The Audit Commission is a public corporation set up in 1983 to protect the public purse.

The Commission appoints auditors to councils, NHS bodies (excluding NHS Foundation trusts), police authorities and other local public services in England, and oversees their work. The auditors we appoint are either Audit Commission employees (our in-house Audit Practice) or one of the private audit firms. Our Audit Practice also audits NHS foundation trusts under separate arrangements.

We also help public bodies manage the financial challenges they face by providing authoritative, unbiased, evidence-based analysis and advice.
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Current pressures are pushing councils towards a ‘worst-first’ strategy for maintaining roads

Thinking about the road as an asset can reduce whole-life costs

Using asset information well can help councils plan budgets and maintenance programmes

Leadership can ensure transparent decisions are made, and the public is engaged

Conclusion

Chapter 5   Challenging delivery

Many councils lack the information needed to challenge the costs of their maintenance works

Councils can get a better deal by incentivising performance throughout their contracts

Councils have changed procurement models to find efficiencies

Collaborative working can reduce procurement and delivery costs for councils

Councils will need to assess standards in light of tighter finances

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Summary

Councils have slightly improved the condition of English roads over the last ten years, while they have seen no real increase in purchasing power as a result of rising cost inflation.

- 152 highway authorities maintained 98 per cent of the country’s roads at a cost of £2.3 billion in 2009/10.
- Overall spending levels encompass wide local variation.
- This variation is not explained by road condition, size of the network or user perceptions.
- Spending has increased in line with road construction inflation, but since this exceeds general price inflation, the cost of maintaining roads is now 50 per cent higher than ten years ago.
- Road condition has improved steadily over the last decade, levelling off recently, in part because of severe winters.
- Improvements have not been shared equally across the network. Currently 8 per cent of C roads are in need of repair compared with only 3 per cent of A roads.

Resources will reduce at the same time as councils face increasing traffic, high public expectations, bad weather and substantial cost inflation.

- Road traffic is expected to increase by over 30 per cent by 2025.
- Public demand for high-quality roads and responsive maintenance is growing.
- At the same time, councils are faced with less money for the period 2011/12 to 2014/15:
  - a 26 per cent fall in central government revenue funding for local government; and
  - a 16 per cent fall in capital allocations through the Local Transport Plan (LTP) programme.
- Councils are implementing these reductions in different ways: highways departments face cuts of between 10 and 40 per cent.
- Planned maintenance budgets compete with other demands arising from poor road condition. Councils also have to set aside funds to deal with:
  - damage by utilities works – nearly £50 million every year;
  - road user compensation claims – while councils have improved their repudiation rates in recent years, this comes at the cost of more rigorous inspection; and
  - the effects of extreme weather.

Councils need to reconcile short-term problems and long-term priorities. Do they deal with ‘worst-first’ or minimise ‘whole-life costs’?

- Councils have two options for prioritising spend on road maintenance:
  - the ‘worst-first’ – reconstructing stretches of road that have ‘failed’ rather than just patching them; or
  - minimising ‘whole-life costs’ – focusing maintenance to prevent roads reaching the failure point.
In practice, most councils adopt elements of both in their maintenance strategy.

Residents’ concerns may push councils towards a worst-first strategy. But giving a higher priority to the worst roads will limit funds for preventive work on roads which are at the optimum point for repair.

The importance of making the right choice is key to improving value for money in road maintenance. One council estimates that it costs almost four times as much to reconstruct a typical road that has failed than to maintain it following a preventive strategy.

There is a marked difference in the approach adopted by councils. Spending on unplanned maintenance in our fieldwork sites varies between 14 and 50 per cent of councils’ road maintenance budgets.

Better procurement and collaboration will deliver savings for many councils.

- Only 40 per cent of survey respondents benchmark their road maintenance prices, and few evaluate contracts regularly.
- Wide variation in the prices of road maintenance materials and services cannot be explained by volume or geography. One council paid £3.50 for emptying each of 13,000 gullies a year, whereas another paid £9.70.
- Councils have extracted more value per pound spent on road maintenance by:
  - building ‘pain and gain’ targets into contracts;
  - moving to longer and larger contracts; and
  - procuring collaboratively to yield savings from quicker processes, lower bidding and set-up costs, greater economies of scale and faster implementation of innovation.
- Collaboration has yielded significant benefits. The Midlands Highway Alliance estimates it has delivered £5.1 million savings for councils and £7.8 million for the Highways Agency in the first three years since it was set up in 2007. The Alliance estimates it will save a further £14 million between 2010 and 2014.
- Ten East of England authorities have formed an alliance to save £6m over five years, with £3.3 million from shared back office costs alone.
- But such examples are rare; few councils work or procure collaboratively, or make best use of price comparisons.
- There are barriers to collaboration, such as contract end dates and political differences – but these can and must be overcome if councils, rather than contractors, are to benefit from higher-value, longer-term contracts.
Recommendations

Councillors and senior managers should:
- be clear how they intend to respond to current pressures while minimising whole-life costs of local roads;
- ensure they set service standards – for example, road condition and response times – that they can afford;
- publicise and explain to the public their approach to road maintenance, and the implications of worst-first and preventive approaches;
- apply asset management principles when making investment decisions; and
- address the barriers to greater joint purchasing and collaboration with other councils.

Highways departments should:
- make better decisions by developing:
  - clear and focused asset management plans; and
  - a better inventory and other relevant data for different aspects of their road asset. They should also:
- improve cost-effectiveness by:
  - sharpening procurement through analysing cost variations;
  - collaborating with others to gain efficiencies in road maintenance;
  - working more closely with contractors to reduce costs and secure innovation;
  - being robust in defending road user compensation claims; and
  - working more closely with utility companies to reduce the number of utility openings and to improve reinstatements.

Professional bodies should:
- help councils determine the optimal balance between planned and unplanned maintenance for their local network.
# Introduction

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Background

1 Local roads play a critical role in the economic growth of an area through increased mobility for citizens and goods, and from building and maintaining infrastructure. The local road network also affects broader quality of life, not least providing access to local services.

2 This Audit Commission national report looks at how councils can maintain or improve their roads with less money. It focuses on road maintenance, which accounts for almost half of all highways-related spending. Its scope excludes footways, spending by Transport for London and some highway maintenance services – for example, bridge and winter maintenance.

3 Roads are councils' single biggest asset. Councils spent £2.3 billion on road maintenance in 2009/10. The debate around the condition of councils' road networks has intensified following the bad winter weather of the past three years. The media has reported high levels of public discontent with potholes, other road defects and the economic and social costs which result when local road condition deteriorates.

Structure of the report

4 This report is primarily aimed at councillors to help them review how they maintain their most valuable asset in the long term. Chief executives, finance directors and officers in highways departments may also find it useful in reviewing strategies, models of procurement and engaging with road users.

5 The report begins with an assessment of spending and road condition across England (Chapters 2 and 3). Chapter 4 discusses the strategies councils should consider to increase the value for money of their spending on roads. Chapter 5 offers practical suggestions for council officers to challenge the cost-effectiveness of the delivery of their road maintenance works.
Maintaining the local road network

Councils in England spend £2.3 billion a year on maintaining the condition of their local roads

Local roads vary in function and construction, and are maintained in different ways

Councils must support economic growth and respond to higher expectations and traffic growth
Councils spend considerable sums maintaining 98 per cent of the nation’s roads. Their asset is varied, old and they have to manage growing public demand for high quality roads.

**Councils in England spend £2.3 billion a year on maintaining the condition of their local roads**

6 Councils in England have a statutory duty to maintain over 380,000 kilometres of road, amounting to 98 per cent of the national road network.\(^1\) The remaining road network, largely motorways and major trunk roads, known as the strategic road network (SRN), is the responsibility of the Highways Agency.

7 Councils’ highway services account for over 3 per cent (£4.7 billion) of total local government spending. Road maintenance services, the subject of this report, represent 50 per cent of all spending on highway services (Table 1).\(^{ii}\) The road network is typically a council’s biggest asset in terms of balance sheet value.

<table>
<thead>
<tr>
<th>Item</th>
<th>Revenue (£ million)</th>
<th>Capital (£ million)</th>
<th>Total (£ million)</th>
<th>% of total (^{iii})</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road maintenance</td>
<td>1,267</td>
<td>1,070</td>
<td>2,337</td>
<td>50</td>
</tr>
<tr>
<td>Construction</td>
<td>–</td>
<td>772</td>
<td>772</td>
<td>17</td>
</tr>
<tr>
<td>Street lighting</td>
<td>478</td>
<td>81</td>
<td>559</td>
<td>12</td>
</tr>
<tr>
<td>Road safety</td>
<td>124</td>
<td>227</td>
<td>351</td>
<td>8</td>
</tr>
<tr>
<td>Bridges</td>
<td>55</td>
<td>205</td>
<td>260</td>
<td>6</td>
</tr>
<tr>
<td>Winter service</td>
<td>219</td>
<td>–</td>
<td>219</td>
<td>5</td>
</tr>
<tr>
<td>Planning &amp; strategy</td>
<td>167</td>
<td>–</td>
<td>167</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2,309</strong></td>
<td><strong>2,355</strong></td>
<td><strong>4,664</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Source: *Capital and Revenue Outturn Returns, Department for Communities and Local Government (DCLG) 2009/10*

\(^{i}\) Only upper-tier councils are responsible for managing local roads. They are known as ‘highway authorities’. This report refers to councils and highway authorities interchangeably, unless indicated otherwise.

\(^{ii}\) ‘Road maintenance spending’ refers to structural and routine spending on carriageways, excluding a) spending on bridges and other assets, and b) other forms of spending on roads (for example, winter maintenance or road safety spending). All spending figures relate to net current expenditure.

\(^{iii}\) Numbers may not add to 100 per cent due to rounding.
Local roads vary in function and construction, and are maintained in different ways

8 The local road network is made up of a hierarchy of road types. The standard classification for local roads covers four broad categories (Table 2). These road types vary in their size and function. Although minor roads make up the largest share of the national network, they carry only one-third of the network’s traffic.

Table 2: The local road network and its classifications

<table>
<thead>
<tr>
<th>Department for Transport (DfT) classification</th>
<th>Group</th>
<th>Description</th>
<th>Share of local network (%)</th>
<th>Share of local traffic (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A roads</td>
<td>Principal roads(^\text{ii})</td>
<td>Major roads to provide large-scale transport links within or between areas</td>
<td>10</td>
<td>47</td>
</tr>
<tr>
<td>B roads</td>
<td>Non-principal roads</td>
<td>Roads to connect different areas, and to feed traffic between A roads and smaller roads</td>
<td>7</td>
<td>11</td>
</tr>
<tr>
<td>Classified unnumbered – known as C roads</td>
<td>Non-principal roads</td>
<td>Smaller roads to connect unclassified roads with larger local roads</td>
<td>22</td>
<td>12</td>
</tr>
<tr>
<td>Unclassified – known as U roads</td>
<td>Unclassified roads</td>
<td>Local roads for local traffic</td>
<td>62</td>
<td>29</td>
</tr>
</tbody>
</table>

Source: Road lengths, expenditure and conditions statistics 2011, DfT, and Road traffic and speeds statistics 2011, DfT

9 Local roads also vary in their construction profile. Most roads in use today have been built over a long time, on varying geological bases and have different maintenance needs. Road maintenance activities can be broadly categorised as listed in Table 3 and this report focuses on the first two categories.

\(^\text{i}\) Numbers may not add to 100 per cent due to rounding.
\(^\text{ii}\) Principal roads also include some motorway spurs that are within councils’ local network.
Table 3: Road maintenance activities

<table>
<thead>
<tr>
<th>Service</th>
<th>Budget</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Routine maintenance</td>
<td>Revenue</td>
<td>Includes cleaning, minor repair, drainage, routine inspections and ad hoc/unplanned patching</td>
</tr>
<tr>
<td>Structural maintenance</td>
<td>Mainly capital, some revenue</td>
<td>Includes reconstruction, overlay, surface treatments, repair to drainage structures, and claims</td>
</tr>
<tr>
<td>Construction</td>
<td>Mainly capital, some revenue</td>
<td>Whole costs of new construction and improvement schemes, including ‘virtual’ detrunking costs</td>
</tr>
<tr>
<td>Winter maintenance</td>
<td>Revenue</td>
<td>Salting, forecasting, maintaining and operating equipment</td>
</tr>
</tbody>
</table>

Source: Audit Commission

Councils must support economic growth and respond to higher expectations and traffic growth

10 Councils must use their road maintenance spending to support the economic competitiveness of their area. Roads play a critical role in public service delivery and economic growth – both through increased mobility for citizens, goods and services, and through building and maintaining infrastructure.

11 Councils also need to respond to growing public demand for a high-quality road network and a responsive road maintenance service. Road traffic is expected to increase by over 30 per cent by 2025. Council members report that highway concerns regularly top the list of local complaints. At the national level, road and pavement repairs were the second highest priority for improvement in local areas according to residents (Figure 1).

Road Transport Forecasts 2009: Results from the Department for Transport’s National Transport Model. The estimate is for all classes of road.
Figure 1: **Road and pavement repairs are a high priority for residents**

Activities for teenagers
Road and pavement repairs
The level of traffic congestion
The level of crime
Clean streets
Public transport
Affordable decent housing
Job prospects
Facilities for young children
Shopping facilities
Wage levels and local cost of living
Sports and leisure facilities
Community activities
Health services
Parks and open spaces
The level of pollution
Cultural facilities (e.g. libraries, museums)
Education provision
Access to nature
Other
Race relations

% of respondents who feel the service area needs improving

*Source: Place Survey 2008, DCLG*

12 But residents' perception of road condition is judged largely on the number of potholes and patchwork appearance; and may not reflect the structural condition of the road. Councils therefore face a difficult balance between investing in road maintenance services and other pressing service demands.
What is road maintenance?

Councils have invested in maintaining road condition, but struggled to keep pace with inflation

Funding has increased in the past – future cuts may place maintenance at risk

Planned maintenance budgets compete with other demands arising from poor road condition

Local road condition has improved generally, but the latest data shows a mixed pattern

Conclusion
Councils have managed to improve road condition slightly over the last ten years despite real-terms spending on roads being static. Constraints on funding demand a more cost-effective approach to prevent roads worsening.

**Councils have invested in maintaining road condition, but struggled to keep pace with inflation**

13 Spending on road maintenance has increased in cash terms by 73 per cent since 2000 (Figure 2). The overall pattern of spending on local roads has not changed significantly – councils have continued to spend about 25 per cent on construction and 75 per cent on maintenance.

14 However, road construction and maintenance costs have outstripped general price inflation, affecting councils’ ability to deliver real improvements to roads. Costs have increased by 85 per cent over the last ten years, compared with general price inflation of around 27 per cent over the same period (Appendix 1). High inflation in the sector is the result of rising oil prices and demand from major infrastructure projects. As a result, the cost of maintaining one kilometre of road is nearly 50 per cent higher than it was ten years ago. This means there had been no real increase in purchasing power since 2000 (Figure 2).

---

i This is spending on routine, structural and winter maintenance and construction.

ii Road Construction Resource Cost Index relative to GDP.
Figure 2: Spending has increased since 2000 but there has been no increase in purchasing power

Source: Capital and Revenue Outturn Returns 2000/01 to 2009/10, DCLG

Funding has increased in the past – future cuts may place maintenance at risk

While councils can use their own capital reserves and locally raised revenue for road construction and maintenance, there are two main sources of external funding for local roads:

- revenue funding for day-to-day spending which in 2011/12 comes from the local government finance settlement (LGFS) (previously, funding was distributed via formula grant and area-based grant); and
- capital funding, from the LTP settlements from DfT. Capital funding for London boroughs is provided from Transport for London’s settlement from DfT, via the Mayor’s Plan. Individual funding settlements are based on boroughs’ Local Implementation Plans.

Revenue funding

The way in which funding is allocated to councils in the LGFS means it is not possible to identify the amount of revenue for road maintenance. Councils will have to consider how they will allocate their share of the 26 per cent cut to overall local government revenue funding as announced in the Spending Review 2010.
Capital funding

17 LTP funding has increased by 60 per cent in cash terms over the past ten years. However, in real terms, funding has only kept pace with price inflation in the sector.

18 The Spending Review 2010 (Ref. 1) announced that overall central government capital funding to councils will reduce by 45 per cent over the period 2011/12 to 2014/15. Councils will receive 16 per cent less LTP capital funding in cash terms over the same period.

19 These combined budget cuts could translate into reduced spending on structural maintenance, which has tended to follow capital funding in the past. In addition, the government has made some changes to the way LTP funding is allocated. Road condition is being phased out as a factor in the LTP maintenance funding formula, and removed completely in 2013/14. Some councils will therefore see less funding relative to previous settlements, but there will be a few with increased settlements.

Planned maintenance budgets compete with other demands arising from poor road condition

20 Councils have to set aside funds from planned road maintenance schemes to cover:

- maintenance backlogs;
- damage by utility works;
- road user compensation claims; and
- potholes and road defects resulting from winter weather.

Maintenance backlogs

21 Industry experts and councils point out that their investment in roads happens in the context of a significant backlog of maintenance needs. The term ‘backlog’ refers to the maintenance needed to get local roads to a ‘manageable’ level (or ‘steady-state’) of condition.

22 It is difficult to put an accurate figure on the backlog but DfT estimated it at ‘several billion pounds’ in 2000 (Ref. 2). The previous government pledged to erase this backlog by 2010, but evidence suggests this has not been achieved. Annual ALARM surveys by the Asphalt Industry Alliance\(^1\) show a persistent maintenance backlog in English councils. While there has been a gradual improvement in London over the last few years, the rest of England appears to be getting slightly worse. Audit Scotland estimates the total cost of road maintenance backlog in Scotland to be in the region of £2.25 billion (Ref. 3).

\(^1\) The Asphalt Industry Alliance represents the suppliers of the raw materials used to produce asphalt as well as asphalt producers and laying contractors.
23 Many of our fieldwork councils report that it will not be possible to remove the backlog at current rates of spending, because new maintenance needs arise faster than they can be addressed.

**Damage by utilities works**

24 Works undertaken by utility companies can undermine the effectiveness of maintenance spending. Utility works may involve opening the road surface for trenches, which weakens the structure of the road. In some cases, the reinstatement of the road is not carried out to a suitable standard. One council estimates that roads are not suitably reinstated in about 30 per cent of inspected cases.

25 Research in the UK shows the average reduction in the lifetime of the road structure due to utility trenches is about 17 per cent. Long-term damage to roads by utility companies costs councils nearly £50 million every year (Ref. 4).

26 The inspection of reinstatements varies across councils according to local priorities. Councils can carry out several inspections at the utility company’s expense. If fault is found, the company is liable for the costs of that and subsequent inspections. Where reinstatements are found to be unsatisfactory, the council can require the utility company to redo the works and cover the cost.

27 Recent legislation (Ref. 5 and Ref. 6) gives councils further powers to manage street works through the use of permit schemes. The primary purpose of such schemes is to coordinate street works. Councils can also use these arrangements to incentivise trench-sharing which can help limit damage through reducing the number of openings.

**Road user compensation claims**

28 Funds are also diverted for road user compensation claims (Info box 1). Councils experienced a spike in claims following the extension of ‘no-win, no-fee’ rules in 2000 (Ref. 7). They report improvement in their repudiation rates in recent years, because they have defended claims more strongly. Although the amount paid out has been steadily decreasing, this progress comes at a cost. Councils now put in place more rigorous inspection regimes, and commit more staff time to investigating and resolving claims.
Dealing with road user compensation claims

Highway authorities’ liability for road maintenance, and the basis for potential claims, comes from two acts:

- S.41 Highways Act 1980 – the highway authority has a duty to maintain highways at public expense; and
- S.111 Railways and Transport Act 2003 (amendment to S.41 of Highways Act 1970) – the highway authority has a duty to keep the highway safe from snow or ice.

However, S.58 of the Highways Act notes that a highway authority may be provided with a defence. Councils are usually not liable where inspections and repairs have been carried out as planned or reported.

There is no reliable national dataset of claims payments. According to CIPFA, payments in 2008/09 were around £660,000 per council. This covers a wide range of recorded payments from £2,000 to £5,435,000.

Potholes and road defects resulting from bad weather

The last three winters have brought severe weather. The resulting road damage and strains on council budgets through both claims and repairs has been widely reported. As a result of the financial burden, DfT provided £84 million for winter repairs in 2010. In 2011, the government announced £200 million of funding for councils to repair potholes caused by the exceptionally cold winter.

Local road condition has improved generally, but the latest data shows a mixed pattern

Condition data suggests that investment in road maintenance has delivered slight improvement in recent years. This is evident when compared with the general trend of worsening condition during the 1980s and 1990s (Figure 3).
What is road maintenance?

Figure 3: Long-term deterioration of local roads in England and Wales was reversed during the period of investment since 2000.\(^i\)

![Diagram showing the defects index from 1977 to 2005. The defects index is measured from 1977 = 100. The graph shows a gradual deterioration trend from 1977 to 1993, followed by an improving trend from 1997 to 2005.]

Source: National Road Maintenance Condition Survey (NRMCS) 2006, DfT

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\(31\) Since 2006, the measurement of local road condition changed and was monitored by two national indicators:\(^{ii}\)

- NI168 – the proportion of principal roads where maintenance should be considered; and
- NI169 – the proportion of non-principal roads where maintenance should be considered.

\(32\) Although it is too early to establish a clear trend, there are some signs of slight deterioration over the past two years. This may reflect the impact of the severe winter weather during this period (Figure 4).

---

\(^i\) A score above 100 on the defects index indicates worse condition relative to 1977.

\(^{ii}\) Data collection for these indicators will continue as part of the single data list for government.
Figure 4: **Latest road condition data suggests the improvement in condition of A roads has stalled**

![Graph showing road condition data from 2006/07 to 2009/10.]

Source: *Road lengths, expenditure and condition statistics 2011, DfT*

33 Concentrating on A roads appears to have had an impact on minor routes, particularly unclassified roads (Figure 5). While the condition of unclassified roads has improved in recent years, the gap in condition with A roads has widened on urban roads. The most recent road condition data confirms the poor condition of minor roads (Appendix 2).
What is road maintenance?

**Conclusion**

34 The amount councils spend on local road maintenance in a given year is not obviously related to road condition. There are many reasons for this, including the priority given to maintenance of major and minor roads. These issues are discussed further in later chapters.

35 Councils spend half their highways budgets on road maintenance activities. They have made some progress on improving road condition, but there are worrying patterns emerging. Local road condition varies widely across England, and smaller, residential roads are being left behind. The early signs show the road network overall is starting to deteriorate again.

36 Highways departments will find the future even more challenging. Recent cuts mean councils will need to seek better value for money from their highways budgets. This comes on top of existing pressures on budgets through trade inflation, and a maintenance backlog. Councils will need to examine the way in which they plan and deliver road maintenance if they are to continue to fulfil their statutory duty.
Current pressures are pushing councils towards a ‘worst-first’ strategy for maintaining roads 24

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Conclusion 36
Councils must find a strategy to deliver road maintenance that balances growing service demands with reducing resources. Applying asset management principles will help councils to achieve value for money and resist expensive, short-term interventions.

Current pressures are pushing councils towards a ‘worst-first’ strategy for maintaining roads

37 Councils have two options for prioritising spending on road maintenance:
- the ‘worst-first’ – focusing maintenance on the stretches of road in poor condition, which are likely to require repairs within one year; or
- the ‘whole-life cost’ of the road – focusing maintenance to minimise the total maintenance costs over the ‘lifetime’ of a road (typically around 15 to 20 years).

38 Both national and local influences can push councils towards a worst-first strategy (Figure 6). Many councils argue that national performance indicators encourage them to focus on improving roads in the poorest condition. Similarly, the desire to maximise resident satisfaction means that councils often focus on patching up the network, rather than improving underlying long-term condition.

Figure 6: Councils have to balance conflicting pressures when deciding their road maintenance strategy

Source: Audit Commission
Focusing on the worst roads first may not be the best approach to managing with less funding. Councils may need to be tougher in prioritising long-term demands over short-term demands, to minimise costs and deliver value for money. Applying asset management principles will help councils to resist reacting to short-term pressures in favour of a road maintenance strategy that is forward looking (Figure 6). There is evidence that following asset management principles can help councils to make decisions that are:

- cost-effective, by minimising whole-life costs and maximising value for money;
- timely, so that they can react to competing and changing service demands; and
- transparent, to justify spending decisions (particularly when resisting short-term demands).

Although asset management has been promoted by the government and professional bodies, councils are often sceptical. Many struggle with transferring asset management principles to roads, not least because roads are an atypical asset: they cannot be sold, nor do they yield an income stream. Rather they consume resources, so it is not surprising that some councils see roads as a liability rather than an asset.

**Thinking about the road as an asset can reduce whole-life costs**

The key to improving the value for money of road maintenance is knowing and understanding when and how to intervene. By considering an asset over a whole life cycle, it is possible to select the best time to intervene. This will maintain road condition and preserve the asset in an economically viable way.

Figure 7 illustrates the benefits of intervening at the right time. The value of a new road will deteriorate with time, volume of traffic and environmental conditions. A road can often be cheaply restored to ‘nearly new’ condition and its life extended significantly by a suitable intervention at the right point in the life cycle (point A in Figure 7). If that point is missed and condition is allowed to deteriorate below the failure threshold (point B), then a more expensive intervention may be required to bring the carriageway back to nearly new condition. This is likely to involve rehabilitation where a full or partial depth reconstruction of a road is required to return it to strength. A road that has been allowed to fall into the failure range will always cost substantially more to refurbish. This can be seen by comparing the cost of restoring point A to ‘nearly-new’ condition (green line in Figure 7) with the cost of rehabilitating at point B (red line in Figure 7). Allowing roads to deteriorate below the failure threshold therefore represents poor value for money.
Figure 7: Failure to intervene at the right time and with the most appropriate treatment will result in poor roads and represents poor value for money

![Graph showing road condition over time]

Source: Professor Martin Snaith, University of Birmingham

43 Councils that effectively apply asset management to roads are rewarded. This approach offers better value for money in the long term.

- One council estimates that reconstructing a typical road that has failed costs approximately £370,000 per kilometre, against £100,000 for a similar lifespan when following a preventive strategy.

- Another council estimates that a timely surface treatment for about £11 per square metre may save the need for more extensive treatments costing £25-30 per square metre a few years later.

44 Despite this evidence, it can be attractive for councils to adopt a worst-first strategy because this will have the biggest immediate impact, particularly for road users. The poor roads will be fixed and so, in the short term, the improvement in network condition and user experience is greatest. But this approach will result in the deterioration of a much greater share of the road network. Instead, a preventive approach will prioritise roads that have not yet fallen into the failure range.

45 While, to members of the public, carrying out road maintenance on a road that doesn’t look to be in need of repair may seem wasteful and unnecessary, this will often be the right action.
Using asset information well can help councils plan budgets and maintenance programmes

Few plans have practical benefits

46 As noted, many councils have struggled to treat their road network as an asset. Guidance to councils states the starting point for an asset management approach is having an asset management plan (AMP). An AMP is a plan for managing the road network over time to deliver the agreed levels of service and performance targets in the most cost-effective way.

47 But many councils have yet to develop an AMP. Our review of 50 councils shows that just over half (28) have one. There is a difference of opinion among council officers about the purpose and benefits of an AMP. Some see such plans as no more than a bureaucratic exercise.

‘The Department for Transport asked that we prepare an asset management plan for the Local Transport Plan. We ticked that off and now it just sits on my shelf. It’s a long document and there’s a whole industry in updating them.’

Council officer

48 But several councils have produced plans that led to practical benefits. These councils (Case study 1) find that they can use their AMPs to:

- make decisions on which roads to maintain and their treatment, based on need rather than the size of the maintenance budget;
- demonstrate to members and citizens that a long-term approach to maintenance will increase the life of the road network, and deliver value for money; and
- make informed choices about how to address the consequences of public spending cuts.

Councils refer to these as highway asset management plans (HAMPs) or transport asset management plans (TAMPs). For the purposes of this report we do not make a distinction between these two, and refer to the documents as asset management plans (AMPs).
Cornwall Council's Transport Asset Management Plan (TAMP) sets out:
- the ethos of needs based budgeting;
- how the council identifies and prioritises its planned maintenance schemes, and the most appropriate intervention required; and
- how the AMP fits with LTP objectives.

Cornwall Council has changed the way it manages its road asset having produced a TAMP.
- Today all planned maintenance scheme budgets, scheme identification, prioritisation and treatment selection is managed by the central asset management team.
- Previously schemes were identified by local teams according to different criteria and budgets.

The Council notes the benefits of following an asset management approach are that:
- spending is based on condition; and
- there is consistency in level of service and condition across the whole council area.

The TAMP was produced in-house for around £80,000.

Source: Audit Commission

Councils need to take a view on how much asset information to collect

To manage their assets effectively, councils need an inventory of baseline information on their roads. This will help them to maintain the road network at the agreed service levels.

Progress on establishing an inventory varies between councils. Most AMPs in our review included an asset inventory of sorts, with varying degrees of detail. Some councils held complete inventories for almost all roads, whereas others collected data for a sample of assets. The simplest plans listed road length only. Councils should hold an inventory suitable for the size and age of their network and the funding available for data collection (Info box 2).
Developing fit for purpose inventories

A basic inventory includes data on asset size, condition and location. But this can be expanded to distinguish between road types, and to include details such as age, material, and costs.

Occasionally, the cost of gathering and analysing the data may outweigh benefits. To illustrate, some councils report that collecting asset data on their road drainage system can be very expensive. Most of the asset works well and needs little or no preventive maintenance beyond regular gully cleaning.

Councils should consider a more pragmatic approach based on the condition of the asset and the spend, volume and maintenance required.

Councils may wish to:
- collect information for a sample of the total asset;
- collect information on individual assets as and when they undergo maintenance – for example, when operatives are unblocking gullies they can also update inventory information on location, size, and maintenance carried out; or
- explore other means of collecting the data:
  - by asking partners such as utility companies to collect data when they are undertaking roadworks;
  - by using new technology to help with inventory collection; and
  - by ensuring that any public reporting (via the internet and other means) is, where appropriate, fed into their inventory.

Source: Audit Commission

Councils need to use their asset information to inform decisions and delivery

But good asset management is not just about having the right information. It is also about using that information well. Some councils have shown how asset data underpins different aspects of managing their road network effectively, including:

- planning and managing budgets against expected service levels (Case study 2); and
- managing responses from road users – for example, compensation claims (Case study 3).
A rationale for data

Leicestershire County Council has a comprehensive inventory that covers its entire road network. This includes the length, width, classification and condition of all roads. The inventory data helps the Council with several things.

- The Council can determine maintenance funding.
  - Good asset data allows the Council to establish an ‘asset’ defect/treatment history. This allows it to analyse past spending and future funding needs. It replaces high-cost, sporadic, reactive maintenance treatments with a programme.
- It meets statutory requirements in terms of network management and performance reporting.
  - The Council is required to ‘maintain the highway’. Knowing what it has, where it is, and its condition supports this requirement.
- It is able to improve planning maintenance works, respond to ad hoc queries about the network and to assist with general network operation.
  - Having good asset information helps to allocate resources. For example, asset data can help answer enquiries about blocked gullies. This can save time and resource both in the office and on site.
- It can import the data into other local systems. This widens its use and availability at no extra cost.

Source: Audit Commission

Using asset data to tackle road user compensation claims

Using multiple data systems, Gloucestershire County Council is able to link its claims data with asset performance data using Geographical Information Systems (GIS). The Council uses Exor (asset management software) for managing its inspection and maintenance repair data and it is able to map defect locations and inspection routes. The Council exports this information into Esri ArcMap where officers can overlay a map layer of claims data. This allows the Council’s claims investigator to identify the last time a road was inspected, what defects were found and when the defects were repaired.

Source: Audit Commission
Councils also need to use information to make strategic choices about their budgets and approach. One way of doing this is to model the effect of different budgets on the roughness of roads (Figure 8). As Figure 8 shows, reducing spending leads to rougher roads. By predicting what condition you will get for your money, this exercise can help councils make an informed decision about their road maintenance budget.\textsuperscript{i}

Figure 8: **Cost models help to plan maintenance and manage standards**

![Graph showing the relationship between average roughness and annual budget](source: Professor Martin Snaith, University of Birmingham)

A few councils have set out these various scenarios for members and used them to feed into the debate about what maintenance funding is needed following the cuts to public spending (Case study 4).

\textsuperscript{i} DfT has commissioned work to estimate the impact of spending cuts on the condition of the local road network.
Using ‘what if’ scenarios to determine condition, treatment and budget

Devon County Council has commissioned WDM® to develop a series of scenarios to chart the projected trend of the relationship between:
- expenditure;
- treatment; and
- road condition (measured according to national indicator 169).

They analysed this data up to the year 2026 (the period of Devon's third Local Transport Plan).

This exercise helped the Council to:
- modify its planned treatments to meet anticipated reductions in budget levels; and
- anticipate road condition levels over the coming years.

Source: Audit Commission

54 The starting point for this modelling is the initial value of the road asset. There have been few incentives on councils to value their roads. Until the recent CIPFA code, there was no consistent methodology with which to value carriageways. Consequently, our review of asset management plans found that nearly a third of councils did not include information on the value of their road asset.

i WDM is a UK manufacturer and provider of highway survey and monitoring equipment, and consultancy services.

ii From 2011/12, councils will be required to include this figure in their accounts to comply with International Financial Reporting Standards (IFRS), the needs of Whole Government Accounts (WGA) and national accounts.
Even among those that did, many do not intend to use the information for modelling and other local purposes. In our review, only four councils explicitly stated that they used valuation data to plan road maintenance. Councils that have put this data to good use (Case study 5) have used it to determine:

- the true cost of holding and maintaining the road network;
- the effect expenditure has on the condition of the asset; and
- how far spending levels match need.

**Case study 5**

**Valuing valuation**

Cornwall Council has used the valuation data together with condition data to:

- inform members about the cumulative effect of underinvestment in road maintenance;
- estimate the effect of maintenance funding on the long-term condition of roads;
- develop life cycle plans that can be linked to new materials, traffic volumes and weather conditions; and
- determine the overall value of the asset, in terms of gross replacement and depreciation costs.

Providing a valuation of the asset has helped the highways department to defend budget proposals, and obtain additional internal capital funding following the recent Spending Review.

*Source: Audit Commission*

**Leadership can ensure transparent decisions are made, and the public is engaged**

Road maintenance is easier to defend when using an asset management approach because it is data driven. But many councils feel that highly technical approaches to road maintenance sideline resident concerns. They have developed different strategies to reconcile these tensions.

**Devolving budgets**

Some councils are supplementing their asset management approach with devolved budgets to address, and be seen to address, the concerns of members and local communities. In one council, members have £10,000 per annum to spend on road maintenance issues that they believe are priorities in their area. In determining these schemes, members consult with local communities.
Devolving budgets to members can result in many benefits. The information generated from councillors and residents can usefully be a sense-check to maintenance programmes developed on whole-life cost principles. It can also present an opportunity for councils to explain their approach to the majority of the road maintenance budget.

However, councils will need to consider devolving budgets with some degree of caution. It is likely that residents will want to mend the roads that affect them and that appear to be in poor condition. If a large proportion of funding is controlled locally, this is unlikely to produce a maintenance programme that represents good value for money. Councils will need to ensure that they do not send out mixed messages about how they plan and deliver road maintenance.

Adapting national performance measures to serve local needs

Another strategy has been to adapt national guidance or indicators to ensure that resident concerns are taken into account alongside whole-life cost models. One council uses a combination of national and local performance indicators to identify its funding needs and treatment programmes. This means that the council can focus its budget on roads that are important to users, as well as responding to the risks that the council must manage.

Using the internet to engage with local people

Attempts to square highly technical approaches with local concerns need to be accompanied by effective communication strategies, ideally led by elected members. Highway departments can help the public to understand their policies, procedures and practice by explaining:

- why the council is carrying out maintenance on a road that appears to be in reasonable condition, rather than attending to those which are in a visibly bad condition; and
- why smaller roads, often where the vast majority of residents live, may fare less well under asset management principles of deferring maintenance to rough roads until long-term solutions can be afforded.

Some councils have tried using the internet to explain their approach (Case study 6). This can be a relatively cost-effective way of explaining a message to a wide audience.
Case study 6

Using YouTube to explain Gloucestershire County Council’s approach to repairing defects

In 2009, following the severe winter weather, Gloucestershire County Council launched two YouTube videos as well as website information and press releases explaining how defects were inspected and repaired.

The main purpose was to improve public understanding of the task facing the highway authority and to share its approach to tackling the repairs to the network following the severe winter. Local teams dealing with daily complaints about the network were able to direct frustrated members of the public to the video clip. This helped the Council to deal with the significant numbers of public complaints and to defend compensation claims. It demonstrated that the Council was highlighting the dangers to motorists, and urging drivers to drive with care.

Source: Audit Commission

63 Councils also use the internet and other routes to collect information from communities. Ninety per cent of councils have introduced internet-based systems for the public to report road defects. This can be a valuable information source. In Gloucestershire, for example, approximately 20 per cent of defects, primarily potholes, are reported by the public.

64 But the introduction of these systems has raised residents’ expectations about councils’ ability to deliver the desired service. Reporting a pothole implies an action will follow. Many residents have been disappointed by councils’ lack of responsiveness, particularly during recent extreme winters. Councils therefore need to:
- use such systems in addition to communicating their strategy effectively;
- tell people what defects and areas the council is prioritising and what will happen to the information logged;
- consider how such information can be used to help build valuable asset data; and
- use the information tactically and strategically. We found one council where the data from its online reporting system went straight to the contractors, bypassing the council.
Conclusion

65 Clearly there are difficulties in following an asset management approach to road maintenance. It might lead to fewer poor roads being corrected straight away as funding becomes more limited. And there can be barriers to entry – councils may be put off by the up-front investment needed in data systems.

66 In addition, current pressures risk pushing councils away from asset management and towards a more localist, resident-led approach. This is worrying. Focusing on roads in the poorest condition will be more expensive. Instead, if councils apply asset management principles to planning road maintenance, this will deliver improved value for money and sustainability in the longer term.

67 Asset management need not necessarily be at odds with localism. Good asset management is about understanding the different priorities, and making informed choices between them. If councils can combine this with strong local leadership and better engagement, they will be able to:

- understand local priorities better; and
- more effectively explain to members of the public their decisions on trade-offs in road maintenance.
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Identifying savings in road maintenance is essential, given the financial climate within which councils now work.

A clear strategy for road maintenance and a longer-term approach to managing the road asset is unlikely to release sufficient savings in the short term. Councils must also reduce their costs. Identifying efficiencies in road maintenance is ever more important, given the financial climate within which councils now work, and reductions to highway maintenance capital funding.

Many councils lack the information needed to challenge the costs of their maintenance works

Evidence suggests that some councils have room to make efficiency savings in how they deliver their maintenance works. Price variation within the road maintenance sector is well known, and suggests councils can do more to challenge the price competitiveness of contractors (Ref. 8). Our own price benchmarking exercise reveals much variation in the unit costs of common maintenance services (Figure 9). This cannot be explained by council type, region or the procurement model used. Nor does the data show that councils are realising lower costs from greater volume. For instance, two councils emptied around 13,000 gullies in one year through term maintenance contracts – one paid £3.50 for a gully emptied, the other paid £9.70.
As with asset management, effective cost management relies on good use of information. Price comparisons can help councils to make cost-effective choices when delivering works (for example, when weighing up the trade-offs between paying more for undertaking works at night and the traffic management costs of daytime works). But our survey reveals that only around 40 per cent of respondents undertook price benchmarking.

Councils have justified reservations about benchmarking. Precise cost comparisons are difficult because of the range of specifications one item may cover and the different methods of calculating costs. However, some councils have overcome these challenges and devised useful benchmarks (Case study 7).

For example, in comparing resurfacing costs, one needs to account for the wide range of materials and depths of the works.
Finding relevant benchmarks in the Midlands

In 2001, the Midlands Service Improvement Group (MSIG) developed a set of seven common maintenance works, as part of a best-value exercise. The set covered four carriageway and three footway schemes.

The Group faced significant challenges. The accuracy of comparisons depended on understanding the different approaches to pricing works, particularly when deciding how to deal with overhead costs. To make meaningful comparisons, some knowledge was required of individual council priorities and operational decisions to explain differences.

But the exercise allowed the Midlands authorities to assess their costs and practice between comparable authorities. As a result, the exercise was repeated in 2005 and 2010. Councils have used these results to establish trends in scheme costs, and develop a breakdown of unit costs across road types.

MSIG benchmarking has had clear practical benefits. For example, one council has used a cost comparison as a lever to bring down maintenance costs with its contractor.

Source: Audit Commission

If councils invest resources in benchmarking exercises, they should draw on experience in other sectors to ensure useful comparisons. For instance, research states that price volatility should determine the regularity of price benchmarking (Ref. 9). Yet our survey shows that the majority of councils that benchmark prices do so only yearly. Given the volatility of construction costs throughout the year, councils may need to consider more frequent exercises.

Councils can get a better deal by incentivising performance throughout their contracts

Performance incentives are critical to good contract management and controlling the costs of delivering road maintenance.
One of the most common methods to incentivise good performance has been through contract extensions. Two-thirds of survey respondents have some form of performance-related extension for current procurement arrangements. Those councils that have used the promise of further work to push for higher-quality services, have combined contract extensions with strong performance management. They have achieved this primarily through agreeing a set of performance indicators and combining targets with penalties (Case study 8). Some councils are also considering newer ways to encourage good performance, such as continuous market testing (Case study 9).

**Case study 8**

**Performance-related contracts**

**Effective contract extensions**
Devon County Council reviewed its contract in 2005, to include some degree of performance management. The new contract was for five years, extendable to ten years based on performance.

The Council evaluated the contractors’ performance using a set of 16 indicators, to be reviewed on a monthly basis. Every year, it assesses a possible extension of contract. For:
- ‘good’ performance, the contract will be extended by a year;
- ‘adequate’ performance, the contract will continue without the extra year’s extension; and
- ‘poor’ performance, the contract will be terminated.

The Council has recorded an improvement in the quality of workmanship and public satisfaction since the contract started.

**Performance targets**
North Yorkshire County Council has used continuing performance targets to manage works – for example, its ‘6-4-2’ process targets. Costly scheme delays were primarily caused by poor information exchanges between the client, contractor, and design consultant. The Council agreed targets for six-week, four-week, and two-week deadlines and it recorded improvements in hitting start times for schemes.

*Source: Audit Commission*
Newer ways of encouraging performance

Target costing
Target costing is used to focus contracts on outcomes rather than outputs. One council uses target costs for its main maintenance schemes. Efficiency savings are therefore encouraged by ensuring the contractor receives some of the savings made, should the actual cost be lower than the target.

Continuous market testing
Hertfordshire County Council is looking at a different form of contract model, which rewards contractors based on the scope of the contract. So, there will be a core contract and, based on good performance, the core contractor will be able to take on further aspects of highways works.

The result is continuous market testing throughout the contract, which is expected to ensure the ongoing competitiveness of contracted works.

Source: Audit Commission

75 Councils that have introduced robust ‘pain/gain’ targets into their contracts say this has helped them to address poor performance, avoid unnecessary costs, and improve the service quality they receive for the money they spend.

Councils have changed procurement models to find efficiencies

76 Councils can choose from several procurement models to deliver road maintenance services, each with their own merits and drawbacks (Appendix 3).

77 Since the 1990s, councils have moved away from in-house provision and traditional, ad hoc contracts towards term maintenance contracts and framework agreements (Figure 10). This trend applies both to the design of works (client-side activities) and their delivery.
Councils let term maintenance contracts and framework agreements for longer periods than individual contracts. This move has delivered many benefits. Contractors have greater certainty about the volume of future work and the chance to spread costs over a longer time, encouraging investment in innovation. These procurement models generally cover a number of maintenance services within one contract, reducing councils’ tendering and contract management costs (Ref. 10).

In addition, moving to longer-term contracts and closer working with contractors can result in:

- better coordination of works;
- closer integration of the design and construction of schemes;
- less demand for the council’s expertise; and
- more risk being transferred to the private sector.

However, it is difficult to single out one of these models as representing the best value for money. Savings from the larger and longer-term contracts have not been uniformly achieved. And some councils have experienced risks attached to these arrangements including:

- higher tendering costs for more complex, longer-term contracts;
- greater demand on the council’s tendering expertise and contract management capacity; and
- a need for regular market testing to ensure value for money over the long term.

Furthermore, there are inefficiencies reported across all procurement models, such as fragmented roles between the client and contractor and contract inflexibility leading to higher costs.
Collaborative working can reduce procurement and delivery costs for councils

82 Our survey found that costs and customer satisfaction are by far the most important success factors for councils when considering their current procurement arrangements. While councils have enjoyed benefits from moving to larger and longer contracts, more radical change is required to find further efficiencies. Collaborative working will need to play a role.

83 The Latham (Ref. 11) and Egan (Ref. 12) reports in the 1990s identified collaboration as a way to avoid fragmented and adversarial procurement practices. Collaboration, however, is a vague term and can refer to several activities. These activities fall into two main categories: collaboration with contractors; and collaboration with other highway authorities (Table 4).

Table 4: Collaborative working can encompass a range of activities

<table>
<thead>
<tr>
<th>Category</th>
<th>Example</th>
<th>Benefits</th>
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<tbody>
<tr>
<td>Collaboration with contractors</td>
<td>Early contractor involvement</td>
<td>■ Improved design and planning of works</td>
</tr>
<tr>
<td></td>
<td>Open book accounting</td>
<td>■ Non-adversarial working relations</td>
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<td></td>
<td></td>
<td>■ Opportunity to compare and challenge costs</td>
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<td></td>
<td>Outcome-focused contracts</td>
<td>■ Encourage innovation and new ways of working</td>
</tr>
<tr>
<td>Collaboration with highway authorities</td>
<td>Shared equipment or services</td>
<td>■ Access to a wider range of capital</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Shared costs</td>
</tr>
<tr>
<td></td>
<td>Buying materials with other councils</td>
<td>■ Lower prices with higher volume</td>
</tr>
<tr>
<td></td>
<td>Contracting works with other highway authorities</td>
<td>■ Lower contract set-up costs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Lower contract management costs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Lower prices with higher volume</td>
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<tr>
<td></td>
<td></td>
<td>■ Better supply chain management</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Strategic alignment of local work (timing and standards, for example)</td>
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<td></td>
<td></td>
<td>■ Consolidating in-house expertise</td>
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Source: Audit Commission
Councils are working more closely with their contractors. Some councils have used partnering arrangements to secure benefits. These include faster take-up of innovative practices and negotiating fee reductions. For example, North Yorkshire County Council has entered into a tripartite arrangement with its design consultants and maintenance contractors. The partnership has a joint business plan, and there is strong buy-in from all sides to the work undertaken.

But few councils have yet to work closely with each other or other partners such as the Highways Agency when delivering maintenance services. This is despite being keen to do so on paper. Two-thirds of our survey respondents agreed that greater value for money could be realised through working collaboratively. The government and the sector have promoted the approach through the Code of Practice, by issuing guidance and holding knowledge-sharing events.

The clearest way in which councils can collaborate is by taking advantage of their joint purchasing power to realise lower prices. Our survey shows only a small increase in councils procuring collaboratively. This is a missed opportunity for councils. Often contractors serve more than one council area and retain the savings this volume generates without sharing them with councils.

The low take-up of collaborative procurement reflects the fact that some councils remain lukewarm about the savings that can be realised. They do not feel there is yet enough evidence of success to justify the cost and effort they perceive is required.

Even so, there is evidence to suggest that the financial benefits of collaboration are significant. The Midlands Highway Alliance, the first regional collaborative venture of its kind, estimates it has delivered £5.1 million savings for councils, and £7.8 million for the Highways Agency in the first three years since it began operating in 2007. It has done so through quicker procurement timescales, lower bidding and set-up costs, shared commissioning and greater economies of scale. Councils' efficiency savings were generated at 7.5 per cent (of £14.7 million commissioned work) as part of its professional services contract and at 9 per cent (of £39.7 million commissioned work) through its highway infrastructure improvement frameworks. The Alliance estimates it will save a further £14 million between 2010 and 2014. Other councils recognise that collaboration can increase efficiency, and are forming similar groups to the Midland Highways Alliance (Case study 10).
Collaboration in the East of England

Eastern Highway Alliance
Ten East of England authorities have formed an Alliance, based on lessons learnt from the Midlands Highway Alliance.

The Alliance’s first step towards delivering road maintenance collaboratively is a medium size schemes framework. The framework agreement is for schemes valued between £50,000 and £10 million, and is expected to begin in 2011/12.

Developing a collaborative procurement model can be logistically difficult, due to the different timings of authorities’ existing arrangements.

But the potential benefits are significant. They include:
- shared contract set-up costs;
- shorter procurement timescales;
- shared innovation;
- economies of sale; and
- lower supplier bidding costs.

The Alliance projects £6 million savings can be made over five years, with £3.3 million from shared costs alone.

Source: Audit Commission

Working collaboratively with other councils can also address issues that have dogged more traditional contracting models. According to our survey, the most significant drawbacks of existing contracts are in-house capacity, administrative burdens and risk transfer. There is emerging evidence from the sector that a collaborative approach to procurement can help with these issues.

Many councils and their partners also feel the local road maintenance sector suffers from overspecification, i.e. individually tailored specifications, when standard materials would be sufficient. Councils working together can establish shared standard specifications. Suppliers tell us this would reduce their costs, which could benefit their clients.
91 A clearer evidence base, in particular transparent calculations of potential savings, should help more councils to take forward collaborative working. Councils may also benefit from advice on overcoming the difficulties experienced in setting up collaborative arrangements. The DfT and the Highways Agency have a role to play in developing the evidence base for collaboration, and drawing on wider UK evidence, such as the proposals for consortia in Scotland (Ref. 13).

**Councils will need to assess standards in light of tighter finances**

92 Councils need to do more than challenge how they deliver road maintenance. They also need to assess the standards at which these services are delivered. They may need to consider compromising on previously agreed minimum service levels.

93 So far, many councils have resorted to ‘salami-slicing’ service delivery in response to lower budgets (for example, continuing a resurfacing programme until money runs out). Levels of service have also remained unchanged in many cases, rather than responsive to funding. Councils should take stock of what service levels are achievable and acceptable, if they are to continue to fulfil their legal commitment to maintain the road network within set standards, with fewer resources.

94 There are options available to adjust local standards, from reducing inspection regimes to closing roads. These decisions are likely to be increasingly devolved to the local level. For example, although declassifying road lengths has often proved a difficult legal challenge in the past, the current DfT consultation outlines proposals to allow councils the freedom to decide road classifications (Ref. 14).

95 A few councils have already taken steps. Manchester City Council’s budget for 2011/12 contains plans to reduce the frequency of routine maintenance activities ‘where current standards allow’ (Ref. 15). But further assessment is needed to understand and evaluate the options open to councils. The DfT’s Highway Maintenance Efficiency Programme is an opportunity to test the implications and feasibility of changing service levels.
Councils should involve road users in decisions to change standards

96 Altering minimum service levels in response to budget cuts is controversial. Councils will need to consider how they involve road users in such decisions. There are drawbacks in trying to do so.
- It can be difficult to reach consensus on which service levels to reduce and where, particularly if there are conflicting priorities between road user groups, such as businesses and residents.
- The process may be considered tokenistic if the council's chosen course of action does not seem to take account of local views.
- Highways departments may not have the opportunity to engage fully with road users, if changes are needed quickly.

97 But these challenges do not make communication a fruitless task. Evidence suggests that councils that have consulted widely have generated more public support for difficult decisions (Ref. 16). So the consultation process in itself may have value even if it does not result in clear solutions.

98 Local authorities have already started to communicate more directly with the public on budget cuts following the Spending Review. Councils need to select the consultation methods carefully, for road users to participate effectively. Simple surveys or meetings are unlikely to be sufficient for a technical area such as road maintenance (Ref. 17).

Conclusion

99 Councils have improved the way they procure road maintenance services. Many have developed effective and more open working practices with their contractors and have changed the way they design contracts to incentivise good performance.

100 However, they can make further progress on challenging the costs of materials and works delivered, and in collaborating with other highway authorities to increase their purchasing power. Both will need attention if councils are going to be able to release further savings.

101 With reduced resources, councils should also consider the trade-off between lowering service levels and the costs of continuing existing service levels. The trade-offs include compensation payments for failing to maintain roads within agreed standards, or unsustainable maintenance costs over the long term. Not all councils will need to drop their standards. But, as good asset management dictates, councils will need to weigh up these options to decide how best to prioritise limited funding.
## Appendices

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Appendix 1: Measuring inflation in the road construction industry

There are different ways to account for inflation in road maintenance spending figures, including the:
- consumer price index (CPI);
- gross domestic product (GDP) deflator;
- tender price index (TPI) for road maintenance; and
- resource cost index (RCI) for road maintenance.

The CPI or GDP deflator can be used to measure general inflation in the economy. But the TPI and RCI can be used to calculate spending over time at constant prices in road maintenance. The TPI is used to benchmark tender prices over time, when using traditional procurement methods. The RCI reflects the cost of labour and materials used in construction, and is therefore the most suitable index to use.

The overall cost to councils does not follow the same pattern as the TPI. This is because the TPI depends on market conditions in a given year, while contracts may last for many years, and traditional procurement methods have become less common over time.

Appendix 2: Measuring road condition

Moving to SCANNER
Latest road condition data is based on Surface Condition Assessment for the National Network of Roads (SCANNER) surveys. These were introduced by DfT in 2006/07.

Automated vehicle-mounted machines gather the data, rather than relying on the visual inspections of SCANNER’s predecessor, the Computerised Highway Assessment of Ratings and Treatments (CHART). Much wider coverage is now compulsory, compared with CHART’s sample survey.

Rating the roads
The survey covers several condition parameters, including ride quality, rut depth, cracking intensity, texture and edge condition. Parameter defect measurements are given a Road Condition Index (RCI) – a score is determined between two thresholds by assigning the defect level to a value between zero and 100. Combining the RCI values for each parameter provides an overall RCI for each 10m stretch of road, with different weightings for each parameter.

This overall RCI for each 10m length can then be summed to provide the overall share of 10m lengths falling into the key categories of condition.
- Green – the road is generally in a good state of repair.
- Amber – the road has some deterioration which should be investigated to decide the optimum time/level of planned maintenance.
- Red – the road is in poor overall condition which will probably require planned maintenance within the next year or so, if treating the worst areas first.

Figure 11 shows the current state of the surveyed local road network (2009/10).

Figure 12 shows how this works for an individual parameter – in this case, rut depth.

The caveats of using SCANNER are that:
- not all councils survey the same size sample;
- comparisons across years may not be accurate, as the same road length may not be surveyed each year; and
- survey samples are smaller for minor roads – for example, 61 per cent of A roads were surveyed overall in 2009/10, but only 34 per cent of C roads.
Figure 11: **Condition of the local road network in 2009/10**

![Condition of the local road network in 2009/10](Source: SCANNER data (unpublished), 2011, DfT)

- A roads
- B roads
- C roads

**Roads surveyed (%)**

- Red
- Amber
- Green

Source: SCANNER data (unpublished), 2011, DfT

Figure 12: **Example of rut depth assessment where lower limit is 10mm and upper limit is 20mm**

![Example of rut depth assessment](Source: DfT)

- Road Condition Index (RCI)
- Rut depth (mm)

Source: DfT
Appendix 3: Typical road maintenance procurement models

Councils should be aware of the benefits and risks of standard procurement models when making decisions about how to procure road maintenance services. They also need to ensure that any new model suits their in-house capacity and circumstances. This table summarises these issues against the main procurement models available.

<table>
<thead>
<tr>
<th>In-house</th>
<th>Traditional / ad hoc</th>
<th>Term maintenance</th>
</tr>
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<tbody>
<tr>
<td><strong>Overview</strong></td>
<td>Council directly employs resources for service.</td>
<td>Council procures individual services separately from a combination of providers.</td>
</tr>
<tr>
<td><strong>Pros</strong></td>
<td>Council retains control, skills, and knowledge.</td>
<td>Simple contract criteria, range of providers, flexible to changing needs across services.</td>
</tr>
<tr>
<td><strong>Cons</strong></td>
<td>Council bears all risks. No comparisons for delivery. Limited innovation as dependent on council budgets.</td>
<td>Council bears responsibility for delivery. Multiple contracts require significant resources. No incentive for innovation as works specified beforehand. Less certainty of future work.</td>
</tr>
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</table>
### Framework agreement

- Agreement with one or more providers with terms and conditions under which contracts (call-offs) are made. Typically runs for up to four years.
  - Can use flexibly alongside other contracts, for when the framework offers the best value for money.
  - Offers certainty over costs, when using a schedule of rates.
  - Reduces tendering costs for works.

- Needs market testing to ensure rates are competitive.
- With multiple potential providers, contractors have no certainty over volume of work, and may be less inclined to work collaboratively with councils.

### Partnering

- Can range from traditional model where partners work together to partnership written into contracts and co-located teams.
  - Less adversarial, generally longer contracts with more investment, encourages output-focused work and flexibility over changes.

- If limited, is essentially traditional procurement.
  - Requires commitment and resources from both partners.
  - Not necessarily outcome-related.

- Trust from both sides.
  - Clear understanding of requirements and shared risks / benefits from both sides.

### PFI

- Councils buys services from private sector in return for annual payment covering costs of service (usually for the life-time of the asset, e.g. 25 years).
  - Focus on whole-life costs, outcome-focused, integrates design, construction, and maintenance, stability over long period.

- Complex, often costly procurement process.
- Requires strong contract management experience as significant control passed to private sector.
- Still rarely used for road maintenance – yet to be clearly assessed.

- Significant tendering expertise when setting up contract.
  - Good performance management.

### Audit Commission

Going the distance: Achieving better value for money in road maintenance

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Appendix 4: Methodology

This study used a mixed methods research approach that included:
- desktop review and analysis of council data on expenditure and road condition;
- review of a 50 councils asset management plans;
- two surveys, one seeking data on approaches to procurement and the other exploring the unit costs for a sample of works and materials; and
- qualitative and quantitative data collection in ten councils. Visits took place over one to two days. There were 51 semi-structured interviews with elected members, head of highway departments, asset management and procurement leads and contractors.

The fieldwork sites were:
- Cornwall;
- Devon;
- Gloucestershire;
- Hertfordshire;
- Leicestershire;
- North Yorkshire;
- Oldham;
- Portsmouth;
- Southwark; and
- Sunderland.

Fieldwork visits took place between June and September 2010. We are grateful to the elected members and officers from these councils who took part in our study and agreed to be interviewed.

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References


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We welcome your feedback. If you have any comments on this report, are intending to implement any of the recommendations, or are planning to follow up any of the case studies, please email: nationalstudies@audit-commission.gov.uk