

Shetland Islands Council

Roads Asset Management Plan

Draft Version 1

June 2010



Road Asset Management Plan

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0 Executive Summary

0.1 Overview

The Roads Asset Management Plan (RAMP) provides an overview of the Roads Assets under the stewardship of Shetland Islands Council. This plan has been developed in conjunction with other Scottish Authorities through the Society of Chief Officials of Transportation in Scotland (SCOTS). Officers from Shetland Islands Council have been working with officers from other Council's in the Highlands and Islands Area over the past two years. This group was one of four, set up in Scotland by SCOTS, to undertake the development of roads asset management planning over a period of four years. These efforts have been coordinated and assisted by EXP Consulting, appointed by SCOTS, in order to develop a consistent approach to Asset Management Planning across Scotland. In this first version of the plan we have collated the most up to date information available on our roads assets. The main aims of this project are:

- Deliver the aspirations for a better roads network as set down by the Scottish Parliament by ensuring that available finances are spent in the most productive manner.
- Create a common framework for the development of road asset management plans for all Roads Authorities across Scotland.
- To provide a single asset management protocol for all Roads Authorities in Scotland.

It is hoped that this document will assist the Corporate Council to develop a Corporate Asset Management Plan. Roads cannot be sold as a commodity; however the asset management principles of developing long term strategies and ensuring the efficient allocation of resources are common objectives and can be applied to any asset.

The RAMP will make a valuable contribution to a Corporate Asset Management Plan and allow better prioritisation of funding across the Council's stock of assets.

In essence asset management sets out an approach to be used in acquiring, maintaining, improving and disposal of an asset. In terms of Roads asset management can be defined as:

“A structured, long-term approach to planning optimal maintenance and eventual renewal of infrastructure.”



0.2 Key Milestones

The RAMP document demonstrates the extent of our current knowledge about the assets for which we are responsible. It also identifies gaps in our knowledge and areas that require further development. During 2010 – 2011 we have identified the following areas to target our improvements.

1. **Development of an asset information strategy**
2. **Development of condition assessments for our major asset groups.**
3. **Verification of the accuracy of our footway/footpath data.**
4. **Development of Levels of Service.**
5. **Development of Local Performance Indicators.**
6. **Development of a Five Year Programme of Road Improvements**

0.3 Review

It is anticipated that the main sections of this document will be reviewed annually over the next two years and then every three years after this.

0.4 Many of the appendices are live documents and will be subjected to regular review and updating.

It is important to recognise that improvements identified through the development of the RAMP will require to be implemented with resources currently available. Target dates for completion will therefore be open to rescheduling.

0.5 Road Network

The Shetland Islands Council are responsible for a network of carriageways totalling 1048Km. We also have responsibility for 180Km of footways and footpaths. As well as carriageway and footways we have a range of ancillary assets to improve the functionality and safety of our network.

It is estimated that the gross replacement cost to replace our network would be nearly £600M, which makes the network the single most valuable asset that the Council has stewardship of.



0.6 Finance

Council budgets have been under severe pressure for some time and things are only going to get worse in the current financial climate. At the same time the expectations for the delivered level of service continue to rise. The latest cost model developed by WDM in conjunction with SCOTS has demonstrated that Shetland is currently investing around 72% of what is required annually to maintain our roads in their current state.

The development of asset management will provide us with a tool that will predict with some confidence the consequences of investment decisions taken in the future in terms of lifecycle planning and risk management.

0.7 Lifecycle Plans

Lifecycle planning is at the core of asset management. Producing Lifecycle Plans (LCP) allows us to predict long-term financial requirements to maintain our asset base. It also provides a tool for monitoring the performance of a particular design/asset group/manufacturer/make/model by comparing actual deterioration against predictions from the LCP. This should provide us with a more robust method of comparing performance levels and improving our procurement decisions by comparing the lifecycle costs rather than simply comparing replacement costs.

The Lifecycle planning process will also provides a mechanism to assess the level of service achievable from the available budget. It will enable an assessment of the impact associated with a budget reduction and allows comparison of the potential savings against the increased risk and the envisaged reduction in service level.

Levels of Service are determined by the adoption of standards, which the available budget can achieve.

This initial version of the RAMP contains lifecycle plans that have been developed for carriageway, footways, street lighting and structures. Plans for other asset groups will be developed for other asset groups in the future.

0.8 Risk Management.

Risk Management is an essential consideration when developing management practices to maintain the asset. Risks need to be identified, assessed, prioritised and then managed in order to mitigate impacts on service delivery.



0.9 User Expectations

The expectations of road users need to be sought and understood as part of the asset management process. It is ultimately Public money that is being used to maintain the asset. The Council takes part in national performance reviews through APSE and SCOTS as well as seeking the views of the local community through questions within the “Your Voice” survey of local residents and Community Council reviews and feedback.

The reviews used to date have clarified some issues but they are not specific enough to be used to inform changes to management practices. As stated in the milestone section we are looking to agree a set of local performance indicators that will help us and we also need to look to develop a more specific user survey. This will help to ensure that we are delivering a valued service that attempts to improve the aspects of the service most desired by road users.

0.10 Future Developments

A lot of effort has gone into producing this first version of the RAMP. Its progress has identified a number of gaps in our knowledge about the assets that we are maintaining. In many cases we have collected additional data to complete the picture in others we have had to make assumptions. In these cases we have identified an improvement action to gather more accurate details so that we can have absolute confidence in the data that we hold.

Collecting accurate data is only the start of the process and we need to develop mechanisms that will update our records as things change in use either through replacement of worn or under-performing assets. Assets get changed for reasons other than reaching the end of their service life. They may be superseded by an improvement scheme, replaced due to accident damage, or proving inadequate to deal with changes in land use or environmental changes e.g. global warming.

These changes can be commissioned by any one of a number of engineering staff and carried out by a number of different contractors. Our current arrangements for recording the roads inventory associated with new improvement schemes is very good however we need to develop a strategy that will ensure that the details of all new assets replaced during maintenance etc. are recorded.



1 Introduction

1.1 Definition of Road Asset Management

The definition of asset management adopted by Shetland Islands Council is that contained within the County Surveyors Society Framework for Highway Asset Management:

“Asset management is a strategic approach that identifies the optimal allocation of resources for the management, operation, preservation and enhancement of the highway infrastructure to meet the needs of current and future customers”

Some key aspects of asset management are:

- **A Strategic Approach**

Taking a longer-term view of how the authority manages its assets. Such a systematic approach may transcend annual budget cycles and are essential if SIC is to maximise the long-term benefits of the resources available.

- **Optimal Allocation of Resources**

Local authorities have a statutory duty to pursue best value. Expenditure must be prioritised to ensure corporate objectives can be effectively delivered within budgetary constraints. Asset management assists this process by enabling the allocation of resources based upon assessed need.

The use of lifecycle planning, the minimisation of whole life costs and decision making informed by an appreciation of risk and benefit are key asset management components that will help SIC allocate resources to where they are likely to provide the best long-term benefits.

- **The Needs of Customers**

The development of levels of service for each of the roads assets means that it is possible to explicitly take account of the needs and aspirations of service users.

1.2 Drivers for Road Asset Management

There are many drivers for the implementation of a Road Asset Management Plan (RAMP), which include:



- Evidence of strategic thinking and long term planning with regard to maintenance and management of the road infrastructure
- Satisfactory explanation to stakeholders of a fair and reasonable way of allocating limited operational, maintenance and improvement resources
- The introduction of Whole of Government Accounts (WGA) and Resource Accounting and Budgeting (RAB), whereby local authorities are to be required to provide financial forecasting and valuation information to central government.
- In order to meet both national and local outcomes as specified within the single outcome agreement.

1.3 Shetland Islands Council's Initial Road Asset Management Plan

The introduction of a fully developed asset management approach cannot be achieved overnight. Time is required to collect relevant asset data, to analyse both new and existing data, to consult upon the outcome and to modify management practices, progressively improving skills and performance.

This plan represents the start of this improvement process. It has been developed by undertaking a thorough and rigorous review of current practice. This review has highlighted a number of areas where current practice does not support an asset management approach.

Improvement actions required to address these issues have been identified within the relevant sections of the plan and are summarised and prioritised.

This initial RAMP is expected to provide a programme of asset management improvements within SIC, it will also enable the identification of funding requirements based around a number of service level options for the major asset groups, identify the risks associated with the management of the council's road assets and begin the task of identifying long term works programmes and investment strategies based on a whole lifecycle approach.

It is important to note that Shetland Islands Council are starting out on their path to undertaking Road Asset Management and as such it is expected that, in common with most other Scottish authorities at the same stage, there will be considerable room for improvement within the organisation.

SIC's initial road asset management plan is a three year plan lasting from **2010 to 2013**, which will be updated on an annual basis throughout this period with the intention of fully redrafting the plan in 2013 and updating every 3 years thereafter.



1.4 Goals and Objectives of the Road Asset

Shetland Islands Council has identified a large number of goals and objectives for their road assets in a number of documents including the Corporate Plan, Service Plans, and the Local Transport Strategy.

Those that are of most relevance to the management of the road assets have been identified within the Roads Service Plan and include:

NATIONAL OUTCOME: 01 – WE LIVE IN A SCOTLAND THAT IS THE MOST ATTRACTIVE PLACE FOR DOING BUSINESS IN EUROPE

LOCAL OUTCOME: IMPROVE ACCESS TO SHETLAND THROUGH BETTER SEA AND AIR LINKS.

LOCAL OUTCOME: IMPROVE PEOPLE'S PERCEPTIONS ATTITUDES AND AWARENESS OF SHETLANDS REPUTATION.

NATIONAL OUTCOME: 02 – WE REALISE OUR FULL ECONOMIC POTENTIAL WITH MORE AND BETTER EMPLOYMENT OPPORTUNITIES FOR OUR PEOPLE.

LOCAL OUTCOME: INCREASE THE BUSINESS START UP RATE

LOCAL OUTCOME: ENCOURAGE DELIVERY OF RAW GAS FROM THE LAGGAN GAS FIELD, COMMITMENT TO ROSENBANK/LOCHNAGAR, PHASE II OF CLAIR FIELD DEVELOPMENT AND REFURBISHMENT OF THE TERMINAL'S CRUDE TANKS BY 2011.

NATIONAL OUTCOME: 12 – WE VALUE AND ENJOY OUR BUILT AND NATURAL ENVIRONMENT AND PROTECT AND ENHANCE IT FOR FUTURE GENERATIONS.

LOCAL OUTCOME: WE WILL BE WORLD RENOWNED FOR BEING CLEAN AND GREEN ISLANDS, DECREASING OUR CO2 EMISSIONS BY 30% BY 2025.

LOCAL OUTCOME: 50% OF ELECTRICITY GENERATED IN SCOTLAND TO COME FROM RENEWABLE SOURCES BY 2020

1.5 Corporate Asset Management within SIC

Although Shetland Islands Council are in the process of developing a Corporate Property Asset Management Plan no thought has yet been given as to how the Property and Road Asset Management Plans relate to each other and how they will be incorporated into a corporate asset management strategy.

1.6 Strategic Document Framework

Shetland Islands Council has developed a strategic document framework that details the relationship between the various strategic documents within the council. How this relates to the roads asset management plan is shown in figure 1.1 below.



Figure 1.1 Strategic Document Framework





2 Asset Description

2.1 The Road Asset

The road asset within the Shetland Islands is comprised of:

Table 2.1 Shetland Islands Council Road Assets	
Asset Area	Elements
Carriageway	Carriageway; including lay-bys, bus lanes etc.
Footways & Footpaths	Footway, - adjacent to the carriageway Footpaths – remote from the carriageway
Structures	Bridges, sign gantries, culverts, embankments, retaining walls, highway structures.
Lighting (incl. Illuminated signs and bollards)	Lighting columns, lamps, cabling, ducts, feeder pillars, seasonal illuminations,. Illuminated signs & posts, illuminated bollards.
Traffic Signals	Signalised pedestrian crossings, detection equipment, cabling, ductwork and bollards.
Safety Fences & Pedestrian Barriers	Vehicle safety fences, pedestrian barriers.
Non-illuminated Signs	Non-illuminated signs, Warning, Regulatory and local direction/information posts, information boards.
Drainage	Gullies & linear drainage channels (road and footpath), road drains (including pipework, manholes & outfalls), land drainage ditches and watercourses, roadside ditches, swales, etc.
Traffic Calming	Traffic Calming Features – including Tables, Humps, Chicanes etc.
Road Markings	All road markings.
Verges and Planted Areas	Verges, soft landscaped areas.
Car Parks	All car parks maintained by the authority
Street Furniture	Cycle stands, litter bins, benches/seats, bollards, etc.



2.2 The Size of the Asset

The amount of the asset managed by Shetland Islands Council Roads Service is detailed in table 2.2 below.

Table 2.2 SIC Roads Asset Inventory		
Asset Type	Amount	Unit
Carriageways	1047	Km
Footways, Footpaths & Cycleways	136	Km
Bridges (> 900mm Span)	305	No.
Culverts		No.
Streetlights	6357	No.
Illuminated Signs & Bollards	409	No.
Car Parks	13	No.
Traffic Signal (Pelican Crossings)	20	No.
Road Gullies	3381	No.

2.3 Assets Not Covered by this Plan

Assets that have been specifically excluded from this plan are:

- Amenity grassed areas which are maintained by Environmental Services.
- Public Rights of Way
- Private Roads
- Private Bridges
- Water related infrastructure that does not form part of the road network

2.4 Asset Growth

The road asset has increased by approximately 0.75Km per year over the last 5 years, mainly due to a number of small housing developments complete with attendant footways and lighting columns.

It is expected that this growth pattern of approximately 0.35% p.a. will rise significantly in the coming years due to the current plans for new housing.

Recent increases in the use of traffic calming features and high friction surfacing, although not at present quantified, are expected to increase the maintenance budget requirements due to their higher maintenance costs.



3 Community Requirements

3.1 Customer Consultation

The Council has undertaken a general "your voice" survey regularly for a number of years. Questions related to roads were included in the autumn 2005 survey, with exactly the same questions repeated in autumn 2008. The survey allowed satisfaction to be rated at one of five levels, from very poor to excellent. By repeating exactly the same questions, it was possible to monitor changes in satisfaction levels over that three year period.

Consultation with stakeholders takes place in several ways. To assist us identify problem areas, primarily in the form of a biennial review of the Action Plan for the Maintenance, Improvement and Use of the Road Network. The stakeholders comprise; all Community Councils, the NHS, All the Emergency Services, Utility Companies, Bus Operators, Freight & Haulage Companies and other Public Bodies.

In addition project specific consultation is undertaken for all major works where local residents, councillors and appropriate user groups are contacted both prior to and following construction to gauge their opinion as to the efficacy of the scheme and the undertaking of the works.

Performance and maintenance issues are consulted on annually. A questionnaire is circulated to all Community Councils asking them to record levels of satisfaction with, and the importance of all aspects of road maintenance. The most recent survey model used was the 'Highway Maintenance Services Customer Satisfaction Survey' as produced by APSE. The results of this consultation is then feedback into the road maintenance plan, determining the respective priorities within each Community Council area.

Additional consultation takes place with transport stakeholders on an as required basis, for example, reviewing specific issues such as winter maintenance, or parking restrictions and traffic management.

3.2 Results of Consultation

Full results of the "Your Voice" survey can be found in the survey report itself, however some of the findings in relation to roads are:-

- 86% rated the general standard of the road surface as satisfactory or better.
- 79% rated the repair of potholes and road surface defects as satisfactory or better (70% in 2005).
- 76% rated the general standard of footway maintenance as satisfactory or better (78% in 2005)



- 60% rated the gritting and snow clearing of rural main roads as good or excellent with 93% rating it as satisfactory or better (89% in 2005).
- 75% rated the gritting or snow clearing of footways in residential areas as satisfactory or better (72% in 2005).
- 86% rated the speed of repairs of Street lights as satisfactory or better (93% in 2005).

3.3 Use of Consultation Results

The results of the surveys have been used by the Roads Service to identify areas of the service that may require revised strategies to be implemented. However the specific relationship between the survey results and any changes to the service provided has not been documented.

4 Future Demands

4.1 Traffic Growth

The SIC traffic section keeps records of traffic volumes from a number of permanent and temporary counter sites throughout the Isles.

4.2 Traffic Composition

As would be expected the majority of HGV traffic occurs on the principal roads however, largely due to the aquaculture industry, there are a number of unclassified routes where significant volumes of HGV vehicles are present and this may require further investigation and the adoption of a revised maintenance treatment regime.

4.3 Utility Activity

Utility activity can have a major effect on the maintenance and management of the road assets, although not yet quantified it is believed that there is a significant increase in the number of defects found following the disturbance of the carriageway or footway surface due to utilities. This is apparent even when the utility has reinstated the surface to the required standard. The recent renewal of the water main within Lerwick will no doubt increase maintenance costs in the same way as costs have increased following the installation of district heating scheme infrastructure. All statutory undertakers are responsible for carrying out their own reinstatements although these may be contracted and/or sub-contracted to others. This can cause programming problems where different contractors are responsible for different aspects of the reinstatement.

At present the authority enforces a 2 year guarantee period on all reinstatements and 3 years for those entailing deep excavations.

Utility works can also have an effect on the maintenance and management of electrical and drainage assets particularly buried cables or pipes, where they are



damaged by the works, in some cases the damage to the council's apparatus goes unreported and is only found when problems occur. This is particularly true for drainage issues where old tile field drains had formed an intrinsic part of the drainage network.

Where statutory undertakers have caused damage to council assets it is SIC practice to endeavour to reclaim the costs of repair or replacement from the responsible party. However this is not always possible which results in an additional financial burden being placed upon the council.

It is difficult to predict the amount of utility activity in any one year although the recent rise in activity related to a massive capital investment by Scottish Water is likely to tail off over the next period.

4.4 Climate Change

To be developed

4.5 Changes in Legislation

At this time SIC have no knowledge of any proposed changes to legislation that may have an effect on the maintenance and management of the road assets.

4.6 Local & Regional Transport Strategies

The Shetland Transport Strategy approved in April 08 has determined that "an approach balanced between the use of motorised road transport and more sustainable modes of transport" is that which achieves the majority of the Council's key objectives.

Infrastructure maintenance and development will be focussed around:

- Accepting use of the car and powered two wheelers to provide a means of personal travel for access to services and facilities over longer distances and for tourist related travel
- Discouraging the use of the private car for personal travel in favour of sustainable non-motorised modes of transport for short journeys
- Accepting that commercial road transport is necessary to sustain and advance economic development.
- Encouraging the use of public transport to provide access to services and facilities as an alternative to using the car.

Road safety measures will be supported to meet ambitious targets for the reduction of casualties.



5 Levels of Service

5.1 Establishment of Levels of Service

Shetland Islands Council will review its established levels of service, in regard to the maintenance and management of the road asset, prior to the finalisation of this Asset Management Plan.

The proposed LoS will be included within Appendix E along with their associated performance measures and targets.

The further development and agreement of these LoS has been included within the improvement action plan.

6 Lifecycle Planning

6.1 Purpose of Lifecycle Planning

As part of the development of this plan we have created lifecycle plans to document how each of the asset groups that make up our road infrastructure is managed. Each lifecycle plan provides definition of the standards that are applied to the management of the asset group in question and details of the processes that are used to ensure that these standards are delivered.

Production and updating of the lifecycle plans is also enabling local knowledge to be captured. Documenting the LCPs has allowed us to capture the knowledge of individuals, to record this and enable it to be shared and developed.

6.2 Output from Lifecycle Planning

The output from the lifecycle planning process is long term prediction of the cost of the continued management and operation of the asset in question. These should be in the form of financial projections (contained in section 7) and are linked to target levels of service (included in section 5).

6.3 Importance of Lifecycle Plans

Lifecycle plans are the core of our approach to road asset management planning. They contain the detail that enables asset management practices, such as long term cost projection, performance management and risk management, to be applied consistently across all Roads asset groups.

6.4 Lifecycle Plan Contents

Lifecycle plans are living documents, updated as we gather and analyse information on each asset group. When fully populated each LCP will contain the following information:



Table 6.1 Lifecycle Plan Contents		
Section	Answers	Contains
The Asset	What assets do the council own?	Inventory details (type size, etc) Asset growth statistics
Service Expectations	What each asset group is required to do?	Customer expectations Specific user requirements Safety considerations, 3rd party use Environmental requirements, Network availability, Amenity considerations
Management Practices	How is this asset group managed?	Policies Inspection Regime Condition Assessment Asset Acquisition standards Routine Maintenance standards Operational/Cyclic Maintenance Planned Maintenance standards Disposal standards
Investment	How much should be and is spent on this asset group?	Historical Investment Output from historical investment Forecast Financial Needs Valuation: GRC, DRC & ADC
Works Programme	How are works programmed for this asset group?	Existing forward works programme 3yrs+ Works programme coordination Option Appraisal: treatment selection - At a project level - At a budget category level?
Risk	What are the risks associated with this asset group?	Risk identification Major asset risks
Works and Service Delivery	How are works delivered or procured on this asset group?	
Performance Measurement	How is the performance of this asset group measured and managed?	Performance indicators Current performance figures Target performance figures
Strategies	What strategies are there for the future management of this asset group?	
Service Improvement actions	What would improve the management of this asset group?	Asset specific improvement actions



6.5 Status of Lifecycle Plans

Separate lifecycle plans have been produced for each of the following asset groups and are currently in the state of development noted in table 6.2.

Table 6.2 Lifecycle Plan Development within SIC		
Asset Group	Status	Improvement Areas
Carriageways	Draft	Investment strategies, Long term programmes & co-ordination, Local performance indicators
Footways & Footpaths	Draft	Inventory details, Investment strategies, Long term programmes & co-ordination, Local performance indicators
Structures	Draft	Inventory details (retaining walls), Investment strategies, Option appraisal,
Street-lighting	Draft	Management practices, Investment strategies, Long term programmes & co-ordination, Local performance indicators
Road Drainage	TBA	Inventory details, Management practices, Investment strategies, Long term programmes & co-ordination, Local performance indicators
Safety Fences & Pedestrian Barriers	TBA	Inventory details, Service Expectations, Management practices, Investment strategies, Long term programmes & co-ordination, Local performance indicators
Traffic Signals	TBA	Investment strategies, Long term programmes & co-ordination, Local performance indicators
Traffic Calming	TBA	Inventory details, Management practices, Investment strategies, Long term programmes & co-ordination, Local performance indicators
Non-illuminated signs	TBA	Inventory details, Service Expectations, Management practices, Investment strategies, Long term programmes & co-ordination, Local performance indicators
Verges & Landscaped Areas	TBA	Inventory details, Service Expectations, Management practices, Investment strategies, Long term programmes & co-ordination, Local performance indicators
Street Furniture	TBA	Inventory details, Service Expectations, Management practices, Investment strategies, Long term programmes & co-ordination, Local performance indicators



6.6 Asset Group Status Reports (Major Asset Groups)

Status reports for the major asset groups, Carriageways, Footways, Structures and Street Lighting have been produced and are included below.



Asset Group: Carriageways

	Statistics	Commentary																												
The Asset	<table border="1"> <thead> <tr> <th>Road Type</th> <th>Urban</th> <th>Rural</th> <th>Total</th> <th></th> </tr> </thead> <tbody> <tr> <td>Principal</td> <td>12.9</td> <td>183.1</td> <td>196.0</td> <td></td> </tr> <tr> <td>Non-principal A and B</td> <td>5.2</td> <td>185.0</td> <td>190.2</td> <td></td> </tr> <tr> <td>Non-principal C</td> <td>20.3</td> <td>178.2</td> <td>198.5</td> <td></td> </tr> <tr> <td>Unclassified</td> <td>82.2</td> <td>380.1</td> <td>462.3</td> <td></td> </tr> </tbody> </table>	Road Type	Urban	Rural	Total		Principal	12.9	183.1	196.0		Non-principal A and B	5.2	185.0	190.2		Non-principal C	20.3	178.2	198.5		Unclassified	82.2	380.1	462.3		Roads Network grows with new houses and/or housing schemes.			
Road Type	Urban	Rural	Total																											
Principal	12.9	183.1	196.0																											
Non-principal A and B	5.2	185.0	190.2																											
Non-principal C	20.3	178.2	198.5																											
Unclassified	82.2	380.1	462.3																											
Customer Expectations																														
Condition	<p style="text-align: center;">SIC Road Condition</p> <table border="1"> <caption>SIC Road Condition Data (Km)</caption> <thead> <tr> <th>Category</th> <th>Green</th> <th>Amber</th> <th>Red</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>188.0</td> <td>33.6</td> <td>3.0</td> </tr> <tr> <td>B</td> <td>110.8</td> <td>44.8</td> <td>6.1</td> </tr> <tr> <td>C</td> <td>134.2</td> <td>57.7</td> <td>6.6</td> </tr> <tr> <td>U</td> <td>211.1</td> <td>166.3</td> <td>82.6</td> </tr> </tbody> </table> <p style="text-align: center;">(Data labels indicate length of carriageway in Km)</p> <p style="text-align: center;">Network</p> <table border="1"> <caption>Network Condition Distribution</caption> <thead> <tr> <th>Condition</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Green</td> <td>63%</td> </tr> <tr> <td>Amber</td> <td>31%</td> </tr> <tr> <td>Red</td> <td>6%</td> </tr> </tbody> </table> <p>Where the colour bandings have been used to indicate required actions:</p> <ul style="list-style-type: none"> Red: Repairs to prolong future life should be considered Amber: Investigation is needed to establish if treatment is required Green: Road is in an acceptable condition 	Category	Green	Amber	Red	A	188.0	33.6	3.0	B	110.8	44.8	6.1	C	134.2	57.7	6.6	U	211.1	166.3	82.6	Condition	Percentage	Green	63%	Amber	31%	Red	6%	<p>The method for calculating the road condition indicator has changed a number of times between 2004/05 & 2008/09 making it impossible to undertake a comparison of the historical results in order to identify any trend.</p> <p>At present SIC has not set a target condition for their carriageways.</p>
Category	Green	Amber	Red																											
A	188.0	33.6	3.0																											
B	110.8	44.8	6.1																											
C	134.2	57.7	6.6																											
U	211.1	166.3	82.6																											
Condition	Percentage																													
Green	63%																													
Amber	31%																													
Red	6%																													



<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Investment Historical</p>	<table border="1"> <caption>Carriageways Investment Data (Estimated from Chart)</caption> <thead> <tr> <th>Year</th> <th>Category</th> <th>Revenue (Blue)</th> <th>Capital (Red)</th> <th>Total Investment</th> </tr> </thead> <tbody> <tr> <td rowspan="2">2004-05</td> <td>Reactive</td> <td>1,600,000.00</td> <td>0.00</td> <td>1,600,000.00</td> </tr> <tr> <td>Renewals</td> <td>1,500,000.00</td> <td>1,600,000.00</td> <td>3,100,000.00</td> </tr> <tr> <td rowspan="2">2005-06</td> <td>Reactive</td> <td>1,600,000.00</td> <td>0.00</td> <td>1,600,000.00</td> </tr> <tr> <td>Renewals</td> <td>1,600,000.00</td> <td>1,300,000.00</td> <td>2,900,000.00</td> </tr> <tr> <td rowspan="2">2006-07</td> <td>Reactive</td> <td>1,000,000.00</td> <td>0.00</td> <td>1,000,000.00</td> </tr> <tr> <td>Renewals</td> <td>1,700,000.00</td> <td>2,000,000.00</td> <td>3,700,000.00</td> </tr> <tr> <td rowspan="2">2007-08</td> <td>Reactive</td> <td>1,300,000.00</td> <td>0.00</td> <td>1,300,000.00</td> </tr> <tr> <td>Renewals</td> <td>1,500,000.00</td> <td>1,600,000.00</td> <td>3,100,000.00</td> </tr> <tr> <td rowspan="2">2008-09</td> <td>Reactive</td> <td>1,500,000.00</td> <td>0.00</td> <td>1,500,000.00</td> </tr> <tr> <td>Renewals</td> <td>1,500,000.00</td> <td>1,000,000.00</td> <td>2,500,000.00</td> </tr> </tbody> </table>	Year	Category	Revenue (Blue)	Capital (Red)	Total Investment	2004-05	Reactive	1,600,000.00	0.00	1,600,000.00	Renewals	1,500,000.00	1,600,000.00	3,100,000.00	2005-06	Reactive	1,600,000.00	0.00	1,600,000.00	Renewals	1,600,000.00	1,300,000.00	2,900,000.00	2006-07	Reactive	1,000,000.00	0.00	1,000,000.00	Renewals	1,700,000.00	2,000,000.00	3,700,000.00	2007-08	Reactive	1,300,000.00	0.00	1,300,000.00	Renewals	1,500,000.00	1,600,000.00	3,100,000.00	2008-09	Reactive	1,500,000.00	0.00	1,500,000.00	Renewals	1,500,000.00	1,000,000.00	2,500,000.00	<p>Renewal work comprises planned maint. programmes of: Reconstruction, Overlay, Resurfacing & Surface Dressing.</p> <p>Reactive works comprise patching works undertaken as defects are identified throughout the year.</p>
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<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Valuation</p>	<p>The Gross Replacement Cost (GRC) of the carriageway asset has been calculated at approximately £500,569,000 (£0.5 Billion).</p>	<p>The Depreciated replacement cost and annualised depreciation has yet to be calculated</p>																																																		
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Future Investment</p>	<p>SIC has not yet determined a long term investment strategy for these assets,</p> <p>However an initial assessment of maintenance requirements using a cost prediction analysis tool developed by WDM on behalf of SCOTS predicts that Shetland has a road maintenance backlog of £27.34M. It also estimates that we require an annual investment of £2.4M for carriageway treatments to maintain the network in its current condition. We currently spend £1.8M or 75% of the steady state budget each year.</p>																																																			



Forward Works Programme	A 12 month forward work programme has been produced for the carriageway asset (see appendix J) that shows an expected commitment of:				
	Road Class	Work Type	No of sites	Area m ²	Estimated Cost
	A	C/way Inlay	3	5,660	£ 99,900
		C/way Overlay	8	10,325	£ 252,992
		Surface Dress	3	6,300	£ 15,939
	B	C/way Inlay	0	0	£ 0
		C/way Overlay	1	2,100	£ 53,000
		Surface Dress	5	30,204	£ 53,832
	C	C/way Inlay	0	0	£ 0
		C/way Overlay	4	6,755	£ 210,000
		Surface Dress	9	55,182	£ 142,621
	X	C/way Inlay	0	0	£ 0
		C/way Overlay	5	5,270	£ 146,200
Surface Dress		38	145,443	£ 363,990	
Total		76	267,239	£ 1,338,474	
Level of Service	Agreed levels of service have yet to be set for this asset group.				
	<p>The only performance measure currently in place is the SPI that relates to the condition of the road network as measured by the SCANNER survey which details the percentage of road network that should be considered for maintenance treatment.</p> <p>This currently stands at A roads 21.83%; B roads 33.93%; C roads 35.87% U roads 51.17% and 38.3% of the overall network.</p>				

Current Issues	Current Strategies
<p>The latest Surface Condition Assessment of the National Network of Roads (SCANNER Survey) 2008-09 shows approximately 7.1% (74 Km) of the roads in the authorities network falling into the Red category (roads requiring immediate investigation for maintenance works) with a further 31.2% (326 Km) in the Amber category (roads requiring regular monitoring for possible maintenance works).</p> <p>We also have a significant length of narrow roads which are barely adequate for large HGV traffic. We do not currently have funding to tackle this problem although we are looking to establish a programme to tackle this issue over a considerable number of years.</p> <p>As a result of the severe winter of 2009/10, there is severe cracking on rural roads.</p> <p>In addition there are significant amounts of edge deterioration (not picked up by SCANNER) particularly on narrow roads subject to frequent HGV movements, which also require maintenance work.</p>	<p>The Council has an approved Roads Maintenance Plan in place which details how roads are inspected, intervention levels and provides a framework to allow maintenance works to be prioritised.</p> <p>Annual SCANNER survey to help assist with the design of planned schemes to help to ensure that we are targeting the correct parts of the network at the most opportune time.</p> <p>Annual SCRIM survey which is monitored along with accident statistics to help maintain the safety of our network.</p> <p>Member Officer Working Group which meets four times yearly to help to keep everyone updated with progress and problems and issues being raised and addressed</p> <p>Annual Service Plans and service reviews to help to ensure that we are taking the views of the community into account, highlighting achievements and identifying what we are planning to address in the coming period.</p>



Asset Group: Footways & Footpaths

	Statistics	Commentary																																							
The Asset	<table border="1"> <thead> <tr> <th>Type</th> <th>Urban (Km)</th> <th>Rural (Km)</th> <th>Total (Km)</th> </tr> </thead> <tbody> <tr> <td>Footway</td> <td>101</td> <td>10.9</td> <td>111.9</td> </tr> <tr> <td>Footpath</td> <td>21.6</td> <td>1.1</td> <td>22.7</td> </tr> <tr> <td>Total</td> <td>122.6</td> <td>12</td> <td>134.6</td> </tr> </tbody> </table>	Type	Urban (Km)	Rural (Km)	Total (Km)	Footway	101	10.9	111.9	Footpath	21.6	1.1	22.7	Total	122.6	12	134.6																								
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Customer Expectations																																									
Condition	<p>SIC has embarked on a trial of a course visual condition assessment which, if it is found satisfactory will, following appropriate training for the safety inspectors, enable them to carry out a visual condition assessment as part of their normal routine.</p>																																								
Investment Historical	<table border="1"> <caption>Footways Investment Data (Estimated from Chart)</caption> <thead> <tr> <th>Year</th> <th>Category</th> <th>Capital (R)</th> <th>Revenue (R)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">2004-05</td> <td>Renewals</td> <td>~700,000</td> <td>~150,000</td> </tr> <tr> <td>Reactive</td> <td>~0</td> <td>~70,000</td> </tr> <tr> <td rowspan="2">2005-06</td> <td>Renewals</td> <td>~650,000</td> <td>~150,000</td> </tr> <tr> <td>Reactive</td> <td>~0</td> <td>~70,000</td> </tr> <tr> <td rowspan="2">2006-07</td> <td>Renewals</td> <td>~400,000</td> <td>~280,000</td> </tr> <tr> <td>Reactive</td> <td>~0</td> <td>~70,000</td> </tr> <tr> <td rowspan="2">2007-08</td> <td>Renewals</td> <td>~580,000</td> <td>~180,000</td> </tr> <tr> <td>Reactive</td> <td>~0</td> <td>~70,000</td> </tr> <tr> <td rowspan="2">2008-09</td> <td>Renewals</td> <td>~250,000</td> <td>~170,000</td> </tr> <tr> <td>Reactive</td> <td>~0</td> <td>~160,000</td> </tr> </tbody> </table>	Year	Category	Capital (R)	Revenue (R)	2004-05	Renewals	~700,000	~150,000	Reactive	~0	~70,000	2005-06	Renewals	~650,000	~150,000	Reactive	~0	~70,000	2006-07	Renewals	~400,000	~280,000	Reactive	~0	~70,000	2007-08	Renewals	~580,000	~180,000	Reactive	~0	~70,000	2008-09	Renewals	~250,000	~170,000	Reactive	~0	~160,000	
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Valuation	An initial assessment based on the recorded length and width of the footway and footpaths within Shetland, as reported in section 1, has calculated a gross replacement cost for these assets of approximately £28.47M .	
Future Investment		
Forward Works Programme	An annual 12 month programme of footway maintenance works is produced each year based on the budgets available, with a list of possible schemes to be included in future years programmes kept on file.	
Level of Service	<p>Agreed levels of service have yet to be set for this asset group.</p> <p>Intervention levels have been agreed in accordance with the Road Maintenance Plan</p> <p>There are no national performance indicators applicable to the footway, footpath or cycleway asset.</p>	

Current Issues	Current Strategies
We inherited significant lengths of footpaths from our Housing section without a corresponding budget increase. Many of these footpaths are concrete and in various states of disrepair. These are being replaced with bituminous surfaces as funds allow on a prioritised basis.	Currently the only management strategies that are applied to the footway and footpath assets are restricted to reactive maintenance based on a targeted regime of safety inspections being undertaken and a winter maintenance service based on a prioritised intervention standard.



Asset Group: Structures					
	Statistics – We will make a breakdown by size/type when it is clearer which categories are to be used		Commentary		
The Asset	Table 2.1 SIC Highway Structures Inventory			The figures have been derived from the inspection surveys undertaken and are thought to be of good quality with approximately 95% of the records of bridges and culverts thought to be accurate, however there is a lack of knowledge in regard to retaining walls, which at present have no identified asset ownership within the council, although there are relatively few of these in Shetland.	
			Single Span		Multi Span
	Type of Structure	Construction Type	No.		No.
	Bridges over 1.8m span	Masonry Arch	TBA		TBA
		Brickwork Arch	TBA		TBA
		Concrete Beam / Slab	TBA		TBA
		Steel Composite	TBA		TBA
		Concrete Box / Pipes	TBA		TBA
		Corrugated Pipes	TBA		TBA
		Others	TBA		TBA
	Total		130 some of which are multi-span		TBA
	Bridges/Culverts (0.9 - 1.8m span)	Masonry Arch	TBA		TBA
		Concrete Pipe	TBA		TBA
		Corrugated Pipes	TBA		TBA
Others		TBA	TBA		
Total			178 some of which are multi-span	TBA	
Customer Expectations	No customer surveys have been carried out in regard to the maintenance and management of the highway structures, apart from scheme specific consultation when works are being considered or undertaken.				
Condition	<p>At present only a general condition is known for each structure based on identified defects. Annual bridge inspections are carried out to identify new issues and/or track the rate of deterioration.</p> <p>Bridge Condition Indicators have not been used to date, as the type, size and construction types of Shetland Bridges limit the usefulness of that approach.</p>				



<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Historical Investment</p>	<table border="1"> <caption>Structures Historical Investment Data</caption> <thead> <tr> <th>Year</th> <th>Category</th> <th>Revenue</th> <th>Capital</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td rowspan="2">2004-05</td> <td>Renewals</td> <td>180,000.00</td> <td>520,000.00</td> <td>700,000.00</td> </tr> <tr> <td>Reactive</td> <td>30,000.00</td> <td>0.00</td> <td>30,000.00</td> </tr> <tr> <td rowspan="2">2005-06</td> <td>Renewals</td> <td>140,000.00</td> <td>530,000.00</td> <td>670,000.00</td> </tr> <tr> <td>Reactive</td> <td>130,000.00</td> <td>0.00</td> <td>130,000.00</td> </tr> <tr> <td rowspan="2">2006-07</td> <td>Renewals</td> <td>90,000.00</td> <td>490,000.00</td> <td>580,000.00</td> </tr> <tr> <td>Reactive</td> <td>60,000.00</td> <td>0.00</td> <td>60,000.00</td> </tr> <tr> <td rowspan="2">2007-08</td> <td>Renewals</td> <td>80,000.00</td> <td>320,000.00</td> <td>400,000.00</td> </tr> <tr> <td>Reactive</td> <td>20,000.00</td> <td>0.00</td> <td>20,000.00</td> </tr> <tr> <td rowspan="2">2008-09</td> <td>Renewals</td> <td>70,000.00</td> <td>200,000.00</td> <td>270,000.00</td> </tr> <tr> <td>Reactive</td> <td>100,000.00</td> <td>0.00</td> <td>100,000.00</td> </tr> </tbody> </table>	Year	Category	Revenue	Capital	Total	2004-05	Renewals	180,000.00	520,000.00	700,000.00	Reactive	30,000.00	0.00	30,000.00	2005-06	Renewals	140,000.00	530,000.00	670,000.00	Reactive	130,000.00	0.00	130,000.00	2006-07	Renewals	90,000.00	490,000.00	580,000.00	Reactive	60,000.00	0.00	60,000.00	2007-08	Renewals	80,000.00	320,000.00	400,000.00	Reactive	20,000.00	0.00	20,000.00	2008-09	Renewals	70,000.00	200,000.00	270,000.00	Reactive	100,000.00	0.00	100,000.00	
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<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Valuation</p>	<p>An exercise to calculate the value of the structures asset has been initiated as part of the SCOTS asset management project, at present the output from this is not complete.</p> <p>Shetland Islands Council bridges section has estimated a Gross Replacement Cost value of £ 27,170,000 (£27 million) for their bridges and culverts.</p>																																																			
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Future Investment</p>	<p>SIC has not yet determined a long term investment strategy for these assets,</p> <p>An exercise has been undertaken to identify the bridges which require replacement in the next 20 years.</p> <p>These replacements have not been fully costed to date, but a continual rolling programme of £600K per year should allow the works to be carried out in the required timescale.</p>																																																			
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Forward Works Programme</p>	<p>At present SIC produces annually a 12 month programme of Capital works and 12 month programmes of Capital Rolling Programmes and Revenue works to be undertaken on the structures asset.</p> <p>The Capital programme is derived from a “wish list” of schemes that could provide a 5 year programme of works should funding be available.</p> <p>The Capital Rolling Programme has identified the bridges and culverts which have a 20 year life, or less, and an outline programme for the replacement of those bridges within 20 years has been drawn up. Individual bridges will move up or down on that programme as defects become more urgent, works are combined with other projects or other factors influence programming.</p> <p>The revenue programme is often adapted throughout the year due to defects of a higher priority being identified during the annual inspection process.</p>																																																			



Level of Service	<p>Agreed levels of service have yet to be set for this asset group.</p> <p>A number of local performance indicators have also been proposed but have yet to be initiated.</p> <p>There are bridges which could have weight and/or width restrictions applied, but in general, traffic size on those structures are already limited by the roads serving them.</p>	
Issues		Strategies
<p>There is a lack of historical information on Retaining walls. Inventory information has been gathered in 2009/10, but ownership details are largely unknown.</p> <p>Bridge assessments remain to be carried out on larger structures, but for the majority of the bridges, their small size and construction methods, together with an almost complete lack of construction details and the ongoing replacement of bridges because of other failings means assessments are often not cost effective.</p> <p>If funding levels continue as per 2010/11 levels for the next 20 years, the bridge replacements required to bring the long term programme back on track can be carried out.</p>		<p>A database of known bridges, culverts and retaining walls has been completed. Inspections will continue to develop the information held.</p> <p>Bridge defects will continue to be monitored and replacement/repair work priorities amended, as required.</p>



Asset Group: Street Lighting																																																																																																						
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The Asset	Shetland Islands Council Street Lights, Illuminated Signs & Bollards Inventory																																																																																																					
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	Total	6788																																																																																																				
		<p>There has been an estimated asset growth of approximately ???% over the last 5 years although exact details of asset acquisition are unavailable at present.</p> <p>See Task 18</p> <p>Asset Valuation</p>																																																																																																				
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Age / Condition	<div style="text-align: center;"> <h3>Age Profile Lighting Columns</h3> <p>■ SL Columns</p> <table border="1"> <caption>Approximate data from Age Profile Lighting Columns chart</caption> <thead> <tr> <th>Age (years)</th> <th>No of Columns</th> </tr> </thead> <tbody> <tr><td>1</td><td>80</td></tr> <tr><td>2</td><td>70</td></tr> <tr><td>3</td><td>60</td></tr> <tr><td>4</td><td>100</td></tr> <tr><td>5</td><td>100</td></tr> <tr><td>6</td><td>20</td></tr> <tr><td>7</td><td>30</td></tr> <tr><td>8</td><td>30</td></tr> <tr><td>9</td><td>100</td></tr> <tr><td>10</td><td>150</td></tr> <tr><td>11</td><td>200</td></tr> <tr><td>12</td><td>180</td></tr> <tr><td>13</td><td>190</td></tr> <tr><td>14</td><td>170</td></tr> <tr><td>15</td><td>160</td></tr> <tr><td>16</td><td>150</td></tr> <tr><td>17</td><td>180</td></tr> <tr><td>18</td><td>220</td></tr> <tr><td>19</td><td>350</td></tr> <tr><td>20</td><td>320</td></tr> <tr><td>21</td><td>150</td></tr> <tr><td>22</td><td>140</td></tr> <tr><td>23</td><td>150</td></tr> <tr><td>24</td><td>140</td></tr> <tr><td>25</td><td>130</td></tr> <tr><td>26</td><td>70</td></tr> <tr><td>27</td><td>60</td></tr> <tr><td>28</td><td>10</td></tr> <tr><td>29</td><td>10</td></tr> <tr><td>30</td><td>20</td></tr> <tr><td>31</td><td>100</td></tr> <tr><td>32</td><td>10</td></tr> <tr><td>33</td><td>10</td></tr> <tr><td>34</td><td>10</td></tr> <tr><td>35</td><td>10</td></tr> <tr><td>36</td><td>10</td></tr> <tr><td>37</td><td>10</td></tr> <tr><td>38</td><td>10</td></tr> <tr><td>39</td><td>10</td></tr> <tr><td>40</td><td>10</td></tr> <tr><td>41</td><td>10</td></tr> <tr><td>42</td><td>10</td></tr> <tr><td>43</td><td>10</td></tr> <tr><td>44</td><td>10</td></tr> <tr><td>45</td><td>10</td></tr> <tr><td>46</td><td>10</td></tr> <tr><td>47</td><td>10</td></tr> <tr><td>48</td><td>10</td></tr> <tr><td>49</td><td>10</td></tr> </tbody> </table> </div>	Age (years)	No of Columns	1	80	2	70	3	60	4	100	5	100	6	20	7	30	8	30	9	100	10	150	11	200	12	180	13	190	14	170	15	160	16	150	17	180	18	220	19	350	20	320	21	150	22	140	23	150	24	140	25	130	26	70	27	60	28	10	29	10	30	20	31	100	32	10	33	10	34	10	35	10	36	10	37	10	38	10	39	10	40	10	41	10	42	10	43	10	44	10	45	10	46	10	47	10	48	10	49	10	<p>See Task 18</p> <p>Asset Valuation</p>
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<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Level of Service</p>																																																				

<p style="text-align: center;">Current Issues</p>	<p style="text-align: center;">Current Strategies</p>
	<p style="text-align: center;">See Street Lighting Lifecycle Plan</p>



7 Financial Summary

7.1 Sources of Funding & Budget Allocation

7.1.1 Revenue

Revenue funding within roads is split between a number of service headings based on historical precedence and identified need. However at this stage individual budget holders are encouraged to make a case for any additional funds that are required to enable the ongoing maintenance and management of the assets such that the funding split can be adjusted to reflect current priorities.

Each of the budget holders is then responsible for determining how the funding is used within their service area.

7.1.2 Capital

Expenditure from the Shetland Islands Council's Capital Fund is required to cover expenditure on works, etc of "lasting value". The Capital Programme is coordinated by the Capital Programme Service, and they report all proposed additions, amendments, and deletions to meetings of the Council for approval. Currently the Roads Capital allocation is running at approximately £2.74m per annum, although this may be reduced in years to come due to pressure on the funding of the Council's overall Capital Programme. This money is split between the service headings based on historical precedence adjusted where exceptional issues require immediate investment. At present, funding is allocated to Roads projects in two separate ways, and these are as follows

The Roads and Transport Capital Rolling Programmes. These programmes are arranged in order to carry out improvement works and purchases, each costing less than £150,000, in the following range of categories. As can be seen, these categories cover each separate element of the road network, each area of growth of traffic on the network, and Road Safety. The provisional list of schemes for the next 3 years is approved by the Council's Infrastructure Committee annually, following both technical assessments and stakeholder consultation.

- Road Reconstruction. For those resurfacing works which also include substantial replacement of the road's foundation.
- Footways. For new or replacement pavements, footpaths, or traffic calming.
- Bridge Replacements. For major refurbishment, or replacement of bridges, large culverts, retaining walls, or tidal protection.
- Streetlighting Replacement. For new or replacement sets of lights.
- Barrier Replacements. For new or replacement of crash barriers.



- Roads Drainage. For new or replacement roadside drainage systems.
- The Scord Quarry, Plant Replacement. For new or replacement fixed or mobile plant in the Council's own quarry, which produces aggregates and surfacing materials.
- Development-Related Roads. To provide matching funds or works, following agreement with developers of new housing, etc.
- Traffic Management. For the provision of junction improvements, new road layouts, parking improvements, works associated with new traffic orders, etc.
- Minor Works and Purchases, Bus Service. For new bus bays, park and ride areas, and shelters. This budget and the Airstrips one (below) are "shared" with the Council's Transport Service.
- Minor Works and Purchases, Airstrips. For various minor improvements to the Council's 8 airstrips serving the outer isles.
- Accident Investigation and Prevention. For various minor works required to improve road safety, and assessed as necessary on technical grounds.
- Minor Works and Purchases, Roads. For other minor safety improvements, and the occasional replacement of the 6 road-side weather stations.
- 20mph Speed Limits at Schools. This budget has been required for only a short period to cover the implementation of this Government initiative.

Named Schemes. Individual projects, each estimated to cost more than £150,000, which have been assessed by the Council's Roads staff as being worthwhile, and the best option for improvement at that location, using the principles of STAG (Scottish Transport Appraisal Guidance). Each project is discussed by the Council's Member/Officer Working Group (Roads), before being presented to the Infrastructure Committee for approval, and to the Council for inclusion in the Capital Programme.

Occasionally bids may be made for Capital Investment from Government, Sustrans and European sources. However, the conditions for obtaining European grants have recently become much more onerous and the chances of success in relation to transport infrastructure are now very small. Small amounts of funding have been obtained from Sustrans (for footpaths and cycleways), and the Government still provides an annual grant for "Cycling, Walking and Safer Streets".

7.1.3 Income

TBA



7.1.4 Grants

Individual grants may be available for specific types of improvement work usually from Government or specialist interest groups. Applications for this grant money are produced by budget holders with any funding allocated being used for the specific projects identified.

7.1.5 Other

The council seeks to obtain costs from developers, or works done by them, as contributions towards improvements to the road infrastructure required in the local vicinity as a result of the development.

7.2 Historical Expenditure

Tables 7.1 to 7.3 below identify the historical spend on the creation, improvement and maintenance of the road assets over the last 5 years.

Table 7.1 Historical Works Budgets by Asset Group & Work Type						
Asset	Works	2004-05	2005-06	2006-07	2007-08	2008-09
Carriageways	Reactive	£ 1,626,918	£ 1,587,318	£ 1,031,298	£ 1,350,306	£ 1,534,491
	Planned	£ 3,103,447	£ 2,864,219	£ 3,738,439	£ 3,129,180	£ 2,473,505
Footways	Reactive	£ 67,005	£ 74,659	£ 68,784	£ 76,593	£ 169,849
	Planned	£ 854,785	£ 807,515	£ 681,340	£ 765,231	£ 421,741
Structures	Reactive	£ 35,583	£ 137,730	£ 63,343	£ 16,615	£ 98,527
	Planned	£ 707,515	£ 666,497	£ 586,674	£ 397,389	£ 265,305
Street lighting	Energy	£ Inc				
	Reactive	£ 275,874	£ 315,231	£ 384,915	£ 347,246	£ 366,412
	Planned	£ 359,740	£ 497,488	£ 265,323	£ 338,212	£ 428,493
Safety Fencing & Pedestrian Barriers	Reactive	TBA	TBA	TBA	TBA	TBA
	Planned	TBA	TBA	TBA	TBA	TBA
Drainage	Reactive	TBA	TBA	TBA	TBA	TBA
	Planned	TBA	TBA	TBA	TBA	TBA
Traffic Signs	Reactive	TBA	TBA	TBA	TBA	TBA
	Planned	TBA	TBA	TBA	TBA	TBA
CCTV	Reactive	TBA	TBA	TBA	TBA	TBA
	Planned	TBA	TBA	TBA	TBA	TBA
Verge Maint.	All	TBA	TBA	TBA	TBA	TBA
Winter Maint.		TBA	TBA	TBA	TBA	TBA



Table 7.2 Historical Revenue Budgets by Budget Heading						
Works		2004-05	2005-06	2006-07	2007-08	2008-09
Maintenance	Roads	£ 3,348,428	£ 3,419,575	£ 3,061,934	£ 3,160,575	£ 3,421,141
	Bridges	£ 217,238	£ 285,811	£ 156,006	£ 102,806	£ 178,879
	Lighting	£ 583,708	£ 695,455	£ 582,293	£ 571,659	£ 647,349
	Winter	TBA	TBA	TBA	TBA	TBA

Table 7.3 Historical Capital Budgets by Budget Heading						
Works		2004-05	2005-06	2006-07	2007-08	2008-09
Roads		£ 2,303,727	£ 1,914,136	£ 2,457,927	£ 2,160,735	£ 1,178,445
Bridges		£ 525,860	£ 518,416	£ 494,011	£ 311,198	£ 184,953
Lighting		£ 51,906	£ 117,264	£ 67,845	£ 113,799	£ 147,556
Safety Schemes		TBA	TBA	TBA	TBA	TBA
Integrated Transport Schemes		TBA	TBA	TBA	TBA	TBA
New Developments		TBA	TBA	TBA	TBA	TBA

7.3 Known Future Funding

At this stage actual funding available over the next few years has not been confirmed however the estimated budgets available for the three years commencing 2009/10 is detailed in tables 7.4 and 7.5 below.

Table 7.4 Estimated Future Revenue Budgets by Budget Heading				
Works		2009-10	2010-11	2011-12
Maintenance	Roads	TBA	TBA	TBA
	Bridges	TBA	TBA	TBA
	Lighting	TBA	TBA	TBA
	Winter	TBA	TBA	TBA

Table 7.5 Estimated Future Capital Budgets by Budget Heading				
Works		2009-10	2010-11	2011-12
Roads		TBA	TBA	TBA
Bridges		TBA	TBA	TBA
Lighting		TBA	TBA	TBA
Safety Schemes		TBA	TBA	TBA
Integrated Transport Schemes		TBA	TBA	TBA
New Developments		TBA	TBA	TBA



7.4 Predicted Funding Need

As part of the asset management process SBC has identified the funding requirements for maintaining the major asset groups in their present condition and/or continuing the existing level of service. Additional information on this process can be found within Appendix G and the individual lifecycle plans.

Table 7.6 below details the predicted steady state funding requirements for the next 5 years without any allowance being made for inflation or unexpected events.

Table 7.6 Steady State Funding Prediction Estimates by Budget Heading						
Works		2009-10	2010-11	2011-12	2012-13	2013-14
Maintenance	Roads	TBA	TBA	TBA	TBA	TBA
	Bridges	TBA	TBA	TBA	TBA	TBA
	Lighting	TBA	TBA	TBA	TBA	TBA
	Winter	TBA	TBA	TBA	TBA	TBA



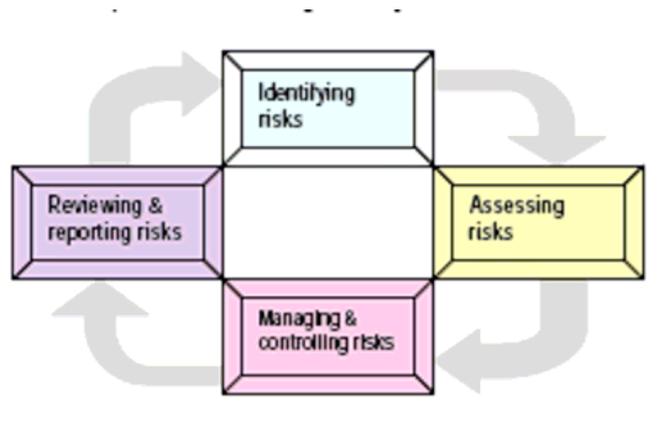
8 Risk Management

Risk management is a systematic approach to identifying and dealing with the risks that threaten our plans and projects and impact upon the continuation of service delivery.

To this end SIC has developed a risk management framework the purpose of which is to define in a controlled way how risks and opportunities will be handled within Shetland Islands Council. The framework provides information on roles and responsibilities and processes and procedures. It sets the context in which risks are managed, in terms of how they will be identified, assessed, managed and reviewed.

The Council has a four-step framework for identifying, assessing, managing and controlling and reviewing risk (See Figure 8.1). This is a continuous process and can easily be integrated with performance management. The Council has agreed criteria by which to judge the likelihood and impact of risks, effectiveness of control measures and required levels of management of residual risks.

Figure 8.1 Four-step risk management framework



8.1 Risk identification

Risk to the Council’s business can take a variety of forms; for example, financial risk, risks to project and service delivery, its reputation, partnerships, employees and Councillors and risks from missed opportunities. Those risks could affect the council’s performance, its assets, stakeholders, customers or members of the public. They can also affect the Council’s viability.

Risk identification is undertaken by all officers as part of their daily activities, these are then brought together as part of a group brainstorming exercise; the thoughts and ideas from that brainstorming are then grouped into common themes and developed into a risk that expresses how the issue will impact upon achievement of the council’s strategic objectives.



8.2 Risk Evaluation

The next step is to assess those risks in terms of the likelihood that they will occur and the impact if they do. The criteria for the levels of likelihood and impact for risks are shown in tables 8.1 and 8.2 below.

Table 8.1: Description and definitions of LIKELIHOOD of the RISK occurring

Descriptor	Description
Almost certain	I would not be at all surprised if this happened within the next few months
Likely	I think this could occur sometime in the coming year or so
Possible	I think this could maybe occur at some point, but not necessarily in the immediate future
Unlikely	I would be mildly surprised if this occurred, but cannot entirely rule out the possibility
Rare	I would be very surprised to see this happen, but cannot entirely rule out the possibility

Fig 1

- Threat 0% probability will never happen = no threat
- Threat 100% probability is certain = not a risk – issue that needs to be addressed
- Risk management deals with threats whose probability lies within those extremes 1% - 99%



Table 8.2: Description and definitions of IMPACT of the RISK should it occur

HAZARD	Personal Safety	Property loss or damage	Failure to provide Statutory Service or breach of legal requirements	Financial Loss or Increased cost of Working	Disruption of Service (Days) (This may vary with the criticality of the service)	Personal Infringement	Privacy	Environmental	Community	Embarrassment
Insignificant	Minor injury or discomfort to an individual	Negligible property damage	Litigation, claim or fine <£2k	<£10k	None	Isolated personal detail revealed	Minor localised - damage to plants	Inconvenience to an individual or small group	<i>Contained within Service Unit</i>	
Minor	Minor injury or discomfort to several people	Minor damage to one property	Litigation, claim or fine £2k to £50k	£10k to £100k	1	Isolated personal detail comprised	Death of invertebrates	<i>Impact on an individual or small group</i>	<i>Contained within Service</i>	
Significant	Major injury to an individual	Significant damage to small building or minor damage to several properties from one source	Litigation, claim or fine £50k to £250k	£100k to £500k	2-3	Several persons details revealed	Death of fish	Impact on a local community	<i>Local public or press interested</i>	
Major	Major injury to several people or death of an individual	Major damage to critical building or serious damage to several properties from one source	Litigation, claim or fine £250k to £1m or custodial sentence imposed	£500k to £1m	4-14	Several persons details comprised	Death of animals	Impact on several communities	<i>National public or press interest</i>	
Catastrophic	Death of several people	Total loss of critical building	Multiple civil or criminal actions. Litigation, claim or fine above £1m	>£1m	>14	All personal details revealed/comprised	Permanent damage to site of special interest	Impact on the whole of Shetland	<i>Officer(s) and/or members forced to resign</i>	

Multiplying the likelihood score by the impact score gives the uncontrolled risk score. The next stage identifies controls (strategy, policies, practices that exist currently) and their efficacy (ineffective, partially effective, effective, and very effective).

The risk is then re-assessed for likelihood and impact. The new score is the current risk score that exists after controls have been applied and so the real level of risk. That information is then recorded in the risk register.

The risks are then prioritised to enable decisions to be made about the significance of those risks to the Council, and how they will be managed.



Table 8.3: Risk Prioritisation

Residual Risk Rating Matrix

F R E Q U E N C Y

Fig 3

S E V E R E I T Y		Rare	Unlikely	Possible	Likely	Almost Certain
	Insignificant	1	2	3	4	5
	Minor	2	4	6	8	10
	Significant	3	6	9	12	15
	Major	4	8	12	16	20
	Catastrophic	5	10	15	20	25

8.3 Risk Control

Now that the risks and opportunities have been identified and assessed for likelihood and impact, there needs to be agreement on **who** will own the risk (and/or manage it) and **how** the risk will be managed, controlled or exploited.

When the existing controls and action plans have been identified, the risks are re-assessed for likelihood and impact. This gives a forecasted controlled score of the Risk Profile as a result of the mitigation action plans. That information is then recorded in the risk register.

8.4 Reviewing & Reporting

Risk action reviews are timed to coincide with overall Business Plan progress reviews following the following pattern:

RED - 3 monthly reviews of action progress throughout the year

AMBER - 6 monthly reviews throughout the year coinciding with red reviews

YELLOW / GREEN - Annual reviews, coinciding with red and amber reviews (see note)

Note: - This review schedule will be programmed to culminate in an annual review of Risk Profiles recorded in all Council's Risk Registers that should be timed to coincide with the substantive revision of Business Plans.

The risk management framework (the four steps of risk management) is a continuous cycle designed not only to identify, assess, manage and review risks, but also to support the service business objectives. Reviewing the risk identification process when drawing up the annual business plan enables the risks and opportunities to be linked directly to the business objectives. That way, risks and opportunities are directly linked to the achievement of business objectives which can then be prioritised using that information.



8.5 Risk Register

A risk register has been developed for the Roads Service (See table 8.3 below). A road asset specific risk register has also been developed and is available in full as Appendix 8 to this RAMP.

Table 8.3 SIC Transportation Services Roads & Fleet Risk Register				
No.	Risk	Score	Impact	Likelihood
001	Limited local / central government funding	16	Major	Likely
003	Damage to vehicles, mobile plant & equipment could affect service delivery	6	Minor	Possible
006	Customers inadequate assessment of needs	6	Moderate	Likely
007	Loss of key staff, recruitment / retention problems	10	Minor	Almost Certain
009	Inadequate training could lead to inefficient work and staff discontent	6	Minor	Possible
010	Failure of key supplier	8	Major	Unlikely
011	Loss of income in SBc Contracts	20	Major	Almost Certain
014	Legal restraints on trading could lead to loss of SBc Contracts' ability to compete or operate externally	20	Major	Almost Certain
015	Budget control failure	8	Major	Unlikely
017	Failure to meet Government Policy	2	Minor	Remote
018	Bad debts poor recovery system	2	Minor	Remote
019	Communication and data collection software shortcomings	2	Negligible	Unlikely
020	Economic climate could raise costs and material delivery problems	6	Minor	Possible
023	SBc Contracts finds difficulty in competing with private sector	6	Moderate	Unlikely
025	Industrial action	6	Minor	Possible
027	Partnership working failure	6	Minor	Possible
028	Failure to meet VOSA regulations	12	Moderate	Likely
029	Failure to meet drivers CPC regulations	12	Moderate	Likely
030	Economic climate reduce demand for services	20	Major	Almost Certain
031	Absence of own service level conditions	9	Moderate	Possible
032	Failure of key supplier	15	Moderate	Almost Certain

8.6 Major Asset Risks

Table 8.4 below details the major risks identified within the Road Asset Risk Register.



Road Asset Management Plan

Table 8.4 Road Asset Major Risks

Risk	Likelihood Score	Impact Score	Uncontrolled Risk Score	Current Controls In Place	Revised Likelihood Score	Revised Impact Score	Controlled Risk Score
Structures							
Inability to complete maintenance work due to lack of funding may lead to substantial failure of the structure causing injury and increased costs due to emergency works, or diversions due to bridge closure	4	5	20	No Controls	4	5	20
Street Lighting							
Lack of long term management personnel may lead to a lack of continuity and the loss of knowledge leading to poor management decisions	5	4	20	No Controls	5	4	20
Carriageways							
Lack of funding for maintenance works may lead to a backlog of required works, the continued deterioration of the network and the need for higher cost remedial works in the future	5	4	20	No Controls - Prudential Borrowing did tackle some of the backlog but has now ceased	5	4	20
Footways							
Lack of funding for maintenance works may lead to a backlog of required works, the continued deterioration of the network and the need for higher cost remedial works in the future	5	4	20	No Controls	5	4	20
Drainage							
Standing water causing skid accidents	4	5	20	No Controls	4	5	20



9 Improvement Plan

9.1 Milestones

An improvement action plan has been created to support this plan and is included in appendix I. For the duration of this plan (1 year for RAMP#1) the key milestones are as follows:

Table 9.1 Improvement Action Milestones			
No.	Milestone	Priority	Responsible Manager
Priority: 1 = Within 6 Months; 2 = 6 – 12 Months; 3 = 12 – 24 Months; 4 = 24 – 48 Months.			
1	Develop an asset information strategy. For each asset group we need to identify members of staff who will be responsible for ensuring that our asset database remains up to date.	3	RB/DM
2	Collect missing asset data identified during asset valuation to reduce the number of assumptions used.	2	DM
3	Develop Condition Assessments for our major asset groups.	2	RB
4	Verification of the accuracy of our Footway / footpath data.	1	RB
5	Development of Levels of Service	2	IH/DM/RB
6	Develop and monitor a set of Local Performance Indicators.	1	IH/DM/RB/BP
7	Develop a programme of planned improvements to the roads infrastructure over the next five years.	2	IH/DM

9.2 Progress Reporting

Reporting against the improvement action milestones will be determined at a later date.



10 Management & Control of the Plan

10.1 Introduction

Throughout this RAMP, issues and corresponding improvement actions have been established. These actions will need to be prioritised, programmed, resourced and implemented in order for an asset management approach to be fully introduced.

10.2 Ownership of the RAMP

The Road Asset Management Plan will become a controlled document with a named officer responsible for:

- distribution to appropriate staff, members and the public
- monitoring of improvement actions and the implementation plan
- authorising and actioning updates to the plan

The persons charged with the delivery of this Road Asset Management Plan and their roles within the process are detailed below.

Position	Name	Role
Shetland Islands Council		
Infrastructure Committee		Approval of the RAMP (3 Yearly)
Member/Officer Working Group (Roads)		Advisory Group
Executive Director of Infrastructure Services		Approval of the RAMP under delegated powers (annually)
Head of Service	Ian Halcrow	Champion of RAMP
Maintenance Manager	Ron Beardsley	Day to day implementation of RAM, monitoring improvement actions, informed decision making & ensuring updates to the documents
Network and Design Manager	David Macnae	Day to day implementation of RAM & ensuring updates to the documents
Programme Manager	Bill Peterson	Producing integrated forward work programmes, both long and short term, and ensuring their availability to all interested parties. Identifying conflicts and opportunities for rationalisation of works.



Road Asset Management Plan

Data Manager	TBA	Ensuring data management procedures are followed and that all information is kept up to date. Providing requested information outputs to other parties.
Systems Manager	TBA	Development of data management systems for all assets & ensuring their integration.
Principal Manager Service Management	TBA	Provides a link to Corporate strategies and identifies where improvements to the service can be made under the continuous improvement agenda
Policy & Performance Manager	TBA	Identifying and actioning policy updates. Collecting and interpreting performance measures and providing relevant output to other personnel
Risk & Quality Manager	TBA	Monitoring and updating risk registers, ensuring control measures are put in place & identifying risks that need to be passed up the management tree.
Asset Owner/Champion Carriageways	TBA	Updating lifecycle plans, ensuring implementation of improvement actions. Identifying asset specific investment requirements; works programmes and changes to procedures and documentation.
Asset Owner/Champion Footways	TBA	
Asset Owner/Champion Structures	TBA	
Asset Owner/Champion Street Lighting	TBA	
Asset Owner/Champion Drainage	TBA	
Asset Owner/Champion Traffic Calming	TBA	
Asset Owner/Champion Safety Fences	TBA	
Asset Owner/Champion Signs	TBA	
Asset Owner/Champion Car Parks	TBA	
Asset Owner/Champion Traffic Signals	TBA	
Asset Owner/Champion CCTV	TBA	
Asset Owner/Champion Verges	TBA	
Asset Owner/Champion Street Furniture	TBA	



10.3 Updating the RAMP

It is anticipated that the review and updating cycles for each part of the plan will differ as follows:

- a. The Executive Summary: is expected to be replaced after the first year by an annual asset management plan performance report. This report will update the key actions from the plan and present these into the relevant SIC decision making processes to influence budget allocations.
- b. The Asset Management Plan: it is expected that the plan will be updated annually during the implementation phase (1-3 years) as it is expected that the information contained within it will change considerably during this period. Thereafter the plan will be updated every three years to reflect ongoing improvements in practice and procedure.
- c. The Appendices: will be “living” documents. They will be updated as their contents demand them to be changed; this will typically be either annually, quarterly or monthly. Updating will be linked to the management processes introduced to manage the implementation of the plan.
- d. Implementation Plan: it is anticipated that the implementation plan will have a duration that mirrors the plan i.e. it will contain proposals that will target the embedding of highway asset management practice within SIC.