Improving The Condition of Local Authority Roads

The National Picture
Improving The Condition of Local Authority Roads
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Summary

Britain used to be well known for the quality of its minor roads - the best second-class road system in Europe, it was called. But in recent years the balance has shifted. Central government has invested heavily in motorways and trunk roads, and less emphasis has been placed on the secondary roads maintained by local authorities.

In England, over the period 1976 to 1986, expenditure on the maintenance of local authority roads decreased in real terms by about 5 per cent, or about 10 per cent when expressed as expenditure per kilometre of road. At the same time the Department of Transport significantly increased its expenditure on the maintenance of the motorway and trunk road network. (Exhibits S1 and S2 and Annex A). But total traffic on local authority roads has increased by more than 20 per cent.

ROAD NETWORK AND EXPENDITURE INDICES FOR LOCAL AUTHORITY ROADS IN ENGLAND

While traffic and road length have been increasing, maintenance expenditure has declined in real terms.

Source: Audit Commission analysis of figures from DTp

Exhibit S1
INDICES OF MAINTENANCE EXPENDITURE PER KM OF ROAD - ENGLAND

While central government has significantly increased maintenance expenditure on motorways and trunk roads, local authority expenditure has declined.

Index of Expenditure at Constant Prices

Source: Audit Commission analysis of figures from DTp

Exhibit S2

AVERAGE DEFECTS INDEX FOR LOCAL AUTHORITY ROADS IN ENGLAND AND WALES 1977-86

Since 1980, roads have been deteriorating and their condition is now worse than in 1977.

Source: National Road Maintenance Condition Survey, 1986

Exhibit S3
The impact of less money and more traffic has been severe, and the condition of local roads is now markedly worse than it was a decade ago. (Exhibit S3).

The deterioration will continue unless more money is spent soon on the maintenance of local authority roads, footpaths and bridges. The government, after years of holding spending down, has recognised this and increased provision for England by 15 per cent in 1986-87 and 13 per cent in 1987-88. Local authorities have not yet responded by increasing their actual expenditure to the same extent. In 1986-87 the shortfall was £44 million, in 1987-88 it is likely to be £143 million.

This muted response to the government's signal is partly due to the general constraints on local authority budgets, the higher priority some local authorities attach to education and social services, and the slow progress in improving efficiency. But it is also difficult to make rapid changes to spending patterns on this type of activity.

In the short term, the Commission recommends that government should continue the enhanced level of provision in real terms and local authorities should try to spend up to that provision nationally. This should be sufficient to stop local authority roads deteriorating but the situation will need to be monitored.

In the longer term, improvements in efficiency and effectiveness can release sufficient funds in aggregate for a higher level of maintenance, at least in the two-thirds or so of authorities where considerable scope now exists. The Commission's study suggests that efficiency improvements in routine maintenance activities (sweeping, grass cutting, street lighting) would alone release about £90 million a year in England and Wales. More money could be made available by reducing the frequency of certain routine activities. Overall, at least 16 per cent more work could be done on maintaining and improving road condition within the same expenditure total, which is probably sufficient to halt the deterioration.

But any savings achieved through increased efficiency should not be seen as an opportunity to cut total expenditure. The money is needed; the point is that it must be better spent.

Achieving these and other improvements will require a more methodical approach to maintenance by local authorities:

- They need to know what it is they are managing. They must have up to date inventories of highway networks and what is on them (street lights, grass verges etc). Computerised highways management systems which provide this information are now available.
- They need to know the current condition of the roads, bridges and footpaths. For this purpose, sample surveys of condition are required.
- All highway authorities should develop explicit, authority-wide maintenance policies in the light of this information, covering, for example, frequencies of routine maintenance and acceptable standards of road and footpath condition. The Local Authority Associations' Code of Good Practice published in 1983 provides a useful starting point. The budget for maintenance should be determined, not on the traditional basis of last year's expenditure adjusted for inflation, but rather according to the need identified by the condition surveys, and the need implied by the frequency and unit costs of routine maintenance. In many cases this will mean a higher priority for structural maintenance.

The day to day management of highways maintenance should be improved by:

- relating staffing levels more closely to the work to be done rather than resting on ossified historical practice;
- ensuring a clean split between client and direct labour organisation (DLO) personnel (except possibly in the small district councils), to avoid conflicts of loyalty;

- ensuring competition for maintenance work, especially the maintenance activities not covered by the Local Government, Planning and Land Act 1980;

- increasing on-site supervision of both contractors and the DLO, and paying more attention to materials testing;

- tightening up bonus schemes (where it is decided to continue with them);

- revising county-district agency arrangements, by recognising that the agent’s role is to apply county policy within the discretion allowed.

The government can help achieve these ends by sustaining the current higher levels of provision for highways maintenance and by encouraging authorities, particularly counties, to increase their expenditure on highways maintenance at least up to their Grant-Related Expenditure Assessments (GREs).

The following legislative changes would assist these processes:

- The repeal of Section 42 of the Highways Act 1980, though district councils will need to be protected through an appeal mechanism against unwarranted withdrawal of agency by counties.

- The setting of minimum national standards for road condition, separately for each type of road. It should be made clear that different standards of condition could be expected on different types of road; in particular, it could be acceptable for poorly used minor roads in rural areas to receive only minimal maintenance if suitable alternative routes exist.
1. Introduction

1. The condition of the roads and footpaths impinges on almost everyone's life, and on the prosperity of industry and commerce. Over 20 million vehicles are licensed to use the roads. The last 20 years have seen a 48 per cent increase in goods moved by road and a corresponding decrease in goods moved by rail so that road transport now carries 85 per cent of the total. Large increases in lorry movements cause additional damage to roads. On principal roads about half the carriageway damage is caused by lorries with four or more axles.

2. Roads are also an important carrier of public utility plant and cables, especially in urban areas. Along most established urban roads there are two wired mains (electricity and telephone) and three piped mains (gas, water, sewerage). In a typical year, about two million excavations in the road are undertaken by the utilities; this poses its own special problems for highways maintenance.

3. Historically, road maintenance has been a local matter, but in 1936 a trunk road system was defined and separated from local authority roads. Currently, responsibility for maintenance of motorways and trunk roads falls to the Department of Transport (DTp) and the Welsh Office, while counties, London boroughs and metropolitan districts (116 authorities in total) are responsible for all other public roads in their areas (Exhibit 1). Shire districts may carry out some of the work as agents for counties, and about two-thirds do so. The central government departments usually appoint local highway authorities to be their agents, so the majority of highways maintenance expenditure is channelled through local authorities, although a number of motorway sections are now, as an experiment, being maintained by consultants. Local highway authorities in England and Wales spent about £1,150 million on maintenance of their own roads in 1986-87 and about half that amount on capital improvements.

4. New roads are designed to have a life of 20 to 30 years before they need major reconstruction, but to achieve this life they need regular maintenance. For example, every five to seven years the road may need to be "surface dressed" (treated with an application of bituminous material and chippings) to seal the surface against water penetration and improve skid resistance. At less frequent intervals, the road may need to be completely resurfaced. Exhibit 2 shows the state of roads in need of various treatments. In addition, potholes will need to be repaired, the road swept, the drains (gullies) emptied and the grass verges cut; street lights, signs, white lines, and footpaths will need attention. The annual cost of this maintenance is about £9,100 per kilometre for principal* roads and £3,200 for non-principal roads, which do not necessarily require frequent surface dressing. Exhibit 3 shows the typical make-up of the maintenance budget for different types of authority. The activities that most people regard as maintenance - surface dressing, reconstruction, resurfacing etc - make up about 50 to 60 per cent of the budget. Routine maintenance** activities such as grass cutting and sweeping account for most of the rest.

*Principal roads are main roads which are not trunk roads, such as most A roads.
**See Note 1 on nomenclature used in the report.
Local authorities are responsible for all public highways other than trunk roads and motorways. Local authorities are spending £1,150 million pa on maintenance and £580 million pa on capital improvements on their own roads.

Source: Department of Transport Statistics Bulletin (87) 32
CIPFA

Source: CIPFA estimates adjusted to November 1986 prices

Exhibit 1
HIGHWAY CONDITIONS REQUIRING REMEDIAL TREATMENT

Exhibit 2

Whole section of road needing reconstruction

Road in need of resurfacing (i.e. removal and replacement of the wearing course and base course)

The ubiquitous pothole

Larger areas requiring patching

Surface deformation suitable for overlay (i.e. placing an additional layer of black top over the existing surface)

Road edge breaking up requiring haunching (i.e. repairing the edges)

Road requiring surface dressing (i.e. spraying the road surface with a film of binder and stone chippings)
THE TYPICAL MAKE-UP OF THE HIGHWAYS BUDGET FOR EACH TYPE OF HIGHWAY AUTHORITY

Routine maintenance activities (shown shaded) make up a large proportion of the budget.

Source: Audit Commission questionnaire to highway authorities, 1986
County budget excludes amenity maintenance funded by districts

5. If maintenance is delayed, additional deterioration occurs and the cost of the maintenance, when it is eventually carried out, rises considerably. For example, on the more heavily used roads, surface dressing at five years (costing around 50p per square metre) will almost restore a carriageway, but if the carriageway is not treated at around that time, then resurfacing (costing around £3 per square metre) will ultimately be needed. If resurfacing is delayed, then reconstruction becomes prematurely necessary. (Exhibit 4),
DEPRECIATION CURVES SHOWING THE NOTIONAL VALUE OF A ROAD UNDER DIFFERING MAINTENANCE STRATEGIES

Timely maintenance helps preserve the value of the asset

Source: Based on a paper by J A Bergg, Chartered Municipal Engineer, July 1978  
Exhibit 4

6. There has been growing concern about whether our national investment in maintenance is adequate. There are frequent public complaints about the state of roads and footpaths. An opinion poll by MORI in May 1986, sponsored by the Commission, suggested that highways maintenance and street cleansing are the local authority services with which the public is least satisfied (Exhibit 5), though this is partly due to the annoyance caused by public utilities digging up the road.

PUBLIC ATTITUDES TO LOCAL AUTHORITY SERVICES

Street cleansing and road maintenance are the services with which the public are most dissatisfied

Source: MORI poll for the Audit Commission, May 1986  
Figures do not necessarily add to 100% because not all people expressed an opinion  
Exhibit 5
But more scientific evidence bears out the notion that local roads are deteriorating. An annual national survey of road condition (The National Road Maintenance Condition Survey - NRMCS) was launched by the Department of Transport and the Local Authority Associations in 1977. Since 1980 it has shown a steady deterioration in local authority roads (Exhibit 6). It is estimated that about 20 per cent of urban principal

DEFECTS INDICES FOR DIFFERENT TYPES OF LOCAL AUTHORITY ROADS

Road condition has deteriorated since 1980 for all road types, but particularly for urban principal and rural unclassified roads.

Source: National Road Maintenance Condition Survey, 1986
Average defects indices for each year are shown

Exhibit 6
roads and 10 per cent of rural principal roads have a residual life of less than five years. A separate survey of bridges has shown that about one in five of the older bridges maintained by local authorities will need work to meet new loading standards. Many highway authorities are facing rising claims for damages, particularly for injuries caused by footpath defects.

8. It was against this background of concern, that in late 1985 the Commission began a study of local authority highways maintenance (the remit did not extend to the maintenance undertaken on behalf of the DTp or Welsh Office). The study was divided into two phases:

   Phase 1 - routine maintenance and surface dressing;
   Phase 2 - staffing, structural and winter maintenance, overall management arrangements and agency agreements between counties and districts.

Local auditors have already completed reviews of the Phase 1 activities in individual authorities and have recently embarked on the Phase 2 work.

9. The research for the audit guides and this report has been based on in-depth investigations at 44 local highway authorities or their agents, and a detailed questionnaire completed by almost all counties plus over three-quarters of metropolitan districts and London boroughs. The Local Authority Associations, the DTp and the Welsh Office have also made many helpful comments. Information from the in-depth work was supplemented by short visits to a number of additional authorities and an exercise in which authorities were asked to cost a selection of typical maintenance jobs.

10. The Commission would like to acknowledge the cooperation given by all the authorities that participated in the review, and also by the Association of Chief Technical Officers, the County Surveyors Society, the Association of Metropolitan District Engineers and the Association of London Borough Engineers and Surveyors under whose aegis the questionnaires were distributed. The study team has met regularly with a consultative group of officers and highway engineers representing the ACC, ADC and AMA.

11. The team, under the overall direction of Stephen Evans, was led by Derek Purdy with three other Commission staff and three consultants who were previously local government officers - Stuart Mustow, David Barber, and Ted Kenyon. This report presents the main findings of the study and is intended for not only highways engineers but also for council leaders, committee chairmen, chief executives and chief officers. It concentrates on the national issues and is intended as a companion to the two other reports of the study:

   - Improving Highways Maintenance - A Management Handbook. This amplifies the recommendations on good practice and should be consulted for the details that have necessarily been excluded from this report. The detailed report is expected to be of particular use to highways engineers.

12. The rest of this report examines current problems with the management of highways maintenance and proposes changes which may help resolve them. Where possible, the findings for England and Wales have been combined but, where the situation differs between them, we refer to England in the main text and give separate material for Wales in Annex A.
2. Problems in the Management of Highways Maintenance

13. Highways maintenance was reviewed by the Marshall Committee in 1970. Although the standards of road condition it set were not achievable, its recommendations on procedures and management are still held in high regard. In 1983 the Local Authority Associations published *Highway Maintenance: A Code of Good Practice* which, in effect, revised and updated the Marshall report's recommendations and provided a suggested range of standards for highways maintenance. There is thus a general consensus among highways engineers as to what constitutes good practice in the management of highways maintenance. It is disappointing to report that the Commission has found the application of good practice to be somewhat patchy.

14. The reasons for this uneven performance vary, but include the unwillingness of some authorities to implement comprehensive management systems, concentration on technical matters to the detriment of management issues, insufficient or unbalanced staffing levels, excessive interference by members in service delivery matters and, in counties, difficulties with agency arrangements. Officers complain that much of their working day is taken up in responding to complaints from the public and council members, and that too little time is available for planning and supervising work. Members frequently regard the maintenance budget as the pot to raid when money for other services is tight. Underlying all the problems is that in comparison with education and social services, highways maintenance has often been regarded as the Cinderella function by members, while officers have paid more attention to design and construction. Until recently, ambitious highways engineers did not regard maintenance work as the best arena in which to develop a promising career.

15. This chapter reviews the main deficiencies in the management of highways maintenance found by the Commission (Exhibit 7). It examines in turn:

- the frequent lack of information on highway condition and inventories - the number and location of items such as street lights, drains, areas of grass etc;
- the lack of explicit maintenance policies;
- inadequate funding of maintenance;
- defects in current budgetary procedures;
- staffing levels;
- the confusion that sometimes exists between client and contractor roles within the highways department;
- the lack of competitive tendering for large elements of highways maintenance work;
- unnecessarily high unit costs;
- the poor basis of many county-district agency arrangements.
Few, if any, authorities exhibit all these deficiencies but equally few are not guilty on all counts.
LACK OF INFORMATION

16. A lack of management information is the main problem. For routine maintenance items, around one quarter of highway authorities do not possess even an estimated inventory; for structural maintenance, only a handful of authorities undertake a sufficiently large condition survey to be able to allocate budgets on that basis; and very few authorities are in a position to check work done at the end of the year against the original workplan - all the emphasis is placed on spending the budget. Typically a quarter to one half of authorities are unable to identify their unit costs for a range of standard activities.

INVENTORIES

17. Inventories - the number and location of items such as mileage of road, street lights, drains, markings, areas of grass to be cut - are essential for allocating funds for routine maintenance on the basis of need rather than historical allocations adjusted for inflation. They are also required for putting work out to tender, for supervising work properly and for calculating unit costs. In short, they are essential for managing routine maintenance, accounting for about one third of the budget. Despite their importance, for specific activities up to 25 per cent of highway authorities do not possess even an estimated inventory. Counties are generally behind other authorities; the majority do not possess accurate inventories of even the basic items covering over 95 per cent of routine maintenance expenditure. A high quality inventory will cost money which must be found from within a hard pressed budget. However, trying to manage resources without one is a false economy in all but the very short term.

HIGHWAY CONDITION SURVEYS

18. Judgements about how much should be spent on structural maintenance and where funds should be allocated are best made on the basis of a survey of condition. This point was made by the Marshall report in 1970 and subsequent reviews. Standardised methods for assessing road condition are available. CHART and MARCH are visual inspection methods which record measurements of defects on a computer, which can then indicate the treatment required and give a priority rating. Deflectographs can determine the remaining life of bituminous carriageways.

19. While many highway authorities are now using condition surveys to monitor trends, few are using surveys as a basis for allocating funds within the authority. Most authorities continue to depend on priority lists drawn up from ad hoc officer inspections and complaints from the public and council members. Money is not necessarily going where it is most needed.

UNCLEAR POLICIES

20. There are two national policy documents which could be used as the starting point for an authority's own policy: the Local Authority Associations' Code of Good Practice (under revision) and the DTp's Code of Routine Maintenance, which the Department's agents are expected to adhere to on motorways and trunk roads. About three-quarters of authorities have a written policy on the frequency of routine maintenance, and half of these base their policy on the LAA Code. A number of authorities, such as Northamptonshire, Shropshire and Devon, have produced quite detailed policy documents, setting out standards and frequencies.

21. Even when a highway authority has a clear policy it may not be applied uniformly throughout the authority. In counties, divisional surveyors and agents commonly exercise
wide discretion and may apply quite different policies. The Commission's recent report, *Improving Highways Agency Arrangements between Counties and Districts* spelt out the problems which arise when agents act as though they were the highway authority and ignore county policy.

22. A comparison of authorities' annual frequencies for common routine maintenance tasks with those recommended in the LAA Code reveals a bias towards higher frequencies than the Code suggests. In some authorities, frequencies could be reduced below the Code for some activities without deleterious effects. In one county visited, the savings from reducing frequencies to those advised by the Code would amount to £900,000 a year, which could be diverted to the structural maintenance of roads and footpaths. Gully emptying, scouting for faulty street lights and lamp replacement seem to offer the most scope for reductions in frequency. On the face of it, up to £30 million a year could be saved on counties' budgets if frequencies were reduced to those in the Code, although some of this could be negated by compensating increases in amenity maintenance undertaken by districts.

23. Policies on structural maintenance also vary widely. Exhibit 8 shows the variation in the proportion of the maintenance budget devoted to road strengthening. Some highway authorities, notably those in urban areas, do not surface dress roads and footpaths claiming it is not cost effective and is unacceptable to the public. In other authorities, surface dressing is being used as a treatment almost to the exclusion of resurfacing. The importance attached to footpath maintenance compared with carriageway maintenance varies widely, with district councils giving it high priority. Again, there is a wide divergence on policies and practices on the winter maintenance of highways, particularly in the criteria for salting roads. Around £20 million a year could be saved by general application of best practice. Local circumstances account for some of the divergence in policies but some is dictated by factors that should not be highly influential, such as a perceived need to provide suitable work for the DLO.

**THE PERCENTAGE OF COUNTIES' HIGHWAYS MAINTENANCE BUDGET SPENT ON STRENGTHENING AND RENEWAL OF SURFACING**

The percentage of budget dedicated to strengthening and renewal of the carriageway varies considerably, from under 5% to over 40%.

<table>
<thead>
<tr>
<th>Percentage of the Maintenance Budget</th>
<th>%</th>
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<tbody>
<tr>
<td>Counties</td>
<td></td>
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*Source: Audit Commission questionnaire distributed to all highway authorities, 1986*  
*Exhibit 8*
INADEQUATE FUNDING

24. Exhibit 9 shows the trends in maintenance expenditure by type of treatment and class of road in England over recent years. Local authority expenditure has fluctuated, but these features stand out:

- spending on surface dressing has increased, particularly on principal roads where less strengthening and resurfacing is done. It can hardly be a coincidence that the condition of principal roads has declined after a period in which expenditure on
- resurfacing and strengthening was reduced by 40 per cent;
there has been a significant increase in spending on footpaths on non-principal roads since 1981.

TRENDS IN MAINTENANCE EXPENDITURE BY TYPE OF TREATMENT

Expenditure on surface dressing and footways has increased significantly while strengthening of principal roads has declined

Source: NRMCS, 1986 and information from DTp

Exhibit 9
25. In its recent paper *The State of Roads and Bridges*, the Institution of Civil Engineers commented that "The results of NRMCS and of the census and sample survey of bridges leave little doubt that funds allocated to structural maintenance are, and have been, inadequate ... There is no doubt that the shortfall in funds allocated arises predominantly from insufficient finance at source, but partly also from ineffective or inefficient use of what is provided".

26. Expenditure per kilometre of local authority road in England declined by about 10 per cent over the period 1976 to 1986, and expenditure per kilometre of principal road declined by more than twice this percentage. Conversely, the money spent on the structural maintenance of motorways and trunk roads has increased markedly, from around £100 million in 1978-79 to close to £200 million in 1986-87 at constant prices, in an effort to eliminate the backlog of maintenance identified by the National Audit Office in their 1985 report *Department of Transport: Expenditure on Motorways and Trunk Roads*. This attack by central government on the backlog of motorway and trunk road maintenance contrasts with the ability of local authorities to adopt the same approach on their roads, where the backlog is, if anything, increasing.

27. A number of highway authorities, Norfolk County Council for one, have been able to estimate their local backlog. Exhibit 10 reveals a national problem. It shows a comparison for England and Wales of the rate of strengthening of principal roads compared with the rate necessary to maintain their life, based on residual life data from NRMCS. This shows a marked shortfall in recent years. Comparisons for earlier years also reveal a shortfall, although curiously this has not been reflected by any long term tendency for residual lives to decrease.

**ROAD STRENGTHENING: NEED AND EXPENDITURE, 1984-86**

In recent years, the amount of road strengthened has been less than half of what is apparently required
28. In the past, central government did not seem concerned about the decline in expenditure, which fitted in with its drive for restraint in public spending. Recently, however, the DTp has signalled its wish for substantial increases in maintenance expenditure on local roads by increasing the provision for highways maintenance in England by 15 per cent in 1986-87 and 13 per cent in 1987-88 (Exhibit 11 and Note 2). English shire counties, in particular have for a number of years underspent their allocation by about eight per cent. It is not mandatory for authorities to spend their allocation for highways maintenance on that function. However, the decline in road condition, coupled with the underspending on highways maintenance, suggests that local authorities need to reexamine their priorities. In particular, they need to ensure that highways maintenance is not suffering because of slow progress in improving efficiency in other services.

**COMPARISON OF PROVISION WITH OUTTURN FOR MAINTENANCE IN ENGLAND**

English authorities are now under-spending provision

![Graph showing comparison of provision and outturn for maintenance in England](image)

Budgetted outturn for 1987-8 shows a projected underspend of £143 million at outturn prices

*Source: Audit Commission analysis of data from DTp*

Exhibit 11

29. Some highways engineers consider that highways maintenance budgets have come under more pressure from competing services since maintenance was taken out of the Transport Supplementary Grant (TSG) procedure. Under this procedure, highway authorities prepared a document entitled *Transport Policies and Programmes* setting out their programme of work, and the government gave a proportional grant for all accepted work above a threshold expenditure level, effectively putting a 'ring fence' around both maintenance and capital expenditure. The procedure has been retained for capital expenditure since 1985-86; the argument is that the purpose of TSG is to encourage local authorities to build or improve through routes that might not otherwise have high priority, in terms of purely local considerations. Majority opinion in local government, however, remains hostile to funding by way of specific grants.
HISTORICAL BUDGETING

30. The Local Authority Associations’ Code of Good Practice published in 1983, sets out a framework for budgeting based upon inventories, service level specifications for routine maintenance, formally defined defect levels above which carriageway and footpath work should be carried out and the use of condition assessment systems such as CHART or MARCH* for structural maintenance. Commendably, a number of authorities are close to operating such a system, including Devon, Avon, Hertfordshire and Birmingham, but the majority still allocate their budgets on the traditional basis of last year’s expenditure adjusted for inflation. This reliance on historical budgeting is not peculiar to highways maintenance.

31. Having fixed the budget, the standard approach is to allocate the money required for routine maintenance first, and the remainder goes to structural and winter maintenance. The danger with this approach is that in times of expenditure constraints or severe winters, the budget for structural maintenance is inevitably squeezed and road condition deteriorates. It is not surprising that the Commission’s study has found that too high a proportion of the maintenance budget is typically devoted to routine maintenance.

INAPPROPRIATE STAFFING LEVELS

32. Staffing levels on the client side of highways maintenance vary widely, between 2.5 and 10.5 full-time equivalents (FTEs) per £1 million, with half the authorities falling between 4 and 6 FTEs per £1 million (Exhibit 12). Local authorities do not review staffing adequately.

HIGHWAYS MAINTENANCE: CLIENT-SIDE STAFFING LEVELS

Maintenance staffing per £1 million expenditure varies by about 4:1 in authorities which suggests that staffing levels often bear no relation to workload.

*See paragraph 18 for a description of these systems
levels as frequently as they should. Low staffing levels (below 4 FTEs/£1 million) are generally found where there are poor or non-existent management systems and/or high unit costs of maintenance and little site supervision of work. Adequate site supervision and materials testing are needed to ensure effective maintenance. It is also important to supervise routine maintenance rather than leave it entirely to the DLO or contractor - the local audits have revealed a high incidence of unsatisfactory work such as failure to meet specification, sometimes coupled with falsification of bonus claims. One of the problems with agency arrangements is that many counties pay their agents too little in administration fees, so districts often do not have enough staff to collect inventory information, etc.

CONFUSION BETWEEN CLIENT AND CONTRACTOR ROLES

33. The primary role of the local authority is the client side task, i.e. deciding what work needs to be done, specifying it, arranging for the work to be undertaken and supervising it. The local authority may also undertake the work itself via its DLO if that is the most economic and effective way of getting it done, but the contractor role should not become blurred with that of the client. We have found counties where the divisional surveyor has both client and DLO responsibilities. This can place him in an awkward position in supervising the DLO and in situations where a choice needs to be made between the DLO or a contractor undertaking the work.

34. One of the common consequences of 'dual hatted' personnel is inadequate supervision of the DLO: the DLO is left to get on with the work, but often with lax bonus schemes and inefficient working practices. Other consequences of too cosy a relationship with the DLO are that insufficient work may be put out to tender, and the DLO's problems are allowed to dominate policy or budget allocation. In some authorities, the increasing attention given to footpath work may have as much to do with the DLO's traditional superiority over contractors at this type of work as it has with complaints from pedestrians. Changes in budget allocations between agents or divisions are often resisted because of their impact on an authority's DLO.

INSUFFICIENT TENDERING

35. Highways maintenance is subject to the requirements of the Local Government, Planning and Land Act 1980. Among other things, this stipulates that all jobs of work where the value is above a specified threshold (currently £25,000 but previously £50,000) should be put out to competitive tender, and a certain proportion of the other jobs (30 per cent until recently, but 60 per cent from April 1988). On the face of it, this would appear sufficient to ensure that the majority of the work awarded to DLOs was won in competition. In practice, it certainly was not sufficient in many authorities, particularly for routine maintenance work and jobs such as potholing and patching (major works such as resurfacing and surface dressing are usually put out to tender).

36. Firstly, typically over a quarter of the highways maintenance budget has not been subject to the Act: winter maintenance, emergency work, street sweeping, grass cutting, gully emptying, sign and traffic signal maintenance, and markings. The majority of this work (80 per cent among counties in 1985-86) has continued to be awarded directly to the DLO without any competition. However, under the Local Government Act 1988 it will be mandatory to go out to competitive tender for many of these functions, and street lighting will be specifically included as an amendment to the 1980 Act to clear up the present ambiguity over its status.
37. Secondly, a DLO could remain viable by simply undertaking work awarded to it without competition and not bothering to bid at all for work put out to competitive tender. Some of the former metropolitan county councils took this extreme approach: their DLOs did only about half of the highways work but none of it was won by tendering. Until recently in many other authorities the proportion of work done by the highways DLO that had been won in competition was around five to ten per cent (Exhibit 13). The County Surveyors Society conducted a survey of its members which showed that in 1985-86 DLOs undertook 45 per cent of highways maintenance work, but a little under a quarter of the work they were awarded was won in competition.

**DLO WORK WON IN COMPETITION, 1983-4 AND 1985-6**

In many highway authorities exposure of DLOs to competition is small, though it is increasing.

![Graph showing percentage of DLO work won by tender in 1983-84 and 1985-86](Exhibit 13)

*Source: County Surveyors Society questionnaire*
38. Thirdly, there were a number of ways in which the parent authority could try to favour its DLO. The work could be parcelled in such a way that it was most convenient for the DLO and hampered private contractors, for example.

39. Finally, an authority can choose to award work to its DLO even if it fails to submit the lowest tender, although it is required by law to identify such occasions and give its reasons. The most common reason given is the cost of redundancies, which may be quite justifiable occasionally, but not if it is used year in and year out.

40. These biases are unfortunate because they tarnish the image of DLOs, when they are in many ways the fault of lax client side management. The Commission believes that an efficient DLO, tendering for most of its work, can be a most effective way of ensuring genuine competition among private contractors and providing value for money. Without its DLO's prices as a benchmark, an authority cannot be sure that the tenders it receives are as keen as they might be. Without DLOs, private contractors' prices might rise, in the short term at least, and a DLO once disbanded cannot readily be re-established. That competition in the private sector in this area is not always as keen as it might be is shown by the ruling of the Restrictive Practices Court, which has declared as against the public interest a series of price fixing and tendering agreements operated by firms in the ready mixed concrete and road building material industries.

THE RANGE IN UNIT COSTS

41. Except with routine maintenance tasks, the nature of work can vary from one authority to another and, for example, different materials may be specified. This makes comparison of the costs of maintenance difficult on other than routine work. To overcome this, the Commission devised a series of realistic jobs which might commonly occur in every highways department and then asked authorities to price them as though their DLO or a contractor was bidding for the work. These 'highways models', as they were called, allow a consistent comparison to be made between the prices paid by different authorities. The full results of the comparison are given in the main report. They show that for structural maintenance the range between the lower and upper quartiles (the most economic and least economic quarter of authorities) is typically about 1.3 to 1. This is a less wide range than has been encountered in some other services and is consistent with a reasonable proportion of such work being subjected to competition from national firms. The range between the most and least economic 10 per cent of authorities is wider at typically 1.8 to 1.

42. There is not the same difficulty in making fair comparisons of unit costs for routine maintenance work. The typical inter-quartile range in unit costs encountered in the study is about 1.6 to 1, higher than that for structural maintenance. The differences in unit costs cannot be explained away by regional differences in wages or by differences in the frequency of the activity, although both these factors have some influence. The in-depth reviews suggest that the differences are mainly due to the extent of competition, the degree of attention paid to updating bonus schemes, the levels of supervision and other factors such as the efficiency of vehicle scheduling.

43. The comparison of highways models' prices and unit costs reveals that the savings that could be made across the whole spectrum of maintenance, if all authorities were working at the efficiency of the best quarter, is 16 per cent (about £180 million a year in England). If the performance of the best 10 per cent could be achieved the savings would be 22 per cent (£250 million). If and when these improvements are achieved, the funds
allocated by central government should not be reduced pro rata. Rather the money should be redirected to improving the condition of the network.

POOR AGENCY ARRANGEMENTS BETWEEN COUNTIES AND DISTRICTS

44. In its report on agencies published last September, the Commission criticised the typical relationship between counties and their agents as being too remote. It argued for a more contractual basis, with the county setting the policy (after due consultation with district members) and the agents’ officers delivering services in line with that policy.

45. Initial reaction to the report has been mainly favourable although both the ACC and the ADC had reservations about certain aspects of it. The ACC strongly endorsed the recommended changes in the law and the ADC welcomed the acknowledgement contained in the report that agencies can work efficiently.

46. Much of the blame for the current position lies with the legislation with which authorities have to work. It is therefore disappointing that the government has so far failed to agree to the recommendation to repeal Section 42 of the Highways Act 1980, which would, in the Commission’s view, improve the environment for constructive negotiations between counties and districts. The DTp has, nonetheless, expressed its general support for the Commission’s recommendations on how agencies should be run.

47. The Commission sees no reason to modify the recommendations in its report on agencies, but is conscious that their successful implementation is dependent upon goodwill and good sense prevailing between counties and districts. The local audits of agency arrangements now underway will show whether the right climate exists.
3. How to Improve the Condition of Highways

48. The last chapter described the main deficiencies observable in the management of highways maintenance. A typical highway authority does not suffer from all these deficiencies, although there are some authorities of which that may be nearly true. The situation is by no means uniformly bleak; a number of authorities have recognised the problems and tackled them. This chapter describes what should be done, both locally and centrally, to improve the condition of local authority roads. Solutions to all the management problems can be found in the best practices adopted by some authorities (Exhibit 14).

CENTRAL GOVERNMENT ACTION
NATIONAL FUNDING LEVELS

49. Chapter 2 showed that insufficient money is being spent by local authorities on highways maintenance. The extent of the backlog cannot be estimated, but it is possible to estimate the extra annual expenditure required to halt the decline. For strengthening, resurfacing and surface dressing of carriageways an estimate of extra expenditure can be based on the rate of increase of the NRMCS defects index compared with the percentage of roads treated each year. This indicates that about 13 per cent of the network should be treated each year rather than the current nine per cent. For principal roads, the NRMCS data on residual lives compared with the rate of strengthening gives an alternative estimate with much the same result. Footpaths did not show any marked deterioration until 1986, but there is considerable public pressure to improve them so it may be desirable to increase spending to its historically high level of 1983-84. The cost to local authorities in England of strengthening sub-standard bridges is likely to be around £600 million*. Based on these assessments, the recommendations for extra expenditure in England are as follows, with corresponding figures for Wales in Annex A; the changes are expressed relative to the situation in 1986-87, but converted to current year prices:

- Expenditure on strengthening, resurfacing and surface dressing on principal roads should be raised by about £40 million a year from the current £70 million a year. The additional money should go to long term treatments, such as strengthening and resurfacing, with priority for urban principal roads.
- Expenditure on strengthening, resurfacing and surface dressing on other roads should initially be increased by about half, i.e. £100 million a year, and the situation carefully monitored.
- Expenditure on footpaths should be increased by about £10 million a year (about eight per cent).

* The Assessment of Highway Bridges and Structures - Bridge Census and Sample Survey, DTp, 1987, sets out the results of a recent bridge census.
### SOLUTIONS TO PROBLEMS IN THE MANAGEMENT OF HIGHWAYS MAINTENANCE

<table>
<thead>
<tr>
<th>MANAGEMENT PROBLEM (Chapter 2)</th>
<th>RECOMMENDED SOLUTION (Chapter 3)</th>
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<tbody>
<tr>
<td>Lack of information</td>
<td>Gather up to date inventories</td>
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<tr>
<td></td>
<td>Undertake highway condition surveys</td>
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<tr>
<td>Unequal policies</td>
<td>Develop explicit policies</td>
</tr>
<tr>
<td></td>
<td>Spend close to GRE</td>
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<tr>
<td>Inadequate funding</td>
<td>Improve efficiency</td>
</tr>
<tr>
<td></td>
<td>Give more priority to structural maintenance</td>
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<tr>
<td>Historical budgeting</td>
<td>Adopt needs-assessed budgets</td>
</tr>
<tr>
<td></td>
<td>Review performance monitoring procedures</td>
</tr>
<tr>
<td>Inappropriate staffing levels</td>
<td>Review staffing levels</td>
</tr>
<tr>
<td>Confusion between client and contractor roles</td>
<td>Clean split between client and contractor</td>
</tr>
<tr>
<td>Insufficient tendering</td>
<td>Ensure that DLOs and private contractors are subjected to competition</td>
</tr>
<tr>
<td>Wide range in unit costs</td>
<td>Review methods of working and bonus schemes in the DLO</td>
</tr>
<tr>
<td>Poor agency arrangements between counties and districts</td>
<td>Implement the recommendations of the Commission’s report “Improving highways agency arrangements between counties and districts”</td>
</tr>
</tbody>
</table>

*Exhibit 14*
Expenditure on bridges should be increased by about £40 million a year so that over a period of fifteen years or so they can be brought up to national loading standards.

Rural unclassified roads should be reviewed locally to determine the standard to which they should be maintained. Harsh decisions may need to be taken to allow some rural roads to deteriorate to what will effectively be green lanes. This will only be possible if the Courts uphold the distinction between the maintenance standards of main roads and less important roads when settling claims for damages.

50. On this basis, the maintenance budget for 1987-88 should have been about £1,300 million in England compared with a central government provision of £1,264 million, not a great difference given the necessarily approximate nature of these calculations (Exhibit 15). Continued central government provision at the current level in real terms and spending by highway authorities close to that provision should prevent further deterioration. The same provision in real terms should be continued until there is evidence that the decline in highway condition is being halted. In the past, local authorities have been slow to change their expenditure in response to changes in provision. They will need to give higher priority to maintenance in the future. There are value for money improvements to be made in other services which would facilitate this.

CURRENT AND REQUIRED LEVELS OF MAINTENANCE EXPENDITURE FOR ENGLAND 1987-8

In the short term, authorities need to increase their expenditure, but in the medium term efficiency improvements can release money for additional work

51. Grant Related Expenditure Assessments (GREs) are an authority's best available indicator of what central government considers should be its share of national maintenance provision (see Note 2). As a broad rule, if each authority had spent 107 per cent of its GRE on highways maintenance in 1987-88 the decline should have been arrested. In the medium term (i.e. five years and beyond), authorities ought to have
achieved sufficient improvements in the efficiency of highways maintenance, especially routine maintenance, to allow a small reduction in total national provision while still holding the condition of the highways. The evidence from the special study and the local audits of routine maintenance is that in England over £80 million a year could be saved on these activities alone and diverted to structural maintenance. Across the whole spectrum of maintenance, the potential savings equate to about 16 per cent of the budget, or £180 million a year in England, if all authorities achieve the efficiency of the best quarter. If the efficiency of the best 10 per cent of authorities could be emulated, the savings would be about 22 per cent. However, some authorities are already operating so efficiently that it may be difficult to squeeze more work out of their existing funds. They may need to increase their expenditure in the medium as well as short term (Exhibit 16).

**IMPROVING THE CONDITION OF LOCAL ROADS**

An authority’s strategy should depend on its efficiency and ratio of expenditure to GRE

![Exhibit 16](image)

52. Central government needs to recognise that local authorities will not be able to achieve efficiency improvements overnight; a period of at least five years will be required. It should maintain the current enhanced provision for highways maintenance until the deterioration in roads has been halted and highway condition stabilised for at least three years.
CENTRAL SUPPORT AND LEGISLATION CHANGES

53. The DTp and Welsh Office should continue their support for computerised highway management systems, in particular RMMS and PMS, and should encourage local highway authorities to extend such systems to their own roads. The DTp should encourage the Transport and Road Research Laboratory (TRRL) to extend and speed up its research into whole-life costing of roads, and should support the research being undertaken by certain universities (Newcastle and Nottingham) into road design and road track costs. It should also follow up the recommendations of the National Audit Office in its 1987 report Department of Transport: Regulation of Heavy Lorries. This report says that, if better suspension systems were further developed and fixed to all heavy lorries, savings of the order of £100 million a year in road maintenance could be achieved.

54. Government should repeal Section 42 of the Highways Act 1980, replacing it with safeguards for efficient agents. Districts should be solely responsible for all street cleansing, grass cutting and other horticultural work in urban areas while the responsibility for all street lighting should lie with counties.

55. Consideration should also be given to clarifying the law to make it clearer that different standards of road condition should be expected on different types of road. Section 58 of the Highways Act 1980 implies that the maintenance standards of a road can take account of its character and the traffic expected to use it, but a more explicit definition of what is a reasonable standard would be helpful. Certain minimum national standards may need to be defined.

LOCAL ACTION

56. Local authorities need urgently to address the shortcomings identified in Chapter 2. They need to take a more strategic view of maintenance and adopt many of the policies and methods now being implemented by the DTp and Welsh Office. To begin with, authorities should determine the budget needed to maintain the local highways in a satisfactory condition. Before this can be achieved, they will need to gather up to date inventories, install a system of regular road condition surveys and develop explicit policies on maintenance. Budget allocation procedures will need to be revised. At the same time as these procedures are being introduced or revised, the day to day management of highways maintenance needs to be reviewed; in particular, agency arrangements, staffing levels, and tendering arrangements.

UP TO DATE INVENTORIES

57. The DTp and Welsh Office are requiring their local authority agents for the motorway and trunk road network to collect basic inventory information and to install their Routine Maintenance Management System (RMMS). The DTp and Welsh Office will contribute to the cost of installing these systems which they hope authorities will extend to their own roads. Several consortia of highway authorities who intend to use the same hardware and software for RMMS are forming. The long term objective is to produce a comprehensive system which will cover all aspects of highways management including inventories, treatment histories, programming of work, resource allocation, traffic modelling and design of schemes. All the systems are based on some form of digital model of the highway network and on a detailed inventory.
58. Unfortunately, not all authorities are yet convinced that the benefits of such systems outweigh the costs. Broadly speaking, the annual cost of operating highways management systems and inventories is equal to one to two per cent of the maintenance budget, a small price to pay for the potential benefits of such systems - improvements in efficiency and effectiveness which can equal 10 to 20 per cent of the budget in authorities currently without adequate information. These benefits are not all directly attributable to highways management systems, but such systems are a prerequisite to their achievement.

59. As an immediate measure, council members should ensure that existing inventory information is updated and, where necessary, extended, so that reliable information is available. In counties, the inventory and road condition data should also include agents’ areas, but on minor roads the information need not be as extensive as on urban roads.

CONDITION SURVEYS

60. The National Road Maintenance Condition Survey (NRMCS) was launched by the DTp and local highway authorities in 1977 with the aim of developing national annual trend information. Highway authorities carry out the fieldwork for the survey at about 9,000 sample sites. NRMCS gives information on national trends but is usually inadequate for trends in individual authorities; many authorities therefore pay for additional sites to give them a better appreciation of local trends in road condition and in this way determine whether to increase or decrease the maintenance budget. This practice is commended by the Commission.* Highway authorities also need to assess the condition of their bridges and devise a programme of improvements and repairs in the light of the Bridge Assessment Code, published in 1984.

61. The DTp in partnership with local authorities has commissioned a feasibility study and system specification of a structural maintenance system (PMS). PMS will allow information on road condition and historic treatment data to be recorded and will provide almost all the information needed on the highway network. Authorities should maintain treatment histories for all roads, something which few currently do. The development of PMS will facilitate this, as well as the application of whole-life costing. The Commission welcomes such developments and encourages authorities to use them.

62. Improved information systems can also assist in winter maintenance. In the case of a county, a call out and salting run as a precaution against ice and snow costs an average of £15,000. Clearly there can be benefits from using systems to refine the decisions on call outs. There are now improved Meteorological Office services to predict local road conditions, and ice detection systems such as those operated by Devon and Cheshire are playing an increasing role. The Welsh Office is funding the development of ice detection systems.

EXPLICIT POLICIES

63. Local highway authority members should see it as their prime responsibility to formulate policies on maintenance, taking into account their local circumstances and the published codes. Counties should consult all their districts before formulating policies, but must then ensure that agents are keeping to these policies within the discretion granted. Authorities should initiate a review of routine maintenance activities to assess the scope for reducing frequencies. The LAA’s Code of Good Practice is a useful guide to likely

*Authorities conducting sample surveys include Kent, West Sussex, Cheshire, Warwickshire and Devon. Hertfordshire is introducing condition surveys for budgeting for footpath maintenance.
frequencies although lower frequencies may also be adequate. They should also review the intervention levels for structural maintenance, such as the height of a footpath trip which requires repair. Again, the LAA Code provides a benchmark.

64. In some authorities, the scope for reducing frequencies may be limited, but every authority should examine its frequencies critically and test the effect of reductions by, for example, a pilot trial in one particular area.

65. A rationalisation of responsibilities between highway authorities and district councils along the lines suggested in the Commission's report on agency arrangements would facilitate the shift of priority from routine to structural maintenance. District councils should be made entirely responsible for all street sweeping and cleansing, and for grass cutting and horticultural work on urban local authority roads, while counties should assume all street lighting responsibilities. This would end many of the current arguments between counties and districts over the appropriate split between highway and amenity reasons for such functions. The government would of course need to change block grant allocations to counties and districts to reflect the changed responsibilities.

REVISED FINANCIAL PROCEDURES

66. The budget allocation procedure should be revised where necessary so that budgets are based on an authority-wide assessment of need linked to overall policy. For routine maintenance, the annual budget for each function should be calculated according to the formula:

\[
\text{number of items} \times \text{specified annual frequency} \times \text{agreed unit cost}
\]

For structural maintenance, the budget should be based on a sample survey of condition.

67. A number of authorities have begun to capitalise maintenance expenditure, but practices vary considerably. Logically, expenditure might be considered capital when it strengthens the road substantially, increases its capacity, or extends its life beyond the original design life; some resurfacing and reconstruction may come into this category. The DTp and Welsh Office are moving towards this way of treating such expenditure on their own roads. Expenditure should be considered as revenue if it is concerned with normal maintenance, such as sweeping, gully emptying, surface dressing and patching. There are a number of points which need consideration and the Commission recommends that highways expenditure be treated as a special area for review by CIPFA's Capital Accounting Steering Group, so that acceptable guidelines can be drawn up.

68. Local highway authorities should review their systems of performance monitoring and the management and accounting information provided to the highways department. A number of highways departments claim it is necessary to run their own manual systems in parallel with the treasurer's because of the inadequacy of the information provided.

IMPROVED DAY TO DAY MANAGEMENT

69. In counties, the agency arrangements should be improved along the lines recommended in the Commission's interim report, and in the light of the local audit recommendations.
70. All authorities should review client side maintenance staffing levels in the light of the local audit findings. They should ensure that staffing levels are adequate for running highways management systems, for ensuring adequate materials testing and for on site supervision of the DLO and contractors. Authorities should aim for between 4 and 6 FTEs/£ million and should examine their staffing levels critically if they fall outside this range.* Local circumstances, such as an unusual mixture of work or major systems development may well suggest levels outside this range but any higher level should be examined. Economising on client side staff may lead to the work done by the DLO or contractor costing more, but there are no benefits from staffing levels greatly above the range quoted.

71. In theory there should be a clean split between DLO and client side personnel, with no dual hatted staff below the chief officer. Such a split may not be practicable in small district councils since it might require employing two people when the need is for only half a person on the client side and half a person on the DLO.

72. The Commission recognises the importance of viable DLOs, both as a safeguard against possible price rings by contractors and because of the convenience of using direct labour for frequent small jobs and emergency work. An analysis by the County Surveyors Society showed that for jobs where both DLOs and private contractors competed for the work, the total value of DLO tenders was six per cent below the total value of lowest private sector tenders, demonstrating that DLOs can be competitive. This result cannot be extrapolated to all work done by DLOs because much of it is awarded without competition.

73. The DLO must be subject to competition to ensure its practices and procedures do not become lax. Before awarding work to its DLO, an authority should ensure that the price being charged is competitive, either by obtaining specific quotes from private contractors or by other means. A substantial proportion of each main category of work (though not necessarily 100 per cent) should go out to competition. The changes to the DLO legislation since 1986 are expected to lead to 75 per cent of maintenance work covered by the 1980 Act being awarded in competition compared with about 50 per cent in 1985-86 (Exhibit 17). Following the Local Government Act 1988 over two-thirds of all highways maintenance work will be put out to tender. This will have a significant impact on the client side of authorities because of the need to administer all the tendering arrangements. The client side of large authorities will typically need some additional staff but they will be able to take the changes in their stride; for small authorities, however, the changes may mean a radical alteration to their systems and approaches.

74. It is not good practice to award entire categories of work without competitive tenders, whether it be to a DLO or outside contractor. Authorities should ensure that outside contractors do not receive work without competition. Major savings - £200,000 a year in one case - have been made when traffic signal maintenance has been put to tender rather than simply awarded to the supplier of the original equipment. Electricity boards which receive contracts for the maintenance of street lighting without competition also sometimes charge high prices. Savings of 30-50 per cent have been made by placing this work in the market place.

* The Highways Maintenance Phase 2 Audit Guide defines which staff to include as client side highways maintenance; available to local authorities from the Audit Commission, St Lawrence House, 29-31 Broad Street, Bristol BS1 2EX, price £10.
The forecast effect of the changes to the competition requirements in the Local Government, Planning and Land Act 1980

About 75% of maintenance will be put out to tender, compared with about 50% in 1985-6.

75. Methods of working and bonus schemes in the DLO should be reviewed as a matter of priority. The study has revealed that significant improvements can be made by revising outdated bonus schemes, devising more efficient schedules for vehicles, and improving the level of supervision by the client. DLOs should not be encumbered by high central establishment charges which bear no obvious relationship to the central support services provided. Since DLOs are themselves subject to competition, it is appropriate that they should have the ultimate sanction of buying in services from outside the authority if that is more economic.

* * *

76. Exhibit 18 summarises what authorities could achieve with the changes outlined above; namely, improved efficiency, increased spending and a higher proportion of the budget devoted to structural maintenance.
A COMPARISON OF A TYPICAL AND GOOD PRACTICE HIGHWAY AUTHORITY FOR THREE KEY CRITERIA - ENGLAND

Typical highway authorities need to devote a higher proportion of expenditure to structural maintenance, and either increase expenditure or improve efficiency. Efficiency improvements should be the goal in the medium term.

Source: Audit Commission analyses

Exhibit 18
NOTE 1  Terminology

Various terminologies are in use by engineers and laymen to describe highways maintenance. The terminology we have used is defined in the charts below:

![Highways Maintenance Diagram](image)

NOTE 2  Provision for highways maintenance in England

Each year the government conducts a Public Expenditure Survey to decide the total level of public spending and the allocation between different departments. Part of the DTp allocation covers transport expenditure by English local authorities. The Department announces a provision for each main head: road maintenance, public transport, professional and technical services, concessionary fares and parking. For example, in 1987-88 the provision for road maintenance was £1,264 million.

For most local services, the government does not believe that local authorities need to spend as much as the provision which is included in the spending plans. Service control totals used for calculating Grant Related Expenditure Assessments (GREs) in the 1987-88 Rate Support Grant Settlement are therefore 4.2 per cent lower than provision. GREs are used as the basis for distributing the Block Grant element of the Rate Support Grant.

An authority's GRE for highways maintenance is calculated according to a formula based on length of principal and other roads in built up and non built up areas, a usage factor which takes account of traffic and heavy goods vehicle kilometres, and the weather.
ANNEX A  WALES

1. Tables A1 and 2 show, respectively, the expenditure on maintenance of local authority and Welsh Office roads, expressed in 1986-87 prices. The local authority outturn figures are RSG current expenditure, including winter maintenance and street lighting. The high outturn in 1981-82 is partly accounted for by exceptional weather conditions resulting in additional expenditure on gritting and repairs to frost damage of about £16 million. Apart from 1981-82, the pattern of expenditure has been the converse of England's, with authorities not spending up to the level of provision until 1986-87. They are expected to exceed provision in 1987-88 as part of the effort to arrest the deterioration in road condition.

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<th>LOCAL AUTHORITY HIGHWAYS MAINTENANCE EXPENDITURE</th>
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<td><strong>1986-7 PRICES</strong></td>
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<th>WELSH OFFICE MAINTENANCE EXPENDITURE</th>
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<td><strong>(GENERAL AND STRUCTURAL) 1986-7 PRICES</strong></td>
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<td>27.8</td>
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2. The TSG arrangements in Wales differ from those in England. Until 1982-83 TSG was paid on programmes of capital and current expenditure but since 1984-85 the only accepted expenditure for TSG has related to schemes costing £5 million or more. In Wales, unlike England, authorities are not given a GRE for transport, let alone for highways maintenance.

3. Non-trunk roads in Wales are, according to NRMCS, in better condition now than in 1977 but since 1980 have been deteriorating at a rate similar to roads in England. In the absence of separate figures for Wales of lengths of road treated, it is difficult to estimate the additional expenditure required to halt the decline in road condition in the same way as the calculation for England was performed. However, a somewhat cruder calculation based on the percentage of roads that require strengthening and the typical cost per kilometre of that work suggests that an additional £13 million may be required over the 1986-87 provision of £83 million.
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