Traffic Standards and Guidelines
2000/2001 Survey

RSS 16

Road Hierarchies

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Survey of Traffic Standards and Guidelines

The Land Transport Safety Authority (LTSA) is the government agency responsible for promoting safety in Land Transport at reasonable cost. Part of its function is to "monitor adherence to safety standards within the land transport system."

To support this objective the regional engineering sections of the Land Transport Safety Authority undertake a survey programme that assesses the implementation effectiveness of various safety standards by road-controlling authorities.

The purpose of these surveys is to:

- assist and advise road controlling authorities on the implementation of selected traffic standards and guidelines that affect traffic safety;
- measure the uptake of standards and guidelines by road controlling authorities;
- provide a national summary of the uptake and compliance with standards and guidelines and report findings to road controlling authorities and other interested parties; and
- identify changes to improve standards, guidelines or traffic rules.

The surveys are usually carried out in two parts:

- Part 1 uses a questionnaire to look at the systems and procedures a road controlling authority has in place to deliver on the standard.
- Part 2 uses a field survey to measure where possible the actual delivery from the users viewpoint. It essentially provides a snapshot of road safety delivery at the date of the survey.

This report presents the national results of the latest of these surveys.

I believe you will find the information of value and will be able to use it to improve road safety in New Zealand.

Please contact the Regional Engineer at the LTSA's Auckland, Wellington or Christchurch Office if you would like further information or assistance with implementing traffic standards or guidelines.

William McCook,
General Manager, Operations

Executive Summary

Introduction

- During April to August 2001 the Regional Offices of the Land Transport Safety Authority (LTSA) conducted surveys of two roading or road safety issues in road controlling authorities (RCAs). The two areas surveyed were road hierarchies (in all RCAs), and roadside hazard management (in 30 RCAs).
- This report describes the procedures for the surveys on road hierarchies and presents the results. A companion report details the results of the surveys of roadside hazard management.

Methodology

- Staff in the thirty authorities participating in the roadside hazard management survey were interviewed face-to-face on road hierarchies by LTSA staff after receiving the questionnaire in advance to prepare responses.
- The questionnaire was mailed to the remaining authorities with a request for the most appropriate person to complete it and mail it back.

Survey Results

- All 67 RCAs responding to this survey reported that they had a road hierarchy in one form or another. Fifty nine (88%) had at least one formal road hierarchy and the others had informal hierarchies used by staff (typically to define maintenance levels or design standards).
- Forty nine (73%) had the hierarchy documented in their district plan. Twenty eight of these also had their hierarchy documented in one or more other documents, commonly a RAMM database, asset management plan or engineering standards document.
- The most common purposes cited for hierarchies were for town planning, defining priorities or levels of service for maintenance, and setting road design or construction standards.
- Most of the reported hierarchies (urban and rural) were based on one of two “standard” hierarchies:

  - "State Highway, Arterial, Collector, Local," favoured by smaller authorities, or
  - "National Route, Regional Arterial, District Arterial, Collector, Local," favoured by larger authorities or those near a metropolitan area.

- Most authorities reported they had design standards for the different classes of urban street (75%) and rural road (72%) but reported that they were flexible in the way they applied their standards.
- While nearly all authorities reported an inspection system that identified whether roads were up to the desired standard for their classification, few had inspection programmes specifically for this purpose.
- Similarly, few authorities had specific programmes to upgrade roads to their defined standards or had set aside funds for the purpose.
- The estimated proportion of roads meeting the RCAs' desired standards showed about three quarters considered more than 70% of their urban network met their desired standards.
- Conversely, only 45% thought more than 70% of their rural network met their desired standards.
- About half of RCAs responding to the questionnaire said they had consulted with neighbouring authorities when formulating their hierarchy.
- Only one third of responding authorities said that the regional council had any involvement in formulating their hierarchy.
- About half said they reviewed their hierarchy every five years (to coincide with district plan reviews) or more frequently.
- There was some support for LTSA to produce guidelines on how to classify roads in a hierarchy and for a national road hierarchy.

Recommendations

- LTSA should ensure that the information obtained in this survey is used to derive a national roading hierarchy and appropriate standards for each class of road in the hierarchy.
- LTSA should produce guidelines or a policy document on desirable standards for different classes in a road hierarchy.
- RCAs should implement programmes to systematically upgrade specific aspects of their roading standards (such as road marking and delineation) to provide motorists with a consistent roading environment on each class of road.

Contents

1. Introduction

During April to August 2001 the Regional Offices of the Land Transport Safety Authority (LTSA) conducted surveys of two roading or road safety issues in road controlling authorities (RCAs).

The two areas surveyed were:

- road hierarchies, and
- roadside hazard management.

This report describes the procedures for the surveys on road hierarchies and presents the results.

2. Purposes of the Surveys

To develop a safety management system approach to managing roads, New Zealand needs an agreed functional road hierarchy for the entire road network. Safety standards and levels of service can then be set for each class of road, taking into account the needs of all road users. Furthermore greater consistency in standards is needed on comparable roads between different road controlling authorities.

The purposes of this survey on road hierarchies were therefore to determine:

- whether RCAs had a road hierarchy in place and what classes of road they defined in their hierarchy,
- what standards they had for each class of road in their hierarchy,
- what programmes were in place to identify deficiencies and upgrade roads to desired standards, and
- what steps need to be taken nationally to achieve the desirable consistency of standards.

As part of the survey, authorities were asked to specify or to provide documentation on the standards they had in place for each class of road or street in their hierarchy. This information has been collated and analysed to determine the extent to which the multitude of different hierarchies could be aligned. However, it is too complex to be included in this report.

3. Methodology

A questionnaire was sent to all RCAs in New Zealand, including all seven regional offices of Transit New Zealand. For most of the 30 authorities included in the survey of roadside hazard management, representatives completed the questionnaire face to face with LTSA staff. Questionnaires were sent in advance to allow time to research answers if necessary. In this situation the LTSA staff were able to clarify questions and prompt the respondents as necessary to obtain full responses.

The remaining authorities were simply mailed a questionnaire with a request that the most appropriate person in the authority complete and mail it back to the LTSA. The responses obtained were therefore dependent on the respondents':

- interpretation of the questions being asked, and
- knowledge of the standards and processes used by their authority.

Including the seven Transit New Zealand regions, questionnaires were sent to 80 authorities. Altogether, responses were received from 67 including one Transit New Zealand region. (No questionnaire was sent to the Chatham Island County.)

Appendix 1 lists the 67 RCAs responding to the survey. Appendix 2 shows the questions in the questionnaire.

There were no field surveys carried out for this subject.

4. Results of the Survey

4.1 Number of Authorities with Road Hierarchies

Of the 67 authorities responding:

- 58 (87%) said they had a road hierarchy that had been formally adopted by their Council or Board,
- 8 (12%) reported no formally adopted hierarchy, and
- 1 (1%) reported two official road hierarchies.

A number reported they had a formally adopted hierarchy plus another slightly different hierarchy for a different purpose. Typically the formal hierarchy would be used for planning purposes and a more complex hierarchy would be used to define levels of service for a maintenance contract. For example, if

some Local Roads were sealed and others unsealed they would have different maintenance needs.

All those RCAs with no formal hierarchy reported some form of informal hierarchy for use by roading staff or consultants, typically to define maintenance and/or design standards. Southland District described a "demand-based" system where streets were constructed to a standard that depended on traffic volume and type of traffic (e.g. tourists, cyclists, school buses, logging traffic or farm traffic) using them.

4.2 Documentation of Road Hierarchies

Forty nine (73%) of the RCAs reported their hierarchy was included in their district plan, including two who reported no formal road hierarchy. Twenty eight of these also had their hierarchy documented in one or more other documents such as in:

- RAMM database (18 RCAs altogether)
- Asset Management Plan (17 RCAs)
- Engineering Standards document (9 RCAs)
- District Land Transport Strategy (5 RCAs)
- Maintenance Contracts (2 RCAs)

The remaining 18 authorities had their hierarchy documented in one or more of the above bullet-pointed documents or:

- Council Policy Manual (3 RCAs),
- stand-alone document (1 RCA),
- plans in the office (1 RCA),
- internal memo (1 RCA),
- external reports (1 RCA), and
- no documentation (1 RCA).

4.3 Purposes of Road Hierarchies

Most authorities reported more than one purpose for their road hierarchy. The most common purposes reported were:

- Defining priorities or levels of service for maintenance contracts (40 RCAs.)

- Town planning, land use/road interface management (37 RCAs.)
- Setting road design, safety or construction standards (25 RCAs.)

Other purposes reported were developing transportation/land use strategies (4 RCAs), prioritising improvement works (4 RCAs), funds allocation, ensure access to main towns, frequency of litter removal and "no specific purpose" (all 1 RCA each.)

4.4 Classifications for Urban Streets

There were 29 distinct urban hierarchies reported by the 67 RCAs responding to the questionnaire. These ranged from a basic "State Highways (SH), Other Roads" in one small authority to one large authority with 14 different urban classes.

The two most common hierarchies were:

- "SH, Arterial, Collector, Local" (23 RCAs), and
- "National Route, Regional Arterial, District Arterial, Collector, Local" (13 RCAs.)

The latter is the hierarchy recommended in Transit New Zealand's "Highway Planning under the Resource Management Act 1991", February 1994. Not surprisingly, smaller authorities dominate those using the first of these hierarchies. The Transit NZ hierarchy is used more by larger authorities or those close to metropolitan areas.

Most other RCAs used variations on these two common hierarchies for their urban street classifications to suit their own circumstances. For example:

- 5 included SHs in with their arterials to have "Arterial, Collector, Local" or "SH, Collector, Local"
- 7 others used "SH, Arterial, Collector, Local" but sub-divided their Local streets in some way (high/low maintenance, major/minor, residential/industrial)

Of the three other smaller RCAs one simply had "SH, Others" and two had "SH, Sealed, Unsealed."

Five larger RCAs had simple variations on the Transit NZ hierarchy by adding an extra class of street at some point in the hierarchy.

Seven other larger RCAs (including the four in the metropolitan area of Wellington Region) reported urban hierarchies differing noticeably from either of the "base" hierarchies and from each other.

Two authorities, Central Hawkes Bay District and Southland District, reported no urban classifications.

4.5 Standards for Urban Street Classes

Fifty authorities (75%) reported design or construction standards for their urban street classes. Of those remaining, 1 reported they had standards for new roads only, 1 was in the process of developing standards, 3 reported standards for maintenance only, and 12 either had no standards or did not respond.

As previously stated, the large range of different street characteristics subject to standards and the wide variety of requirements for each of these standards create a matrix too complex to include in this report. An analysis has been completed and reported separately. However, as an example, some of the characteristics subject to standards were:

- traffic volumes,
- carriageway surface and width,
- type of median,
- number of lanes and lane widths,
- parking provision,
- type of pedestrian crossing facilities,
- type of cycle facilities,
- road markings and materials,
- street lighting,
- speed limit,
- street name and direction signing, and
- access controls.

4.6 Flexibility of Standards for Urban Street Classes

Authorities were asked the extent to which their standards for each class of urban street were "negotiable." Seventeen (25%) said their standards were "not negotiable." Descriptions used by the remainder were:

- 20 (30%) said they were "negotiable"
- 15 (22%) said they were negotiable in specific circumstances, and
- 1 (1%) said they were "not negotiable" on new roads only,

The remaining 14 authorities gave no reply.

4.7 Classifications for Rural Roads

Three authorities reported they had no rural roads. There were 29 distinct rural hierarchies reported by the remaining 64 authorities. Again they ranged from a basic "SH, Other Roads" in one small authority to large authorities with many different classes.

The two most common hierarchies were:

- "SH, Arterial, Collector, Local" (23 RCAs), and
- "National Route, Regional Arterial, District Arterial, Collector, Local" (9 RCAs.)

Other authorities used variations on these hierarchies to suit their own circumstances. Specifically:

- 3 included SHs in with their arterials to have "Arterial, Collector, Local" or "SH, Collector, Local."
- 2 had "SH, Collector, Local" but with two classes of Local road,
- 6 others used "SH, Arterial, Collector, Local" but sub-divided their Local roads in some way (high maintenance/low maintenance, major/minor, residential/industrial)

Of the remaining smaller authorities one simply had "SH, Local Roads" and three had "SH, District Arterial, Local." This latter hierarchy may effectively be the same as "SH, Collector, Local."

Five larger authorities varied the Transit NZ hierarchy by adding an extra class of road at some point in the hierarchy.

The remaining 12 authorities reported rural hierarchies that differed noticeably from either of the "base" hierarchies. Again these included all four authorities in the metropolitan area of Wellington Region, whose hierarchies also differed from one another. Some examples of these hierarchies are:

- "Arterials and five volume-related classes",
- "Motorway, Major Arterial, Minor Arterial, Principal, Collector, Sub-collector, Local Road, Access",
- "a volume-based hierarchy" (2 authorities),
- "SH, Sealed, Unsealed M1 to M5",
- "Motorway, Rural 1 – Rural 4",
- "Minor Arterial, Distributor, Collector, Local" (2 authorities), and
- "SH, Principal Sealed, Principal Unsealed, Local Sealed, Local Unsealed."

4.8 Standards for Rural Road Classes

Forty eight authorities (72%) reported design or construction standards for their rural road classes. Of the remainder, 1 reported they had standards for new roads only, 2 were in the process of developing standards, 1 reported standards for maintenance only, and 15 authorities either said they had no standards or had no rural roads.

As with the urban hierarchies, the large range of different road characteristics subject to standards and the wide variety of requirements for each of these standards create a matrix too complex to include in this report. An analysis has been completed and reported separately. However, as an example, some of the characteristics subject to standards were:

- traffic volumes,
- design speed,
- carriageway surface and width,
- shoulder type and width,
- type of median,
- number of lanes and lane widths,
- overtaking opportunities,
- type of cycle facilities,
- road markings and materials,
- guide posts and delineation,
- road name and direction signing, and
- access controls.

4.9 Flexibility of Standards for Rural Road Classes

Authorities were asked the extent to which their standards for each class of rural road were "negotiable." Of the 64 authorities with rural roads, 15 (23%) said their standards were "not negotiable." Descriptions used by the remainder were:

- 24 (38%) said they were "negotiable," and
- 13 (20%) said they were negotiable in specific circumstances.

The remaining 12 authorities gave no reply.

4.10 Inspection Programmes to Identify Road and Street Standards

Respondents reported a variety of inspection systems to identify whether roads or streets met the desired standards for the relevant class in their hierarchy. Seven authorities had no inspection programme or "nothing specific" in place. The inspection programmes reported by the remaining 60 authorities were:

- inspections by contractor as part of a maintenance contract (25 RCAs),
- inspections to update RAMM data (13 RCAs),
- inspections by staff and contractors (11 RCAs),
- periodic inspections by network management consultants (8 RCAs),
- regular maintenance inspections with follow-up audits by staff (7 RCAs),
- building new roads to standard and auditing them (5 RCAs),
- existing road audits (3 RCAs),
- resource consent monitoring (2 RCAs),
- part of a strategy study (1 RCA), and
- checking plans of proposed works (1 RCA).

Some of the 60 authorities used different combinations of maintenance inspections, inspections for RAMM data updates and staff audits.

While some authorities had systematic inspections and others had more informal procedures, it is difficult to determine from the responses received exactly what level of responsibility was used or how systematic each authority was with their programme.

4.11 Upgrading Programmes to Achieve Desired Standards

Sixty-five authorities responded to a question on the programmes they had for upgrading roads and streets to the desired standards. Twenty-four (37%) simply reported they had no systematic programme, although two of these were developing a systematic programme.

Of the others, most stated they had no specific programme to upgrade roads to their desired standards for the relevant class. Upgrades were generally done as part of another programme.

Responses were:

- 19 upgraded "only in association with other works",

- 13 included upgrades in their forward roading programme, and
- 3 had long term programmes for different standards.

The "other works" were typically the minor safety programme, pavement upgrading programme, or blackspot treatment programme.

Single authorities reported the following programmes to upgrade specific aspects of their roading:

- constructing footpaths,
- widening rural arterials,
- upgrading delineation to RTS 5 standards,
- sealing all urban streets,
- sealing all unsealed roads, and
- reaching target levels of service for maintenance.

One authority reported that all their roads were already up to their desired standards.

4.12 Proportion of Roading Budget used for Upgrading to Standards

Because few authorities had specific programmes to upgrade to standards, most had difficulty estimating the proportion of their annual roading budget that was used for this purpose. Sixteen (24%) didn't know the proportion or didn't respond to the question. The other responses were:

- 9 (13%) said none of their roading budget was used for this purpose,
- 14 (21%) said between 1% and 10% of their budget,
- 8 (12%) said between 11% and 33%,
- 7 (10%) said between 34% and 50%, and
- 1 said 75%.

In addition, 5 RCAs (7%) said they spent a different proportion each year and 7 (10%) spent no specific proportion.

4.13 Road Hierarchy as a Basis to Prioritise Roading Works

In one way or another, most authorities reported they ranked roading works by giving priority to the most important streets or roads in their roading hierarchy. Nineteen RCAs (28%) said they didn't prioritise on the basis of hierarchy, one

said prioritisation was a political decision and two did not respond. Of the remaining 45 authorities:

- 25 (37%) prioritised on the basis of their road hierarchy,
- 11 (16%) did work on roads with the highest traffic volumes first,
- 6 (9%) prioritised on the basis of benefit/cost ratio,
- 1 (1%) prioritised on the basis of highest traffic volumes and benefit/cost ratio,
- 1 (1%) sometimes used road hierarchy as a basis, and
- 1 (1%) used injury crash numbers.

All of these bullet-pointed methods would tend to give priority to works on the most important roads in the hierarchy.

4.14 Proportion of Roads Meeting the Desired Standards

Respondents were asked to complete a table showing the proportion of each class of street or road in their urban and rural hierarchies estimated to meet their desired standard for each class. Twenty nine respondents (43%) were unable to give an answer for their rural roads and 27 (40%) for urban streets.

Because of the wide variety of different classes in the road hierarchies reported, the results given for the remaining 38 authorities have been aggregated here in Table 1.

Table 1 Proportion of Roads and Streets Meeting Desired Standards

Estimated Proportion Meeting Standard	Urban Number	Urban Percent	Rural Number	Rural Percent
50% or less	7	18%	12	32%
51% to 60%	0	0%	2	5%
61% to 70%	4	10%	7	18%
71% to 80%	10	25%	9	24%
81% to 90%	10	25%	5	13%
91% to 100%	9	23%	3	8%
Total	40	101%	38	100%

4.15 Conformity with Hierarchies in Neighbouring Authorities

Asked whether there had been consultation with neighbouring authorities to ensure their hierarchy matched those in the neighbouring areas, the responses were as follows:

- 30 (45%) had consultation to ensure conformity,
- 29 (43%) had no consultation,
- 5 (7%) had consultation with Transit New Zealand but not with other territorial authorities,
- 1 (1%) had informal consultation only, and
- 2 (3%) didn't know.

4.16 Regional Council Involvement in Formulating Hierarchies

Respondents reported the following involvement of regional councils in formulating their road hierarchies:

- 41 (61%) had no involvement from the regional council,
- 16 (24%) reported full involvement,
- 5 (7%) reported some involvement,
- 3 (4%) advised their authority was a unitary authority, and
- 2 (3%) didn't know.

4.17 Frequency of Reviewing Road Hierarchies

Twelve authorities (18%) said they had never reviewed their road hierarchy and 4 (6%) didn't know how often their hierarchy was reviewed. Otherwise, responses to the question on how often road hierarchies were reviewed were:

- 4 (6%) said every year,
- 8 (12%) said every three years,
- 5 (7%) said every three to five years,
- 25 (37%) said every five years,
- 5 (7%) said every ten years, and
- 4 (6%) said as and when needed.

4.18 Processes to Review Road Hierarchies

The processes used by authorities to review their road hierarchies were clearly related to where the hierarchy was documented and what the purposes of the hierarchy were. Out of the 53 authorities reporting a process, the most common responses were:

- 19 (36%) used the district plan review process,
- 7 (13%) reviewed as part of their Asset Management Plan Review,
- 6 (11%) asked consultants specifically to review it,
- 5 (9%) used staff knowledge of traffic changes to do a review, and
- 3 (6%) used the district plan review process or did a special review.

Apart from the 6 authorities who didn't know what process was used, there was one authority using each of the following processes:

- part of the annual plan review,
- public consultation and Council consideration,
- transportation study review,
- staff decision,
- maintenance contract review,
- consultant's recommendation, and
- Regional Land Transport Committee decision.

4.19 Review of Road Hierarchy Classifications

When asked whether their authority reviewed the classifications in their hierarchy when reviewing the hierarchy:

- 31 (46%) said "yes",
- 21 (31%) said "no",
- 1 (1%) said "unlikely", and
- 14 (21%) didn't know or didn't respond.

4.20 Reclassification of Existing Roads or Streets

When asked whether a review of their road hierarchy would include a reclassification of any roads or streets in their authority:

- 44 (66%) said "yes"'

- 7 (10%) said “no”,
- 2 (3%) said “sometimes”, and
- 14 (21%) didn’t know or didn’t respond.

4.21 Adequacy of Standards for Road Hierarchy Classes

When asked whether they thought the standards they used for the classes in their road hierarchy were adequate, 4 authorities gave no response or said the question was not applicable to them. Of the remaining 63 authorities:

- 44 (70%) thought their standards were adequate,
- 17 (27%) thought their standards were not adequate,
- 1 (2%) thought their urban standards were adequate but not their rural standards, and
- 1 (2%) said their standards were always subject to continuous improvement.

4.22 Comments on LTSA’s Role in Road Hierarchies

The most common comment, made by 11 respondents, on the LTSA’s role was that the LTSA should publish a good practice guide on how to classify roads in a road hierarchy.

A further 11 respondents said they would support the concept of a consistent national road hierarchy.

Five respondents said that the funding system should provide for RCAs to upgrade and maintain their roads to a standard consistent with their role in the road hierarchy rather than having to meet a benefit/cost criterion on a project by project basis.

Other comments, each made by one respondent were:

- The number of classes in a hierarchy should be kept to a minimum.
- There needs to be a clear statement on when a new road (especially in a private subdivision) should be classified.
- There should be no national guidelines or hierarchy.
- There needs to be better liaison in most road controlling authorities between the traffic/roading staff and the transport planning staff.
- A hierarchy is essential to set levels of service for maintenance.
- Road design standards should be determined by the need for provision for cyclists and parking.

5. Discussion

All 67 road controlling authorities responding to this survey reported they had a road hierarchy in one form or another. They recognised the importance of a road hierarchy for a variety of purposes, notably town planning, defining priorities for maintenance, and/or setting design standards for different classes of road.

Most of the reported hierarchies (urban and rural) were based on one of two "standard" hierarchies:

- "SH, Arterial, Collector, Local," favoured by smaller authorities, or
- "National Route, Regional Arterial, District Arterial, Collector, Local," favoured by larger authorities or those near a metropolitan area.

Either or both of these hierarchies could therefore be a convenient starting point to build a national hierarchy of roads.

Most authorities also reported they had design standards for the different classes of urban street and rural road. Reporting on the wide variety of these standards and trying to reconcile the similarities and differences was beyond the scope of this report. However, because this task is a necessary component of formulating a national road hierarchy, it has been completed on a provisional basis and reported separately.

Most authorities reported they were flexible in the way they applied their standards, presumably for practical and economic reasons. These factors will need to be recognised if standards for different classes of road are going to be set nationally.

While nearly all authorities reported some sort of inspection system that identified whether their roads were up to the desired standard for their classification, few had inspection programmes specifically for this purpose. The level of responsibility for conducting or auditing these inspections varied widely and it was not clear how systematic many of these inspections were.

Few authorities had specific programmes to upgrade roads to their defined standards or had set aside funds for the purpose. This is not surprising, given the current funding system. However, the benefit/cost basis of the funding system generally results in priority being given to works on the more important roads in the hierarchy simply because they carry the highest volumes of traffic.

The estimated proportion of roads that meet the desired standards of road controlling authorities showed that about three quarters of authorities considered more than 70% of their urban network met their desired standards. Conversely, only 45% of authorities thought more than 70% of their rural network met their desired standards.

Unless the funding system is developed to give road controlling authorities access to funds to upgrade roads to a fixed standard there is little incentive for them to be more systematic or put more effort into this area. Many are already implementing programmes to upgrade specific aspects of their roads (such as delineation) to a defined standard. This helps provide motorists with the consistent environment they expect.

About half of the authorities responding to the questionnaire said they had consulted with neighbouring authorities when formulating their hierarchy. However, only one third of these authorities said that the regional council had had any involvement in their hierarchies. This is somewhat surprising given the requirement for regional councils to produce a regional land transport strategy.

Finally, there was some support for LTSA to produce guidelines on how to classify roads in a hierarchy and for a national road hierarchy.

6. Recommendations

- LTSA should ensure that the information obtained in this survey is used to derive a national roading hierarchy and appropriate standards for each class of road in the hierarchy.
- LTSA should produce guidelines or a policy document on desirable standards for different classes in a road hierarchy.
- RCAs should implement programmes to systematically upgrade specific aspects of their roading standards (such as road marking and delineation) to provide motorists with a consistent roading environment on each class of road.

Appendix 1 Road Controlling Authorities Responding to the Questionnaire.

Far North District
Whangarei District
Kaipara District
Rodney District
Waitakere City
Auckland City
Manukau City
Franklin District
Hauraki District
Waikato District
Matamata-Piako District
Hamilton City
Waipa District
Otorohanga District
South Waikato District
Waitomo District
Western Bay of Plenty District
Tauranga District
Rotorua District
Whakatane District
Kawerau District
Opotiki District
Gisborne District
Wairoa District
Hastings District
Napier City
Central Hawkes Bay District
New Plymouth District
Stratford District
South Taranaki District
Ruapehu District
Rangitikei District
Manawatu District
Palmerston North City
Tararua District
Horowhenua District
Kapiti Coast District
Porirua City
Upper Hutt City
Hutt City
Wellington City
Masterton District
Carterton District
South Wairarapa District
Nelson City
Marlborough District
Buller District
Grey District
Westland District
Hurunui District
Waimakariri District
Christchurch City
Banks Peninsula District
Selwyn District
Ashburton District
Timaru District
Mackenzie District
Waimate District
Waitaki District
Central Otago District
Queenstown-Lakes District
Dunedin City
Clutha District
Southland District
Gore District
Invercargill City
TNZ Christchurch

Appendix 2 Road Hierarchies Questionnaire

Road Controlling Authority: _____

Person(s) Filling in Questionnaire: _____

Position in Organisation: _____

Contact Phone No.: _____ Date _____

1. (a) Has your authority formally adopted (by the Council or the board) a hierarchy for its roading network?

   (b) If not, does your authority have an informal hierarchy (used by staff members)?

   (c) Which staff members?

2. Where is your authority's hierarchy documented?
   (For example, in a district plan, safety management system or other policy document.)

3. What is the main purpose or use of the approved/informal hierarchy?

4. What classifications of urban streets does your authority have in its hierarchy (using your authority's terminology) and how is each class defined or described? (Attach copies of documentation if that is more convenient)

   Urban Classes or Categories_____

   _____

   _____

   _____

   _____

   _____

5. Has your authority identified standards for each class of urban street? Please enter any such standards in the table at the back of this questionnaire.

6. How "negotiable" are these standards?

7. What classifications of rural roads does your authority have in its hierarchy (using your authority's terminology) and how is each class defined or described? (Attach copies of documentation if that is more convenient)

   Rural Classes or Categories_____

   _____

   _____

   _____

   _____

   _____

   _____

8. Has your authority identified standards for each class of rural road? Please enter any such standards in the table at the back of this questionnaire.

9. How "negotiable" are these standards?

10. What (inspection) systems are in place to ensure that roads or streets achieve or are maintained to the desired standard?

11. What type of programme does your authority have for getting roads or streets in each class up to the standard for that class?

12. What proportion of the roading budget or any other budget is allocated each year to upgrading roads or streets to the desired standard for their class?

13. Are works prioritised in any way on the basis of hierarchy? If so, how?

14. If known, what proportion of streets or roads would be up to the desired standard for each class? Otherwise, please estimate and note as such.

Urban Class	Proportion	Rural Class	Proportion

15. (a) What steps have been taken to match your authority's hierarchy to those of neighbouring authorities (including Transit NZ)?

(b) What involvement has the regional council had in formulating your authority's hierarchy or standardising it with neighbouring authorities?

16. (a) How often is your road hierarchy reviewed?

    (b) What process is used to review the hierarchy?

    (c) Does the review extend to reviewing the classes in the hierarchy?

    (d) Does the review reclassify existing roads or streets?

17. Do you consider the standards your authority uses for each class of road or street to be adequate, or could they be improved? If so, how?

18. Do you have any general comments about road hierarchies, or suggestions on ways the LTSA could be of assistance on this issue?

If your authority has standards specified for each class of <u>urban street</u> in its hierarchy, can you please either:

- **fill in the following table as accurately as possible (with the classes that your authority uses written in the shaded cells), or**
- **attach copies of the relevant documentation if that is more convenient.**

Can you please do the same for each class of <u>rural road</u> in your authority's hierarchy?

<u>Thank you very much for taking the time to complete this questionnaire.</u>

	Urban Street Classification				
Standard					
Traffic Volume					
Carriageway Width					
Pavement Surface Type					
Type of Median or Centreline					
Number of Lanes each way					
Lane Width					
Clear Zone Width					
Parking Provision (yes/no/one side)					
Pedestrian Crossing Types					
Pedestrian Footpaths					
Provision for Cyclists					
Road Marking Materials					
Edge Line Markings					
Pavement Markers					
Street Lighting					
Speed Limit					
Direction Sign Standard					
Street Name Signs Standard					
Access Control					
Control on Land Use Type					
Roadside Advertising Control					

	Rural Road Classification				
Standard					
Traffic Volume					
Design Speed					
Number of Lanes each way					
Surface Type (Sealed, gravel)					
Type of Median or Centreline					
Lane Width					
Sealed Shoulder Width					
Gravel Shoulder Width					
Bridge Widths					
Edge Line Markings					
Pavement Markers					
Guide Posts and Delineators					
Overtaking Opportunities					
Direction Sign Standard					
Road Name Signs Standard					
Access Control					
Control on Land Use Type					
Roadside Advertising Control					
Stock movement controls					
Others: Please specify					

Road Safety Survey Series

RSS 1	Traffic Signal Light Output	1995/96
RSS 2	Street Lighting	1995/96
RSS 3	Treatment of Slip Lanes at Traffic Signals	1995/96
RSS 4	Stop and Give Way controls at Intersections	1996/97
RSS 5	Advisory Speed Signs	1996/97
RSS 6	Pedestrian Crossings	1996/97
RSS 7	Temporary Speed Limits	1998
RSS 8	Traffic Control at Road Works	1998
RSS 9	Safety Management Systems	1998
RSS 10	Skid Resistance	1999
RSS 11	Pedestrian Platforms	1999
RSS 12	Floodlighting Pedestrian Crossings	1999
RSS 13	No Passing Lines	2000
RSS 14	Roundabouts	2000
RSS 15	Roadside Hazard Management	2001
RSS 16	Road Hierarchies	2001

These reports are available on the LTSA website at www.ltsa.govt.nz or may be purchased from the Regional Engineer, Land Transport Safety Authority in Auckland (Private Bag 92-515), Wellington (PO Box 27-249) or Christchurch (PO Box 13-364) at a cost of $10 each including GST.