

Maintaining Scotland's roads

A follow-up report



ACCOUNTS COMMISSION 

AUDITOR GENERAL 

Prepared by Audit Scotland
August 2016

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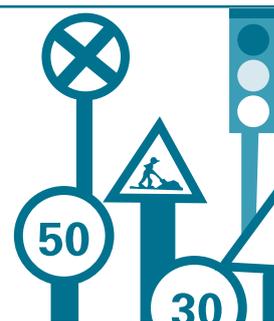
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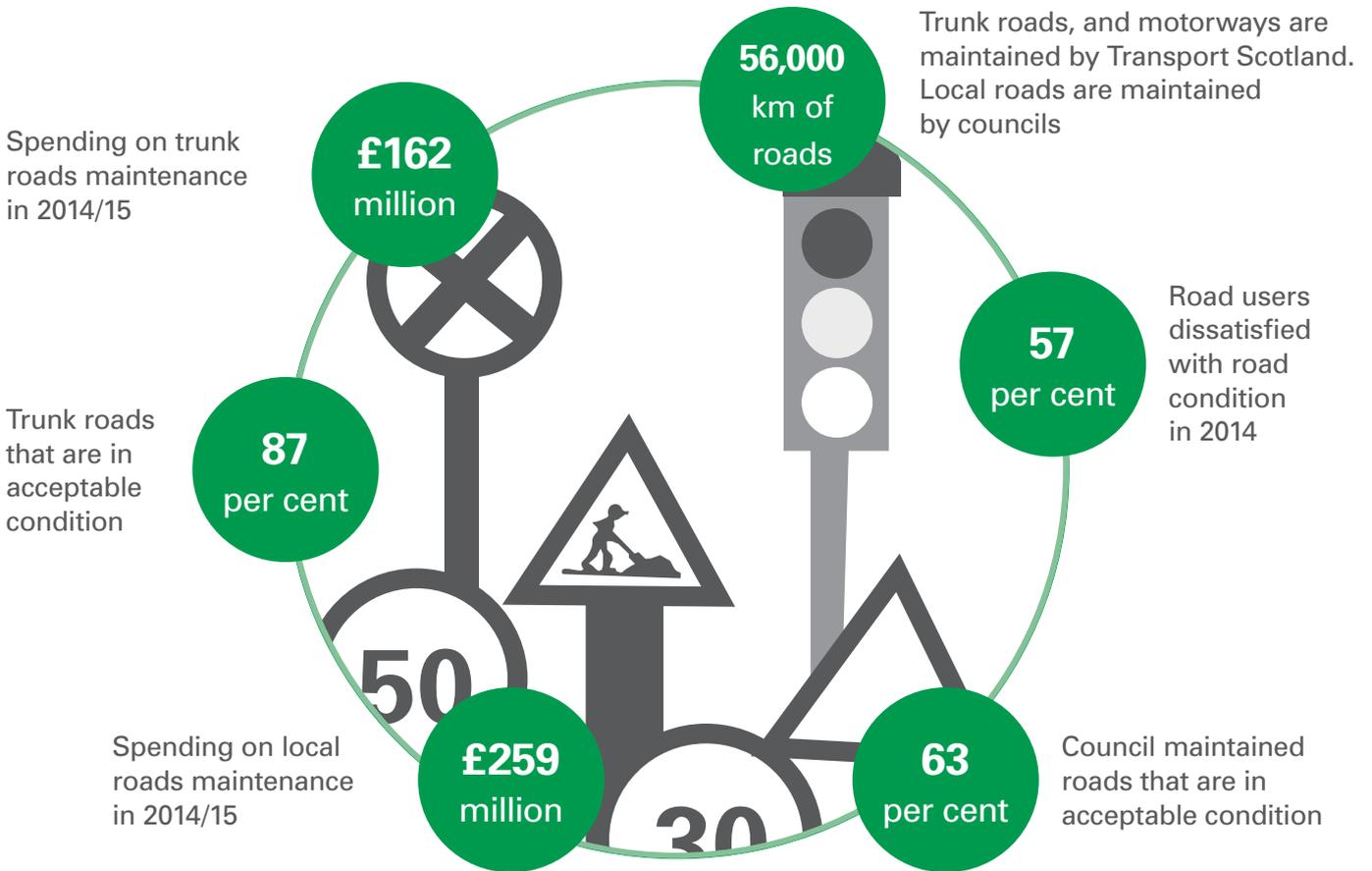
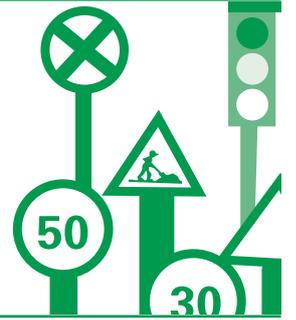


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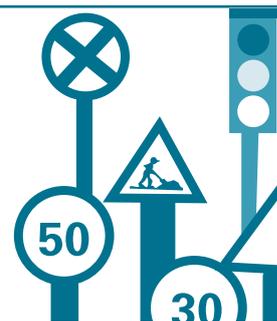
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Key facts



Summary



- 1 The proper maintenance of the road network is vital to Scotland's economic prosperity and for road users to travel safely. Roads authorities, locally and nationally, urgently need to demonstrate a much greater commitment to innovation, comparing relative efficiency and being clearer with the public about the impact on road condition of agreed spending levels. It is clear that the status quo is no longer an option if there is to be any improvement in road condition. A longer-term view is required, one that takes into account both the need for new roads and the maintenance of the existing road network.
- 2 Independent survey results indicate that the condition of council-maintained roads has remained stable at around 63 per cent in acceptable condition over the period 2011/12 to 2014/15. There is significant variation in road condition among councils. There is also concern that the survey approach does not always pick up the full extent of failures in the structural integrity of lower road layers. Fifty-seven per cent of users report that road condition is a major concern. While 13 authorities increased their spending, overall council expenditure on roads maintenance continues to decrease, from £302 million in 2011/12 to £259 million in 2014/15 (14 per cent). Overall, councils spent £33 million (13 per cent) less on planned and routine maintenance in 2014/15 than the Society of Chief Officers of Transportation Scotland considers was necessary to maintain the current condition of local roads.
- 3 The condition of trunk roads declined from 90 per cent in acceptable condition in 2011/12 to 87 per cent in 2014/15. Most of this decline is associated with the condition of motorways. Transport Scotland attributes this to more resurfacing work, instead of more expensive reconstruction which would also improve the condition of the lower road layers. Transport Scotland's expenditure on trunk roads maintenance fell from £168 million in 2011/12 to £162 million in 2014/15 (four per cent). It spent £24 million (38 per cent) less on structural maintenance in 2014/15 than it considers was necessary to maintain trunk road condition at its current levels.
- 4 In the current context of reduced public spending, the competing priorities of some services, such as education, health and social care mean that roads maintenance budgets may be put under further pressure. There is evidence that roads authorities are better prioritising and targeting roads maintenance, and using cheaper treatment options. This has helped available budgets go further but carries risks. Increasing the use of surface dressing might help to maintain the condition of the surface of the road network in the short term, but this may not deliver value for money in the longer term. It is important that

roads
authorities
need to
demonstrate
greater
commitment
to improving
road
condition

proper scrutiny and challenge includes taking account of all options and users' views when considering spending on roads.

- 5** Progress with introducing a shared services approach to roads maintenance, a central theme of the 2012 National Roads Maintenance Review, has been disappointingly slow. Councils are in the process of establishing regional governance bodies for local roads maintenance but there is still no clear plan and timetable for determining the extent of shared services at an operational level. Scottish ministers want to see councils make more progress, and be able to demonstrate the efficiency savings and other benefits arising, before trunk roads could be considered for inclusion in such regional arrangements.

Recommendations

The Strategic Action Group should:¹

- Ensure that the Roads Collaboration Board works with regional group partners to determine a clear plan and timetable for:
 - supporting the development of regional arrangements for roads services to secure the benefits arising, such as efficiencies, increased service resilience and professional skills, while also preserving local accountability
 - making decisions on the extent of shared services at an operational level
 - learning lessons from existing shared service models such as the Ayrshire Roads Alliance, Tayside Contracts and further afield
 - establishing a baseline position, so that roads authorities can measure the expected benefits from collaboration over time
 - develop outcome measures which demonstrate the contribution of well-maintained roads to Scotland's economy.

Councils should:

- Ensure that they work closely with the Roads Collaboration Programme and regional group partners to determine the extent of shared service models for roads maintenance operations
- Ensure that they implement the findings of the consultant's review of Roads Asset Management Plans (RAMPs) where relevant
- Implement methods for assessing and comparing councils' roads maintenance efficiency with the aim of identifying and learning from councils delivering services more efficiently
- Use the National Highways & Transport (NHT) Network Survey, or similar, to obtain user views and perceptions of roads services consistently
- Use the results of user surveys to develop more proactive ways of engaging with the public over roads maintenance issues, and to help inform scrutiny and challenge of roads maintenance budgetary proposals.

Councils and Transport Scotland should:

- Ensure that they use their RAMPs to inform elected members and Scottish ministers of long-term investment plans for maintaining roads that take into account the whole-life costing of treatment options
- Ensure that the consequences of spending less than that necessary to maintain current road condition adequately features in budget-setting processes to allow elected members and Scottish ministers make informed choices which take account of competing demands and priorities.

Transport Scotland should:

- Make road condition information publicly available for the geographical areas of the trunk road network: North West, North East, South East and South West Scotland
- Identify unit cost or other efficiency measures to evaluate the value for money provided by operating companies
- Consider the overall trend in performance of operating companies and ensure it has appropriate mechanisms in place for addressing areas of poorer performance
- Fully take account of the needs of the existing trunk road network when considering the affordability of large-scale transport investments taken forward within the Scottish Government's Infrastructure Investment Plan
- Consider its future strategy for maintaining the trunk road network. The strategy should fully reflect the progress made by council regional groupings in determining the extent of shared service models for roads maintenance operations. If Transport Scotland decides to renew its existing operating contracts, it should seek to maximise opportunities for greater collaboration with councils through contract conditions.

The Society of Chief Officers of Transportation Scotland (SCOTS) should:

- Work with councils to implement the findings of the consultant's review of RAMPs, and promote good practice where it is identified
- Continue, as a matter of priority, to work with consultants to develop methods for assessing and comparing how efficient councils are at roads maintenance
- Focus the work of the Scottish Roads Research Board so that it identifies a programme of research projects aimed at maximising innovation and sharing current good practice in delivering roads maintenance services.

This is the third time we have reported on roads maintenance in the last six years. We expect the Strategic Action Group to publicly report on the progress made on implementing the recommendations contained in this report. It should publish this report no later than the end of December 2017.

Background

1. In February 2011, the Auditor General for Scotland and the Accounts Commission published [Maintaining Scotland's roads: A follow-up report](#) . The audit examined progress on implementing recommendations in *Maintaining Scotland's roads* which the Auditor General for Scotland and the Accounts Commission published in November 2004. The 2011 audit report found the following:

- The condition of Scotland's roads had worsened since 2004.
- Spending on roads maintenance had fallen, after taking account of road construction inflation.²
- Roads authorities could improve how they manage roads maintenance, for example by introducing Roads Asset Management Plans and using performance indicators to help them benchmark against other roads authorities.
- The Scottish Government should consider whether a national review of how the road network is managed and maintained is needed to stimulate service redesign and increase the pace of examining the potential for shared services.

2. The Scottish Government and councils initiated a National Review of Road Maintenance (NRMR) later in 2011. A Strategic Action Group, jointly chaired by COSLA and the Minister for Transport and Islands, provided overall direction to the NRMR. The findings of the NRMR, published in July 2012, identified 30 actions under six main themes:

- Better asset management, including prioritising investment in roads maintenance.
- The use of performance information to support benchmarking.
- Using innovation.
- Enabling faster progress in improving road condition.
- Considering different delivery models, including the scope for greater collaboration and the 'optimum arrangements for the management and maintenance of roads in Scotland' (known as Option 30).
- Communicating with industry partners and road users.

[The Supplement](#) provides more details of the NRMR actions.

3. In May 2013, the Accounts Commission published *Maintaining Scotland's roads: An audit update on councils' progress*. The audit examined councils' progress in implementing relevant recommendations in the 2011 audit report. It also reviewed progress on implementing the actions set out in NRMR. The 2013 audit report found the following:

- The condition of local roads had improved marginally since 2010.

- Some progress had been made with the introduction of RAMPs and performance indicators but further work was needed.
- The NRMR was progressing but significant new ways of working would take time to put in place.

4. Overall, the Accounts Commission recognised that although councils were facing budget constraints, they needed to improve the condition of Scotland's roads more quickly.

About this audit

5. This audit follows up previous audit reports in 2011 and 2013. It reviews:

- changes in road condition and spending on roads maintenance since the 2011 report
- progress made against previous audit recommendations
- progress in implementing the actions set out in the NRMR, in particular Option 30.

6. During the audit we:

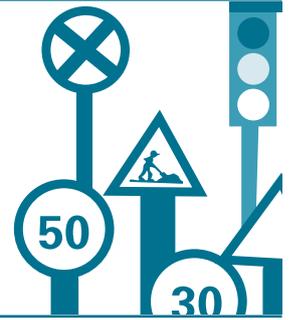
- analysed performance data, in particular road condition and spending on roads maintenance
- reviewed other key information and documents such as:
 - Transport Scotland strategic documents
 - Roads Collaboration Programme updates and reports
 - Scottish Roads Research Board documentation
 - User survey results, such as those generated from the Scottish Household Survey and the National Highways & Transport Network Survey
- conducted fieldwork at a sample of 11 roads authorities, where we:
- reviewed strategic documents such as Roads Investment Strategies, Roads Asset Management Plans and Annual Status and Options Reports
- interviewed senior officers and elected members at a sample of ten councils, and senior officers at Transport Scotland.

7. The report has two parts:

- [Part 1](#) outlines the condition and cost of maintaining Scotland's roads.
- [Part 2](#) reviews progress made in improving the management of roads maintenance.

Part 1

The condition and cost of maintaining Scotland's roads



Key messages

- 1 Independent survey results indicate the overall condition of council-maintained roads has remained stable, at around 63 per cent in acceptable condition over the period 2011/12 to 2014/15. Road condition varies among individual councils from 44 per cent to 79 per cent in acceptable condition. While 13 authorities increased their spending, overall council expenditure continues to decrease, from £302 million in 2011/12 to £259 million in 2014/15 (14 per cent). Overall, councils spent £33 million (13 per cent) less on planned and routine maintenance in 2014/15 than the Society of Chief Officers of Transportation Scotland (SCOTS) considers was necessary to maintain the current condition of local roads. Only a third of councils are presenting options to elected members on what kind of road condition can be expected from different levels of spending.
- 2 The condition of trunk roads declined from 90 per cent in acceptable condition in 2011/12 to 87 per cent in 2014/15. Most of this decline is associated with the condition of motorways. Transport Scotland attributes this to more resurfacing work, instead of more expensive reconstruction which would also improve the condition of the lower road layers. Its expenditure on trunk roads maintenance fell from £168 million in 2011/12 to £162 million in 2014/15 (four per cent). Transport Scotland spent £24 million (38 per cent) less on structural maintenance in 2014/15 than it considers necessary to keep trunk road condition at its current levels.
- 3 Fifty-seven per cent of users report that road condition is a major concern. Councils and Transport Scotland both need to be clearer with the public on the impact that current levels of investment will have on road condition. They also need to take account of users' views consistently to make informed budgetary decisions that take account of competing priorities.

users
consider road
condition
as a major
concern

Proper maintenance of the road network is vital to Scotland's economic prosperity and for road users to travel safely

8. Scotland's road network connects business with customers, suppliers and the workforce, helps people access places of employment and education, and helps move goods from point of production to local, national and international markets. There is no single indicator of how roads contribute to economic and social outcomes. But the Scottish Government considers that the road network plays a part in delivering nine of the 16 national outcomes in its National Performance Framework.³

9. Scotland's road network consists of almost 56,000 kilometres of road, as well as footways, bridges, lighting, signs and lines. Councils are responsible for 25,600 kilometres of classified roads and 26,800 kilometres of unclassified roads. Classified roads comprise:

- **A roads** – major roads which deliver the basic road links to certain areas or communities.
- **B roads** – roads that serve a local purpose and connect to strategic routes.
- **C roads** – mainly rural interconnecting roads.

10. Transport Scotland is responsible for 3,600 kilometres of motorways and trunk roads. Motorways and trunk roads make up only six per cent of the road network but, based on vehicle mileage, carry over a third of the traffic and nearly two-thirds of heavy goods vehicles (HGVs). In this report, the term trunk roads include motorways, while local roads mean council-maintained roads.

11. Councils are changing the way they value local roads with effect from 2016/17. The value of local roads will now be calculated on a similar basis to trunk roads, based on depreciated replacement cost, that is, the cost of replacing all roads to their current condition. The change is likely to lead to a significant increase in the value of Scottish councils' road network. Local roads will be the highest value asset on councils' balance sheets.

12. Road maintenance covers all work on roads other than major new-build work. It includes:

- structural maintenance, such as planned schedules of resurfacing or reconstruction works. Resurfacing is aimed at replacing a failed road surface. Reconstruction replaces a failed road structure, including the surface and lower road layers.
- surface dressing, to seal the surface, improve skidding resistance and restore ride quality
- routine maintenance, such as repairing potholes, emptying drains and gullies, and repairs to lighting and signs
- weather and winter services, such as applying salt and grit to remove snow and ice
- reactive maintenance, such as responding to inspections, complaints or emergencies.

Generally, the cost of materials forms the greatest proportion of spending associated with structural maintenance, while staff costs comprise the greatest proportion of spending on routine repairs.

13. Police accident records indicate that the biggest cause of road accidents is driver error or reaction, being a factor in 68 per cent of all road traffic accidents. Poor road condition is a small, but still important, contributory factor in the causes of road traffic accidents. Police accident records indicate that poor and defective road conditions are a contributory factor in around 0.7 per cent of fatal road traffic accidents in the UK, 0.8 per cent of serious road traffic accidents and 0.6 per cent of slight road

traffic accidents⁴. Between 2010 and 2014, there were 865 fatal, 8,039 serious and 38,957 slight road traffic accidents on Scottish roads. Extrapolating these figures means that poor and defective road condition may have been a contributory factor in six fatal, 64 serious and 234 slight road traffic accidents on Scottish roads over the five-year period.

14. Good road condition is also of vital interest to cyclists. The number of cyclists killed or injured on Scotland's roads increased from 776 in 2004 to 857 in 2014 (10.4 per cent).⁵ The number of accidents involving cyclists where road condition was a contributory factor is not recorded. While the increase in casualties is likely to be attributable, at least in part, to the growing popularity of cycling to work and as a leisure activity, the Scottish Household Survey routinely asks those surveyed why they do not cycle to work. On average, five per cent of those surveyed between 2010 and 2014 said that they do not cycle to work because the road surfaces are dangerous.⁶

The condition of the Scottish road network has worsened since 2011, mainly as a result of a decline in the condition of motorways

15. The Society of Chief Officers of Transportation Scotland (SCOTS) appoints WDM Ltd, a private firm with UK-wide experience in undertaking roads surveys, to undertake annual surveys of the condition of local roads on behalf of councils. *The Scottish Road Maintenance Condition Survey* uses a traffic speed machine based survey (Surface Condition Assessment for the National Network of Roads – SCANNER) to make a number of measurements that describe the condition of the road surface, including rutting, cracking and ride quality. This allows councils to assess the length of road requiring maintenance. The length of road surveyed annually includes:

- 100 per cent of A class roads with the direction of travel changed in alternate years
- 50 per cent of B and C class roads with the remaining 50 per cent surveyed the following year. The direction of travel is also alternated such that every B and C class road lane is surveyed every four years
- 10 per cent of unclassified roads are surveyed in one direction each year.

16. The results of the survey are used to classify local roads into one of three measures:

- **Green** – roads are in acceptable condition.
- **Amber** – some deterioration is apparent on the roads and should be investigated to determine the best time to carry out planned maintenance treatment.
- **Red** – roads are in poor condition and are likely to require repairs within one year.

17. A road that is assessed as in an acceptable condition through the survey does not necessarily mean it is free of any defects. Equally, a road that is in a poor condition does not necessarily mean it is unusable. But a road in poor condition:

- may require vehicles to travel at lower speeds
- increases the risk of vehicular suspension and other damage

- could present an increased safety risk, for example owing to the loss of the road's anti-skid properties.

18. SCANNER provides an indicator of the condition of the lower road layers but not an absolute measure. Transport Scotland tests the surface of the trunk road network using SCANNER. It also uses a Deflectograph to provide an estimate of the remaining useful life of trunk roads and to identify areas requiring strengthening. The Deflectograph is a lorry-mounted system involving a loaded wheel passing over the road. The size of the deflection is related to the strength of the lower road layers. Each year, Transport Scotland uses the Deflectograph to survey 20 per cent of the trunk road network.

19. The different approaches mean that, under normal circumstances, the reported condition of the local road network cannot be compared with that of trunk roads. Transport Scotland publicly reports trunk road condition using the combined results of its SCANNER and Deflectograph surveys. But it is also able to separate its survey results so that trunk road condition can be more directly comparable with that of local roads. This report outlines the condition of the trunk road network using both how Transport Scotland reports it (combined surface and lower road layer surveys) and surface survey only.

The condition of council-maintained roads has stabilised overall

20. The 2011 audit report found that the condition of council-maintained classified roads had deteriorated over the last five years. In 2005/06, 70 per cent were in acceptable condition. By 2010/11, the figure had dropped to 66 per cent in acceptable condition. Since then, the road condition survey indicates that the proportion of classified local roads in acceptable condition has remained the same ([Exhibit 1](#)).

Exhibit 1

The condition of council-maintained roads from 2011/12 to 2014/15

The proportion of local roads in acceptable condition remained the same between 2011/12 and 2014/15.



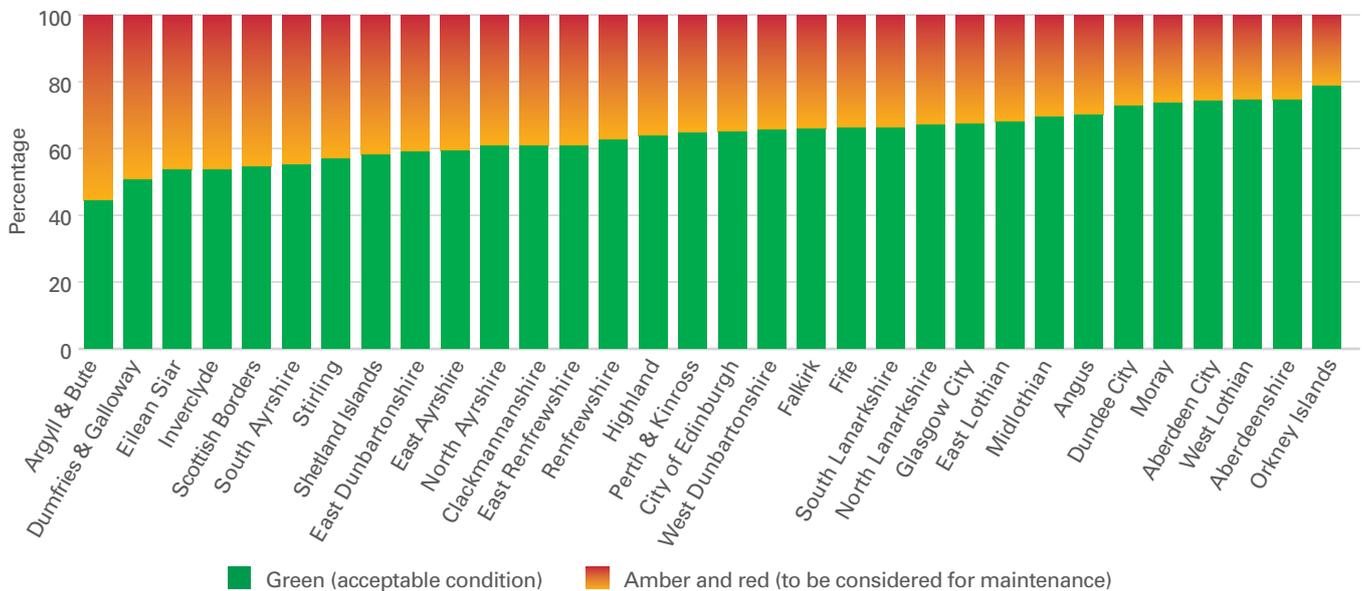
21. Unclassified roads make up slightly more than half the local road network. The condition of unclassified roads declined slightly from 62 per cent in acceptable condition in 2011/12 to 60 per cent in acceptable condition in 2014/15. Unclassified roads continue to be in worse condition than classified roads.

22. While the overall condition of council-maintained roads has remained stable at around 63 per cent over the period 2011/12 to 2014/15, there is significant variation in the condition of roads among councils. For example, in 2014/15, the proportion of local roads in acceptable condition ranged from 44 per cent in Argyll and Bute Council to 79 per cent in Orkney Islands Council ([Exhibit 2](#)).

Exhibit 2

Comparison of the proportion of roads in acceptable condition by council for 2014/15

There is significant variation in road condition among individual councils.



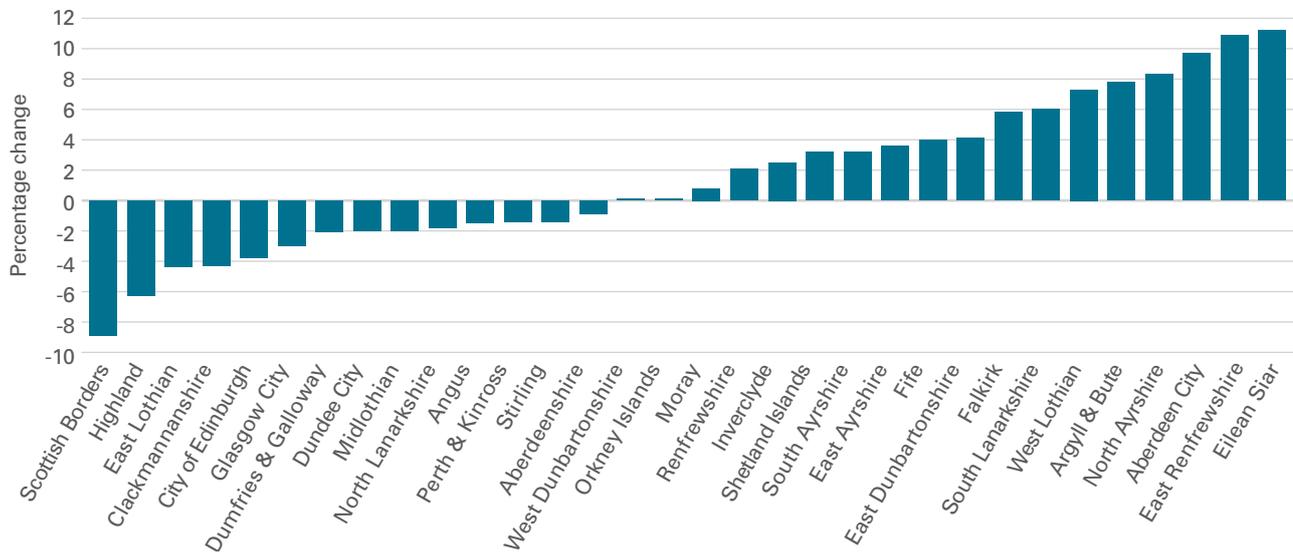
Source: SCOTS

23. There is also significant variation among councils in how the condition of local roads has changed over time. Between 2011/12 and 2014/15, survey results indicate that for 18 councils the proportion of their local roads in acceptable condition increased, while for 14 councils the condition of their local roads deteriorated. The extent of variation ranged from an improvement in acceptable condition of 11 per cent in Comhairle nan Eilean Siar to a deterioration of nine per cent in Scottish Borders Council ([Exhibit 3, page 15](#)). There is no obvious correlation between the change in road condition over time and the current level of road condition in individual councils.

Exhibit 3

Change in percentage of council-maintained roads in acceptable condition from 2011/12 to 2014/15

There is significant variation in the change in road condition between councils.



Source: SCOTS

The condition of trunk roads has worsened

24. Transport Scotland has a higher maintenance standard for the trunk road network. In particular, it considers that motorways need to be maintained to a higher standard owing to the higher proportion of HGVs thus enabling traffic to move safely at higher speeds than normally experienced on local roads.

25. Using Transport Scotland's method of assessing road condition, the condition of trunk roads declined from 90 per cent in acceptable condition in 2011/12 to 87 per cent in 2014/15. Dual and single-track A-class roads are in better condition than motorways. Motorways declined from 79 per cent in acceptable condition in 2011/12 to 74 per cent in acceptable condition in 2014/15 ([Exhibit 4, page 16](#)). Transport Scotland attributes much of the decline in motorway condition to doing more resurfacing work instead of reconstruction, which would also improve the condition of lower road layers ([paragraph 72](#)).

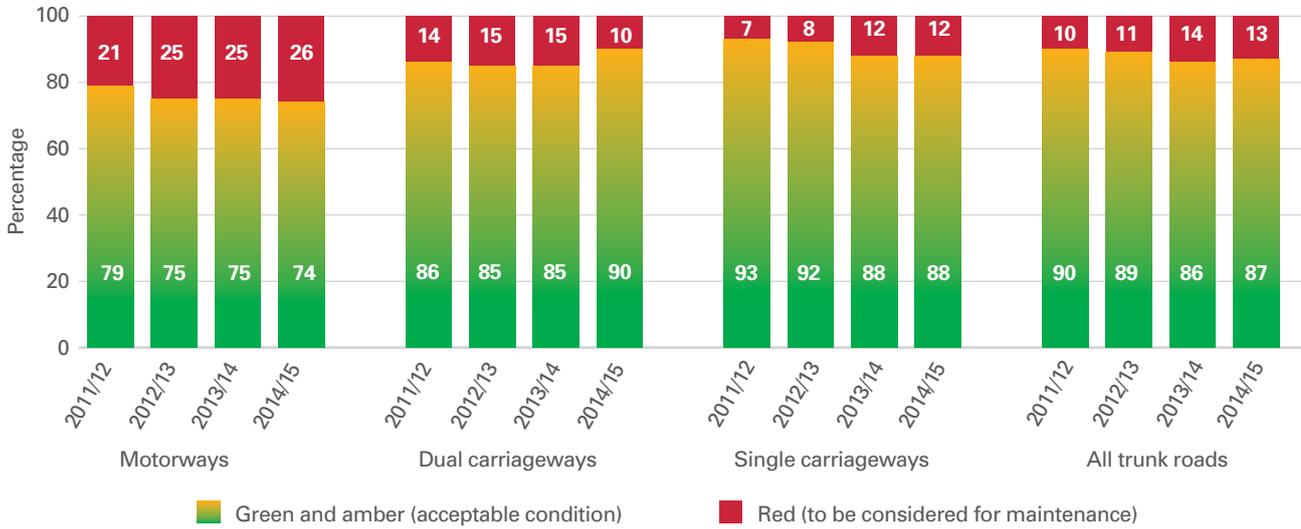
26. The 2011 audit report found that 78 per cent of trunk roads were in acceptable condition in 2010/11 based on the methodology used to assess council-maintained roads, that is, based on surface survey only. Since then, the overall condition of trunk roads has increased slightly to 79 per cent in acceptable condition. However, the proportion of motorways in acceptable condition fell from 70 per cent in 2011/12 to 58 per cent in 2014/15 ([Exhibit 4, page 16](#)).

Exhibit 4

The condition of trunk roads from 2011/12 to 2014/15

The condition of trunk roads has worsened since 2011/12.

Condition results using Transport Scotland's approach, that is combined surface and lower road layers surveys.



Condition results using councils' approach, that is surface survey only



Source: Transport Scotland

27. Transport Scotland evaluates the quality of trunk road maintenance through the Performance Audit Group (PAGplus) and the annual reports it produces. These reports assess the performance of the operating companies which carry out trunk roads maintenance on behalf of Transport Scotland. Prior to June 2015, four operating companies provided trunk roads maintenance, organised into four geographical areas. A fifth operating company began operations in June 2015 when responsibility for maintaining the Forth Road Bridge and adjacent trunk road network was transferred from the Forth Estuary Transport Authority to Transport

Scotland. PAGplus assesses the performance of operating companies using a number of criteria, including:

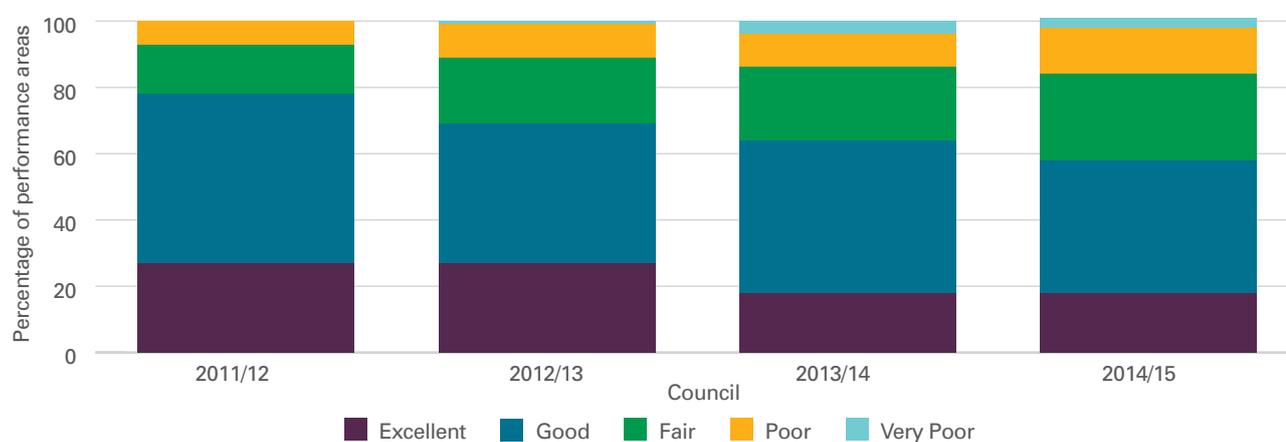
- Repair of major defects
- Planned maintenance of roads and other structures
- Winter service response times
- Safety inspections and patrols.

28. PAGplus assesses the performance of operating companies on a scale from 'excellent' through to 'very poor'. In 2011/12, PAGplus assessed 78 per cent of performance areas as 'excellent' or 'good' but this fell to 58 per cent in 2014/15. Conversely, PAGplus assessed seven per cent of performance areas as 'poor' or 'very poor' in 2011/12 but this increased to 16 per cent in 2014/15 ([Exhibit 5](#)). The introduction of new contracts in the North West, South West and South East areas during 2013 and 2014 may have played a part in the decline in performance during this time. It is important that Transport Scotland considers the overall trend in performance of operating companies and ensures it has appropriate mechanisms for addressing areas of poorer performance.

Exhibit 5

Trunk road maintenance operating company performance 2011/12 to 2014/15

The overall performance of trunk road operating companies declined between 2011/12 and 2014/15.



Note: The performance of the operating company responsible for the maintenances of the Forth Road Bridge and adjacent trunk road network is excluded from this analysis as it did not begin operations until June 2015, so there is no publicly available report through PAG plus.

Source: Transport Scotland

29. Transport Scotland does not report publicly on individual operating companies using road condition as an indicator of performance. This means it is not possible to compare the performance of operating companies in the same way as we have compared councils. Making road condition information publicly available for the geographical areas of the trunk road network – North West, North East, South East and South West Scotland – would help improve openness and transparency to the public.

Users continue to report that road condition is a major concern

30. The 2011 and 2013 audit reports both indicated that road users were increasingly dissatisfied with the condition of Scottish roads, which they believed was getting worse. In particular, the 2013 audit report referred to an AA survey in January 2013, which found that 45 per cent of local road users in Scotland considered road conditions to be poor, very poor or terrible. This was the worst rate in the UK.

31. Councils use a range of approaches to gauge customer satisfaction with roads in their area, such as user surveys and feedback from consultation groups. Not all authorities report their results publicly and, of those that do, there are differences in the type of question asked. For example, some councils seek views about road condition, while others ask about satisfaction with roads maintenance overall. There can also be different response options for customers to choose from.

32. In response to actions contained in the NRM, a question was included in the 2014 Scottish Household Survey (SHS) to capture levels of user satisfaction with road condition on a more consistent basis than councils had done previously.⁷ The results indicated that a third of respondents felt satisfied with road condition while 57 per cent felt dissatisfied. The remaining ten per cent felt neither satisfied nor dissatisfied, or had no opinion.

33. The National Highways & Transport (NHT) Network Survey asks the public more detailed questions than those contained in the SHS, including their views on road condition, road safety, traffic pollution and public transport. Since 2013, only seven Scottish councils have taken part in the NHT Network Survey. The 2015 survey results confirmed the importance that the public attach to road condition, and their low levels of satisfaction with it. For example, people living in the five Scottish councils that took part (Aberdeenshire, Dumfries and Galloway, North Ayrshire, Scottish Borders and South Lanarkshire) rated road condition as either the first or second most important aspect of roads services.

34. The NHT survey is a useful way to get councils thinking about how they might influence public perception of road condition by engaging more proactively over their roads service. For example, as part of a Roads Service communication strategy and action plan, in 2015 Aberdeenshire Council:

- used social media to inform the public about its winter roads maintenance procedures and how best to report potholes
- placed videos on YouTube to advertise particular events, such as the reopening of the Balmoral Bridge, and to let the public know more about the work of a roads manager
- issued news releases informing the public that its summer programme of surface dressing was about to begin and to be aware of loose chips
- raised the profile of female engineers by including an interview with a female member of staff in the YourJob section of the local press.

While the council acknowledges it is difficult to establish how much these activities have played a part, public levels of satisfaction with road condition in Aberdeenshire improved from 34 per cent in 2013 to 41 per cent in 2015.

35. Transport Scotland carries out annual surveys to gauge trunk road users' levels of satisfaction. Following a period of decline, levels of satisfaction have risen in the most recent survey. The 2011 audit report found that the proportion of users who were satisfied with the general condition of trunk road surfaces fell from 52 per cent in 2007 to 37 per cent in 2010. The survey results for 2015 indicate that 45 per cent of users were satisfied with trunk road surfaces.

Councils spent 14 per cent less on roads maintenance in 2014/15 than in 2011/12, while Transport Scotland spent four per cent less

36. Recent reports from the Accounts Commission have highlighted the financial challenges and service pressures that councils are currently facing. For example, [An overview of local government in Scotland 2016](#)  outlined the increasing demand for social care owing to demographic change, and how a third of councils overspent their social care budgets in 2015/16.⁸ These service demands and national policy conditions on, for example, maintaining teacher numbers, have meant that councils have tended to prioritise big spending areas such as social care and education. As a result, budget reductions have tended to focus on other areas, such as roads and transport.

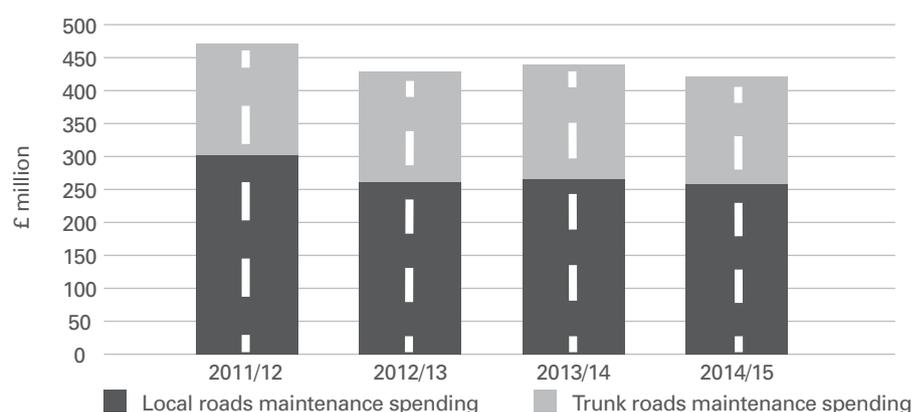
37. There is likely to be a five per cent reduction in Scottish Government revenue grant funding for local government in 2016/17, compared to 2014/15. This, and the continued prioritisation given to services such as social work and education, means that roads maintenance budgets may be put under further pressure.⁹

38. The 2011 audit report found that councils' roads maintenance spending fell by £76 million (13 per cent) between 2004/05 and 2009/10, after taking account of road construction inflation. Transport Scotland spending on roads maintenance fell by £78 million (32 per cent) in real terms, that is, allowing for inflation, over the same period. Since then, roads maintenance spending has continued to fall ([Exhibit 6](#)). Councils and Transport Scotland spent £421 million on roads maintenance in 2014/15. Taking inflation into account, this was £50 million less (11 per cent) than in 2011/12.

Exhibit 6

Roads maintenance spending from 2011/12 to 2014/15

Roads maintenance spending decreased by 11 per cent between 2011/12 and 2014/15 after taking account of inflation.



39. Councils' net revenue and capital expenditure on general fund services (that is, the cost of all service provision except some council housing costs), decreased by £0.97 billion (7.5 per cent) between 2011/12 and 2014/15, after taking inflation into account. Councils' revenue and capital spending on roads maintenance fell from £302 million to £259 million over the same period (14 per cent).¹⁰ In percentage terms therefore, the reduction in councils' expenditure on roads maintenance between 2011/12 and 2014/15 was almost double that of their reduction in net spending on general services. Councils spent £4,935 per kilometre on local roads maintenance in 2014/15. Traffic volumes on council-maintained roads increased by two per cent between 2011/12 and 2014/15.

40. In 2014/15, Transport Scotland spent £162 million on trunk roads maintenance. This equates to £47,200 per kilometre and is some £6 million (four per cent) less than in 2011/12, after taking inflation into account. During the same period, traffic volumes on trunk roads increased by five per cent.

41. In addition to this spending, Transport Scotland funds trunk roads building and maintenance through its Design Build Finance and Operate schemes, such as the M6 and M80 improvements. Private operators are required to maintain these trunk roads, which Transport Scotland funds as part of its annual unitary service charges. Transport Scotland spent £84.7 million on these privately financed roads in 2014/15, an increase of 36.6 per cent from 2011/12. Transport Scotland will need to consider the implications on its budget of further increases in its annual unitary charges as new privately financed roads are built.

The amount of money councils spend on roads maintenance varies significantly

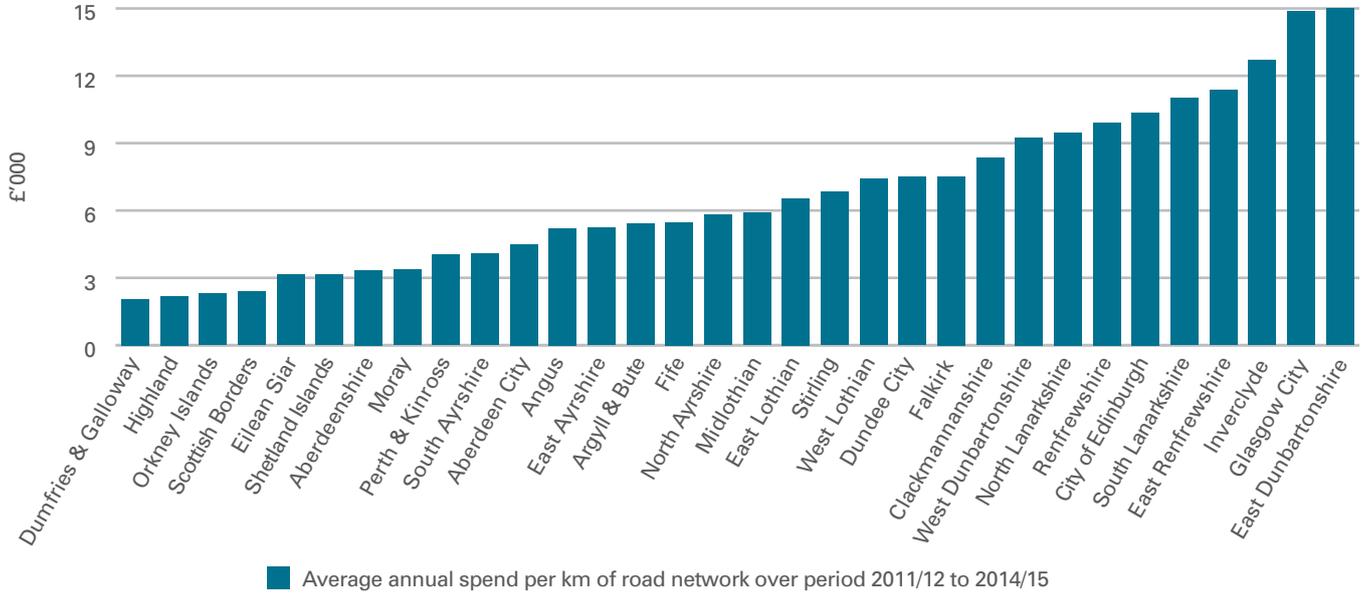
42. There is a wide variation in roads maintenance spending among councils ([Exhibit 7, page 21](#)). Between 2011/12 and 2014/15, average annual roads maintenance spending varied from £2,052 per kilometre of roads in Dumfries and Galloway Council to £14,995 per kilometre in East Dunbartonshire Council. Based on spending over the period 2011/12 to 2014/15, urban and city councils spend the most on roads maintenance per kilometre of network. There is likely to be a number of reasons contributing to this variation in expenditure between councils. We outline some of the factors which may influence council's spending patterns at [paragraphs 67–69](#) of the report.

43. In total, 19 councils reduced their spending on roads maintenance between 2011/12 and 2014/15, while 13 councils increased their spending ([Exhibit 8, page 21](#)). East Dunbartonshire Council reduced its spending on roads maintenance the most (by 64 per cent), while Dumfries and Galloway Council increased its spending the most (by 188 per cent).

Exhibit 7

Councils' spending on roads maintenance 2011/12 to 2014/15

The amount of money councils spend on roads maintenance varies significantly.

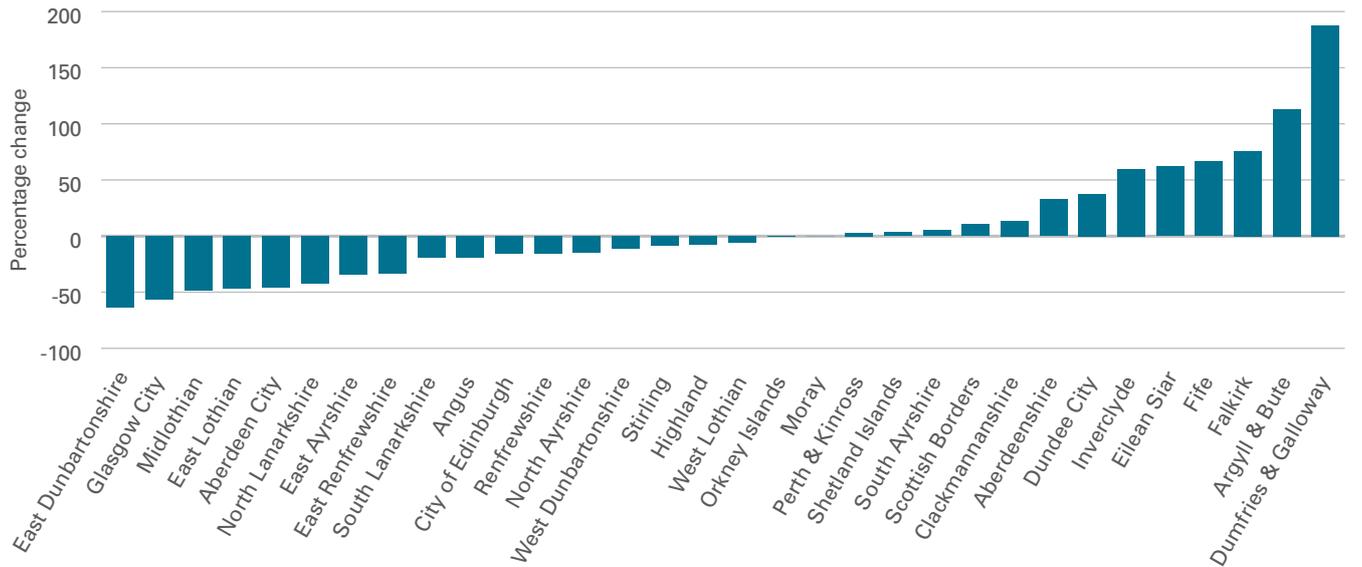


Source: SCOTS

Exhibit 8

Change in councils' roads maintenance spending from 2011/12 to 2014/15

There is significant variation in the change in roads maintenance spending across councils.



Source: SCOTS

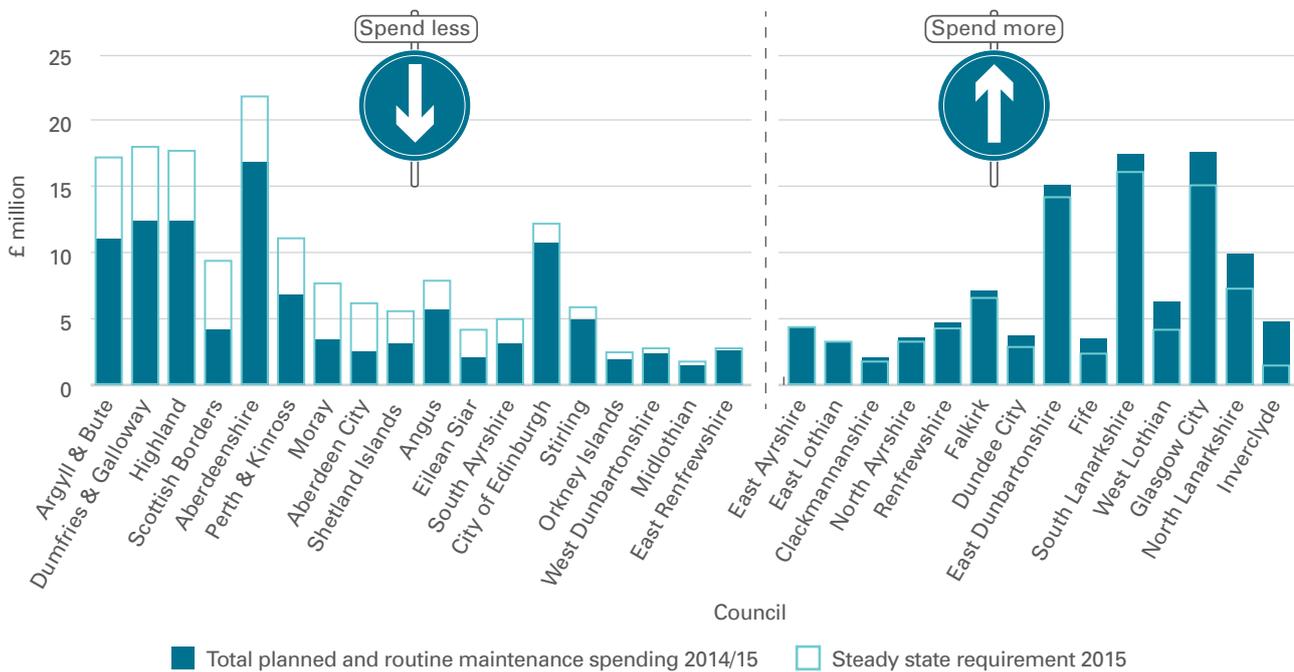
Levels of spending may not be enough to maintain roads in their current condition

44. Planned and routine maintenance are the types of road maintenance activity which are most likely to lead to improved road condition. SCOTS estimates that councils need to spend £246 million each year, excluding inflation, on planned and routine maintenance to maintain the local road network in its current condition. This is known as steady state and is calculated using a methodology that takes into account existing road condition, and the type and cost of treatments related to that condition. Overall, councils spent £33 million (13 per cent) less on planned and routine maintenance in 2014/15 than SCOTS considers was necessary to maintain the current condition of local roads. According to SCOTS' figures, 14 councils spent more in 2014/15 than that necessary to maintain their current condition, while 18 councils spent less ([Exhibit 9](#)).

Exhibit 9

Councils' roads maintenance spending compared to that necessary to maintain their current road condition in 2014/15

Based on SCOTS' steady state calculations, 18 councils did not spend enough to maintain their current road condition in 2014/15.



Source: SCOTS

45. Between 2013 and 2015 Transport Scotland undertook a study, with consultant support, to develop a long-term vision for maintaining the trunk road network. This considered a number of options for future investment, including:

- A baseline position, such that the trunk road network should be maintained in a steady state condition over a 20-year period to 2033. This was based on an overall network condition of 14 per cent in need of investigation for maintenance each year. The cost of this option was calculated at £1.24 billion (excluding inflation) and is equivalent to spending on average £62 million each year on structural maintenance.
- An option to improve the network over the 20-year period such that its condition was comparable to the rest of the UK and to similar countries internationally. This was based on an overall network condition of six per cent in need of investigation for maintenance each year. The cost of this option was calculated at £1.59 billion (excluding inflation), equivalent to spending on average £79 million each year on structural maintenance.

46. Transport Scotland spent £38 million on structural maintenance in 2014/15, some 62 per cent of what the study calculated was necessary to achieve steady state condition. Given the annualised nature of public sector budget setting, there is no guarantee that sufficient funds will be available in the future to achieve either of these aspirations.

Roads authorities need to be clearer about what road condition can be expected from given levels of spending

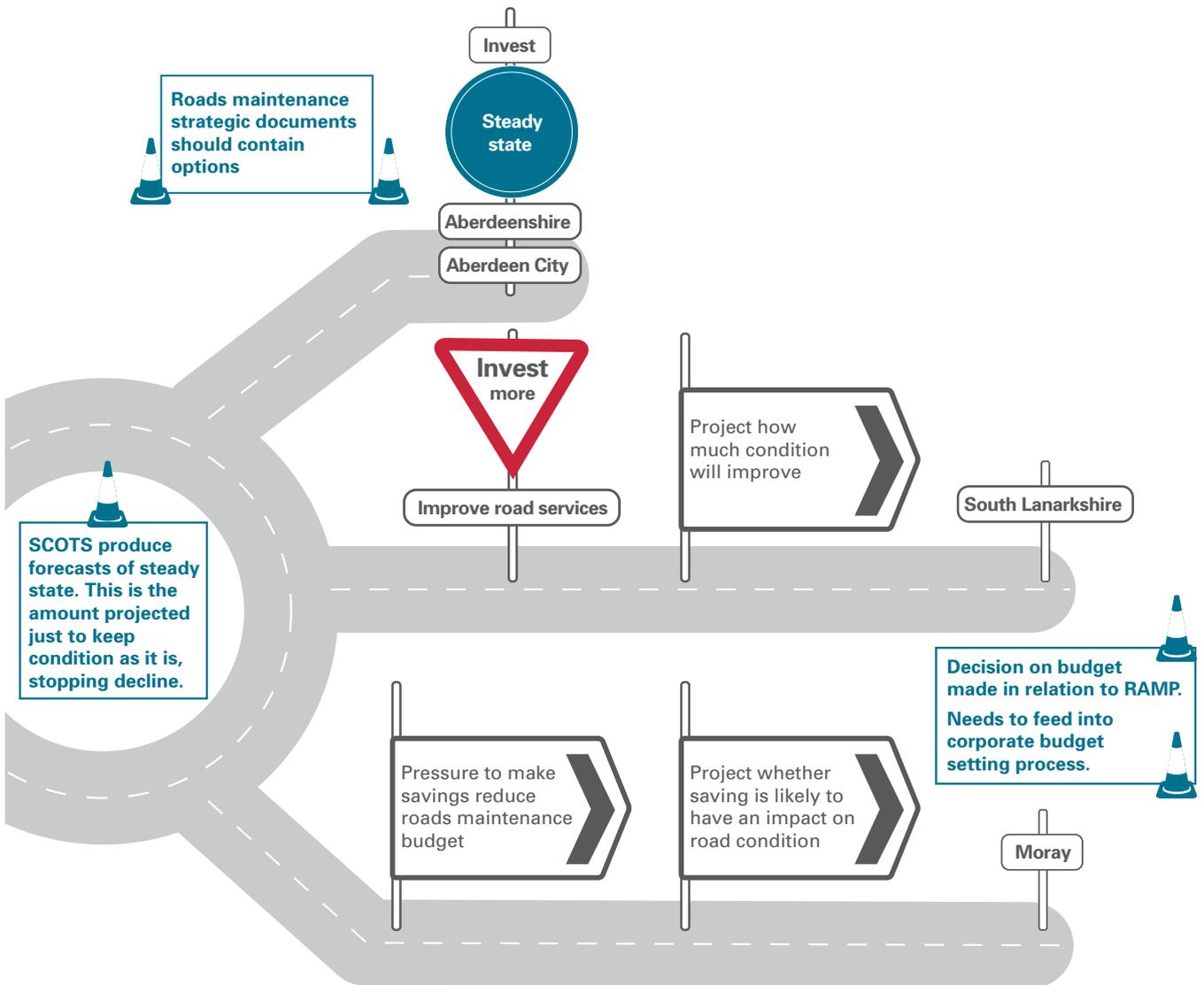
47. SCOTS' estimates of the spending needed to maintain steady state can help give an indication of the level of investment required to prevent further deterioration in road condition. Councils are beginning to use financial modelling tools to analyse how different levels of spending on roads maintenance is likely to impact on road condition. SCOTS is also promoting the use of Annual Statement of Options Reports to allow elected members to consider how different budget decisions will affect road condition. These reports can help councils decide whether they want to invest to improve road condition, maintain steady state or identify budget savings that may impact on road condition. However, only a third of councils are presenting options to elected members on the road condition that can be expected from different levels of spending.

48. A good quality RAMP should set out the expected standard of service to be provided by the road network. This can be used to help inform the consideration of options based on the level of spending and prioritisation given to roads maintenance. In turn, these can help inform councils' corporate budget decisions. [Exhibit 10 \(page 24\)](#) illustrates how this should work in practice. It also gives examples from our audit fieldwork of the decisions councils have made and whether they were investing to improve road condition, maintaining steady state or releasing budget savings that may impact on road condition.

Exhibit 10

Council budget decisions and their impact on road condition

Councils need to be clearer about what they are trying to achieve from their budget decisions and what road condition they can expect from given levels of spend.



Council	Decision taken on roads maintenance
	<p>The council approved the option in 2015 to maintain current road condition. It calculates this would require an increase in the annual roads maintenance budget from £4.5 million to £6.9 million. The council has still to commit these additional funds.</p>

Exhibit 10 continued

Council	Decision taken on roads maintenance
<p data-bbox="276 416 456 454">Aberdeenshire</p> 	<p data-bbox="549 427 1465 663">Between 2011/12 to 2014/15, the council has spent significantly less on roads maintenance (around £12.3 million per annum) than the amount indicated by SCOTS' steady state calculation (£21.8 million) while still maintaining condition at around 75 per cent of roads in acceptable condition. In 2015, using a tailored modelling tool, the council approved the option to continue to maintain steady state while achieving budget savings of up to £2.2 million a year, by greater use of lower cost treatments and additional works on distressed areas.</p>
<p data-bbox="276 748 456 786">City of Edinburgh</p> <p data-bbox="264 797 467 835">Improved condition</p> 	<p data-bbox="549 757 1414 958">The council approved a new approach to allocating its capital budget for road maintenance in October 2015. This moves away from prioritising roads in the worst condition to a more preventative approach using a range of less expensive treatments. The council did not set a specific improvement target but used a modelling tool to predict an increase from the current position of 65 per cent in acceptable condition to 88 per cent in acceptable condition.</p>
<p data-bbox="245 1115 488 1153">Ayrshire Roads Alliance</p> 	<p data-bbox="549 1088 1442 1256">East Ayrshire Council committed funding in 2013 to improve road condition, with a target to improve the proportion of roads in acceptable condition by one per cent a year. The capital investment programme 2013-23 allocated £24.3 million to roads maintenance over the ten-year period. Options put forward in the RAMP are based on this agreed budget.</p> <p data-bbox="549 1294 1465 1429">Before 2014, South Ayrshire Council had not identified capital funding for roads maintenance. The establishment of the Ayrshire Roads Alliance (Appendix) brought capital funding for roads maintenance in South Ayrshire more in line with the Ayrshire area. A target was set in 2016 to improve condition by one per cent per annum.</p>
<p data-bbox="304 1482 427 1520">Inverclyde</p> 	<p data-bbox="549 1491 1474 1727">Around 54 per cent of roads in Inverclyde are currently in acceptable condition, one of the worst in Scotland. The council approved a Roads Investment Strategy in 2013, which laid out a five-year capital investment programme of £29 million intended to improve road condition. There is no overall target for improving the proportion of roads in acceptable condition but the aim is to reduce the backlog of roads in red condition and maintain the level of amber condition roads. The condition of all classes of local roads in the council area improved in 2014/15.</p>
<p data-bbox="276 1818 456 1856">Perth & Kinross</p> 	<p data-bbox="549 1827 1461 2063">The current RAMP identified two options, maintaining the current £8.7 million annual spend on roads maintenance or increasing annual funding to £11 million to achieve steady state. However, the RAMP does not identify the impact of current funding levels on road condition. The council has prioritised A class roads, to improve those to the national average, while allowing other classes of road, already above the average, to deteriorate. The council committed additional funding of £2 million a year for next three years, based on an annual statement and options report approved in November 2015.</p>

Exhibit 10 continued

Council	Decision taken on roads maintenance
 <p>Scottish Borders</p> <p>Slow down</p> <p>Decline</p>	<p>The council committed funding from 2015 to slow down the rate of decline in the condition of roads. The RAMP identified a series of options and the council selected the option to invest an additional £67.3 million in roads maintenance over 20 years. This is projected to slow down the rate of decline and achieve a target of 55 per cent of roads in acceptable condition. Current condition is 54.5 per cent of roads in acceptable condition.</p>
 <p>South Lanarkshire</p> <p>Improve condition</p>	<p>The council has committed additional funding since 2008 to improve road condition. The council approved an investment plan with £126 million capital funding. It has a target of 72 per cent of roads in acceptable condition by 2019. The council has been resurfacing around 5-6 per cent of roads a year and achieved improvement from 62.5 per cent of roads in acceptable condition in 2008 to 66.2 per cent in 2015. The improvement was made mainly in category A and B roads.</p>
 <p>The Moray Council (secure budget savings)</p>	<p>The council currently has a significantly higher than average percentage of roads in acceptable condition. As part of a wide-ranging review in 2013, the council considered the impact of a planned reduction in road condition. The report identified that allowing condition to deteriorate to the Scottish average over five years would save approximately £5 million each year. A significant increase in budget would be needed thereafter to maintain that average condition. The council has reduced the annual roads maintenance budget by £1.4 million between 2013 and 2015.</p>

Source: Audit Scotland fieldwork

49. Transport Scotland has a number of budget headings for roads maintenance, including structural maintenance, and routine and winter maintenance. For routine and winter maintenance works, the requirement for roads maintenance is set out as service standards in contracts with the operating companies. For example, the requirement for salting and gritting treatment is triggered when temperatures fall below certain levels.

50. The structural repair budget is the main funding stream that contributes to improving the condition of the trunk road network. The operating companies submit proposals for structural maintenance schemes, which Transport Scotland prioritises to produce a three-year planned programme of works.

51. As noted in [paragraph 46](#), Transport Scotland spent £38 million on structural maintenance in 2014/15, 62 per cent of what the study calculated was necessary to achieve steady state condition. Transport Scotland's public facing RAMP, does

not outline the consequences that spending less than steady state will have on road condition. In line with councils, there is a need for Transport Scotland to be clearer on what road condition can be expected from given levels of spending.

More is spent on roads maintenance in England although only trunk roads are in significantly better condition

52. The Department for Transport publicly reports road condition in England as the proportion of roads that should be considered for maintenance.¹¹ This equates to category red condition roads in Scotland. In 2014/15 around:

- Four per cent of council A class roads, seven per cent of B and C class roads classified roads and 18 per cent of unclassified roads in England should have been considered for maintenance. The comparative figures for Scotland were five per cent, eight per cent and nine per cent respectively.
- Four per cent of motorways and trunk roads in England should have been considered for maintenance. In comparison, 13 per cent of motorways and trunk roads in Scotland were assessed as being in need for further investigation to determine if maintenance was required.

53. Roads maintenance spending is also higher in England. In 2014/15 for example, English councils spent £3.5 billion on roads maintenance, equivalent to around £12,238 per kilometre of local roads. Highways England spent £981 million on roads maintenance, equivalent to around £137,200 per kilometre of motorways and trunk roads.¹² This is two and a half times that spent per kilometre by Scottish councils on local roads maintenance, and nearly three times per kilometre more than Transport Scotland spent on trunk roads maintenance.

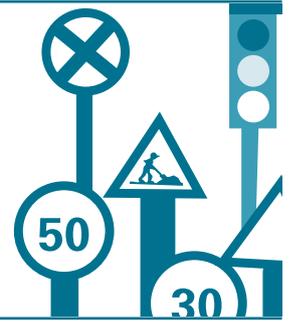
54. In December 2014, the Department for Transport published its Roads Investment Strategy, setting out plans to invest £15.2 billion on motorways and major roads in England between 2015/16 and 2019/20.¹³ Around £6 billion of this investment will be used to resurface 80 per cent of the strategic road network. In July 2015, the Chancellor of the Exchequer announced the creation of a new national roads fund, using Vehicle Excise Duty, to pay for this maintenance.

55. The Department for Transport also announced in December 2014 that £6 billion would be made available to English councils outside London for local roads maintenance between 2015/16 and 2020/21. In addition, it has agreed to provide other funding which are likely to result in increased local roads maintenance expenditure from 2014/15 onwards. In particular:

- The 2012 Autumn Statement included £75 million for Additional Highways Maintenance Funding Allocations after an underspend in 2013/14.
- In March 2014, £184 million was made available through the Weather Repair Fund for roads hit by weather damage in the winter of 2013/14.
- Local authorities were invited to bid for a share of a £250 million Pothole Fund to repair local roads, between 2016/17 and 2020/21.

Part 2

Improving the management of road maintenance



Key messages

- 1 The National Roads Maintenance Review (NRMR) has resulted in a range of actions, including the development of Roads Asset Management Plans and a common suite of performance indicators for roads maintenance activities. While much work has been done, further progress is needed. For example, existing performance indicators do not measure relative efficiencies between councils.
- 2 Roads authorities are changing the way they approach roads maintenance activities through better prioritising and targeting of roads maintenance, and using cheaper treatment options. This has helped available budgets go further but carries risks. Increasing the use of surface dressing might help to maintain the condition of the surface of the road network in the short term. But in the longer term it could lead to additional costs.
- 3 So far, the focus of roads authorities' collaborative working has been largely on specific areas of activity. Progress with introducing a shared services approach to roads maintenance, a central theme of the NRMR's findings, has been disappointingly slow. The Roads Collaboration Programme (RCP) is supporting councils to establish regional governance bodies to consider roads maintenance issues. But as yet, there is no clear plan of how this will translate into shared services at an operational level. Scottish ministers have made it clear that councils need to make more progress before trunk roads maintenance could be considered for inclusion in the regional groupings.

progress with introducing a shared services approach has been disappointingly slow

Road asset management plans are now in place although some still lack detail

56. Roads authorities need clear RAMPs for managing their roads to ensure they meet service standards and achieve value for money. A good quality roads asset management plan:

- describes the assets forming the road network and their condition
- assesses the future demand likely to be placed on the network

- clearly describes the level of service the council will provide to maintain the network
- provides financial information, including a long-term prediction of the cost of managing and operating the road network.

57. The 2011 audit report found that only around a third of councils had draft RAMPs. The 2013 audit report found that about half of councils had approved their RAMP and the remainder were in the process of doing so. The 2013 report also found that half of councils had information gaps in their RAMPs, including incomplete or unreliable asset inventory data, incomplete asset lifecycle plans and a lack of detailed long-term funding requirements.

58. To improve the consistency and quality of RAMPs, SCOTS commissioned an independent assessment of the state of councils' development and use of RAMPs as one of the NRMR action points. The consultant's report, in April 2016, found that all councils have RAMPs in place although some still lacked detail. In others, there was a need to update core data. The consultants also noted councils that were making the best use of RAMPs displayed some common characteristics, including:

- elected member recognition of the value of investing in the road network
- a lead official with responsibility for asset management
- an active programme of asset management improvement
- good asset data and capable users of RAMP software
- a high level of staff engagement with the SCOTS project to embed the use of RAMPs.

59. Transport Scotland first published a RAMP for the trunk road network in November 2007. It published an updated RAMP in January 2016. The January 2016 RAMP contains most of the good quality features outlined in [paragraph 58](#) above. It also sets out arrangements for monitoring the performance of the operating companies that Transport Scotland appoints to maintain the trunk road network. The RAMP does not provide information on planned roads maintenance spending beyond 2015/16, as the outcome of the 2015 spending review was not known at that time. Instead, it provides an indicative forward work plan, estimating work volumes up to 2024/25, based on the scenario that the budget for structural maintenance will remain at its current level.

More use is being made of performance information but further work is needed to allow comparisons of council efficiency

60. The 2011 audit report recommended that councils should adopt the suite of performance indicators that SCOTS was developing. This would allow councils to consistently measure the performance of roads maintenance activities. It also recommended that councils should make greater efforts to benchmark roads maintenance activities to drive out cost inefficiencies. The 2013 audit report found that councils were making more use of performance information but further work was needed to improve the quality and consistency of data to allow meaningful benchmarking to take place.

61. All councils have now adopted a common set of performance indicators developed between SCOTS and the Association of Public Service Excellence (APSE). The indicators cover various aspects of roads maintenance, including other asset groups such as lighting and footways. Key roads maintenance indicators within the set include:

- spend per kilometre of network
- overall road condition and by classification
- percentage of budget spent on each of planned, reactive and routine maintenance
- percentage of customer enquiries dealt with in target time
- percentage of major defects dealt with in target time
- percentage of the road network treated each year.

High-level roads maintenance condition and expenditure indicators have also been incorporated into the Local Government Benchmarking Framework, which is published annually.¹⁴

62. Although councils are now meeting as family groups to discuss performance information, the focus to date has mainly been on ensuring data is consistent. This has been useful in developing the indicator set but there is a need to move discussions on to identifying the underlying reasons for variations and sharing learning and good practice. Some examples of sharing good practice exist, for example policies for dealing with insurance claims and the APSE roads and lighting advisory group, but this is not yet established across core roads maintenance activities. At [paragraphs 67–69](#) we outline some of the factors that can influence spending and condition. Between 2011/12 and 2014/15, 11 authorities improved their road condition without increasing spending. It is important roads authorities improve their benchmarking to identify and adopt good practice.

63. The NRMR included an action for Transport Scotland to review the suite of SCOTS/APSE performance indicators to determine if it would be appropriate to adopt them, and allow direct benchmarking against councils. Transport Scotland noted that its performance management system included performance indicators that enable comparison and benchmarking between its trunk road maintenance operating companies. It recognised the usefulness of being able to compare performance with councils. But it considered that, owing to the different levels of service between trunk and local roads, many of the aspects of performance it measures were not directly comparable with the SCOTS/APSE set of performance indicators. This means it is still difficult to compare the relative efficiencies between councils and the trunk road operating companies.

64. The SCOTS/APSE indicators do not easily allow for a meaningful evaluation of the efficiency of roads maintenance activities. For example, none of the indicators covers the unit cost per metre of structural maintenance carried out. One NRMR action was to develop a consistent unit cost benchmarking methodology across

all roads authorities. In response, councils were asked to participate in a pricing exercise for a typical standard carriageway maintenance scheme. This identified several issues including how councils were handling:

- the apportionment of overheads
- differences between trading and non-trading organisations
- the profit element within costings.

65. SCOTS also considers that benchmarking is more difficult because there are now few discrete roads departments across Scotland as a result of council reorganisations over the last five years. It considers from the work done to date that there is a need to understand better the factors which contribute to the wide variation in roads maintenance unit costs of across Scotland. SCOTS is now working with the University of Leeds and Measure2improve to explore an alternative methodology for assessing and comparing councils' road maintenance efficiency and the potential for improvement.

Roads authorities are changing how they manage roads maintenance but there are risks attached

66. It is difficult to establish a clear link between changes in councils' spending on maintenance and changes in road condition. [Exhibit 2 \(page 14\)](#) and [Exhibit 7 \(page 21\)](#) noted wide variation among councils in their roads condition and the amount they spend on roads maintenance. [Exhibit 11 \(page 32\)](#) notes the difficulty in establishing a link and shows that between 2011/12 and 2014/15:

- seven councils increased their roads maintenance spending and the proportion of roads in acceptable condition increased
- eight councils reduced their roads maintenance spending and the proportion of roads in acceptable condition declined
- in six councils the roads condition declined, despite spending more on maintenance
- in 11 councils the roads condition improved, despite spending less on maintenance.

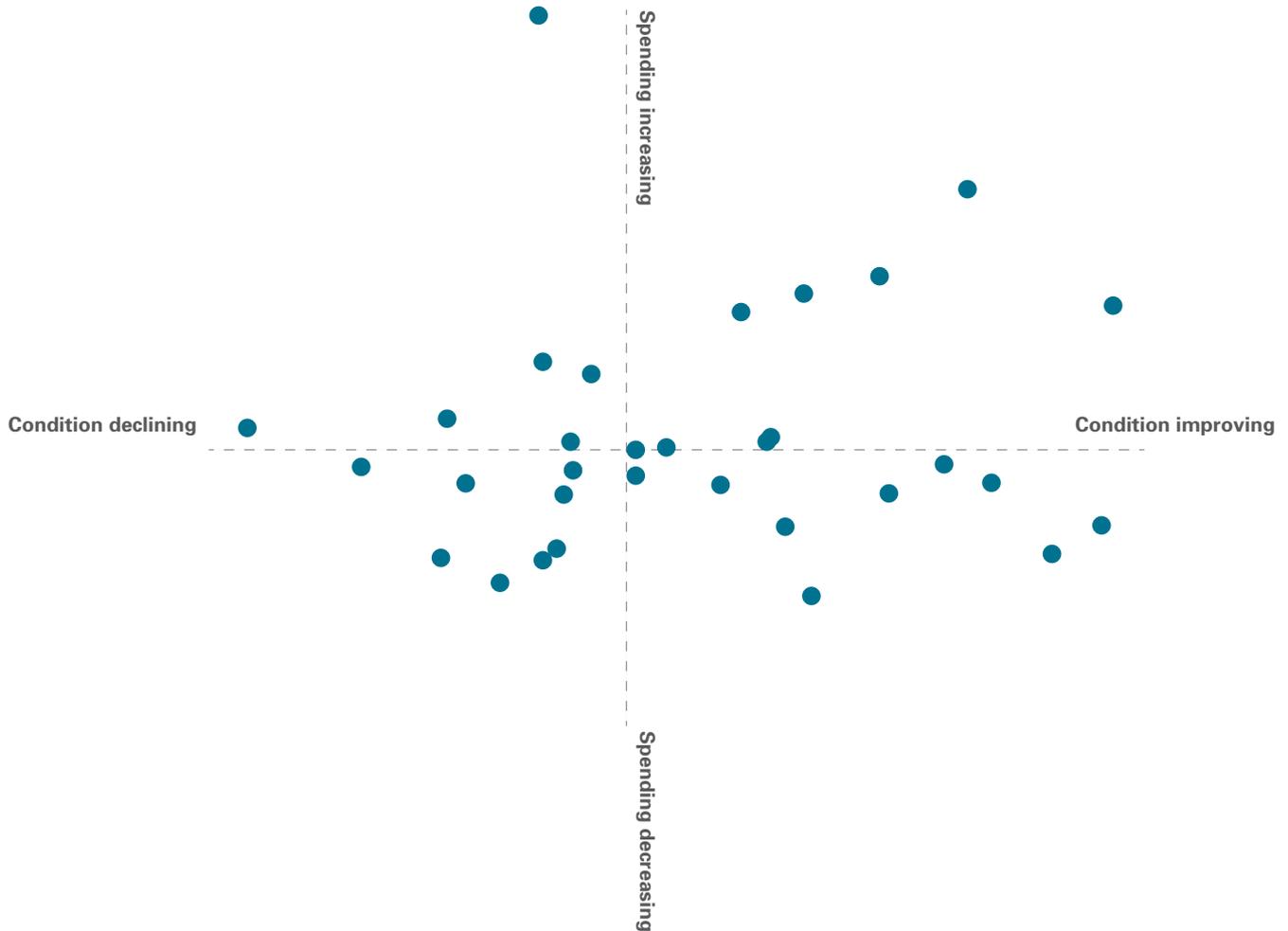
67. How road expenditure is incurred, where and on what, may have a greater or lesser effect on road condition. For example, depending on the scale of deterioration, roads engineers might decide that one section of road needed less expensive surface dressing while another section required more expensive reconstruction. Both road sections would be returned to an acceptable condition but at greatly different cost and resulting lifespan. Other factors influencing the relationship between spending and condition include:

- The nature of the road network. For example, depending on the distance from the roads maintenance depot, some road maintenance activities might require extra travel time and costs.
- Greater traffic volumes in some council areas may mean some roads need maintained more often.

Exhibit 11

Change in councils' roads maintenance spending from 2011/12 to 2014/15

There is significant variation in the change in roads maintenance spending across councils.



Source: SCOTS

- Compared to 2009/10, recent winters have not been as challenging to roads authorities. However, localised rainfall and the resultant flooding can damage roads and take money from a budget that could otherwise be spent on structural maintenance that would improve the condition of roads.
- Owing to the way councils calculate road condition using a two-year rolling average of survey results, there is likely to be a time lag between a decision to increase or reduce roads maintenance spending and how this affects reported road condition.
- Historic patterns of investment may impact on what level of spending and types of treatment are now required to maintain or improve road condition. For example, a council that has previously invested heavily in roads maintenance is more likely to be able to maintain road condition at lower cost than a council that has not historically invested in its roads.

- Some councils may focus more on maintenance activities that make greatest contribution to improved road condition. For example, unless councils actively use RAMPs to improve road condition, there is a risk that maintenance work is targeted at short-term solutions, such as filling potholes, rather than a planned programme of works.

68. There is evidence that councils and Transport Scotland are changing the way they manage roads maintenance. To some extent this has been stimulated by actions resulting from the NRM. Public sector budgetary constraints have also played a part. For example:

- SCOTS is encouraging councils to use asset management hierarchies to prioritise roads of greater strategic importance and intervene earlier when roads begin to deteriorate, rather than treating those in the worst condition. Transport Scotland is also using asset management hierarchies to prioritise trunk roads maintenance where it is of most benefit. These are based on a scoring methodology which evaluates the function of a route based on its economic, social, and integrated transport connections.
- The introduction of RAMPs and greater use of modelling has led several councils to modify how they carry out planned maintenance by paying more attention to long-term costs. For example, Aberdeenshire Council, City of Edinburgh Council, Dumfries and Galloway Council and Glasgow City Council have developed preventative road maintenance strategies aimed at minimising long-term cost by applying lifecycle costing techniques.
- There are moves to adopt lean management techniques as a systematic process for improving efficiency.¹⁵ Dumfries and Galloway Council and Aberdeenshire Council are now carrying out lean management projects, looking at aspects of planning and making repairs. It is too early to say what the results will be but early indications from the Dumfries and Galloway Council pilot suggest that efficiencies of ten per cent may be achievable.
- Roads authorities are focusing savings on activities which contribute least to road condition. For example, Perth and Kinross Council plans to save £280,000 during 2016/17 by reducing the frequency of certain roads maintenance activities such as road sign maintenance and verge and ditch clearing. Councils consider it is more difficult to find savings from structural maintenance work, which have the greatest impact on improving road condition. This is because the main element of cost is the purchase of materials which is largely outside their control.

69. These approaches are helping to target roads maintenance activities and make available budgets go further, but carry risks. For example, prioritising roads which are of greatest strategic importance may mean that the condition of less important roads will deteriorate over time. Concentrating maintenance works on roads that are beginning to deteriorate may also mean that roads already in poor condition will get worse.

70. Roads authorities are also changing how they treat road deterioration. For example, road condition in the Aberdeen City Council area improved from 68 per cent in acceptable condition in 2011/12 to 74 per cent in 2014/15. The council

reduced its roads maintenance expenditure from £6,287 per kilometre to £3,430 per kilometre (45 per cent) over the same period. It considers this has been achieved through a combination of:

- targeting A class roads which are in the worst condition using surface treatments with limited deeper patching
- making more use of surface dressing as an alternative to reconstruction work in appropriate urban locations
- a more efficient approach to pothole filling, including using dedicated response teams along with a better quality material
- more innovative practices, such as the use of thinner treatments and how cracks are treated
- not undertaking any major full reconstruction work in the last four years.

71. While surface dressing can be effective at halting deterioration, it can be more expensive in the long term than reconstruction work. Surface dressing has a life span of between ten to 15 years dependent on traffic volume, compared to 20 to 40 years for reconstruction work. Councils consider that there are times when surface dressing represents better value for money than reconstruction. But they also recognise that making more use of surface dressing could also be hiding the true condition of local roads. This is because their road condition surveys do not always pick up the full extent of failures in the structural integrity of lower road layers.

72. As a result of budgetary constraints, Transport Scotland is also focusing on maintaining the condition and safety of trunk roads through resurfacing, as an alternative to more costly strengthening or reconstruction options. It considers this is having an impact on the structural integrity of some motorways built in the 1970s and which are now approaching the end of their useful lives. These roads are not unserviceable but need to be closely monitored to identify the best timing to strengthen or reconstruct them.

73. Similarly, Perth and Kinross Council has decided recently to change how it deals with potholes by repairing them only when they reach a depth of 60mm, compared to the previous depth of 40mm. It expects this to generate savings of £120,000 in 2016/17. But it recognises that the changed approach could accelerate the decline in road condition and result in higher repair costs in the long term.

74. Perth and Kinross Council's decision to reduce its roads maintenance budget was taken against a backdrop of it identifying the need to save £12 million from its overall annual revenue budget. As part of its 2016/17 budget considerations, the council undertook a web-based consultation exercise between December 2015 and January 2016 to seek the public's and staff's views on which service budgets should be maintained or reduced. The three service areas where respondents were most in favour of maintaining budgets were children and families social work, services for older people and roads maintenance. The council recognised that a reduced roads maintenance budget could result in more customer complaints and give a poor visual impression of the council area. But it felt that budget reductions were necessary in order to achieve the overall savings amount.

75. In May 2015, Scottish Ministers announced a review of the office and functions of the Scottish Road Works Commissioner (SRWC). The SRWC's role is to improve the planning, coordination and quality of roads works throughout Scotland. The SRWC also monitors the performance of, and promotes good practice across, both utility companies and roads authorities. One of the issues the review is considering is the guarantee period for road reinstatements after the completion of utility works. Currently, utility companies are required to guarantee the quality of road reinstatements for two years after the completion of utility works, or three years for a deep excavation. Councils have informed the current review that they would prefer a longer guarantee period to fit with a longer-term asset management approach. The review is due to report later in 2016.

The Scottish Roads Research Board has been established to promote greater innovation in roads maintenance

76. In response to the NRMR, Transport Scotland, SCOTS and the SRWC set up the Scottish Roads Research Board (SRRB) in 2011. SCOTS and Transport Scotland jointly fund the SRRB which has an annual budget of around £400,000 to fund research projects. Its main objectives are to promote and deliver innovation and share new products, techniques and knowledge across Scotland's road sector.

77. To date, research projects coordinated through the SRRB have been completed in a number of areas including:

- the use of new types of materials, such as bitumen as a binder for asphalt and thermoplastic road markings
- photo-luminescent technology
- fabric reinforcement to surface dressing
- tourist signs
- climate change adaptation.

78. The SRRB disseminates all project reports and other relevant information to the roads community via its website, in the form of technical reports, advice notes and other guidance. However, it does not provide a coordinated role for research activity. Roads authorities continue to trial materials and techniques on an individual basis which risks duplication of effort and cost. While there are networks for sharing the outputs of these trials, for example through SCOTS working groups and the Transport Scotland Pavement Forum, this is not yet being centrally coordinated to ensure roads authorities share good practice.

79. The SRWC and SCOTS are also taking forward research projects under the auspices of the SRRB. For example, the SRWC is leading on research into joint repair techniques, in response to survey findings indicating the poor quality of repairs by utility companies and others. SCOTS is leading on producing guidance on how to achieve best value in selecting materials and techniques for repairing potholes.

Staff reductions are adding to the challenges for roads maintenance

80. Roads authorities are increasingly concerned about the potential effect of staff reductions arising from budgetary constraints on future roads maintenance activities. In particular, they are concerned at the loss of technical and commercial skills and expertise, the presence of an ageing workforce and how they can attract and train new staff. There is no central record of the scale of roads maintenance staff reductions over the last few years. But of the approximately 5,000 council staff currently engaged in roads activities, 40 per cent are aged over 50 years and only 13 per cent are aged under 30 years.

81. Councils are responding by training staff through modern apprenticeships and graduate programmes:

- Twelve councils are employing modern apprentices, with 61 apprentices currently in training.
- Fourteen councils have graduate programmes in place, with a total of 47 graduates currently in training.

82. The Roads Collaboration Programme (RCP) ([paragraphs 90–93](#)) is also working to address staffing issues. For example, it is:

- Developing a ‘futures leaders programme’ to bring together opportunities for leader exchange, coaching and mentoring and technical training. The RCP expects to be able to roll out the programme from autumn 2016.
- Working with Skills Development Scotland and the Construction Industry Training Board to attract and recruit young people at all levels into the roads sector. This will include improved secondary school career advice to supplement that already provided by professional civil engineering institutions.
- Working with academia to better match industry needs with college and university curricula, and with the roads sector to create more attractive career paths within the public road service.

Progress in delivering a shared service approach to roads maintenance has been disappointingly slow

83. Before finalising its report, the steering group overseeing the NRM identified the need for a more detailed assessment of the ‘optimum arrangements for the management and maintenance of roads in Scotland’ (known as Option 30). A separate Option 30 report, published in June 2012, concluded that current arrangements could be improved on and that all councils should explore sharing services in the short term.¹⁶

84. The report also considered that the benefits from setting up a new roads authority, or authorities, were likely to take longer to achieve. It stated that if the benefits of shared services were not realised as anticipated in the short term, work on exploring structural change should be accelerated. The report did not define 'short term' but we would regard it as normally encompassing a two to three-year period.

The focus of collaborative working has so far largely been on specific areas of activity

85. Roads authorities can demonstrate many examples of collaboration, both between themselves and with other partners ([Exhibit 12, page 38](#)). Particular themes include:

- shared procurement – for example procuring minor works contracts, weather forecasting services, road condition surveys and materials
- the delivery of specific maintenance activities – for example surface dressing, winter gritting and sharing of specialist equipment
- joint staff training – for example health and safety training and using equipment
- joint improvement projects – for example the SCOTS RAMP project.

86. So far, the focus of roads authorities' collaborative working has largely been on specific areas of activity rather than wider reform to the way roads maintenance services are designed. There are currently only two shared service arrangements in place between councils – Tayside Contracts and the Ayrshire Roads Alliance.

87. Tayside Contracts is a well established multi-council consortium established between Angus, Dundee and Perth and Kinross councils in 1996 through a joint committee. It provides services that include roads maintenance, fleet maintenance and management, winter maintenance, catering and facilities management services. A range of individual collaborative arrangements are in place within the consortium and not all councils are involved in all service areas. Reported benefits include:

- economies of scale enable the delivery of a wide range of services at competitive rates
- delivery of a full range of services from minor potholes repairs to major contracts, possible through the retention of specialist skills and vehicles
- a single management structure which promotes a focus on front-line service delivery
- flexibility to move resources across council areas
- scale of operations has enabled a focus on innovation, such as a cold road paving system (known as TAYSET) and a reed-based system for the treatment of gully waste.

Exhibit 12

Examples of roads authorities' collaborative working

Roads authorities collaborate on a wide range of activities and with a wide range of partners.

Collaborative working examples



Collaboration between councils

There are many examples of councils working together on developing joint procedures, joint procurement, sharing specialist staffing and the delivery of specific road maintenance treatments.



Collaboration between roads authorities and industry

Councils, Regional Transport Partnerships and the timber industry are funding joint Timber Transport Officer posts to improve how to transport timber and to minimise its impact on roads.

The Transport Scotland Pavement Forum brings industry representatives and roads officers to work together on approaches and solutions for roads maintenance.



Collaboration between councils and trunk road operating companies

Councils often collaborate with trunk road operating companies in rural areas to deliver roads maintenance services. For example, Scottish Borders Council provides winter maintenance services on behalf of AMEY (responsible for delivering the South East trunk roads maintenance contract) on trunk roads in the Scottish Borders.

Similarly, BEAR (responsible for delivering the North West trunk roads maintenance contract) and Stirling, Highland, and Argyll and Bute councils maintain joint depots and share salt stocks. Argyll and Bute Council also delivers emergency response, winter services and Category 1 repairs on behalf of BEAR.

Source: Audit Scotland fieldwork

88. East Ayrshire Council and South Ayrshire Council established the Ayrshire Roads Alliance in April 2014. The councils decided to agree a fully shared service on the basis of a detailed business case and options appraisal process that considered a range of service models. The [Appendix](#) provides more details on the shared service, its anticipated benefits and progress to date.

89. The experience of establishing the Ayrshire Roads Alliance has highlighted several lessons and challenges for other potential shared service arrangements. Similar to other Audit Scotland reports commenting on what good partnership working looks like, the Ayrshire Roads Alliance has identified that the main lessons for others include the importance of:

- agreeing a lead authority (in this case East Ayrshire Council) early in the process to maintain progress
- the early involvement of elected members to ensure they have influence and are kept informed of developments
- setting out well defined governance arrangements, such as oversight, roles and responsibilities, which maintain clear elected member involvement

- clarifying the split between strategic and operational functions early in the process
- the need to keep affected staff informed and involved throughout
- having a good baseline understanding of the existing services and where the shared arrangements can have most impact.

Regional governance bodies are being established but there is no clear plan of how this will translate into shared services at an operational level

90. The Roads Collaboration Programme (RCP) was launched in November 2013 to explore opportunities for further collaboration between roads authorities. A Strategic Action Group, which the Minister for Transport and Islands and COSLA's spokesperson for Development, Economy and Sustainability takes turn to chair, provides political oversight to the RCP. It also includes representatives from SCOTS, Transport Scotland, the Improvement Service and the Society of Local Authority Chief Executives. In addition, a Roads Collaboration Board, with a similar wide-ranging membership, oversees the activities of the RCP. The board replaces the Shared Capacity and Shared Services Improvement Board established as a result of the NRMR to take forward various actions relating to shared services, including Option 30.

91. A key part of the RCP's work is the Governance First project. This aims to establish more formal governance arrangements for roads authorities looking to deliver collaborative activity or shared services in clusters or across regions. Within Governance First, creating a formalised governing body is the fundamental first step to developing shared services, and needs to happen before designing how the shared service will operate.

92. The constituent members of the Roads Collaboration Board are all strongly behind the core principle of Governance First, that sharing should be the default position to delivering roads services. Through working with councils, the RCP has identified various benefits to shared services, including:

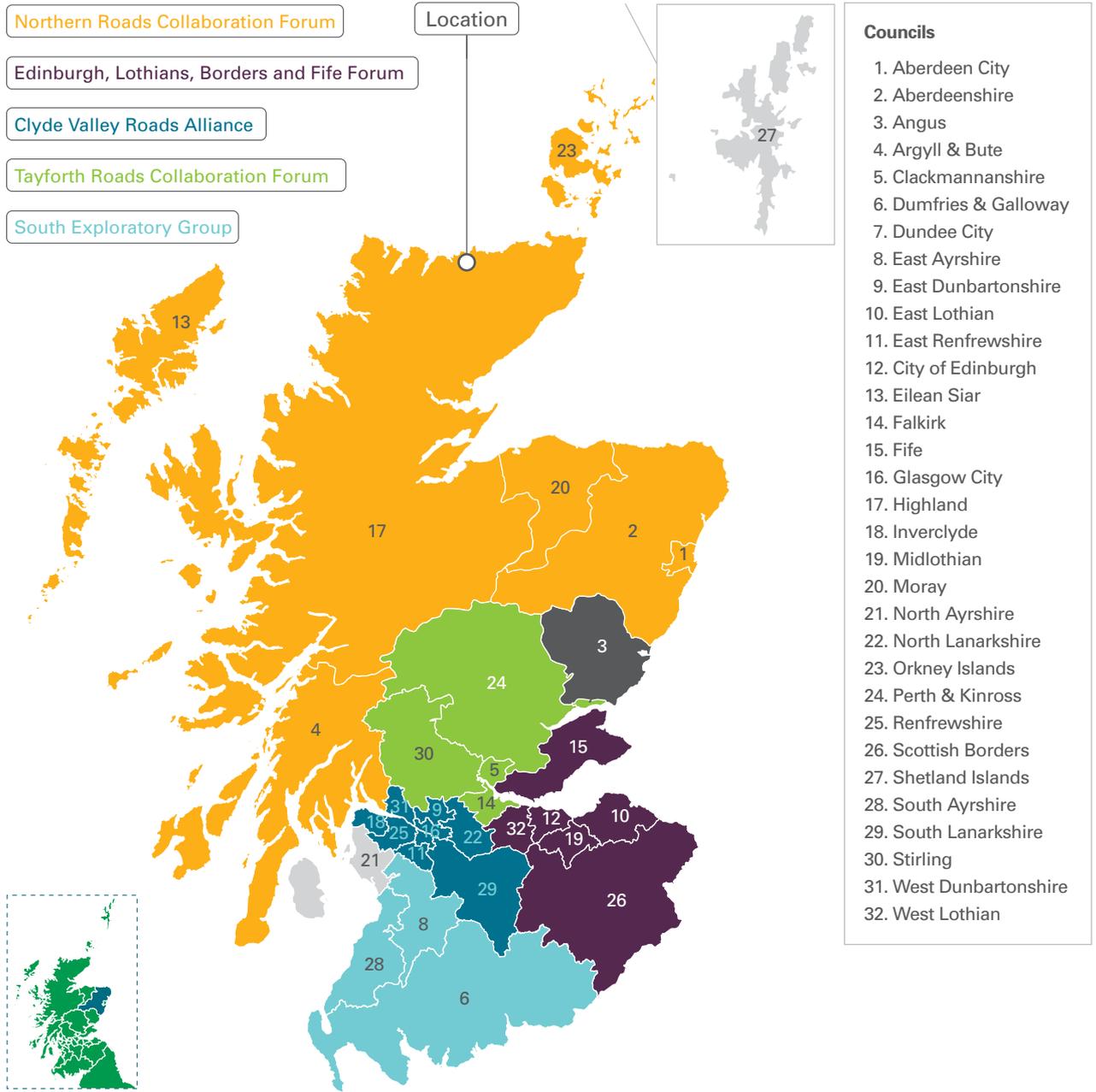
- Efficiency of size through having a larger available budget, greater purchasing power, a stronger strategic function and streamlined back-office functions such as administration.
- Being stronger organisationally through having a larger and more mobile workforce. A shared service would be less dependent on individuals, and a bigger volume of work would enable it to retain skilled staff more readily and offer enhanced training opportunities.

93. The RCP has been working with councils to establish five regional groups to explore opportunities for further collaboration (**Exhibit 13, page 40**). The RCP has provided support through leading discussions at meetings, providing guidance on different models for collaboration and commissioning legal advice for councils on the implications of these different models. Regional joint committees are being established in some areas. Regional Transport Partnerships, the statutory bodies responsible for transport planning at a regional level, present another option. Roads authorities need to determine the governance arrangements that best suit their needs, but it is important that any potential for duplication is avoided.

Exhibit 13

Regional collaboration through the Roads Collaboration Programme

Councils are now participating in regional partnerships to consider how they can provide roads maintenance services in new ways.



Notes:

1. Angus Council is currently involved in two groupings: the Northern Roads Collaboration Programme and the Tayforth Roads Collaboration Forum.
2. North Ayrshire Council has still to decide whether it wishes to be part of the formal groupings. Shetland Islands Council is monitoring progress of the Northern Forum having decided in 2015 not to be part of a formal group at this time.

Source: Roads Collaboration Programme

94. COSLA agreed at its Leaders Group meeting in November 2015 to endorse the proposals for regional working. In particular, Leaders agreed that the optimum model for the future management and maintenance of the Scottish road network is via regional bodies covering the work of all existing roads authorities, that is the 32 councils and Transport Scotland. SCOTS has also endorsed the proposals.

95. Councils are responsible for agreeing how best to establish regional bodies. This has led to a variety of different approaches and has contributed to the slow progress being made. Some of the challenges encountered include:

- Uncertainty on whether the trunk road network would be included in the development of collaboration proposals. Scottish ministers did not clarify their position on this until November 2015 ([paragraph 100](#)).
- Concern that the service areas to be included in the shared service arrangement are small scale and unlikely to deliver the service improvement or organisational benefits required.
- Fewer perceived benefits for larger councils, or for those who have previously been investing in their road network.
- Fear of bigger councils dominating.
- Elected members' concerns about the extent of the powers for joint committees and how this impacts on local financial control. So far, proposals for the powers for joint committees do not extend to the control of budgets.

96. As at March 2016, the current status of each regional group was:

- **Northern Roads Collaboration Forum** – Elected members have met twice and have appointed a councillor from Highland Council to chair the forum. Aberdeenshire Council is preparing a minute of agreement which, once the other councils approve it, will form the basis of a joint committee. The formal committee's first meeting is expected in autumn 2016.
- **Edinburgh, Lothians, Borders and Fife Forum** – All councils have now approved the setting up of a shadow joint committee. The committee first met at the end of March 2016. City of Edinburgh Council legal officers are preparing a draft Memorandum of Agreement for consideration at the next Forum meeting, prior to it being circulated to constituent councils for approval.
- **Clyde Valley Roads Alliance** – An officer subgroup has been established and is to develop proposals for an integrated service by summer 2016. Elected members have yet to be closely involved in the arrangements and member councils recognise that faster progress is needed.
- **Tayforth Roads Collaboration Forum** – There will be overarching collaboration across the Tayforth area, but operational collaboration will be split. This will be between the three Tayside Contracts councils (Angus, Dundee and Perth and Kinross) and the Forth Valley councils (Falkirk, Stirling, Clackmannanshire) plus potentially West Lothian and East Dunbartonshire. This is to allow for a review of the Tayside Contracts arrangements to be completed.

- **South Exploratory Group** – This is still very much at an exploratory stage. Discussions are continuing between officers but formal arrangements have still to be established and potential shared services to be confirmed. Collaboration with Cumbria County Council is also being explored.

97. Based on the progress of establishing regional governance bodies, it is clear that the second phase of Governance First, which covers designing how shared services will operate, is still some way off. A key issue with the rate of progress is the low profile that roads services have with elected members and senior managers due to them being now largely subsumed within larger council departments. As a result, the lead officer for roads maintenance is often at a lower management tier level than before and lacks delegated authority for taking shared services forward. Similarly, the extent of elected member involvement and buy-in to the shared service concept has been mixed.

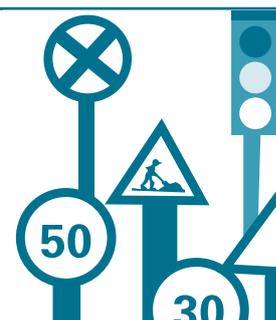
98. Councils may also be able to learn from others about how to develop shared services in the future. For example, Transport for London and London borough councils formed the London Highways Alliance in 2013 as a joint initiative to deliver all aspects of roads services, including maintenance. Roads services are provided through four geographic contracts that cover eight years. Transport for London and London borough councils expect to save up to £450 million over the life of these contracts, with annual savings equivalent to around ten per cent of current spending on roads services. They expect to achieve this through measures such as collaborative procurement, sharing expertise and innovative construction techniques.

Scottish ministers want to see more progress being made before trunk roads could be considered for inclusion in regional groupings

99. A key question for roads authorities is the extent to which the shared service operational model should include trunk roads. Transport Scotland has yet to decide whether to enter into regional arrangements. It considers that more competitive procurement and pricing through its trunk road operating contracts has generated efficiency savings of around £42 million over the three years 2012/13 to 2014/15.

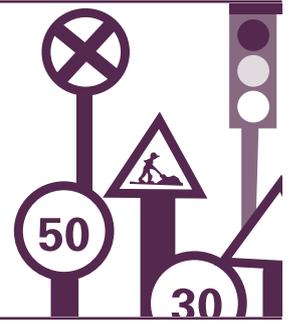
100. Two of the trunk road operating contracts are due for renewal in April 2018 (North West and South West). Another two are due for renewal in August 2020 (North East and South East), although all four contain options to extend contract lengths. This provides Transport Scotland with flexibility over its future approach to trunk road maintenance, including its inclusion in regional groupings. Scottish ministers outlined to COSLA in November 2015 that, before trunk roads maintenance could be considered for inclusion in any future regional groupings, councils need to make more progress. In particular, councils need to be able to demonstrate that including trunk roads within any future regional groupings would lead to efficiency savings and other benefits.

Endnotes



- 1 The Strategic Action Group is jointly chaired by the Minister for Transport and the Islands and COSLA. It is tasked with overseeing the progress of the National Roads Maintenance Review.
- 2 The Office for National Statistics calculates road construction inflation by examining price increases in a variety of materials and activities associated with road construction. It is currently reviewing how it calculates road construction inflation and has stopped publishing updates of it. This report therefore uses GDP price deflators to calculate changes in roads maintenance expenditure in real terms.
- 3 **Scottish Government National Performance Framework** The Scottish Government considers that the road network contributes to the following outcomes: We live in a Scotland that is the most attractive place for doing business in Europe; We realise our full economic potential with more and better employment opportunities for our people; We live longer healthier lives; We have tackled the significant inequalities in Scottish society; We live our lives safe from crime, disorder and danger. We live in well-designed, sustainable places where we are able to access the services and amenities we need; We value and enjoy our built and natural environment and protect it and enhance it for future generations; We reduce the local and global environmental impact of our consumption and production; Our public services are high quality, continually improving, efficient and responsive to local people's needs.
- 4 <http://www.driving-test-success.com/causes-car-crash.htm>
- 5 **Reported Road Casualties Scotland 2014**, Scottish Government, October 2015.
- 6 **Scottish Household Survey 2014**, Scottish Government, October 2015. The survey uses a main sample base of over 10,000 respondents covering all council areas.
- 7 **Scottish Household Survey 2014**, Scottish Government, October 2015.
- 8 **An Overview of Local Government in Scotland 2016**, Accounts Commission, March 2016.
- 9 **An Overview of Local Government in Scotland 2016**, Accounts Commission, March 2016.
- 10 Council spend figures come from the SCOTs/APSE data returns and include both revenue and capital expenditure.
- 11 **Road Conditions in England 2015**, Department for Transport, March 2016.
- 12 **Maintenance expenditure by road type**, Department for Transport, March 2016.
- 13 **Roads Investment Strategy for the 2015/16-2019/20 Roads Period**, Department for Transport, December 2014.
- 14 The Local Government Benchmarking Framework (LGBF) brings together performance information from all 32 councils covering a wide range of services. The Improvement Service maintains the LGBF to support councils to improve their services by working and learning together.
- 15 Lean management is a long-term approach that systematically seeks to achieve small, incremental changes in processes in order to improve an organisation's overall efficiency and quality.
- 16 Option 30 Report, Consideration of optimal delivery structures for roads management and maintenance, June 2012.

Appendix



The Ayrshire Roads Alliance

The Ayrshire Roads Alliance (ARA) was established in April 2014 as a shared roads service between East and South Ayrshire councils. All three Ayrshire councils were involved in developing it following the establishment of the Ayrshire Shared Services Joint Committee in March 2012. In June 2013 North Ayrshire Council decided not to join the ARA after the business case was prepared. East and South Ayrshire councils consider that the joint committee arrangement provides an established governance framework, and a good forum for discussing the development of the shared service, and joint decision-making.

The Ayrshire Roads Alliance has been set up as a shared strategic function, including a single head of service. The two participant councils remain the statutory roads authorities. The ARA acts as a single operational service across the area. All South Ayrshire Council roads and transportation staff transferred (under TUPE arrangements) to East Ayrshire Council. The Ayrshire Roads Alliance considers this provides a more flexible and mobile workforce that can be used more effectively across the combined road network.

To maintain responsiveness to each council's priorities, roads maintenance and improvement work is currently planned separately through two separate RAMPs. Each council also retains responsibility for its roads maintenance budget. The Ayrshire Roads Alliance sees this as a key factor in addressing elected member concerns about the potential for loss of local control and accountability in a shared service. With the exception of a small shared strategic budget, spending is ring-fenced for activity within each of the geographic areas. The total budget for 2014/15 was £24.4 million, with £16.7 million coming from East Ayrshire Council and £8.1 million from South Ayrshire Council.

The business case identifies developing a mobile, integrated and responsive workforce as a core aim of the shared service. It sets a savings target of £8.6 million over the first ten years of the service (approximately six per cent of current revenue spending). Savings over the first few years are expected to be generated mainly through a reduction in strategic staff. There are currently no plans to reduce the level of operational staffing, although the Alliance has identified the opportunity to reduce its combined winter maintenance fleet as a result of more efficient gritting routes across the combined area.

Historically, the two councils' spending on roads maintenance has differed significantly. The Ayrshire Roads Alliance considers that joint scrutiny of plans and budgets at the shared services joint committee has allowed elected members to become more aware of these differences and the potential impact of different levels of investment. Since the Alliance was established, South Ayrshire Council has decided to allocate additional capital investment to roads maintenance, investing an additional £10 million over five years.

Maintaining Scotland's roads

A follow-up report

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