1.0 Introduction

Argyll and Bute’s road network, at 2321km is the largest and most valuable community asset in Argyll and Bute. Our road network plays a vital role in supporting the local economy; facilitating the movement of people, goods and services throughout the area and connecting people with economic opportunities.

The Audit Scotland Report – *Maintaining Scotland’s Roads* was published in November 2004. A central recommendation was that a national project should be carried out to develop a common accepted methodology to calculate the size of the structural maintenance backlog. This has been led by the Society of Chief Officers of Transportation in Scotland (SCOTS), and calculated the backlog in Argyll and Bute in 2007 to be £135.81 million.

In February 2011 Audit Scotland published a follow up report. A key recommendation in both reports was that “*Transport Scotland and councils should review their road maintenance strategies and plans to confirm that adequate prioritisation is given to those routes which are likely to contribute greatest to economic growth and improved quality of life.*”

The backlog figure for Argyll and Bute was also updated from 2010 survey results, in February 2011 to be £162.38 million. This indicates that the deterioration of the network, requiring additional funds to rectify, at an annual rate of £9.0M p.a. during this 3 year period. However also included within the SCOTS project is a calculation of the “Standstill Budget” to maintain the network at the existing condition standard. The Argyll and Bute figure, calculated in 2010, indicated a Standstill Budget of £11.4M p.a. In 2011/12, the combined capital & revenue budget for Roads Reconstruction (Asset Sustainability) and Maintenance was £12.5m.
2.0 Context

Argyll and Bute Council’s Corporate Plan 2012-2013 has four objectives, two of which have outcomes of supporting economic activity and one of which requires transport infrastructure to meet the economic and social needs of our economies. These outcomes mirror the priorities identified by Audit Scotland in *Maintaining Scotland’s Roads*.

Our roads are a key enabler of economic growth. Audit Scotland’s report makes clear the challenge of maintaining this asset to a standard that enables the continuing fulfilment of this role in the face of increasing traffic volumes, the recent severe winters and decreasing budgets. To ensure full value is obtained for maintenance funds they recommend improvements to management, asset management and procurement processes. This strategy takes full account of these recommendations.

Following implementation of the Council’s Modernisation Programme in 2010 (which brought Roads & Amenity Services, Economic Development and Planning together within the new Directorate of Development & Infrastructure), and on completion of the Roads Operations Service Review and a review of the deliverability of Strategic Change Roads Design Projects, the Council revised its asset management priorities within its Capital Plan for 2011-14, to reflect an increased priority towards Roads Reconstruction (Asset Sustainability) Projects; an increase in funding for 2011/12 of £4.7M. The Three Year Recovery Programme will deliver material improvement in the condition of the Council’s road network, and will allow for the development of proportionate and deliverable network improvement schemes. At the Council meeting in February 2012 a 3 year Capital programme totalling £21million was approved for Roads Reconstruction.

3.0 Objective

This strategy takes the Audit Scotland recommendations together with the approach detailed in “Well Maintained Roads: Code of Practice for Highway Management.” Its objective is to provide a strategy on which detailed plans can be based to deliver the road maintenance service in accordance with Corporate Policy and National accepted best practice.

4.0 Purpose

The main purpose of road maintenance is to ensure that the road network is sustainable and is available for the safe and convenient movement of people and goods. Where sustainability depends on weight restrictions which are a restraint on the economy, works to remove the restriction will be prioritised whenever practicable.

5.0 Asset Management & Maintenance Strategy

5.1 Reduce Reactive Maintenance

Audit Scotland’s analysis concludes that generally Roads Authorities should spend less on reactive works and more on structural and planned maintenance works. This will be achieved by:-

- Carrying out planned routine and cyclic maintenance in accordance with the Roads Asset Management and Maintenance Plan. An emphasis will be placed on
preventing the flow of water onto the road surface and reducing the water table within the carriageway structure to minimise the risks of damage through scour, hydraulic pumping and frost action. This will reduce the need for reactive maintenance.

- Increasing the proportion of carriageway repaired by first time permanent patch (with a life of more than 2 years) rather than temporary pothole repair (reactive).
- Reviewing defect categories and revising response times, to support “Right first time” (RFT) repairs within reasonably achievable times.
- Prioritising larger scale surface treatments, where this will give worthwhile reductions in reactive potholing.

5.2 Prioritise Routes Contributing to Economic Growth and Quality of Life

Both Audit Scotland and the Council consider improved connectivity through better roads to be essential to encourage economic growth. Maintenance works will be prioritised to improve strategic routes and those with higher levels of LGV use, including quarry access, farming, fish and timber transport routes. This will be achieved by a review of the present Maintenance Hierarchy to ensure that strategic routes have been correctly identified. It is essential that this analysis is informed by accurate data on total traffic flows and LGV flows. A programme of classified traffic counts at selected points throughout the network will confirm the comparative status of sections of the network.

Scheme ranking will also be weighted to improve residents’ and visitors’ Quality of Life by favouring routes used by bus services and those accessing community facilities such as ferries, hospitals, and shopping areas in main town centres.

5.3 Prioritise Using Asset Management Techniques

Asset Management techniques seek to maximise the impact of work programmes on the condition and value of the roads asset. When these techniques are applied to scheme ranking, the worst roads will not necessarily be repaired first. This approach allows better use to be made of the available resources.

5.4 Budgets and Investment

In developing the Council’s capital road reconstruction programme, the Service will apply this strategy to funding allocation approved by the Council. The current allocation of funds is apportioned on an Area basis using a percentage resource formula approved by the Council.

One of the key benefits of asset management is that it improves the decision making process allowing the Council to prioritise its limited resources in such a way that ensures value for money. It has to determine both short and long-term work programmes which take account of all the available preferences using economic and life-cycle considerations; these programmes must be capable of meeting users’ needs and preserve the value and integrity of the asset over its lifetime.

The Council needs to take account of the long term effect of its roads reconstruction and network improvements to ensure value for money. Long term planning requires accurate predictions about traffic volume, road conditions and budget levels. The cost effectiveness
ratio of treatment life to treatment costs reflects the principle that higher value treatment is more durable and requires less maintenance representing value for money over asset life.

The choice of improvement schemes will give consideration to need, as identified through scheme ranking using objective condition and significance data together with engineering review. Prioritising work programmes takes account of not just condition but also transport orientated factors such as road hierarchy, service levels, and the importance of the work itself. Although emphasising the strategic network is paramount because of its economic significance to Argyll and Bute, the process of optimisation should be able to,

- Identify the most suitable option from a range of acceptable outcomes;
- Reflect the demands on the different parts of the network, and
- Address the different service areas against economic, social, environmental and cultural criteria.

Ensuring the best returns on investment initiatives, in preserving the condition of the asset, takes account of network demand on different parts of the physical assets and different service areas; it also considers the risk to service delivery associated with deferring treatments. Risk management aims to reduce the risk associated with asset failure and loss or degradation of service. The following support tools are utilised in the decision making process:

- United Kingdom Pavement Management Services (UKPMS).
- SCANNER
- SCRIM
- Whole life costs.
- Single criterion level optimisation.
- Multi criteria optimisation.
- Risk management.

### 5.5 Three Year & Ten Year Programme of Works

The 3 year programme (commenced 2012/13) will focus on the need to recover from the effects of the winters of 2009-10 and 2010-11 which exacerbated the impact of years of underinvestment as highlighted by Audit Scotland. It will also be designed to assist the movement away from reactive maintenance and towards more structural maintenance together with enhanced routine and cyclic maintenance as detailed in the Roads Asset Management Plan (RAMP).

The 3 year programme will therefore largely be a Recovery Programme with the emphasis on providing surface treatments on as much of the network as possible together with introducing more robust systems to ensure that routine and cyclic work is carried out.

- The Recovery Programme will give detail on planned surface treatments and routine/cyclic works for the three year period.
- It will be reviewed annually to allow amendment for any major changes in road condition or major economic developments.
- At the end of year 2 a full scanner survey of all our roads will be carried out to measure progress and to give a full baseline for the next 3 year programme to be developed.

The 10 year programme will be an Improvement Programme with the emphasis on upgrading the strategic network through reconstruction, drainage improvements and local widening and edge strengthening works. It will also seek to treat roads at an earlier stage
in their deterioration in order to allow use of less expensive treatment options leading to an increase in the proportion of the network treated and better long term outcomes. It will be reviewed and updated annually.

5.6  **Capital Investment Strategy**

The capital asset management and investment strategy should align with the Corporate Plan and integrate with planning and decision making at the strategic, tactical and operational level. The broad scope of the Council’s roads asset management function is shown at Figure 1 and is summarised as:

- **Strategic – Why and Where we invest capital**
  The Council’s overall long-term strategic priorities for the roads network e.g. policy, goals, objectives, vision and outcomes.

- **Tactical – When and on What do we invest capital**
  At the tactical level the strategic goals and objectives are translated into specific plans and performance targets for individual asset types e.g. roads, structures and lighting.

- **Operational – How we ensure that we invest capital wisely**
  At the operational level the asset manager, engineer, technician and operative develops and implements detailed work plans and schedules that have a short-term outlook but take account of the work volume and programming arising from the Roads Asset Management Plan (RAMP). The focus is on choosing the right techniques and carrying out the work in the most efficient way.

![Asset Management Hierarchy](image)

Expanding on the Strategic, Tactical and Operational described above:

**Strategic – Why and Where we invest capital funding**

Following the Council’s decision in 2011 to increase the priority and funding it will provide for Asset Sustainability Roads Reconstruction and the subsequent decision in 2012 to allocate £21M over the next 3 years, prioritisation is given to those routes which are likely
to contribute greatest to economic growth and improved quality of life. For example, weighting given to ‘lifeline’ routes such as the A819 which provides an alternative to the Trunk Road Network when the A83 or the A82 (Loch Lomond) are not available. Weighting is given to the high speed “A” class network which links the main centres of population and commerce within Argyll & Bute. The Network Hierarchy classifies the road asset according to the following factors, namely:

- Function;
- Economy;
- Customer needs;
- Usage of road in the network;
- Environment

Tactical – When and on What do we invest capital funding

Capital Investment priorities are identified within Annual, 3 Year and 10 Year programmes, which are informed from the following data sources:

- Priorities taken from WDM based on machine surveys measuring various parameters including:
  - Wheel track rutting
  - Longitudinal profile
  - Texture depth
  - Surface Defects/Pot holes
- Input from Economic Development, Planning & Housing
- Local knowledge held by area teams
- Number of customer complaints
- Number of Category 1 and 2 repairs carried out.
- Accident information

Prioritisation is given to larger scale surface treatments, where this will give worthwhile reductions in reactive pothole repairs. (Targeting the Red and Amber RCI values to maximise returns – often it will be prudent to tackle Amber areas in advance of Reds to prevent further deterioration, reduce whole life costs and provide better Value For Money).

The programme of works is developed in consultation with transportation and economic stakeholders who include Transport Scotland, Trunk Roads Contractor and the Argyll Timber Transport Group.

Operational – How do we ensure that we invest capital funding wisely

Following the Roads Operations Service Review (2010) the Council has developed a “mixed economy” model to procure capital works. This “mixed economy” procurement model combines an In House roads reconstruction capacity with a Partnership Contract with the Private Sector for the Islands & Kintyre, and an annual Private Sector Surface Dressing procurement process. This innovative mixed economy procurement approach is consistent with Audit Scotland’s recommendations together with the approach detailed in “Well Maintained Roads: Code of Practice for Highway Management”, and

The Programme of Works seeks to maximise the impact of capital funding:

- Through a proportionate programme of:
  - Edge Strengthening
  - Overlays
  - Structural Patching and Surface Dressing
Focus on Quality

- Where appropriate, capital and revenue works will be combined during capital schemes to maximise the benefit of traffic management and to complete all works during the works programme such as associated drainage and environmental works.
- Increasing the use of innovative techniques (developed where appropriate with Partners):
  - Such as recycling, micro asphalts, recycling road planings, on lower category roads capped by thin overlays and/or surface dressing.
  - Maximise the surface area treated to seal and reduce deterioration through surface dressing, micro asphalts and insitu recycling processes.

5.7 **Performance Management**

The delivery of the *Recovery Programme* and the *Improvement Programme* will be supported by the development of a Performance Management capability and culture within Roads Services. The introduction of Monthly Management Book performance reporting to Roads Operations, which provides a Balanced Scorecard approach to managing safety, productivity, quality and value for money, underpins this strategy.

6.0 **Summary**

The Road Asset Management and Maintenance Strategy will move resources from reactive maintenance to planned structural and routine maintenance. It includes a recovery element to allow this change to be made and an improvement element to drive improvements, in particular to the strategic routes.