

MAKING BUDGETS GO FURTHER - SCOTLAND'S NATIONAL ROAD MAINTENANCE REVIEW

Ewan Wallace
Aberdeenshire Council
Donald Morrison
Transport Scotland
Donald Bell
Halcrow

1. BACKGROUND TO THE REVIEW

1.1 Purpose of the Review

A deteriorating road network impacts on sustainable economic growth. It adds to business costs, personal travel costs and has the potential to reduce safety, environmental amenity and social cohesion.

Audit Scotland's report in 2010 identified concerns about the road maintenance backlog and made a number of recommendations. These were accepted by the then Minister for Transport and Infrastructure.

In response, and to deliver effective changes to maintenance delivery, a steering group was established to take forward a National Roads Maintenance Review ("the Review") in partnership. The steering group members are senior officer representatives from Transport Scotland, COSLA, SOLACE, SCOTS, the Scottish Road Works Commissioner and Halcrow.

The Review aimed to identify how those responsible for, and working in, Scotland's roads maintenance sector can deliver efficiently managed roads for all within the budgets available, and identify opportunities for innovation, collaborative working and the sharing of services.

The whole of the road asset was included in the Review, including the road carriageway (all the layers that make up a road) and adjoining footways, cycleways, bridges, verges, signing and lighting.

1.2 Context of the Review - Scotland's Road Network

Scotland's road network, at over 55,000 km, is one of the country's largest community assets, encompassing all roads, footways, cycleways, bridges, street lighting and road signage. It plays a vital role in supporting Scotland's economy by facilitating the movement of people, goods and services and connecting people with economic opportunities, often providing a focal point and sense of place. On a local level, the road network is essential for the long-term sustainability and development of Scotland's communities and the well-being of its residents.

In the last 15 years, total road usage has increased by almost 30%; trunk roads usage has risen almost 40%, whilst the increase in the use of Scotland's

local authority roads rose by around 20%. This continued growth in usage, together with a forecast traffic growth of 25% between 2005 and 2022, has an impact on the level of maintenance required on the Scottish road network. The higher the volume and weight of traffic, particularly HGVs, the more frequently maintenance is required to sustain the road's lifespan.

There has been deterioration in the condition of the network. In 2005, 70% of Scotland's local authority roads were viewed as being in an acceptable condition but, by 2010, this has fallen to 66%. The current condition on trunk roads is marginally better, but deteriorating faster. In 2006 the percentage of trunk roads in acceptable condition stood at 84% whereas, by 2010, this had fallen to 78%. These results are indicative of the change in purchasing power of roads authorities' budgets over that period as identified by Audit Scotland.

Recent severe winters have also damaged the network. Whilst these may not be related to climate change, there is no doubt that its consequences will add to the cost of maintaining our roads.

Scottish public spending in 2011/12 has been reduced by £1.3 billion, with capital reduced by 22.9%. Based on UK Government spending plans, it could take until 2025/26 for the Scottish Government budget to return to 2009/10 levels, a cumulative loss of £40 billion.

Given the present financial climate, and with pressures on all public sector budgets, it is unlikely that significant additional funding will be made available for road maintenance to help address the backlog issue and further deterioration is therefore inevitable.

The Scottish Government's 2011 budget publication also noted "*We will implement the bold and imaginative programme of renewal and reform necessary to maintain the quality of public services that the people of Scotland expect and want. In doing so, we will focus all of Scotland's public bodies on transforming their operations to deliver radical service improvements, targeted to secure better outcomes for individuals and their communities*".

This clearly signalled an expectation on all public services to be bold and creative in delivering value in a challenging climate.

The Christie Commission Report highlighted the benefits of longer term strategic planning and early interventions to achieve better outcomes. The principles put forward by Christie were:

- Reforms must aim to empower individuals and communities receiving public services, by involving them in the design and delivery of the services they use
- Public service providers must be required to work much more closely in partnership, to integrate service provision and thus improve the outcomes they achieve
- Prioritise expenditure on public services which prevent negative outcomes from arising.

The Christie Commission Report covered a wide remit, encompassing the public sector as a whole and a variety of policy subjects and some of its recommendations had a direct relevance to this Review and a variety of policy subjects. The Scottish road network supports all aspects of local service delivery and as such the links with the Christie recommendations are crucial.

In particular, Christie recommended, among other things:

- The preparation of long-term asset management plans
- The whole system of public services - public, third and private sectors - must become more efficient by reducing duplication and sharing services wherever possible.

Audit Scotland estimated the cost of the backlog across the whole of the Scottish roads network to amount to around some £2.25 billion; £1.54 billion for local authority roads (excluding bridges and other assets such as lighting) and, £0.713 billion for trunk roads (including bridges).

However, this is only a partial assessment of the cost. It does not include the backlog costs for local authority bridges and other assets, nor does it include additional costs to comply with equalities legislation, to ensure resilience or, the costs of adapting the network to meet climate change, sustainability and other challenges.

As with all of Scotland's public services, securing funding to maintain roads at even their 2008 levels of service will require strong, compelling evidence. It is likely that a combination of productivity improvements and efficiency savings, changes in standards or levels of service can deliver some efficiencies. Significant additional investment will, however, be required to deal with the backlog and deliver a sustainable road asset for future generations.

The Scottish Government has signalled it expects the public sector to “*support maintenance of assets in our key public services and encourage a collaborative approach to asset management*”.

This suggests the sector should consider both short-term efficiencies, alongside radical steps, to deliver an effective, well-maintained road network.

2. ECONOMIC, SOCIAL AND ENVIRONMENTAL IMPACTS OF ROAD MAINTENANCE

2.1 The Effects of Reducing Spending on Road Maintenance

As part of the Review, TRL were commissioned to analyse the economic, social and environmental impacts of road maintenance. This work was to enable wider understanding of the costs and benefits of road maintenance. This work was carried out in parallel with the detailed development of potential improvements for road maintenance in Scotland.

TRL's analysis, of the impacts of reducing road maintenance spending across the Scottish road network provides compelling evidence of the negative effects this would have on roads users, communities and the environment.

Some of this evidence is quantifiable, but in addition there are clear impacts that have not been given an economic value. This does not diminish their importance.

TRL gathered evidence, not only from a comprehensive literature review, but also undertook a quantitative appraisal of three separate spending scenarios:

- Maintaining Scotland's total roads maintenance spending at 2010/11 levels in real terms (this is the base case)
- Reducing this 2010/11 baseline by 20% over the next 10 years
- Reducing this 2010/11 baseline by 40% over the next 10 years.

The base case scenario still results in an increase in the maintenance backlog, as current levels of expenditure are not sufficient to address the needs of the road network. It should also be noted that the base case only applies if roads authorities can actually maintain their 2010/11 spending levels in real terms over the next 10 years.

The report assesses road maintenance in terms of the standard STAG criteria. In doing so, it highlights the potential effects of these budget scenarios on the five key areas of:

- The environment
- Safety
- Economy
- Integration
- Social inclusion and accessibility.

The *quantitative analysis* is based on a net present value appraisal of the additional costs and benefits arising from each scenario. The following were assessed:

- *Vehicle operating costs* - if roads deteriorate in condition due to reduced funding, vehicles incur more costs for example through increased fuel consumption and wear and tear
- *Travel time costs* - if roads deteriorate in condition, vehicles will also travel more slowly and so journey times will increase

- *Skid related accident costs* - Transport Scotland and some local authorities monitor skid resistance and apply skid resistance management policies. The justification of these is that skidding accidents increase on lower quality road surfaces in wet conditions
- *Delay costs at roadworks* - roadworks cause disruption to travel and so reductions in roadworks due to funding constraints will generate less disruption. However, these effects are negligible in the overall travel costs
- *Lighting related accident costs* - the economic justification for provision of streetlights is a reduction in night-time accidents on well lit roads.

The summary results of the quantifiable aspect of the appraisal are shown in Table 1. Under scenarios 2 and 3 (ie, either a 20% or a 40% reduction in roads maintenance spending) there is a negative net present value (NPV). Scenario 1 is the base case and therefore has no positive or negative NPV.

Table 1 reflects that social, economic and environmental costs outweigh the financial cost savings.

Incremental Impact Compared to Base Case £m, 2002 Prices						
	Trunk Road Network		Local Road Network		All Roads	
	Scenario		Scenario		Scenario	
	2	3	2	3	2	3
Present value of savings in maintenance spend	266	568	688	1,459	954	2,027
Present value of total costs arising from the reduction in maintenance spend	-373	-647	-1,212	-2,433	-1,585	-3,080
NPV ¹	-107	-79	-524	-974	-631	-1,053

Source: TRL

Table 1: NPV Analysis of Quantifiable Impacts of Roads Maintenance Spending Under Two Spending Scenarios

Table 1 shows that for scenarios 2 and 3 the savings on road maintenance are significantly outweighed by the wider additional costs. This conclusion applies to trunk roads and, to an even greater extent, the local road network. This point is reinforced when the non-quantifiable impacts are considered.

Under Scenario 3, there are savings of £2.027 billion by reducing all road maintenance investment by 40% over ten years. However these savings are significantly outweighed by additional costs to Scotland's road users and communities of over £3 billion.

The overall dis-benefit to society of Scenario 3 is therefore estimated at £1.053 billion. This suggests that a £1 reduction in road maintenance results

in a £1.50 cost to the wider Scottish economy and society. Spending on road maintenance clearly delivers economic and social benefits to Scotland.

If budgets are maintained at today's prices, current inflationary pressures continuing in future will mean that Scottish road authorities will be able to buy less maintenance work than they can today.

The STAG analysis by TRL also showed there is a wide array of largely *non-quantifiable effects*, which may be equally significant, that suggest lower levels of roads maintenance will have negative impacts for Scotland. In particular:

Economy

- Journey reliability and quality will both deteriorate
- Increasing road condition deterioration caused by delays in maintenance will mean a rise in temporary repairs and the final costs of roadworks
- Local economies may be disproportionately affected should there be an increase in emergency incidents (eg, A83 Rest and Be Thankful landslip)
- There is also an increased risk of emergency incidents on strategic infrastructure. Responding to these would likely divert further resources from maintenance budgets.

Safety

- Lower levels of spending on key structures are likely to increase the frequency of emergency incidents leading to, at a minimum, local economy disruptions and increased journey times
- The balance of evidence suggests lower levels of street lighting increases accidents, increases the public's fear of crime and reduces the public's use of footpaths and cycle-tracks
- Deterioration in footways and cycle-tracks will cause increased safety risk to pedestrians and cyclists.

Accessibility and Social Inclusion

- Remote communities likely to suffer as priorities for spending a reduced budgets focus on where risks and traffic are most significant
- Community accessibility will face greatest challenges in the event of emergency closures where alternative access routes are limited or non-existent
- Vulnerable groups particularly those with a visual or mobility impairment are most likely to be affected from increased defects on footpaths

- Vulnerable groups are most likely to be affected by increased perceptions of crime caused by poorer levels of street lighting
- Pedestrians and residents will experience poorer amenity from increased roadside noise and reduced local air quality.

Cyclists are likely to face poorer cycling conditions

Integration

- Lower quality footways and cycleways will act as disincentives to physical fitness aimed at increasing improved health outcomes.

Environment

- Landscape, visual amenity and cultural effects will be significantly affected - poorly maintained streets and public spaces have a negative effect on quality of life
- Poor walking environments and transport links leave areas isolated and damage community cohesion
- Noise and vibration effects will worsen
- Lower levels of street cleaning lead to increased environmental pollution (dust levels), local flooding along with reduced amenity.
- Lower levels of street lighting make commercial areas less attractive to businesses
- Biodiversity will be negatively affected if vegetation control is reduced and weeds spread
- Global and local air quality may benefit from less planned maintenance activity, but this may then be countered by increased emissions arising from a greater number of unplanned interventions.

2.2 Impact of Reducing Road Maintenance Spend

Engineers report that reducing budgets results in not only a deterioration of the infrastructure, but also an acceleration of that decline. This aligns with the recommendations of the Christie Commission on the benefits of preventative spending.

The assessment by TRL supported this and demonstrated:

- There are considerable wider social effects, including detrimental impacts on non-motorised users, if road maintenance spending declines

- Reducing budgets results in significant negative economic and social impacts for Scotland
- Rising cost inflation means delaying spending increasingly reduces the real spending power of any roads budget.

The status quo of continued decline in asset condition does not provide value for Scotland's communities, road users and the economy. Given the severe budget pressures, both nationally and locally, continuing with the current approach to road maintenance is not sustainable and change is required.

3. APPROACH AND METHODOLOGY

3.1 Phases of the Review

The Review has been carried out in a series of Phases.

Phase 1 looked at initial evidence and generated a series of themes for development. This phase ran from April to June 2011 and included a stakeholder event in Edinburgh.

Phase 2 ran from July to November 2011. This built on the work from Phase 1. A strategic framework was developed and generated a series of options for further consideration and development.

Phase 3 commenced in February 2012 and is ongoing. This is taking forward the options generated in Phase 2.

Figure 1 shows an overview of the process that was used to take forward the Review.

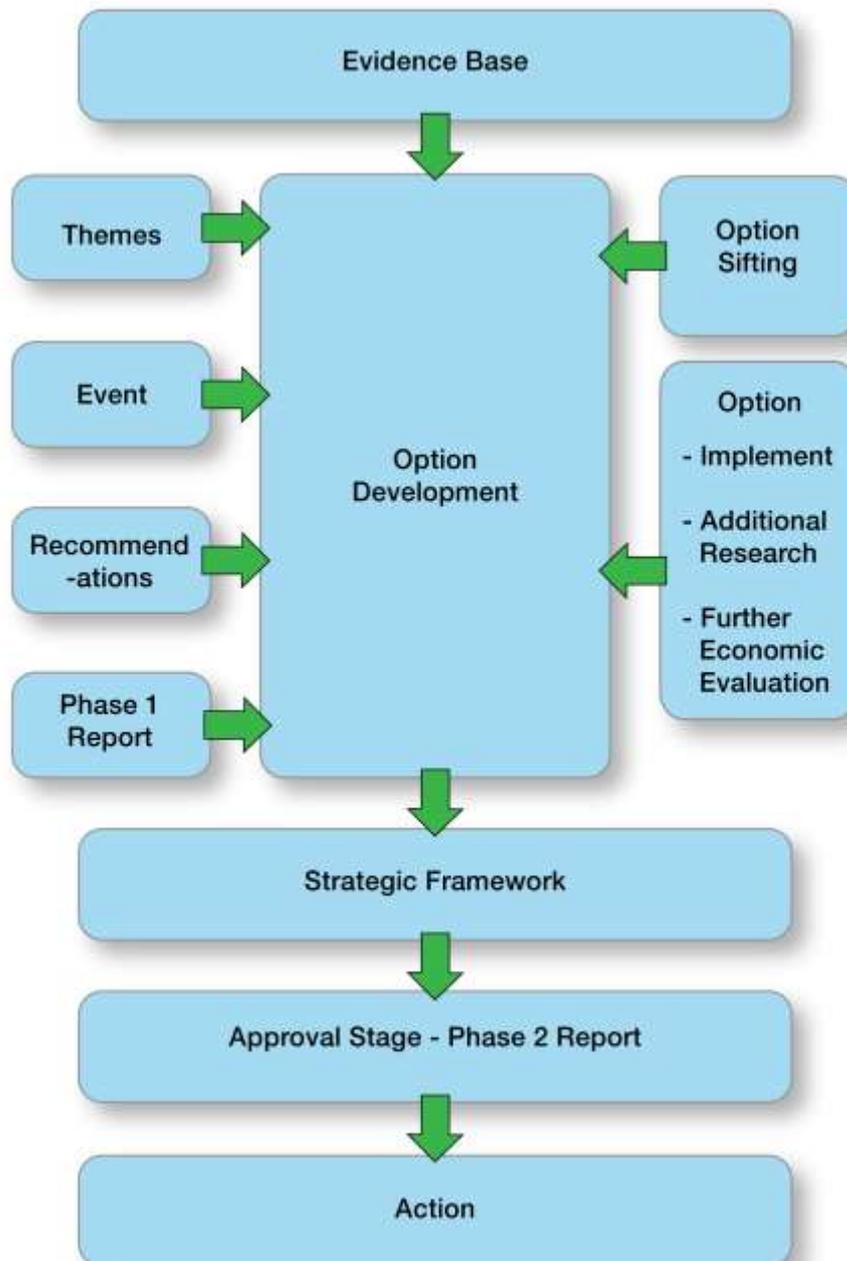


Figure 1 - Process Used to Take Forward the Review

4. PHASE 1 - GATHERING EVIDENCE AND DEVELOPMENT OF THEMES

4.1 Scope and Evidence

From the start of the Review, the steering group considered the following four key areas:

- How standards and asset management techniques influence the maintenance of assets including all roads, footways, lighting and structures

- What opportunities exist for technology and productivity innovation, and whether there are strategic mechanisms to address potential barriers to innovation
- Where resourcing of maintenance could be improved, including consideration of current and possible new approaches to sharing services and collaboration between authorities
- The economic, social and environmental impacts of deteriorating roads, footways etc. The wider economic impact is covered in Section 2 of this report.

Four working groups were established to look at each of these areas. Drawing on supportive, verifiable evidence, the groups were asked to identify operational changes, in the form of options that would benefit the sector. The groups were also asked to outline what mechanisms may be required to facilitate these changes.

In particular, they assessed the current baseline conditions and highlighted examples of best practice in delivery and innovative approaches. This was to ensure Scotland's roads maintenance community can rise to the challenges of severe financial pressures, deteriorating road quality, rising road usage and growing road user expectations.

4.2 Emerging Themes and Recommendations

Seven emerging themes were also developed from the evidence, alongside the options.

A stakeholder event took place on 23 June 2011 to share the emerging findings (in effect, the seven themes) of Phase 1 of the Review with the wider community. This was to ensure the Review and option development were shaped and informed by the views of all involved.

The recommendations were developed after the event and were endorsed by the steering group with the publication of the Phase 1 report. Many of the recommendations directly address issues raised in the Audit Scotland report.

The themes and their associated recommendations are:

Theme 1 - Effective Asset Management

- *Recommendation 1* - Action should focus on identifying the impediments to implementation and how these can be reduced.
- *Recommendation 2* - Action should be taken to foster wider use of Lean techniques² by all road authorities. Those authorities already applying Lean techniques at an operational level should consider applying them strategically, to identify where structural changes may be of benefit. Best Practice should be shared with all roads authorities to encourage those not yet applying Lean techniques to do so.

Theme 2 - Prioritisation

- *Recommendation 3* - Action should focus on rapid implementation of Road Asset Management Plans (RAMPs) and effective prioritisation methodologies, adapted to suit local authority need
- *Recommendation 4* - Action should focus on developing an approach that assists in prioritisation between different types of road.

Theme 3 - Benchmarking and Monitoring

- *Recommendation 5* - Action should focus on (a) identifying what are the right KPIs for the sector and (b) how to introduce more effective monitoring as a means of leading to improved outcomes.

Theme 4 - Delivery Models

- *Recommendation 6* - Action should be taken to examine which of the various delivery models offer the best returns in local circumstances, including any legislative barriers to implementation.

Theme 5 - Incentivising Innovation

- *Recommendation 7* - Action should look to assess how more effective risk-transfer can be introduced
- *Recommendation 8* - Action should focus on how to significantly rationalise the standards, appraisals and approvals processes in Scotland for new products and techniques.

Theme 6 - Enabling faster Change

- *Recommendation 9* - Action should be taken by the sector to encourage collaborative engagement which achieves regional outcomes, improves performance and reduces costs.

Theme 7 - Communication

- *Recommendation 10* - Action should be taken to implement an external communications strategy to (a) convey the full extent of the backlog, (b) determine acceptable steady state service levels and (c) convey the importance of road maintenance to ensuring sustainable economic growth
- *Recommendation 11* - Action should be taken to strengthen internal links on research and development, and communication with stakeholders.

5. PHASE 2 - DEVELOPING OPTIONS AND THE STRATEGIC FRAMEWORK

5.1 Developing Options

The steering group considered the following:

- What economic, social and environmental impacts need to be considered to help prioritise future actions and resources
- Options for change to help address Phase 1 recommendations including, more collaboration and sharing of services, better use of technology and innovative methods and more effective communications
- What next steps need to be taken, both to select the final options for change, as well as to reach a politically agreed implementation plan.

The four working groups were tasked with developing options. At the end of their initial investigations the working groups had established 85 options that would benefit the sector.

During a detailed review it became clear to the steering group that some options were already being implemented. Other options would not meet the objectives of the Review, were outside the agreed scope or were duplicates or subsets of another option.

An initial sifting of options to affirm their relevance and potential effectiveness reduced their number to 45. Following further discussions, the steering group consolidated the total number of options to 30.

These options are discussed in more detail in Section 6. Action plans have been developed by the working groups to set out how each option could be taken forward.

As part of Phase 2, a strategic framework was developed

5.2 Principles Underpinning Change - A Strategic Framework for Change

Whilst change is necessary, there remains a choice as to how far and how fast it can be delivered. Standing still is not an option.

Underpinning the chosen route is the extent to which any change helps national and local government meet their desired outcomes and the development of a strategic framework to aid the final selection.

Options that could be implemented need to be able to show how they contribute to:

- Accepting reduced standards to enable funds to stretch further
- Doing the same more efficiently and effectively, or
- Enabling roads authorities access to new and alternative sources of funds.

One size does not fit all. There is a diversity of road types, local conditions, priorities and current practices. Different parts of the country or road network may have different start and end points for change.

Business cases for options requiring access to funds (existing and new) or structural changes to delivery models will need to show they are both cost effective and value for money.

To demonstrate efficiency and effectiveness, a review of the Phase 1 recommendations, suggested development to some or all of the following areas of current working practices to create a strategic framework for change:

- D1 - Robust asset management planning
- D2 - More than one provider or supplier to ensure meaningful comparison
- D3 - Appropriate outcome-focused benchmarks and KPIs to illustrate efficient performance
- D4 - Appropriate monitoring to demonstrate transparency
- D5 - Appropriate incentivisation to encourage behavioural change and innovation
- D6 - SMART targets
- D7 - Ability to generate additional continuous improvement to ensure innovation and collaboration are the norm.

These seven developments, which can be adopted as appropriate, form part of a strategic framework for change.

These developments would embed best practice across road maintenance in Scotland, ensuring best value with existing resources and arrangements. They will also help demonstrate the alignment of the sector with the Christie Commission recommendations on preventative spend.

Delivering 1-7 above will ensure that the most is being made of declining financial resources, but will only slow down rather than stop the decline caused by lack of investment.

Roads authorities could strengthen their business case to justify initial requests for additional public investment, or funding from the private sector by undertaking some or all of enhancements 8-10 below.

- En8 - Increased certainty of even short-term finance
- En9 - Value-driven collaboration to deliver economies of scale eg, resources, funding, management, skills and specialisms, assets and plant

- En10 - Enhanced levels of scrutiny to ensure delivery of outcomes.

Roads authorities can choose to adopt some or all of these. Doing so would demonstrate significant efforts to optimise their service delivery. By undertaking enhancements En8-10 roads authorities will have strengthened their business case to justify initial requests for additional public investment or funding from the private sector.

Options encompassing facets of developments D1-7 are nonetheless still worth pursuing, to ensure that the most is being made of existing financial resources.

6. USING THE OPTIONS AND STRATEGIC FRAMEWORK TO DELIVER CHANGE

Set out below are the options agreed and taken forward by the steering group to deliver change in the maintenance of Scotland's roads under Phase 3 of the Review.

Each option was identified as having the opportunity to deliver either significant or moderate benefits if implemented.

The anticipated benefits / outcomes and progress to date are shown for each option in Table 2. In addition, the options are mapped against the related recommendations from the Phase 1 report and the developments or enhancements from the strategic framework from Phase 2.

Option / Related Phase 1 Recommendation / Related Development or Enhancement	Description	Anticipated Benefits / Outcomes	Progress to Date
1 R6 & 9 En9	Joint collaboration/ working arrangements/ operational collaboration between all roads authorities.	Time and cost Savings	This work is combined with Option 30.
2 R6 & 9 En9	Integrated service arrangements within local authorities (for example, the current GCC model).	Time and cost Savings	This work is combined with Option 30.

Option / Related Phase 1 Recommendation / Related Development or Enhancement	Description	Anticipated Benefits / Outcomes	Progress to Date
3 R7 D2	Identify opportunities for the introduction of new contracting approaches to increase flexibility and to include framework agreements	Cost savings, Workload flexibility Time savings, procurement cost savings	This is tied in with the Option 30 Brief and baseline data is currently being gathered.
4 R9 En8	Review Scottish Road Works Commissioner Reports with regard to potential charges for overrunning.	Cost Savings Funding sources Potential transfer of costs to utility customers - could be regressive	The Scottish Roadworks Commissioner wrote to the Minister for Housing and Transport. The Commissioner's comments will be addressed as part of the Review's overall outcomes.
5 R8 D7	Deliver and adopt SCOTS recommended minimum levels of service for road maintenance for local authorities. Implement Transport Scotland review of maintenance thresholds and condition parameters for identification of maintenance schemes.	Cost Savings Fewer Legal Claims, more appropriate level of service	Subject to Option 7 (securing funding) and reactivation of the SCOTS Asset Management project.
6 R8 D5 & 7	Review current traffic management standards at roadworks to provide more customisable approach.	Cost savings Potential gains in efficiency Savings to the working day	Research paper approved by Trunk Roads Research Board (now Scottish Roads Research Board (SRRB)).

Option / Related Phase 1 Recommendation / Related Development or Enhancement	Description	Anticipated Benefits / Outcomes	Progress to Date
7 R1 & 3 D1	Seek to secure continued funding for SCOTS Road Asset Management Programme (RAMP)	Time & Cost Savings More effective RAMPS and their implementation More effective use of budgets	Evidence base and paper being compiled to secure funding.
8 R3 D1	Implement asset management planning across all roads authorities and monitor effectiveness.	Time & Cost Savings More effective RAMPS and their implementation More effective use of budgets	Subject to Option 7 (securing funding) and reactivation of the SCOTS Asset Management project.
9 R3 & 4 D1	Consider amending the criteria for determining which roads are surveyed as part of the local authority SRMCS condition survey. This is to reflect their maintenance hierarchy, rather than simply as A, B, C and unclassified roads.	Cost savings Better informed decisions and targeting of resources	SCOTS Asset Management group is exploring how best to take this forward.
10 R11 D7	Initiate a SCOTS, Transport Scotland, Health & Safety Executive, Law Society engagement group to ensure better understanding and appreciation between technical and legal parties involved in the road maintenance industry.	Cost Savings A better understanding of the legal implications of maintenance decisions by the parties involved	Initial discussions underway with interested parties.

Option / Related Phase 1 Recommendation / Related Development or Enhancement	Description	Anticipated Benefits / Outcomes	Progress to Date
11 R10 & 11 D5 & 7	Develop an effective overarching communication strategy that raises awareness on the critical value of road maintenance.	Cost Savings Improved political and public understanding	A communications strategy is currently being prepared.
12 R11 D7	Set up National Roads Research Working Group with a remit for all road maintenance research topics. This is to coordinate potential new products or techniques and share knowledge and experience.	Cost savings Improved efficiency in research & sharing knowledge. Increased Academic & industrial participation Improved Skills retention & development New sources of research funding Duplication of effort eliminated. Investment focused on nationalised priority.	A Scottish Roads Research Board (SRRB) is currently being established and will hold its first meeting in May 2012.
13 R11 D7	Further co-ordinate work on: joint repair techniques; pothole repairs; bridge repair techniques; and footway repairs.	Cost Savings Improved sustainability & productivity Quicker repair, fewer potholes Reduced disruption	All ongoing trials are currently being collated and a database is being compiled for dissemination.

Option / Related Phase 1 Recommendation / Related Development or Enhancement	Description	Anticipated Benefits / Outcomes	Progress to Date
14 R8 D5	Develop a mechanism to review and authorise Scottish Amendments to UK standards e.g. use of reflective materials in lieu of lighting standards.	Cost savings More efficient process	The structure of Group is being developed with interested parties.
15 R6 & 9 En9	Investigate local authority shared services across smaller consortia of councils (smaller regional groups/ clusters).	Time and cost savings Potential staff re-deployment Allows long term budgets but locks in commitment with lower flexibility	This work is combined with Option 30.
16 R1 & 9 En8	Explore multi year budget allocation at central and local level.	Cost savings Multi-year certainty allows full implementation of best-practice asset management principles for road maintenance programmes over several years.	A Paper has been prepared setting out benefits, barriers and key considerations. This will be considered by the Steering Group.
17 R8 D7	Review Scottish technical standards against UK and international equivalents. This is to identify examples of over-specification, where relaxation or a risk.	Cost savings Fewer legal claims More appropriate level of service	Research paper approved by Trunk Roads Research Board (now Scottish Roads Research Board (SRRB)).

Option / Related Phase 1 Recommendation / Related Development or Enhancement	Description	Anticipated Benefits / Outcomes	Progress to Date
18 R11 D7	Review the recommendations of the current winter maintenance service review to identify how they can be integrated into this Review.	Cost Savings Transparency and full understanding of how these two pieces of work correlate	The impact of the service reviews of Winter 2010/11 and 2011/12 are currently being assessed.
19 R5 D3	Adoption of the SCOTS suite of roads KPIs by all local authorities in Scotland. Transport Scotland to review the suite of KPIs to determine if it would be appropriate to adopt them, allowing direct benchmarking against local authorities.	Service Improvement Consistent benchmarking of KPIs directly related to road maintenance Opportunity to identify areas where they may be able to improve or reduce costs	SCOTS KPIs adoption now complete. Transport Scotland currently reviewing appropriateness of the KPIs to Trunk Roads.
20 R9 En8	Investigate means/ barriers/ benefits to allocating revenue from asset sales to inject into roads improvement.	Service improvement Delivery of an investment strategy through commercial disposals and prudential borrowing to allow authorities to raise capital funds. Additional funding source.	Currently underway as part of public sector efficiencies. A Paper has been written outlining the process & benefits for consideration by the Steering Group.
21 R1, 3 & 4 D1	Transport Scotland to deploy asset management hierarchies on the trunk road network.	Service Improvement Proportionate maintenance for road priority	The base data behind the hierarchy depends on a variety of socio-economic factors which are currently being updated.

Option / Related Phase 1 Recommendation / Related Development or Enhancement	Description	Anticipated Benefits / Outcomes	Progress to Date
22 R5 D4	Develop and continue Road to Excellence to work towards providing a suite of international Benchmarks	Service Improvement Highlight best practice	Transport Scotland has registered interest in the Road to Excellence project, which is being led by Sweden and the University of Helsinki. The project brief is currently being developed.
23 R2 D6 & 7	Introduce a lean culture across the road maintenance sector.	More efficient & effective service delivery, and service improvement Embed lean thinking across all those organisations involved in maintaining Scotland's roads, with the aim of delivering an increase in value of at least 5%.	A draft Implementation plan sets out a proposal to develop pilot programme. To be considered by the Steering Group.
24 R9 D7	Review the conflict between road construction periods, working periods in different circumstances, budget cycles and road user demands.	Service improvement Longer term asset development. Recognise the most appropriate time for road maintenance activities	Research paper approved by Trunk Roads Research Board (now Scottish Roads Research Board (SRRB)).

Option / Related Phase 1 Recommendation / Related Development or Enhancement	Description	Anticipated Benefits / Outcomes	Progress to Date
25 R11 D7	Increase the scope of Traffic Scotland website to include local roads authorities to offer a single portal for all travel information.	Service Improvement Easier access to all travel information. Improved service & reduced user disruption. Presents full information to road users	Delivery plan is currently being developed
26 R5 & 9 D3	Develop and apply a consistent unit cost benchmarking methodology across all roads authorities.	Service Improvement Transparency and better understanding of backlog -meets Audit Scotland recommendations	Currently being taken forward by the Performance Indicator focus group, a sub-set of the SCOTS Asset Management Project. A first suite of indicators has been prepared with cost benchmarking still to be developed.
27 R6 En8	Potential contributions from utility companies to the costs of making good long term damage to roads due to reinstatements.	Service Improvement Transparency and full understanding of costs of maintaining asset therefore using that to reduce costs	The Scottish Roadworks Commissioner wrote to the Minister for Housing and Transport. The Commissioner's comments will be addressed as part of the Review's overall outcomes.
28 R9 En8	Investigate funding distribution options to reflect need based on road use and hierarchy.	Service improvement	To be progressed further once outcome of the Option 30 study is known.

Option / Related Phase 1 Recommendation / Related Development or Enhancement	Description	Anticipated Benefits / Outcomes	Progress to Date
29 R10 D7	Investigate existing local authority surveys and the Scottish Household Survey (SHS) to capture public perceptions in a cost effective way.	Service improvement More consistent Service level	Currently collating information on how Local Authorities currently survey and what. SHS deadline has closed. These questions are considered bi-annually. Community Planning Partnerships are being explored as a possible route along with the TS Mori survey.
30 R6 & 9 En9 & 10	Explore the optimal delivery of road maintenance services.	More effective and efficient management and maintenance of the Scottish Roads Network	Scottish Ministers and COSLA have agreed that this will be taken forward as a comprehensive research and appraisal study. A dedicated Task Group has been formed, lead by former Local Authority Head of Service, supported by Halcrow, PWC and The Improvement Service in Scotland.

Table 2: Anticipated benefits / outcomes, progress to date, related Phase 1 Recommendations and Phase 2 Developments or Enhancements for each option

7. THE WAY AHEAD

7.1 Taking the Options Forward

Under the Phase 3 of the Review these 30 options are currently being taken forward as outlined above.

It is anticipated that the Review will conclude in Spring 2012, with the production of a final report.

7.2 Summary

The Scottish road maintenance sector is facing major challenges in maintaining the road assets.

There has been a considerable encouragement and support for this Review from members of the Scottish road maintenance community, in addition to the support given by the steering group and the working groups.

The strategic framework provides a model to enable Scotland's roads authorities to embed best practice and examine funding options.

The 30 detailed options generated and taken forward will provide the opportunity for appropriate change in the management and maintenance of Scotland's roads.

The Scottish road maintenance community is ready to embrace change to deliver enhanced value. Support and encouragement from stakeholders will be the catalyst for this change.

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NOTES

¹ Net present value is the difference between the present value of costs and benefits, discounted to 2002. A negative NPV in Table 1 therefore means the benefits gained over the next 20 years by reducing maintenance expenditure are less than the costs arising from that decision.

² "Lean" is a method of designing and implementing business systems to minimise waste and maximise value.