

REPORT OF THE  
**AUDIT OFFICE**

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THE PLANNING OF ROADS

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**THE  
AUDIT  
OFFICE**

OFFICE OF THE CONTROLLER AND AUDITOR-GENERAL,  
WELLINGTON, NEW ZEALAND.

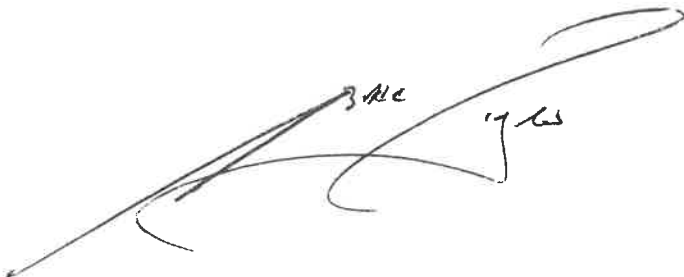
# THE PLANNING OF ROADS

This is one of a series of reports being published this year as a result of major value for money studies undertaken by the Audit Office.

The planning of roads affects the social and economic well-being of everyone. \$800 million is being spent on the roads in 1989-90. The effectiveness of applying these funds to the construction and maintenance of roads is determined by the extent to which the needs of the community and road users are met. The extent of user participation in the planning process is critical to the quality of that process.

This report has been written at a time when major reforms are being proposed for Local Government and for Central Government's Roothing, Road Safety and Urban Transport programmes. The report focusses on the manner in which overall national roading objectives are formulated and met.

I hope that the results of the audit as set out in this report will make a useful contribution to the debate on the proposed changes to roads administration and provide the basis for improvements to the management of an essential national asset.

A handwritten signature in black ink, appearing to read 'B H C Tyler', with a large, sweeping flourish extending to the right.

B H C Tyler  
Controller and Auditor General  
14 March 1989



**THE AUDIT OFFICE**

# **THE PLANNING OF ROADS**

**MARCH 1989**

## **ACKNOWLEDGEMENTS**

We would like to thank the members and officers of the National Roads Board, District Roads Councils and local authorities who volunteered information for the audit. We would also like to acknowledge the assistance given by staff of the Ministry of Transport and all the other people who gave their time so generously.

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## EXECUTIVE SUMMARY

New Zealand has about 51,300 km of paved roads and 41,800 km of unsealed roads. In the current year, about \$800 million (or 1.5% of GNP) is planned to be spent on those roads. Their planning affects the social and economic well-being of everyone. The benefit that the country obtains from road planning is dependent on the extent to which that planning meets the needs of road users and the community.

There have been limited funds available for new roads. During the last 30 years, the volume of traffic has continued to grow at a relatively constant rate, while the amount of money that is spent on the roads has declined as a proportion of national income. Because of the need to keep the existing roads in a serviceable condition, an increasing share of spending has had to go into maintenance. In recent years, spending on State Highways maintenance has taken over 70% of the funds that are available in that sector. (Paragraphs 344 and 531-532)

There is no integrated transport decision-making framework. This can mean, for example, that decisions about closing rail services are taken without consideration necessarily being given to the effects on the congestion or condition of the roads. Decisions relating to building and maintaining roads have been kept separate from road safety enforcement. Proposals are at present under consideration to bring urban transport (buses, passenger trains, ferries, etc) and road building and maintenance together under a single authority, and to bring the administration of those areas closer to road safety and traffic enforcement. This offers the opportunity for decisions affecting any one of these areas to be made taking into account the costs and consequences in the other areas. This has often not been the case in the past. (Paragraphs 307-311)

It is not possible for Parliament or the public to easily ascertain whether the National Roads Board (NRB) is doing a good job. The NRB does not declare its strategic aims or report publicly on the overall condition of the roads. Any changes in the administration of roads should require greater accountability from the agencies that may succeed the NRB. (Paragraphs 315 and 601-608)

Relatively few members of the NRB or its District Roads Councils directly represent the road users who pay for the roads. Most Board and Council members are appointed by local authorities. In any restructuring of roading administration, a greater voice should be given to the user representatives. In future, roading administration should also have stronger financial and management skills. (Paragraphs 408-415)

Present legislation requires the NRB to deal with many minor issues that would be more effectively dealt with at a local level. In any new structure, such issues should, wherever possible, be dealt with locally, where they are most likely to be well understood. (Paragraphs 316 and 414-415)

There are concerns over the accuracy of information in two key areas of road planning. Firstly, while the methodology of Cost Benefit Analysis (CBA) is appropriate, not all of the values used in the CBA are regularly reviewed. These values determine the results of the analysis and are crucial. They must be kept under regular review. Secondly, there is no legal requirement to report accidents that do not involve injury. The Ministry of Transport (MOT) knows details of only about 12% of all accidents. All significant road accidents should be reported, so that road planners have more information on where those accidents occur. With greater knowledge of accidents, road planners can design safer roads. (Paragraphs 325-330 and 338-340)



## EXECUTIVE SUMMARY

Road planning can cause considerable distress to communities that lie in the path of proposed road works. Uncertainty over projects can continue for more than twenty years. This is an unacceptable burden. If road works have not started within ten years, the roading authorities should either purchase the affected properties or remove the designation on them. (Paragraphs 346-351)

In the past, there has been only limited co-operation between the Road Transport Division of the Ministry of Transport and the former Ministry of Works and Development's Roothing Division. Both are now part of the MOT. The expertise and full co-operation of both is essential to effective management of the roads. For example, without good co-operation, road safety needs cannot be fully included in road design and the collection of Road User Charges cannot be carried out efficiently. Co-operation is therefore essential. (Paragraphs 423-425 and 514)

While road funds are collected in a generally effective manner, two aspects of the administration of Road User Charges need consideration. Firstly, there is a need for a review of the collection of the charges with particular reference to whether centralising the system in Wellington is the most cost-effective means of collection. Secondly, there is a need for continuing efforts to minimise lost revenue. One estimate puts total losses from evasion at less than \$10 million each year. Another estimate puts them at over \$14 million from inaccurate hubodometers alone. (Paragraphs 513-515)

Road funds are distributed in a generally effective manner. However, some changes are required. There is, in our view, no justification for the present system that allocates at least 39% of revenue to local authority roads and a minimum of 47% to State Highways. The NRB should allocate funds on the basis of need. There is also not enough oversight by the NRB of subsidy funds paid to local authorities. There have been occasions when the NRB has paid for works which were subsequently found to have been not fully complete when payment was made. There should be better monitoring to ensure work is complete before the subsidies are paid. (Paragraphs 523 and 537).

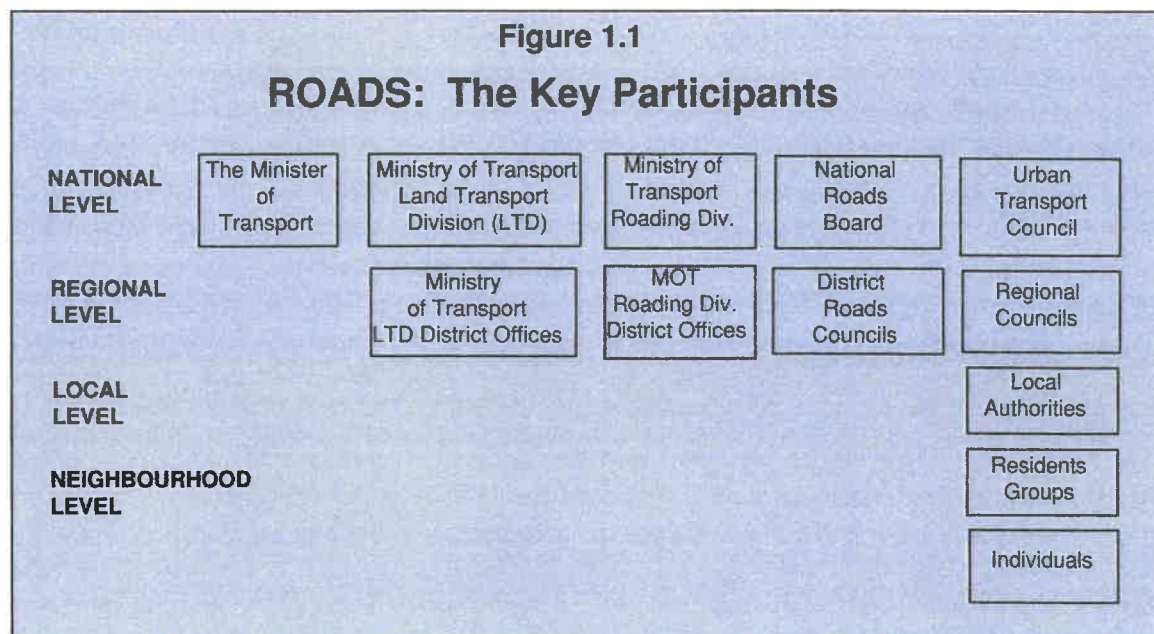


## INTRODUCTION

101. This audit, carried out under the authority of section 25 of the Public Finance Act 1977, examined the planning of roads in New Zealand.

102. The effectiveness, efficiency and economy of the planning of roads affects everyone. Roads are essential to our social and economic well-being, and about \$800 million is being spent on them in the 1988-89 financial year. Of this sum, the National Roads Board (NRB) is spending \$550 million on State Highways and local authority roading subsidies. Local authorities develop their own roading programmes and are spending \$250 million collected from rates. As a rough guide, 1.5% of GNP is allocated to roads.

103. This report reviews the roles, effectiveness and accountability of key participants in the road planning process. We specifically focussed on the manner in which overall national roading objectives are formulated and met. We did not deal in detail with, for example, the effectiveness of the application of local authority roading funds. Figure 1.1 illustrates the principal participants in the present roading process.



104. The report is written at a time when plans are being formulated for the reform of Government roading, road safety and urban transport programmes. To this end, the Minister of Transport has published a discussion paper prior to tabling draft legislation in the House of Representatives (“Reform of Government Roothing, Road Safety and Urban Transport Programmes, September 1988”). These proposed changes include combining the NRB and the Urban Transport Council (UTC) into a new Land Transport Authority (LTA). In this report, we refer to the NRB or the UTC when describing the past or present situation but, when talking of the future, we refer to the LTA.

**105.** We are also writing this report at the time of a significant re-organisation of local government. This will result in fewer district authorities and more Regional Councils with responsibilities for transport planning.

### **Audit Method**

**106.** We examined the procedures used in planning roads, identified what we see as the necessary processes, participants and means of funding of effective road planning, and compared the existing system with our model. We then drew conclusions and formulated recommendations.

**107.** Our audit covered the whole roading field, not only the activities of the NRB. As a result, we interviewed members and staff of the NRB, District Roads Councils, Regional Councils and other local authorities. We also talked with staff of the Ministry of Transport, consultants and individuals with special expertise and/or experience.

## BACKGROUND

**201.** It is only in recent years that road transport has become the principal means of long-distance communication and haulage. From the start of European settlement until after 1945, first shipping, and later railways, were the main means of transport.

**202.** Until the 1920s, roads were principally a responsibility of local government. The rapid development of motor traffic in that decade, with its need for better surfaces, wider roads and greater sight distances, created demands for road works which local government was unable to meet. In 1922, Parliament passed the Main Highways Act which set up a network of key roads managed by a Main Highways Board (MHB). The construction and maintenance of Government Roads was funded from the Consolidated Account.

**203.** By 1953, the limited extent of the MHB's administration of roads was seen as inadequate and new legislation replaced the MHB with the National Roads Board (NRB). The NRB was given a greater role in subsidising and overseeing local authority roads. The 1953 legislation also provided the NRB with a secure source of funding, independent of the annual Government Budget, by the establishment of the National Roads Fund (whose principal source of income came directly from a tax on motor spirits).

**204.** With a relatively stable financial base, the NRB carried out a major programme of road works through to the 1970s. In particular, in the 1960s the NRB put great emphasis on road construction and, during that time, the length of sealed highway doubled. This high level of construction in the 1960s is now resulting in an increasing volume of maintenance work.

**205.** In 1970, the Ministry of Transport published a report on the national transport system prepared by Wilbur Smith and Associates. This report proposed developing an integrated national transport plan.

**206.** A change to the funding of roads occurred in the late 1970s when the owners of heavy commercial vehicles began to pay Road User Charges. This form of road taxation collects revenue from heavy commercial vehicle owners to pay for the extra wear which their vehicles cause to the roads.

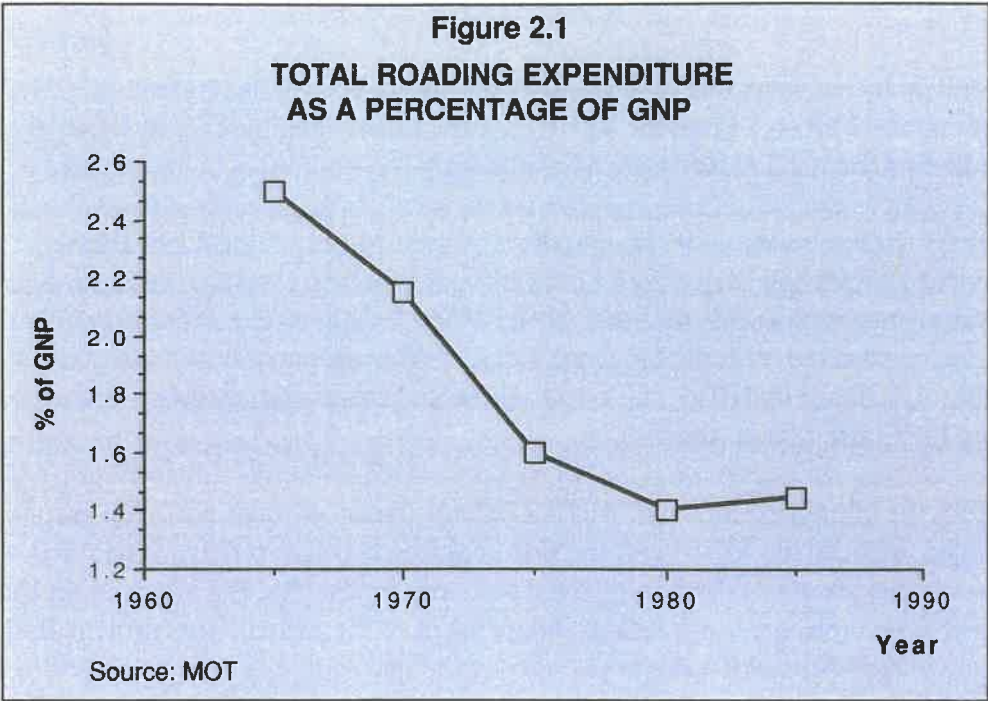
**207.** During the 1980s, the proportion of road works funded by Central Government has varied. In 1984, the general taxpayer contributed 28 percent of all roading costs. By 1987, with the phasing-in of Road User Charges, that contribution had shrunk to zero. At the time of writing, the NRB's income is almost entirely from excise duty on Motor Spirits and Road User Charges.

**208.** There are about 51,350 km of paved roads, made up of 11,030 km of State Highways and 40,320 km of local authority roads. There are also about 41,300 km of unsealed local authority roads and 500 km of unsealed State Highways.

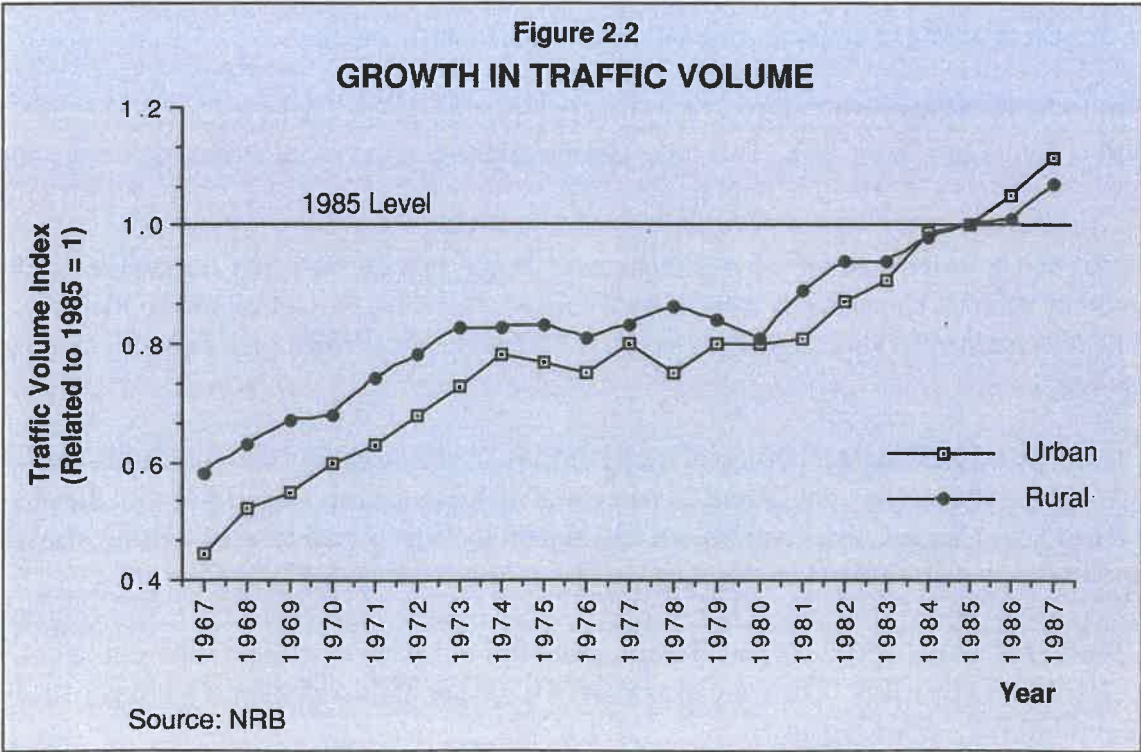
**209.** The ratio of motor vehicles to population has increased at a relatively constant rate since 1945. This rate of increase is a reflection of families becoming smaller and having two or more cars. The

**BACKGROUND**

pressure on roads therefore continues to increase, although the proportion of resources devoted to roading has reduced during the last 20 years. (See Figure 2.1)



210. The volume of motor traffic on our roads has, apart from a period between about 1974 and 1981, continued to grow at a relatively constant rate. (See figure 2.2)



## THE PROCESS

### The Requirements for an Effective Planning Process

**301.** The road system is a national asset. It vitally affects national economic and social performance. This requires that, at a strategic level, roads are planned and managed nationally.

**302.** The oversight of roads is logically the responsibility of the Government because of:

- The national significance of the roads system;
- The funding system by forms of taxation; and
- The public expectation that the Government will enforce the provision of safe roads.

**303.** For the planning of roads to be effective, several features are needed:

- A conscious national policy framework into which land transport and the planning of roads should fit. Decision-making should be co-ordinated within a national framework to provide clarity of objectives and to allow roading authorities to develop clear, strategic aims.
- A national roads authority concerned with strategic issues such as policy, standards, research and resource allocation. Local issues can be better dealt with at a local level.
- Agreed objectives, effective allocation of resources, monitoring and reporting of performance.
- A system that is simple, fair, open and responsive to community demands.
- Adequate information, skills and funding.

**304.** The Government, which is ultimately accountable for the resources, must define expectations and appoint management with the skills and personal qualities judged necessary to meet those expectations. While roading management is accountable to the Government for the successful management of roads, its credibility is in turn enhanced by a degree of independence from the Government.

**305.** To manage the roads successfully, there should be clear goals and responsibilities, control over resources and accountability for actions. Parliament, the Government and the public would then be able to judge managerial effectiveness.

**306.** Resource allocation must be generally accepted as fair. This is particularly so with respect to:

- Where money is spent;
- How allocations are divided between new work and maintenance; and
- How allocations are divided between State Highways and local authority roads.



### The Existing Planning Process

#### *Policy Framework*

**307.** Major inter-modal transport policy decisions are made on a case by case basis. There is no national policy framework for evaluating the competing priorities of differing types of transport. There is therefore no national land transport framework within which decision-makers can assess the various roading interests and issues. In this situation, it is not possible to determine whether the funds spent on one mode of transport might have been better spent on another.

**308.** In the September 1988 MOT Roading discussion paper, the Minister of Transport said “There has been no systematic integration of central Government’s main agencies in the wider roading sector.” The Minister also said “For many years the central Government roading agencies have been organised as though the construction and maintenance of roads were separate from, and unrelated to, the business of ensuring the safe and orderly use of the roads, and separate again from the public transportation systems.”

**309.** There has been little recognition that roading is only the means and not the end by which we enhance our economic and social welfare. Other than by Cost Benefit Analyses on individual projects, the NRB has not had to show that its policies are effective in meeting wider transport needs. As a result, it is difficult to decide whether road planning has been an effective element in national economic terms.

**310.** Without national land transport policy objectives, road planning demands are principally generated at a regional (District Roads Council) or local authority level. The principal concerns of these authorities are road construction and pavement maintenance. Such considerations do not take into account alternative strategies (such as investment in buses, trains, parking facilities or ferries) as ways of solving transport problems.

**311.** There is a need for the development of an organisational framework in which total transport needs can be identified and roading effectively planned. If carried out, the changes outlined by the Minister of Transport in the September 1988 discussion paper should help this.

#### *Management*

**312.** The National Roads Board is the principal road planning agency. Working through its District Roads Councils, it manages the State Highways and subsidises the local authority roads programmes. Local authorities manage their own roads to standards set by the NRB. Such a situation contains potential for overlapping of responsibilities and waste of resources.

**313.** The strengths of the present system are:

- Local authorities retain control of roads which they see as belonging to them and their ratepayers;
- There is a partnership between the NRB and the local authorities, with a mechanism for the distribution of resources; and
- There is a single national administration of the State Highways.

The principal weakness is the relative lack of control by communities over State Highways, which

may be the main or only road for those communities.

**314.** There is insufficient evidence to either support or deny the suggestion that the division of roads management between Central Government and local government is ineffective. On balance, we believe that the virtues of the present system outweigh its deficiencies. Its continuing effectiveness is, however, a matter which the LTA should keep under review.

### *Objectives*

**315.** While the NRB sets good technical standards for road works, there are few overall national roading objectives. The NRB often does not tell the community how it is going to spend the money that it has collected. It has no corporate or strategic plan. For example, there are no published statements that will tell us what the NRB intends to do about:

- reducing travel time,
- reducing vehicle running and maintenance costs, or
- improving the overall condition of the roads.

The NRB reports on its success in areas such as the extension of sealed highways and new roads. It does not, however, either in its annual report to Parliament or in its five-yearly Roding Surveys, declare its future aims in these areas. There is, therefore, no way for Parliament or the public to assess the performance of the NRB in achieving its targets.

### *Levels of Decision Making*

**316.** The National Roads Board deals with many issues which are of a local nature and therefore best dealt with locally. Examples of the types of issues which might be best resolved locally are illustrated in the minutes of the NRB meeting of 12 October 1988. These included:

- A footbridge across the State Highway at Plimmerton.
- Approval of a cycleway/footpath in Upper Hutt.
- Closure of SH1 and the Dunedin Motorway for a vintage car rally.
- Removal and disposal of abandoned motor vehicles in Dunedin.

Many of these issues have been dealt with by the NRB because present legislation requires it. In future, the proposed Land Transport Authority should be responsible for policy, standards, research and resource allocation. It should have the ability to delegate local issues to the Regional Councils and the District Councils.

**317.** There is greater community involvement in identifying local authority road needs than there is for State Highways. In local government, the initiative for road works comes from members of Councils, their technical staff, residents groups and individuals. Road needs for State Highways are more often identified by the staff of the NRB or its consultants. In both areas, the NRB's Investigating Teams identify necessary work.

**318.** Some local authorities make real efforts to involve or inform users and those affected by key decisions in planning road works. The NRB makes less effort than local authorities to directly inform and encourage community participation in the State Highway area. This is because the NRB sees



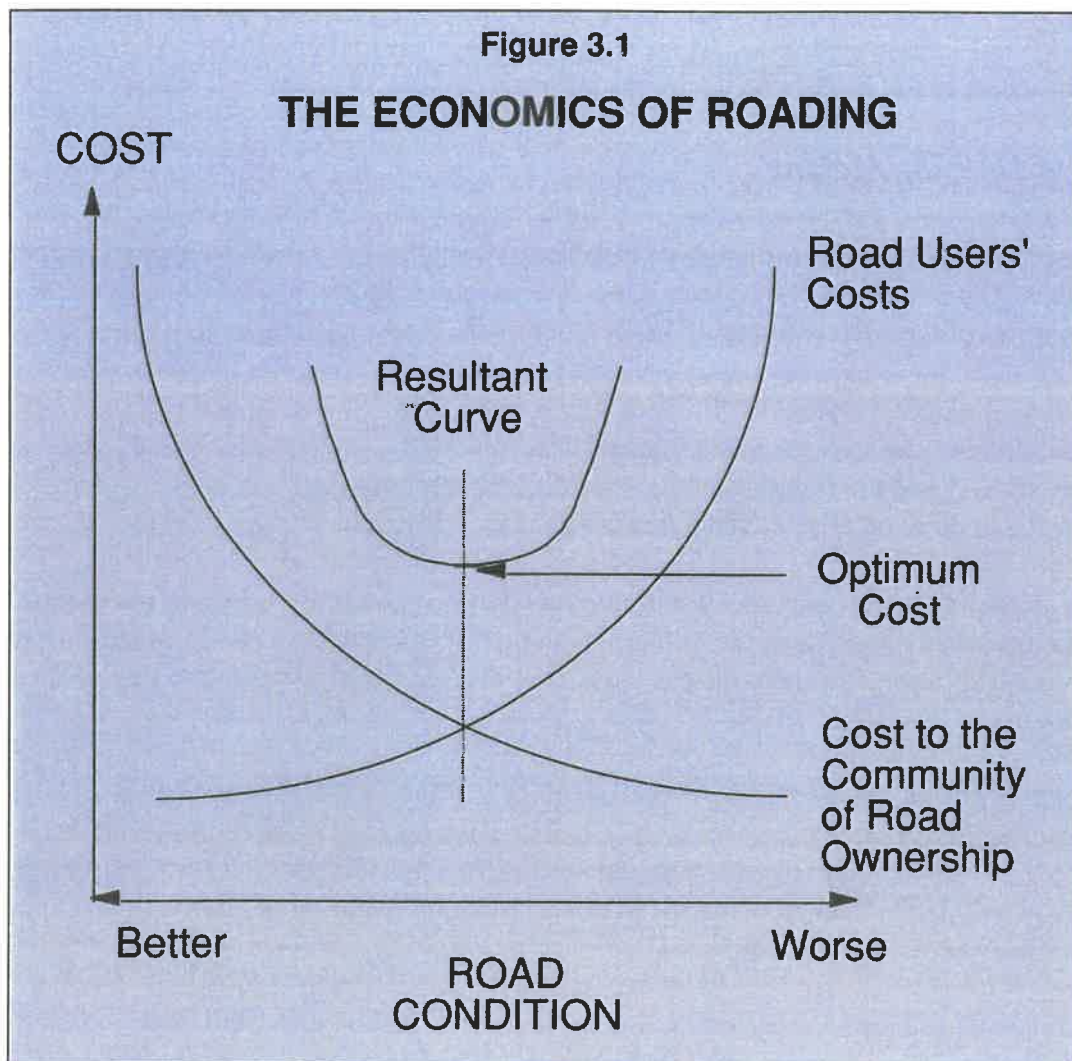
territorial local authorities as its principal point of contact with community groups.

**319.** The NRB does try to tell the public of its major projects. For example, it is funding a public information programme about the Wellington Urban Motorway through the media. Greater public information skills are needed in the NRB so that more such programmes can be mounted. They should be targeted to provide information, and the opportunity to comment, to those most closely affected by the work, i.e. those whose lives and properties may be disrupted by the road construction.

**320.** While both NRB and District Roads Council meetings are open to the public and receive good coverage, they are not advertised. They ought to be advertised and public attendance encouraged, even if that means more frequent changes of meeting location and time.

### *Planning Determinants*

**321.** The costs of roads vary depending on issues such as relative isolation, the types of construction, and climatic and geological characteristics. Road designers and managers have to provide roads which are neither of an unreasonably high quality (and cost) nor so cheap that maintenance costs and vehicle wear make them uneconomic.



322. Figure 3.1 shows how road costs increase in sympathy with benefits to the motorist. The cost and quality of a road increases as the cost to the user reduces in fuel costs and maintenance (better, to the left of the diagram). As the cost and quality of a road decreases, the cost to the user increases (worse, to the right of the diagram). A resultant curve is drawn when the two curves are added together, the lowest point of the curve being the best cost of the road, both to the user and to the community as the owners of the road.

323. The NRB does not have the information to quantify accurately the costs necessary to make Figure 3.1 of practical use. This means that it does not have all the information it needs for fully effective planning. NRB staff contend that this lack of key data is common to similar agencies overseas. Further research work into road costs is warranted to permit the NRB to design and build roads at the optimum cost to the community.

324. However, while the costs and benefits attributed to roading are comparable with those of major industries, the amount of research in road-related issues is poor by comparison. The quality of the research into roading issues that is being carried out is good and the work of the various research agencies well co-ordinated. Given the social and economic importance of roads, we believe that the investment in research into roading, road economics and road accident prevention should increase.

325. Road planners identify State Highway and local authority road needs and prioritise them by Cost Benefit Analyses (CBAs). In the case of local authorities, the roading engineer carries out the CBA before passing it to the District Roads Council (DRC) for consideration. For State Highways, the District Roding Engineer's staff will carry out this task before the DRC considers the project.

326. It is to the credit of the NRB that it has developed methods for objectively setting priorities on major projects. There are, however, some criticisms. Although CBA provides a useful basis for decision-making, the centralisation of that decision-making process means that intangible values important to local communities may not finally be taken into account. The dependence on the CBA process, and the sensitivity of the result to often quite small changes in values, means that it is important that both the methodology and the values used in the CBA are correct.

327. Assumptions about values largely condition the results of the CBAs. If a high value is allocated to life and low values to other factors, then the results will favour projects that save lives. If an undue weight is given to time savings, then the results will favour projects that speed traffic flow. It is imperative, therefore, that there is general agreement that these assumptions are correct. It is also important that sufficient weight is given to the intangible values in any CBA.

328. We sought the views of a number of engineers and transport economists on the effectiveness of New Zealand's CBA methods and values. They said that:

- The methods used in New Zealand are consistent with those used overseas. (Overseas roading authorities consider New Zealand is an international leader in applying CBA principles to road works);
- The present values of life and time, and the relatively high discount rate (10%), may tend to discriminate against projects with benefits coming from road safety over longer periods of time.

**329.** The NRB accepts the need to review the value of the life component of the CBA. The discount rate and the value of time should also reflect wider economic conditions and be regularly reviewed.

**330.** It is our belief that the CBA methodology provides a rational basis for allocating priorities. But it is still under development. Its effectiveness can be improved by regular reviews of the tangible and intangible components of the analysis. More research is warranted in this area. In addition, further development work is needed on the methodology of CBAs for small projects where, at present, the technique is not used.

**331.** The NRB has only a three-year programme for new works. Three years is the minimum time recommended by us for local authority works programmes and, given the size and complexity of the NRB's activities, we recommend that road works be programmed over a longer period. Five years should be the minimum programme period.

### *The Planning Process*

**332.** Figure 3.2 opposite shows the planning procedures once a project has been identified.

**333.** The NRB and DRCs consider roading projects at two points during the planning process (X and Y in Figure 3.2). This process is clearly structured and generally effective.

### *The Condition of the Roads*

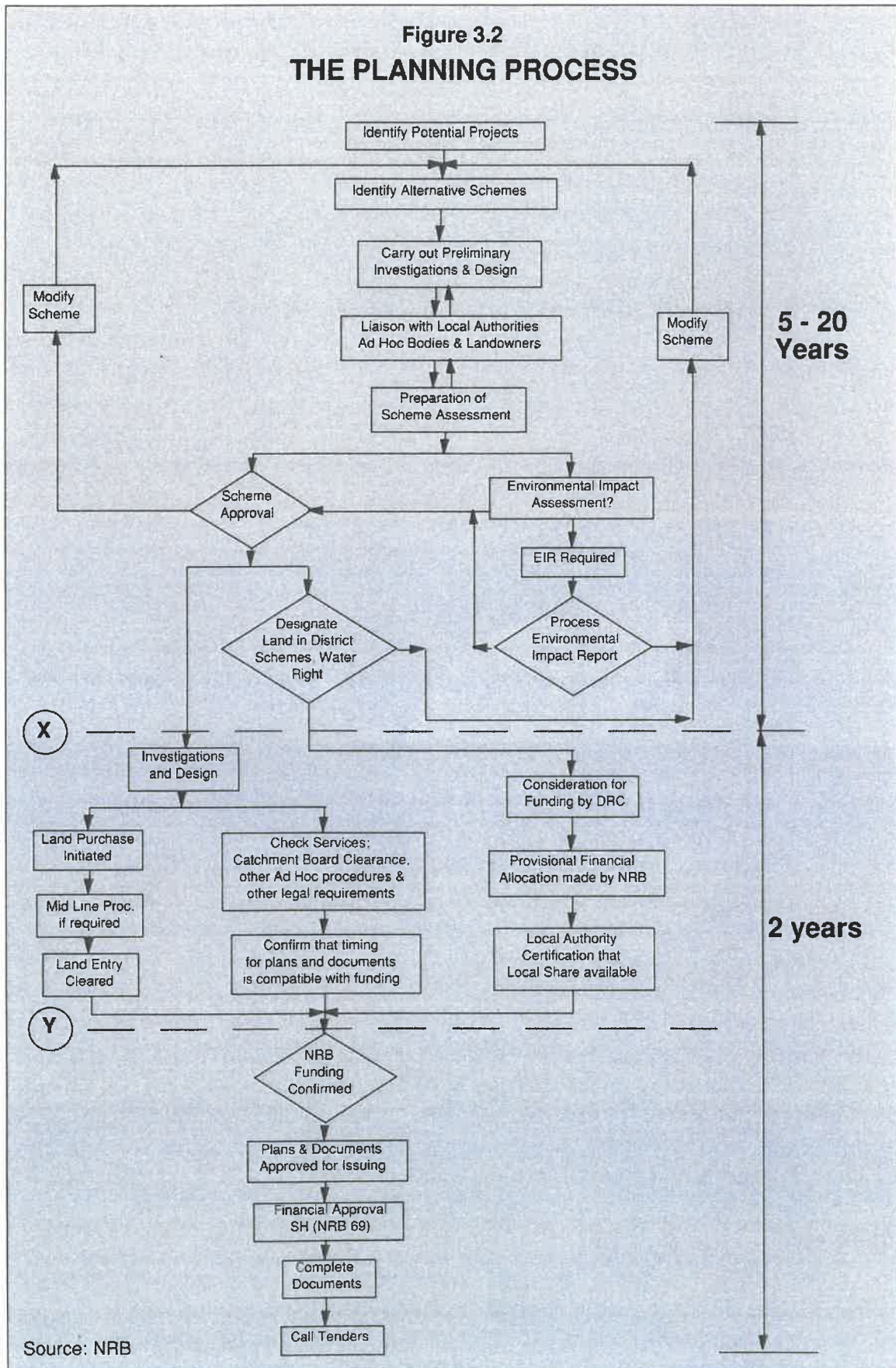
**334.** Towards the end of the 1940s, New Zealand adopted the flexible road pavement in preference to the more permanent asphalted concrete or Portland Cement surfaces. That decision was largely because of plant limitations and the high cost of the more permanent materials. The flexible pavement is a low capital/high maintenance cost design, whereas the permanent pavements are generally higher capital/lower maintenance costs. The flexible pavement allows for different surfaces to suit local conditions. The regular addition of tar/chip seal increases the strength of the road, reducing the risk of damage from heavier traffic.

**335.** There is a general view that the use of flexible pavements had been an effective way of developing the country's roads. However there is some evidence that, while our light tar seal roads are good for light traffic, they are less cost effective for heavy vehicles. With the deregulation of heavy traffic and greater volumes of freight carried by road, it is essential that road designers keep their planning assumptions under review. To make the correct decisions, designers must define their objectives, allocate the necessary resources and monitor performance. Roads managers need a good technical and management information system to assist them in making such decisions. The NRB is developing such a tool at present. This is the Road Assessment and Maintenance Management System (RAMM, see Appendix 1). It will provide managers and designers in both the State and local government sector with a valuable tool.

**336.** Little data is available to compare trends in the overall condition of roads. The only real indicator used by the NRB is the National Association of Australian State Roading Authorities Roughness Index. This suggests that the condition of our roads is improving (from a Roughness Count of 81 in 1984 down to 75 in 1988).



**Figure 3.2**  
**THE PLANNING PROCESS**



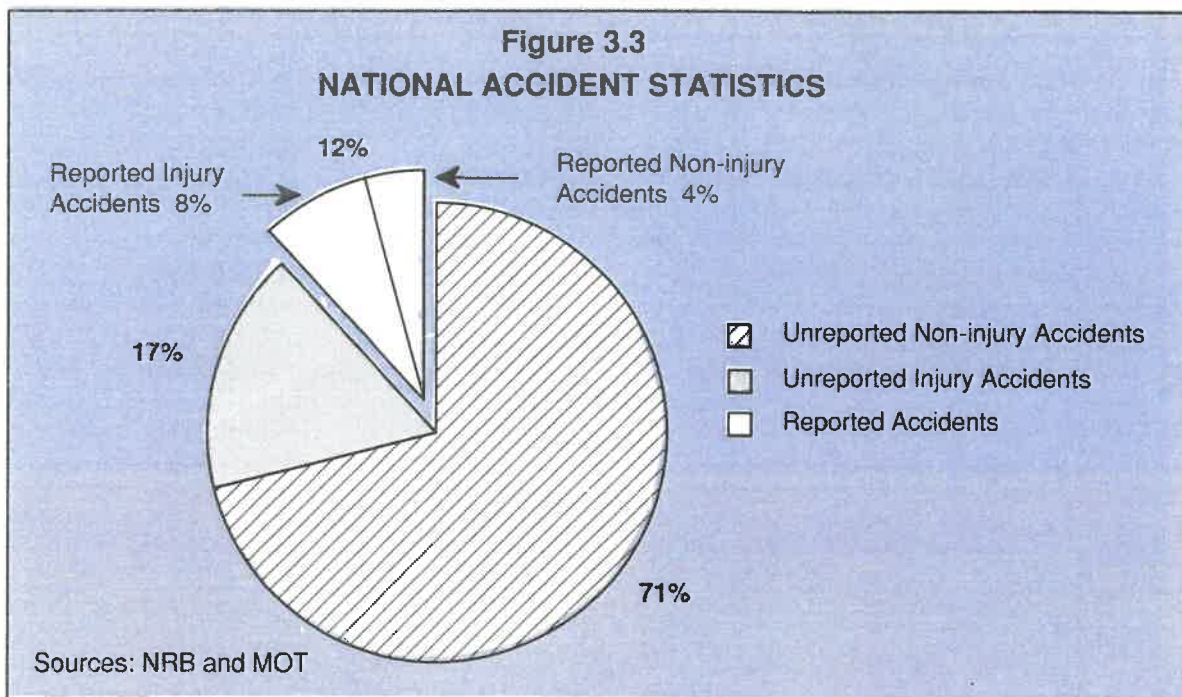
Source: NRB

337. However, the Roughness Index is only one of a number of possible performance indicators. The quality of a road can be defined by other factors, such as skid and rolling resistance. The Land Transport Authority should determine what the appropriate performance indicators are, define and publicly state its performance targets, and report regularly on its progress towards meeting them.

**Location of Road Accidents**

338. The minimising of accidents is a key factor in road planning. Road design and maintenance are hampered by inadequate knowledge of where accidents happen. The law requires only the reporting of accidents involving injury.

339. There is no obligation to report non-injury accidents, which are about 75% of all road accidents. The NRB and the MOT estimate that only 40% of non-fatal serious injury accidents, 20% of minor injury accidents, and 5% of all non-injury accidents are reported. Therefore, at best, the MOT knows details of about only 12% of all accidents (see Figure 3.3).

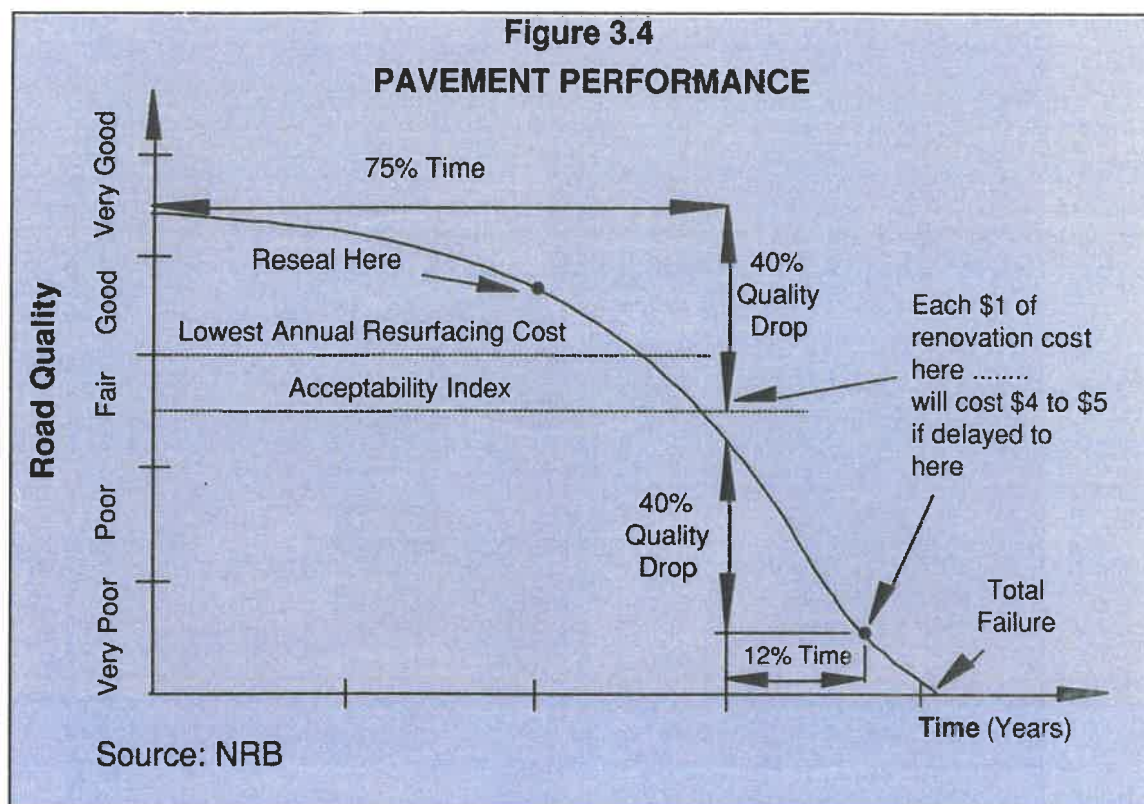


340. This inadequacy of key data hinders effective planning and should be remedied. It would not be necessary or cost-effective for all accidents to be reported. But major accidents, whether they involve injury or not, should be reported. In some American and Australian States, accidents involving damage in excess of about NZ\$750 must be reported to the authorities. A similar approach is needed here, possibly as a prerequisite to insurance claims.

**Maintenance**

341. The NRB has a policy of giving priority to the maintenance of the existing roading system (often called “basic” work in NRB documents). We generally agree with this philosophy. There is a considerable body of evidence to prove the high costs of deferring essential roading maintenance (see Figure 3.4).



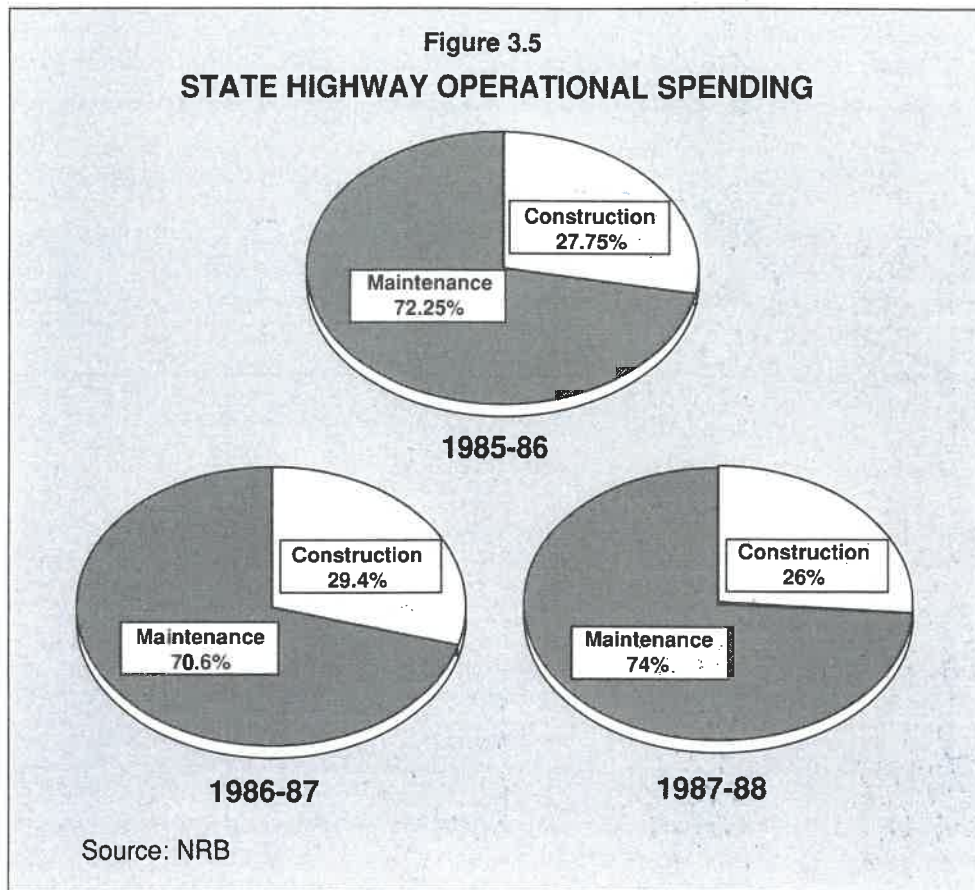


342. However, it is important to recognise that there is little purpose in maintaining roads where a low volume of use does not warrant it. The NRB's action last year in announcing that it may no longer subsidise the maintenance of roads carrying low volumes of traffic takes account of this point.

343. In recent years, maintenance and basic reconstruction work has formed a growing proportion of the roading workload. Today, approximately 70% of all funds are spent on keeping existing roads in an acceptable condition. The availability of funds for new road works is therefore limited (see Figure 3.5 overleaf).

344. While engineers can tell whether a road has been adequately maintained, they have difficulty in determining whether a road has been over-maintained. In the State Highway sector, regular inspections and a manual inventory of roads (which lists what work has been done and when) lessen the possibility of over-maintenance. In the local government sector, the number and geographical spread of roads make comprehensive NRB inspections impracticable. Often, local authorities do not have detailed inventories of their roads. Thus, although the system whereby local authorities have to contribute to the cost of their road works makes deliberate over-maintenance unlikely, it may not eliminate it altogether. Without commercial constraints, the ready availability of labour and plant in local authority in-house work forces may also contribute to the possibility of over-maintenance. Many local authorities lack the means to decide the cost-effectiveness of such in-house resources.

345. The NRB's Roads Assessment and Maintenance Management System (see para 335 above and Appendix 1) will provide road managers with an inventory of their roads. This information will be used to avoid unintentional over-maintenance and improve the management of roads.



### *The Consequences of Delay*

**346.** Property can be designated as being needed for roading purposes for as long as twenty years before work starts. Such delay causes hardships to individuals and communities. While regrettable, these hardships are to some extent unavoidable in the roading process. Some people's lives and property are going to be disrupted in the interests of the wider community. That does, however, place a duty on the authorities to treat such people with the maximum possible degree of consideration.

**347.** A roading designation can be challenged only at the time of a five-yearly District Planning Scheme Review. To do so can cost the challengers large sums of money to marshal the necessary resources. Even then, it appears that the weight of information and resources lies with the Crown and local authorities.

**348.** Individuals can also request the Planning Tribunal to instruct the NRB to buy affected property if they are unable to sell the property because of the designation. However, such resort to a legal process may also need money and knowledge beyond the resources of most members of the public.

**349.** In such apparently unequal situations, there must be means by which the imbalance between the strength of the Crown and local authorities on the one hand and the weakness of individuals on the other, can be redressed.



**350.** A recent review of planning law recommended that, if road works have not started within five years of the designation being placed on a property, then the designation should be removed and not reinstated for at least two years.

**351.** We feel that five years is too short a time-horizon and works against the need for more long-term planning that we mentioned earlier. There is, however, a need to put some discipline into the planning process to guarantee fairness and effectiveness. We feel it appropriate that, if road works have not started and/or the local authority has not acquired all the property affected within ten years, the designation should be removed.

### Conclusions

**352.** There is no national framework in which transport needs are identified and roads effectively planned. Decisions involving different modes of transport are made on a case by case basis.

**353.** The NRB has not had to show how its policies and role in the transport sector are effective in meeting wider social and economic needs.

**354.** The NRB has few agreed strategic objectives and few ways of measuring whether, under its stewardship, the condition of the roads system is improving or deteriorating.

**355.** The NRB deals with many minor issues which would be better dealt with at District Roads Council level where the local viewpoints would be better understood.

**356.** There is greater direct user and community involvement in local authority roads planning than in State Highway planning.

**357.** Cost Benefit Analyses provide the NRB with a generally effective way of assessing the relative benefits of projects. The technique is, however, dependent on the correctness of the assumptions used in the analysis (values of time and life, discount rate, etc). These are not regularly reviewed.

**358.** The three-year timespan for the work programme is inadequate.

**359.** Not enough data is available to monitor trends in the condition of roads. If the quality of roads is assessed using the only measuring tool quoted by the NRB, then the condition of the State Highway system is improving.

**360.** Inadequate knowledge of where accidents occur hampers road design and maintenance.

**361.** Some local authorities lack the information needed to guard against unsystematic maintenance and the possibility of over-maintenance.

**362.** The long delays that occur in the road planning process can cause major distress to communities.

### Recommendations

**363.** There is a need for a national framework in which transport needs are identified and roads are effectively planned. If implemented, the changes as outlined by the Minister of

Transport in the discussion paper “Reform of Government Roading, Road Safety and Urban Transport Programmes, September 1988” should help this. (Paragraph 311)

364. The proposed Land Transport Authority should keep under review the partnership between the national and local authorities in the management of roads. (Paragraphs 312-314)

365. The proposed Land Transport Authority should be responsible for policy, standards, research and resource allocation. The Authority should delegate more decision-making to local and regional roads authorities. (Paragraph 316)

366. There should be an increase in research into road-related topics. (Paragraphs 323-324)

367. There is a need for regular reviews of the key values in Cost Benefit Analyses of road projects. (Paragraphs 326-330)

368. The national road works programme should have a minimum five-year timespan. (Paragraph 331)

369. There is a need for a national computer-based roads management system. The NRB is developing such a system and, if implemented, it will provide better information and help planning, costing and post-project reviews. (Paragraphs 335, 345)

370. The LTA should introduce some means of measuring and reporting its performance in maintaining and improving the condition of roads. (Paragraphs 336-337)

371. All significant road accidents should be reported, so that road planners can have more complete data on where those accidents occur. (Paragraphs 338-340)

372. There should be a review of planning law to ensure that there is a clear time limit on the period between designation of land for roading purposes and a commitment by the local authorities to that scheme. (Paragraph 351)

## THE MAJOR PARTICIPANTS AND THEIR ROLES

### The Essential Participants

**401.** The community obtains greatest value for the money invested in roads when those roads meet the demands of users in terms of providing the greatest benefits at the least cost. This requires that those who use the roads should have the right to have their views taken account of in planning decisions. The effectiveness of the management of roads is tested by confirmation that it meets the needs of these users.

**402.** Decision-making groups need the best available specialist support (financial, civil engineering, planning, economic, etc). They must also be able to effectively manage the resources at their command, for which skilled management support is needed.

**403.** There should be means by which individuals and groups of individuals (e.g. residents associations, etc) make their views known during the decision-making process.

**404.** The decision-making groups, while needing specialist expertise, must be representative of the wider community if those who make submissions to the roading authority are to feel that their views are understood and heeded.

**405.** The decision-makers must be held accountable to those from whom they derive authority. Decision-makers can be held accountable only for matters under their control.

### The Present Participants

**406.** The planning of roads involves a wide range of organisations. Figure 1.1 (page 3) illustrates the key participants.

#### *The National Roads Board*

**407.** The NRB is the main agency of road planning. It recently described its role as:

- Helping and advising local authorities generally on roading matters;
- Providing financial assistance towards a programme of works accepted for subsidy purposes; and
- Ensuring that the standards adopted and the roads system generally are adequate and appropriate, having regard to efficient road transport, the needs of vehicle operators, and the related safety of the public.

The NRB consists of the Minister of Transport and eight other members - four representing local government, two public servants, and two representing users. At present, the Automobile Association represents private motorists and the Industrial Transport Association represents commercial interests. The Board meets monthly.

408. The structure of the NRB, with its heavy emphasis on local government representation, reflects priorities in 1953, the year of its establishment. The National Roads Act does not allow the appointment to the Board of individuals with specialist expertise, nor does it provide a voice in the decision-making process for the non-vehicular users of roads. Local authorities have a dual interest as spenders of roads funds as well as representing their ratepayers. They do not necessarily represent the interests of road users. The proposed Land Transport Authority should be more directly representative of users and have more specialist expertise (road safety, economic, environmental, etc) among its members.

409. We believe that there is an inherent conflict where a Minister is responsible for the allocation of funds to competing agencies and, at the same time, is a member of the controlling board of one of those agencies. If, in the future, the Minister of Transport is to be responsible for allocating resources between the competing divisions of the Ministry, it will not be appropriate for that person to chair the proposed Land Transport Authority.

410. The presence on the NRB of officers of the Ministry of Transport causes doubt regarding the separation of the controlling body from its officers. The Board should set policy and oversee performance. The role of the MOT staff should be to advise the Board and carry out its policies. The proposed structure of the Land Transport Authority will be more appropriate if the Secretary for Transport and the Director of Roading are advisers rather than members of the Authority. A Chief Executive should then ensure that the Board's decisions are carried out.

411. The support to the NRB and the DRCs is provided by the Roading Division of the MOT. The Division has a total staff of approximately 200. Until recently, these people were part of the Ministry of Works and Development (MWD). Of the total number of staff, 59 administer the Road User Charges system and 141 provide technical and administrative support to the NRB and the DRCs. Of this latter group, 56 are located in Head Office and 85 in the Districts. The senior ranks of the Division are filled mainly by civil engineers. While engineering skills are essential, there are few people with other disciplines in senior positions within the Division. The NRB is a major business undertaking and there is a need to broaden the professional structure of the Division and, in particular, to provide additional financial and business management skills within the organisation.

412. The Head Office organisation contains 36 civil engineers and associated technical staff and 20 administrative and clerical officers (excluding the Road User Charges group). The composition of the Head Office group was reviewed early in 1988 at the time of the transfer of the Roading Division from the MWD to the MOT. While the Head Office group both services the Board and provides a central technical resource, it appears large when compared with recent trends in the size of Head Offices in similar organisations in Central Government. The proposed Land Transport Authority and the MOT should review the Head Office advisory and support needs.

### *District Roads Councils*

413. The DRCs are the NRB's advisory committees. They represent the local viewpoint to the NRB, formulate local roads programmes (for NRB approval) and monitor the execution of those programmes.

414. With only two user representatives on each DRC compared with up to eleven local authority members, the decision-making process of the DRCs is dominated by the local authorities. As with the NRB, they have a dual role—as the beneficiaries of subsidies and as representatives of their

## THE MAJOR PARTICIPANTS AND THEIR ROLES

ratepayers. The consequence is also the same - the people who spend the money heavily outnumber the direct representatives of those who provide the money.

**415.** Like the proposed Land Transport Authority, the successors to DRCs will need to be more visibly representative of road users and contain more specialist expertise. The Regional Councils should incorporate the DRCs into their structure. This will be beneficial if the new structure provides a stronger voice for road users in decision-making. This regional organisation would operate within a strategic plan and a resource allocation approved by the Land Transport Authority. It will not be appropriate for the LTA to devolve its powers to the new Regional Councils until it is confident that they are able to exercise those powers effectively.

**416.** The District Roads Councils are at present supported by 85 staff, excluding Road User Charges administration staff. The Land Transport Authority and the MOT should review the role of these staff when the relationship between the Regional Councils and the DRCs has been resolved.

DISTRICT ROADS COUNCIL SUPPORT STAFF		
District	Administration	Technical
Auckland	7	15
Hamilton	5	7
Napier	3	6
Wanganui	3	5
Wellington	3	7
Christchurch	6	7
Dunedin	4	7

**417.** Figure 4.1 overleaf illustrates the process of individual and community input into road planning.

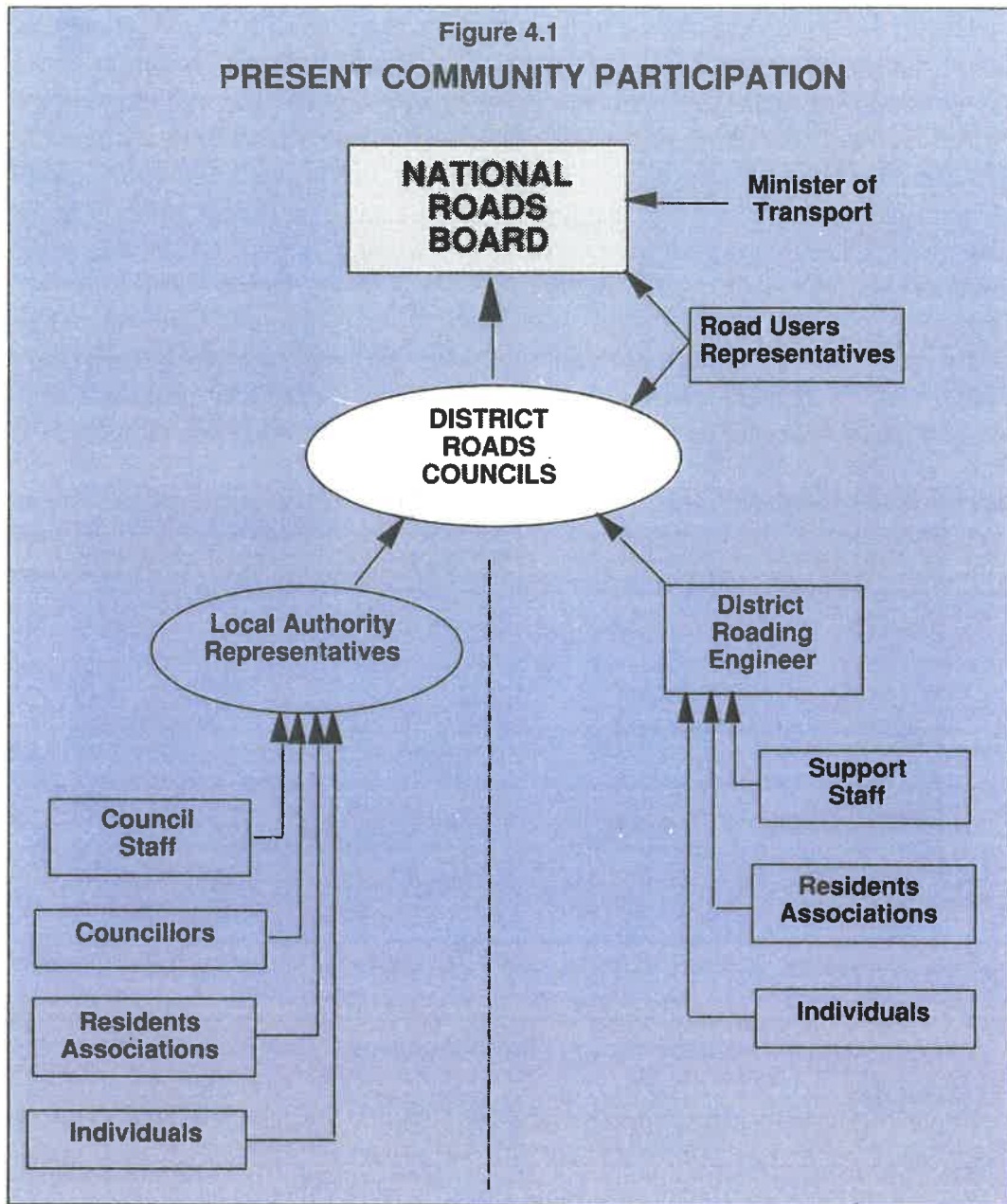
### *Local Authorities*

**418.** The territorial local authorities own and manage approximately 40,320 km of sealed roads and 41,300 km of unsealed roads. They manage their roads in partnership with the NRB. The quality of this management, while generally good, varies considerably depending on the skills and resources of the authority. The amalgamation of local authorities arising from the current re-organisation of local government is likely to result in the consolidation and strengthening of in-house road maintenance teams and professional design and supervisory staff. We believe this will be to the benefit of communities. However, this amalgamation should be used as the opportunity to review the requirement for and the effectiveness of such forces.

**419.** The effectiveness of local authorities' work forces will also be more clearly identified as a result of the new local government accountability requirements and the introduction of Public Sector Accounting Concepts (see Appendix 2). These will require better definition of objectives and reporting of performance in meeting those objectives.

**420.** Where local authorities have effective and efficient roading design and construction forces, they should be given the opportunity to take control of the State Highways within their areas.





*The Ministry of Transport*

421. Two divisions of the Ministry of Transport are involved in the planning of roads. These are the Roothing Division (referred to in paragraph 411 above) and the Land Transport Division.

422. The Land Transport Division consists of 1700 staff spread throughout the country. There are 1100 staff involved in traffic enforcement and the remaining 600 are involved in other duties, such as:

- Traffic education, e.g. school patrol/community education, curriculum development;
- Traffic engineering;
- Vehicle inspection and automotive engineering;

## THE MAJOR PARTICIPANTS AND THEIR ROLES

- Research, including accident/traffic statistics;
- Traffic standards, e.g. setting/monitoring safety standards for roads;
- Administrative systems; and
- Publicity.

We reported on the activities of the Road Transport Division in our Report of March 1987.

423. The degree of co-operation between the former MWD's Roothing Division and the Land (formerly Road) Transport Division, while sometimes working well (as with roading research bodies), was not as good as we would have expected. We have noted closer co-operation between the two agencies since the transfer of the Roothing Division to the Ministry of Transport. This development must continue.

424. There has been a lack of clarity over application of the road safety aspects of traffic engineering to road design. The Land Transport Division has overall responsibility for road safety but the Roothing Division is responsible for the design, and thus the inherent safety, of roads. Similarly, the development of the Road User Charges system had an effect on vehicle design in that there was an incentive for owners to add extra axles to their vehicles to lessen the load on the road. Effective road planning requires the clarification of the relationship between the road safety experts and the road design agencies.

425. An example of the benefits that can come from co-operation between the two Divisions is the work of the Accident Blackspot Investigation Teams. In these groups, staff of the Road Transport and Roothing Divisions work together to lessen the number of accidents. This system has been running only since 1985 but early results are encouraging.

### *The Urban Transport Council*

426. The Urban Transport Council (UTC) is responsible for the planning and funding of urban public transport. Its activities have a major influence on the relief or creation of road congestion. Buses, trains and ferries can lessen the need for more roads. Alternatively, decisions by the UTC to reduce rail subsidies can result in the withdrawal of rail services and increased road congestion. Until now, the UTC was not directly involved in roading policy. There has been no representative of the UTC on the NRB, although there is a representative of the NRB on the UTC.

427. We welcome the proposal contained in the MOT discussion paper of September 1988 that the roles of the Urban Transport Council should be merged with those of the National Roads Board to form a national Land Transport Authority.

### *Regional Councils*

428. Regional Councils, unlike territorial local authorities, are increasing in number because of the local government re-organisation. While having responsibility for transport planning, they have no voice as of right in road planning (other than during the Regional and District Planning Scheme processes). This should be corrected. As we have noted earlier (in paragraph 415), a close relationship is needed in future between Regional Councils and District Roads Councils (and any successors to the DRCs).



### *Professional Services*

**429.** Effective road planning requires the participation of many professional skills, including financial and general management, civil and structural engineering, and transport planning. We have already noted the need for more financial and general management skills. In addition, there is a shortage of transport planners. University and local authority staff commented on the need for people whose skills are in the analysis and planning of traffic movement.

**430.** The Works and Development Services Corporation (Works Corp) undertakes the design and supervision of road works in the State Highway sector for the NRB. Until 1 April 1988, the staff of Works Corp and those advising the NRB belonged to the same organisation, the Ministry of Works and Development (MWD). That organisation provided the NRB with its technical and professional services. With the rapid change from MWD to Works Corp it was logical that, at least at first, Works Corp would continue to provide services to the NRB. The Board appears to have recognised that it must keep this under review, in that its contract with Works Corp in effect guarantees the present level of work for only the succeeding twelve months (after an initial period).

**431.** In the local authority area, both private consultants and local authority staff carry out design and supervision work. Works Corp can also be expected to extend its activities into this sector.

**432.** The proposed Land Transport Authority and local authorities will want to show that they are selecting their professional advisers on the basis of merit and economy. This will inevitably involve a degree of competition and possibly a greater degree of involvement of private consultants in the State Highway field in future. All consultants should have their performance monitored and reported on so that past performance is a significant factor during selection.

**433.** In such circumstances, the performance of local authority in-house professional staff (County and Borough Engineers, etc) will also come under scrutiny. It is relatively rare for local authority professional engineering and technical staff to charge their time to projects and for the costs of servicing those projects to be compared with the cost of a private consultant. Measures must be introduced to ensure that ratepayers and taxpayers are benefiting from the most economic and efficient use of professional services. Introduction of the new Public Sector Accounting Concepts (see Appendix 2), which are intended to show clearly the performance and true costs of Government (including local government) activities, will go a long way to enabling Parliament, the LTA and the public to identify uneconomic practices.

### **Conclusions**

**434.** The structure of the NRB and District Roads Councils reflects priorities that were perceived in 1953. In our view, that structure is no longer appropriate. There is too heavy an emphasis on local government representation and there are too few representatives of road users.

**435.** The senior positions in the Roding Division are filled largely by civil engineers.

**436.** In the past, there has been only limited co-operation between the MOT's Roding Division and Road Transport Division.

**437.** Regional Councils and the Urban Transport Council, while having responsibility for transport

## THE MAJOR PARTICIPANTS AND THEIR ROLES

planning, at present have no voice as of right in the road planning process.

**438.** The shortage of planners skilled in the transport sector hinders better road planning.

**439.** There is little questioning of the present arrangement whereby the Works and Development Services Corporation designs State Highways and private consultants or in-house staff design local authority roads.

### Recommendations

**440.** The proposed Land Transport Authority should be more directly representative of users and have more specialist expertise (road safety, economic, environmental, etc) among its members. (Paragraph 408)

**441.** The Minister of Transport should not chair the proposed Land Transport Authority. (Paragraph 409)

**442.** A position of Chief Executive of the proposed Land Transport Authority should be created. The Roothing Division's financial and business management skills should be strengthened. (Paragraphs 410-411)

**443.** The District Roads Councils should in future be part of the Regional Council structure. The DRCs should have maximum possible delegated authority over both State Highways and local authority roads. The Land Transport Authority should devolve its powers to the new Regional Councils only when it is confident that those powers can be exercised effectively. (Paragraph 415)

**444.** There must be an improvement in the relationship between the MOT's Land Transport and Roothing Divisions. The roles of the participants in the planning process, especially in the determination of road safety needs and standards, should be clearer. Road designers should have regard to safety standards set by road safety advisers. (Paragraphs 423-424)

**445.** We support the recommendation that the National Roads Board and the Urban Transport Council should be combined within a single authority, as suggested in the MOT discussion paper of September 1988. (Paragraph 427)

**446.** All competent road designers should have the opportunity to take part in State-funded roading work. (Paragraphs 429-433)

## FUNDING AND RESOURCE ALLOCATION

### Preferred Funding System

**501.** For an effective road planning process, the funding for roads should be:

- As simple, timely and direct as possible.
- Collected efficiently and equitably.
- Distributed on a basis which is seen as fair by road users and the community in general.
- Neutral in its application; neither unreasonably encouraging nor unnecessarily discouraging spending.
- Adequate for essential works.
- Used for the purposes intended by users and the community.

### The Existing Funding System

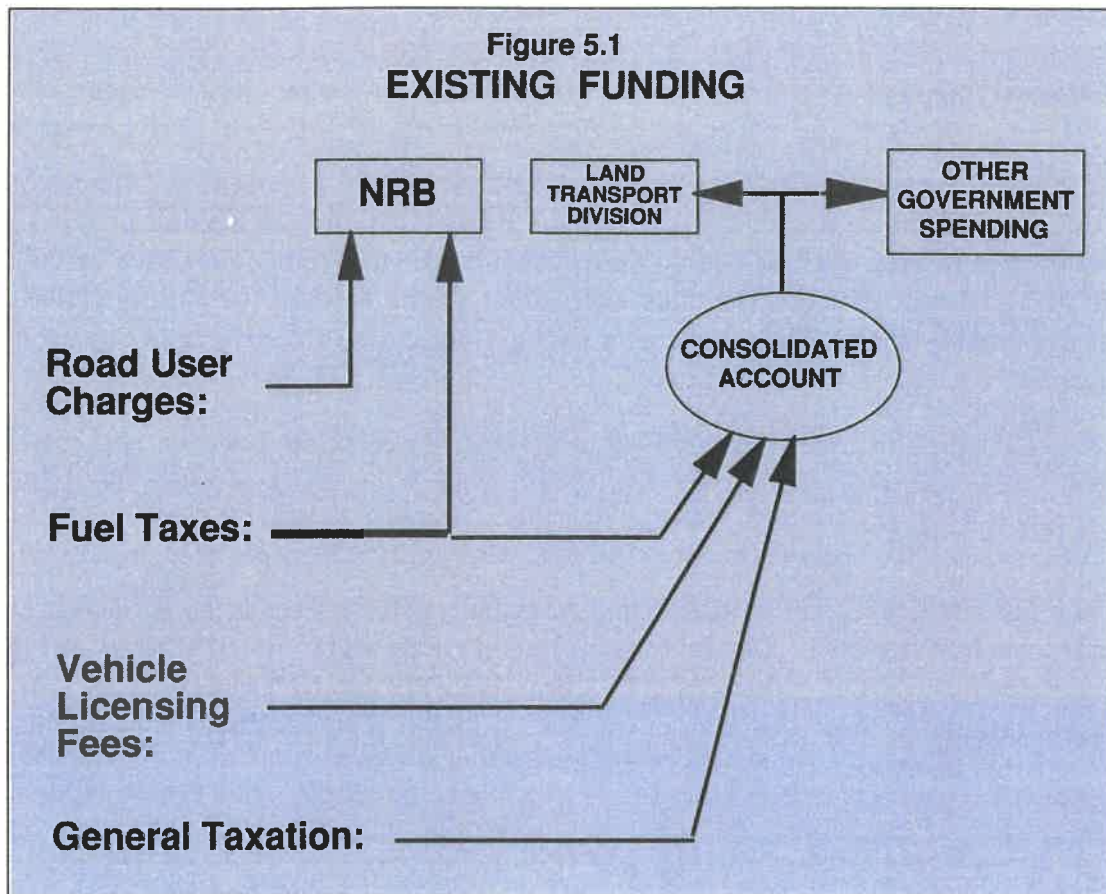
#### *The Funding Environment*

**502.** As stated earlier, about \$800 million is being spent on roads in the 1988-89 financial year. \$550 million of that is being collected as Road User Charges, Excise Duty, etc, (see Figure 5.1) for the use of the NRB in funding State Highway works and local authority roading subsidies. The balance is met from local authority rates.

**503.** The funding environment is neutral in the State Highway sector. In the local authority sector, the availability of subsidies does encourage authorities to promote schemes which are likely to qualify. By determining what subsidies to offer, the NRB and DRCs try to promote works that they see as important. Such a means of influencing road work programmes is proper if the decision-making groups (NRB and DRCs) are representative of road users. At present, this is not the case.

**504.** In preparing its annual budget, the NRB aims to cover the cost of maintenance work and necessary construction projects. The reluctance of Parliament and the public to accept tax increases restrains the NRB's ability to set unreasonably high budgets. The fact that local authorities have to meet a portion of the roading costs (25-57%) from their own funds in most instances encourages them to carry out only necessary and subsidised works.

**505.** The present funding system operates on the principle of funds being provided by those who use the roads. This is generally appropriate, although one can argue that it is not entirely fair, because roads also benefit some who make little direct contribution to roading costs.



**506.** Communities can benefit from the roads, just by being located close to them. Roads in areas of scenic or other special interest (such as those on the West Coast of the South Island or in Fiordland) may carry relatively low volumes of traffic, but that traffic may largely benefit the tourist industry. When judged by the yardstick of how much Fuel Tax or Road User Charges are collected, the traffic may not be paying for the cost of the repair of the road. Such tourist traffic does, however, make a major contribution in other parts of the national economy. A case could be made for a financial contribution from general taxation in recognition of these benefits which are not charged for in the present “user pays” system. Any future review of road funding should consider this matter.

**507.** The NRB’s principal sources of funding are:

- The 10.9 cents per litre Excise Duty (fuel tax) levied on all gasoline and an equivalent tax on LPG and CNG; and
- The proceeds from Road User Time or Distance Licences which are required for heavy motor vehicles (including trailers) and diesel-powered light vehicles. The cost of a licence depends on the maximum gross weight and axle arrangements. The aim is to ensure that heavy vehicles bear their fair share of the cost of the additional wear to the roads which they cause.

**508.** As fuel tax is levied when the fuel is drawn off from the refinery or imported to the country, and Road User Charges are paid on purchase of licences, the system is timely. It is also reasonably simple in administration.



509. The NRB also receives income from investment interest which, in the 1987-88 financial year, amounted to \$29 million.

### *Road User Charges*

510. Road User Charges (RUC) are collected by New Zealand Post as seller of the licences. As part of its on-going efforts to improve efficiency, the Road User Charges Section of the MOT is considering alternatives, such as central collection through its Wellington office or collection through MOT District Offices. The latter alternative appears to make the most effective use of existing resources but the benefits of these alternatives compared with the present arrangements need investigation.

511. A recent study at a specific State Highway location has indicated that 4.3% of heavy vehicle operators were overloading their vehicles. This was causing wear to the roads that the vehicle owners were not fully paying for.

512. There is a significant problem in assessing the quantity of RUC revenue lost because of evasion and inadequate hubodometers. Limited reviews carried out by MOT Traffic Officers in 1986 and 1988 suggested that possibly as many as 10% of heavy vehicles may have inaccurate hubodometers resulting in revenue losses of the order of 6%-8% . (If applied on a nationwide basis, this could amount to a loss of approximately \$14-18 million each year.)

513. NRB officials, while accepting that a degree of evasion does exist, believe that it probably accounts for a loss of no more than 5% of revenue (\$10 million) each year. They accept that this is nevertheless a significant sum and are making efforts to contain and reduce such evasion. The conflicting reports, opinions and evidence highlight the need for continuing efforts to improve the integrity of the system.

514. In the past, co-operation between MOT and NRB staff over the application of Road User Charges has not been as close as desirable. The MOT Enforcement Branch provides the only means of policing Road User Charges evasion. If the system is to operate efficiently, the co-operation between these two agencies must improve. In recent months, such improvements have been taking place and we welcome this; the process must continue.

### *The NRB Budget*

515. As required by the National Roads Act, the NRB submits a budget to the Minister of Transport before 31 October each year. The user representatives play a major part in ensuring that the levels of funding recommended take into account the ability of users to pay.

516. Once the budget has been approved by the Government, the Board makes its preliminary allocation of funds and sends approved programmes of works to the DRCs before 31 December. This early determination of the budget has two advantages:

- Once the Government has approved the revenue and expenditure provision, any tax changes required to fund the budget are calculated and implemented from the beginning of the financial year. Taxation levels within the constraints of Government policy therefore follow, not lead, the determination of the roading budget.

## FUNDING AND RESOURCE ALLOCATION

- Local authorities and DRCs know well in advance of the “roading season” the maintenance and reconstruction works for which they will receive subsidy.

These advantages in the budgeting system should not be lost in any changes that occur in roads administration.

**517.** The Board has to predict revenue and expenditure when preparing its budget. As the actual outcome of both is subject to variables beyond the control of the Board, it is possible that, on an annual basis, surpluses or deficits may occur. Also, the nature of the work undertaken by the Board means that September is almost the latest date at which a new project can start, i.e. 6 months before the end of the financial year. Any surplus arising cannot be easily reallocated.

**518.** There is provision in the National Roads Act to carry forward a surplus or deficit into the following financial year. However, in 1988, when there was a large surplus (mainly because of circumstances beyond the control of the NRB), the Government obtained legislative authority to use \$85 million for other, roads associated purposes. Such a course of action does not encourage prudent financial management.

**519.** We believe that it is better for surpluses to be carried over to the following year to allow cost-effective work to be carried out, rather than to rush through less useful projects before the end of the current year. The size of the surplus or deficit over a single year is not a suitable basis for the assessment of financial performance.

**520.** The Board's financial year at present ends on 31 March. There would be advantages in changing the balance date to 30 June. As most road works are undertaken between September and May, a 30 June year-end would better match the financial year with spending patterns. At present, expenditure incurred during the “roading season” comes to charge over two financial years, with a resulting diminished clarity of financial reporting.

**521.** Before 1987, the National Roads Board had a revenue budget guaranteed by the Government. A contribution from the Consolidated Account met any deficit and the National Roads Board therefore had to contend with only one variable, expenditure. Now the Board has to consider both revenue and expenditure in managing its budget.

### *Distribution Of Funds*

**522.** There has been criticism that urban areas which contribute the majority of the NRB's funds receive less than their fair share of those funds. From our observations, the NRB divides resources in what it sees as the best national interest, using CBAs as its principal priority-setting tool. However, the centralisation of so much of the decision-making process referred to earlier leaves the NRB open to the criticism that it is making decisions in many areas where it does not have the local knowledge required.

**523.** In terms of the National Roads Act, the Board has to allocate a minimum 39% of total revenue to the payment of local authority subsidies and a minimum 47% to the costs of State Highway roads. The limits do not allow the NRB complete control of allocation. If one of the tasks of the NRB is the effective allocation of resources, then such constraints are inappropriate and should be removed.

**524.** With the proposed change to the administration of roading, it is likely that revenue collected

## FUNDING AND RESOURCE ALLOCATION

from road users will have to fund a wider range of transport activities than in the past. These may include urban transport (buses, trains, parking strategies and ferries) and traffic enforcement. Such a change in scope will warrant a review of the current method of allocating funding.

**525.** The amount of subsidy paid to local authorities varies depending on their rating base and the size of their roading programme. The aim is to ensure that poor local authorities with large programmes get a higher proportion of subsidy and richer local authorities with small programmes get a lower one. The rate of subsidy paid ranges from a minimum of 43% to a maximum of 75% and is determined from an NRB formula that takes account of the local authority's ability to fund its own road works programme.

**526.** Some local authorities, especially the smaller rural ones, have recently been unable to collect sufficient rates to fund their share of the work and have therefore been unable to take advantage of the full subsidy available.

**527.** The subsidy rate is adjustable at the discretion of the Board. NRB Investigation Teams will be looking for any long-term deterioration resulting from a local authority's inability to fund road works.

### *Patterns Of Expenditure*

**528.** As described earlier (paragraph 341), the NRB gives priority to maintenance of roads. Once maintenance needs are met, the majority of the balance of the funds are allocated to new construction works on the basis of the results of Cost Benefit Analyses. The Board ranks the works in order and allocates available funds down the list until the funds are exhausted.

**529.** The NRB is generally receiving sufficient funds to meet its objectives of maintaining the existing asset, with sufficient funds left over to do the most cost-effective projects. Some projects are removed from the programme and others move up the priority list, so that the backlog is not significantly increasing. However, the NRB has recently reported that "many more projects with equally high benefits are not being promoted at this time because of the historic limitations on construction funds". Funding is therefore apparently not adequate to cover all road construction work which might meet the present CBA criteria.

**530.** In the State Highway sector, the funds allocated to maintenance, as opposed to highway construction and major reconstruction, are now over 70% of all operational spending in that sector (see figure 3.5 above).

**531.** Until recently, administration costs of running the NRB have remained constant at approximately 6.5% of total payments. This figure was the result of an agreement with the Ministry of Works and Development. An increase occurred during the 1987-88 financial year, when the MWD charged at actual cost. Future trends in administration costs must be closely monitored.

### *Monitoring*

#### **State Highways**

**532.** An effective planning process requires definition of objectives, deployment of resources and



monitoring of performance to ensure that the objectives are met.

**533.** In the State Highway sector, the MOT District Road Engineering (DREs) monitor the work of their consultants and contractors. The consultants design the works and tenders are then called through the DRE's office. When contracts are let, the day to day supervision is carried out by the consultant, who certifies to the DRE when the contractors are entitled to payment. The DREs require monthly performance reports from their consultants and maintain oversight of the cost and quality of the work being carried out on their behalf by the consultants.

**534.** The NRB monitors spending through monthly statements. These statements summarise all payments made into a single document. The accounting system has the ability to analyse variances at both the district and the individual job level.

**535.** NRB Investigation Teams play a major role in monitoring the overall quality of the road system. They visit all districts over a five-year period, review the condition of the roads, propose programmes of work and report in detail on their findings. The teams play a major part in setting and monitoring road standards.

### Local Authorities

**536.** The funding of local authority road works comes from ratepayers and from NRB subsidies. The National Roads Board Investigation Teams visit all local authorities over a five-year cycle and review and comment on their work programmes. Local authorities place a high value on the skills and expertise of the Investigating Teams. DREs also designate a senior engineer responsible for liaising with local authorities.

**537.** When road works proposals have been approved for subsidy by the NRB, they are carried out by the local authorities. On completion, the local authorities certify to the DRE that the work is complete and request payment of the subsidy. The NRB District staff check the claim to ensure that the work is within the programme approved by the Board. There is no requirement to check that the work claimed for has been completed. There have been occasions when claims were paid and the work was subsequently found to have been not fully complete at the time of payment. There should be more frequent monitoring to ensure that all claims are correct for payment.

### Conclusions

**538.** The sources of funding are simple to administer, timely and direct. There are, however, some individuals and groups who benefit from the road system without directly contributing to it.

**539.** While the collection of roading funds is generally carried out efficiently and effectively, two issues relating to the Road User Charges system require continuing action:

- The minimising of the loss due to evasion, inaccurate hubodometers and overloading. Estimates of the extent of this loss vary from less than 5% to greater than 8%.
- Improving the efficiency of the sale of RUC licences.

**540.** The funds available to the NRB are sufficient to cover maintenance work and those construction projects with a sufficiently high Benefit Cost Ratio, although the NRB reports that some local authority projects are not promoted because of limitations on funding.

## FUNDING AND RESOURCE ALLOCATION

**541.** The Board, in forecasting its revenue needs, looks at the revenue it requires to cover necessary spending, i.e. it budgets what it needs rather than spends what it gets. The road user representatives on the Board have a major role in ensuring that road cost requirements take into account what users can afford. A benefit in any strengthening of the user voice in the proposed LTA will be greater user influence over revenue and spending.

**542.** Because of the estimates involved in the Board's budgeting, a surplus or deficit is expected. The NRB rightly carries forward surpluses rather than spending them on less cost-effective projects.

**543.** There is insufficient monitoring of subsidised works by local authorities and there have been cases where the NRB has paid subsidy on works which were not fully complete at the time of payment.

### Recommendations

**544.** There should be a review of the basis of allocating funds if all roading and urban transport activities are funded from a common pool. (Paragraph 524) This review should also consider whether a contribution to the costs of roads should be obtained for those who derive benefits from roads without contributing directly to those costs. (Paragraph 506)

**545.** There should be a review of the Road User Charges system to ensure its efficient administration. This should include determining whether centralising the system in Wellington would be cost-effective. (Paragraph 510)

**546.** There should be further efforts to minimise the evasion of Road User Charges. (Paragraph 513)

**547.** There should be a closer working relationship between the MOT Enforcement Section and the Road User Charges Branch of the NRB. (Paragraph 514)

**548.** The NRB's financial performance should not be assessed by the size of its surplus or deficit or by its performance over a single year. We support the carry-forward of surpluses or deficits within the bounds of good financial practice. (Paragraphs 518-519)

**549.** The Board's balance date of 31 March does not match its roading construction season of September to May. A more appropriate balance date would be 30 June. (Paragraph 520)

**550.** There is no longer any logical basis for the mandatory percentage allocation between State Highways and local authority roads. The NRB should have the power to allocate funds in the proportion it sees fit. (Paragraph 523)

**551.** There should be better monitoring of works, especially by local authorities, to ensure that works are completed before the NRB pays the subsidies. (Paragraph 537)

## ACCOUNTABILITY

**601.** It is essential that road-users are able to judge how effectively the funds collected from them for roading purposes have been used. The roading authorities, both national and local, must be held to account by Parliament, Ministers and rate- and taxpayers (as the ultimate owners of the roads) for their use of public funds and resources.

**602.** Accountability means providing information about intent and performance. In this case, the organisation must firstly declare its objectives so that the community can assure itself that it shares those objectives. Then the organisation must report on its success in meeting the objectives so that the effectiveness of the use of public funds and resources can be judged.

**603.** As the Controller and Auditor-General's 1988 Report on Statutory Boards and Corporations stated, Parliamentary accountability requires:

- Agreement by Parliament of the boundaries of operations;
- Agreement by Parliament of specific goals and objectives to be achieved in the medium term (say, 1-3 years); and
- Availability of information which enables an informed assessment of performance.

The accountability framework to be applied to the LTA must meet these requirements.

**604.** Without clear objectives and adequate reporting, accountability requirements cannot be met and planning will ultimately be ineffective. As discussed in paragraph 315 above, the NRB has few published objectives and it reports to Parliament in historical terms, confining itself to describing its activities in the previous year. It does not give any indication of the extent or cost of the Board's work in future years. The report is not useful as a tool for testing the Board's efficiency and effectiveness. Similarly, the 5-yearly Roading Surveys do not provide a test of accountability. The Board does provide a detailed assessment of its roading requirements in the coming year to the Government but this document is not made public. Without published and agreed objectives and reports on performance, there is no way for Parliament or the public to judge the effectiveness of the NRB.

**605.** Improved accountability must be a key element in the restructuring of roads administration. A contract between the Minister of Transport and the LTA defining the responsibilities and objectives of the Authority is essential. The contract should also set out clear requirements for performance reporting to Parliament.

**606.** The LTA must be equally clear in the accountability that it requires from the local authorities and other agencies that it funds. They must state in advance what they are going to do and how much it is going to cost and then report back on their success in meeting those targets. At present, few local authorities have formal statements of their objectives in roading. Therefore, like the NRB, their public accountability objectives cannot be met.

**607.** It appears to us that, at an operational or technical level, the managerial accountability requirements for the Board's district staff, consultants and contractors work well. Once the NRB sets the programme, the Board's staff clearly define their requirements and seek reports on performance

from consultants. The NRB Inspection Teams play a key role in this process. They carry out major inspections of the roads and roading proposals for all State Highways and local authorities on a five-yearly cycle. In their studies, they set priorities for new works and maintenance and propose funding levels. When new works are approved, the District Roading Engineers maintain oversight of works in their respective areas.

### Conclusions

**608.** While accountability requirements are generally met at an operational level, overall there is an absence of proper accountability because of the lack of clear performance objectives and reporting at both local authority and national strategic levels.

**609.** The purpose of the planning of roads cannot be effective unless it aims at carrying out agreed objectives. No such objectives exist at present.

### Recommendations

**610.** The accountability requirements of the Land Transport Authority to Parliament, Ministers and the public must be clearly defined and acted upon. (Paragraph 605)

**611.** Similarly, the Land Transport Authority must ensure that the agencies that it funds are held accountable. These agencies must clearly and publicly state their objectives and report their success in meeting those objectives. (Paragraph 606)

## SUMMARY OF RECOMMENDATIONS

- There is a need for a national framework in which transport needs are identified and roads are effectively planned. If implemented, the changes as outlined by the Minister of Transport in the discussion paper “Reform of Government Roading, Road Safety and Urban Transport Programmes, September 1988” should help this. (Paragraph 311)
- The proposed Land Transport Authority should keep under review the partnership between the national and local authorities in the management of roads. (Paragraphs 312-314)
- The proposed Land Transport Authority should be responsible for policy, standards, research and resource allocation. The Authority should delegate more decision-making to local and regional roads authorities. (Paragraph 316)
- There should be an increase in research into road-related topics. (Paragraphs 323-324)
- There is a need for regular reviews of the key values in Cost Benefit Analyses of road projects. (Paragraphs 326-330)
- The national road works programme should have a minimum five-year timespan. (Paragraph 331)
- There is a need for a national computer-based roads management system. The NRB is developing such a system and, if implemented, it will provide better information and help planning, costing and post-project reviews. (Paragraphs 335, 345)
- The LTA should introduce some means of measuring and reporting its performance in maintaining and improving the condition of roads. (Paragraphs 336-337)
- All significant road accidents should be reported, so that road planners can have more complete data on where those accidents occur. (Paragraphs 338-340)
- There should be a review of planning law to ensure that there is a clear time limit on the period between designation of land for roading purposes and a commitment by the local authorities to that scheme. (Paragraph 351)
- The proposed Land Transport Authority should be more directly representative of users and have more specialist expertise (road safety, economic, environmental skills, etc) among its members. (Paragraph 408)
- The Minister of Transport should not chair the proposed Land Transport Authority. (Paragraph 409)
- A position of Chief Executive of the proposed Land Transport Authority should be created. The Roading Division's financial and business management skills should be strengthened. (Paragraphs 410-411)



## SUMMARY OF RECOMMENDATIONS

- The District Roads Councils should in future be part of the Regional Council structure. The DRCs should have maximum possible delegated authority over both State Highways and Local Authority roads. The Land Transport Authority should devolve its powers to the new Regional Councils only when it is confident that those powers can be exercised effectively. (Paragraph 415)
- There must be an improvement in the relationship between the MOT's Land Transport and Roothing Divisions. The roles of the participants in the planning process, especially in the determination of road safety needs and standards, should be clearer. Road designers should have regard to safety standards set by road safety advisers. (Paragraphs 423-424)
- We support the recommendation that the National Roads Board and the Urban Transport Council should be combined within a single authority, as suggested in the MOT discussion paper of September 1988. (Paragraph 427)
- All competent road designers should have the opportunity to take part in State-funded roading work. (Paragraphs 429-433)
- There should be a review of the basis of allocating funds if all roading and urban transport activities are funded from a common pool (Paragraph 524). This review should also consider whether a contribution to the costs of roads should be obtained for those who derive benefits from roads without contributing directly to those costs. (Paragraph 506)
- There should be a review of the Road User Charges system to ensure its efficient administration. This should include determining whether centralising the system in Wellington would be cost-effective. (Paragraph 510)
- There should be further efforts to minimise the evasion of Road User Charges. (Paragraph 513)
- There should be a closer working relationship between the MOT Enforcement Section and the Road User Charges Branch of the NRB. (Paragraph 514)
- The NRB's financial performance should not be assessed by the size of its surplus or deficit or by its performance over a single year. We support the carry-forward of surpluses or deficits within the bounds of good financial practice. (Paragraphs 518-519)
- The Board's balance date of 31 March does not match its roading construction season of September to May. A more appropriate balance date would be 30 June. (Paragraph 520)
- There is no longer any logical basis for the mandatory percentage allocation between State Highways and local authority roads. The NRB should have the power to allocate funds in the proportion it sees fit. (Paragraph 523)
- There should be better monitoring of works, especially by local authorities, to ensure that works are completed before the NRB pays the subsidies. (Paragraph 537)
- The accountability requirements of the Land Transport Authority to Parliament, Ministers and the public must be clearly defined and acted upon. (Paragraph 605)
- Similarly, the Land Transport Authority must ensure that the agencies that it funds are held

## **SUMMARY OF RECOMMENDATIONS**

accountable. These agencies must clearly and publicly state their objectives and report their success in meeting those objectives. (Paragraph 606)

# APPENDIX 1

## ROAD ASSESSMENT AND MAINTENANCE MANAGEMENT SYSTEM (RAMM)

The aim of RAMM is to optimise the selection, prioritisation and timing of road maintenance so that the operating costs of roads, and of those who travel on them, are kept to a minimum.

RAMM is being developed by the Road Research Unit of the National Roads Board. It is a computerised index system which allows great flexibility in reporting methods. The system is also evolutionary in nature in that, as more information is provided, the more accurate becomes the output.

The database is also programmable and takes information from various parts of the programme to calculate costs and timescales.

The system consists of seven components:

1. Road network inventory;
2. Rating procedure;
3. Treatment selection;
4. Estimating, budgeting and work recording;
5. Road structure inventory;
6. Maintenance scheduling; and
7. Graphic display of data.

Components 1 to 3 are designed and operating in Dunedin, while components 4 to 7 are still being developed. Component 4 includes software to enable the user to carry out contract management.

It is estimated that, if each local authority obtains its own RAMM system, the cost of installing and preparing a National Roding Inventory will be approximately \$2.75 million. For the State Highway sector, the cost is estimated to be \$420,000. These costs, added to development costs of \$200,000, total \$3.37 million, less than 0.5% of annual spending on the roads. If the system is applied correctly, we believe that the resultant savings should be well over this figure.

## APPENDIX 2

### PUBLIC SECTOR ACCOUNTING CONCEPTS

The primary objective of the Public Sector Accounting Concepts (PSAC) is to improve the quality and effectiveness of public sector reporting practices. Public sector organisations act on behalf of the public and they must be accountable to the public for the functions they carry out and the management of the funds and other resources entrusted to them.

The prime benefit of PSAC is to help public sector organisations show to Parliament and the public how well they have performed.

The concepts provide a framework for reporting which recognises the special character of public sector organisations. At present, most of these organisations report purely in dollar terms. Such information, on its own, cannot properly communicate the extent of an organisation's activities or its performance. To do that, the reports need to show clearly what the organisation intended to achieve and how successful it was, as well as showing the true costs of activities.

Under PSAC, information will be provided to show:

- The overall intentions and objectives of the organisation;
- Specific targets and achievements which demonstrate performance;
- The costs of achieving that level of performance;
- The resources that were committed to the activities or functions; and
- The financial position of the organisation.