

TRANSFUND NEW ZEALAND
TECHNICAL REVIEW
OF
MINOR SAFETY WORKS 2002/03

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DISCLAIMER

This is a final report. It has been prepared in the discharge of Transfund New Zealand's legal responsibility to audit the performance of approved organisations in relation to activities approved by Transfund. A draft of the report has been referred to those organisations surveyed, for comment.

The findings, opinions and recommendations in the report are based on an examination of a sample only, and may not address all issues existing at the time of the audit. So readers are urged to seek specific advice on particular matters and not rely solely on the report.

While every effort has been made to ensure the accuracy of the report, it is made available strictly on the basis that anyone relying on it does so at their own risk without any liability to Transfund New Zealand.

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1. EXECUTIVE SUMMARY

1.1 Review Dates

Minor safety works projects programmed in 2002/03 were reviewed 21 January-20 February, 2004. A sample of programmes consisting of those for one Transit New Zealand region within a specific local government region, and 12 territorial local authorities, was taken for the review. This work was conducted as part of Performance Monitoring Group's business plan for 2003/04.

1.2 Scope of Review

1. To review the achievements of the Minor Safety Works (MSW) allocation as used by a sample of road controlling authorities, including Transit New Zealand.
2. To review procedures for choosing, prioritising and committing Minor Safety Works projects.
3. To review the extent to which MSW projects realise their objectives.
4. To determine whether in light of answers to the above questions what changes might usefully be made in present procedures.

1.3 Review Conclusions

- With a limited number of possible exceptions, MSW projects are judged to be successful in achieving an improvement in road safety.
- We believe that road controlling authorities are largely using their MSW allocations well. Any tightening of the rules to inhibit poor practices would be likely to reduce the ability of those authorities using the allocation well to respond to and to anticipate safety needs. Poor practices are best addressed directly between councils and transfund liaison staff.
- Where possible, councils seek to use MSW projects to enhance other, larger projects.
- The majority of road controlling authorities consider their objectives for MSW projects are being realised. Land Transport Safety Authority's Crash Analysis System (LTSA's CAS) is providing useful confirmation that projects are worthwhile, above the more subjective assessments of authorities that have not adopted it as an input to their decision-making.
- Some 60% of authorities monitor crashes using CAS either directly or through LTSA.
- Those councils that have had less successful projects appear to place unusually high value on community involvement in project development and authorisation.
- A little over half the expenditure on 2002/03 MSW was spent on small isolated geometric improvements and on improvement of existing intersections.
- Councils that have had crash reduction studies carried out consistently implement the recommendations of these studies.
- Six examples of best practice are identified as worth drawing to the attention of road controlling authorities generally, and six practices or issues we consider should be reviewed are listed. Where unacceptable or undesirable practices have been found, these were fully discussed with authority staff at the time.

2. RECOMMENDATIONS

The following recommendation arises from consideration of the major points identified in the report.

That the Transfund Board request the Chief Executive to distribute this report to all territorial local authorities:

- drawing attention to good practices identified in the report;
- encouraging all authorities to adopt good practices; and
- discouraging practices identified as needing to be reviewed.

3. REVIEW FINDINGS

Review Objectives and Principal Findings

Objective 1 : To review the achievements of the Minor Safety Works allocation.

Our overall conclusion is that with a limited number of exceptions, MSW projects are correctly focussed on identifying and improving factors that contribute to road crashes and casualties. Some road controlling authorities that are operating connections to CAS are able to quantify the reductions in crash statistics that are being achieved. Other authorities consider on the evidence available to them that their projects are generally successful. In all cases this conclusion must be based on the known consequences of previous years' MSW projects, as only nine months have passed since the close of the 2002/03 year.

Where possible, councils seek to use MSW projects to enhance other, larger projects.

A little over half the expenditure on MSW in 2002/03 was spent on small isolated geometric improvements and on the improvement of existing intersections.

Councils that have had crash reduction studies carried out consistently implement the recommendations of these studies. Their MSW allocations are a principal tool in doing this.

Objective 2 : To review procedures for choosing, prioritising and committing MSW projects.

Most road controlling authorities select MSW projects in an informal, but informed manner. Half of councils delegate this responsibility to their technical staff. Transit New Zealand does likewise, subject to the endorsement of the chosen projects by the Regional Manager. Two councils (17%) have formal systems for selecting projects and setting their priorities for projects. Three councils (25%) have formal policy statements.

Those councils that have identified a need to re-visit and modify projects appear to place unusually high value on community involvement in project development and authorisation. In these instances the effectiveness of completed projects appears to be reduced at times by the over-riding of professional opinion for non-technical reasons.

Objective 3 : To review the extent to which MSW projects realise their objectives.

The majority of road controlling authorities consider their objectives for MSW projects are being realised. Some 30% can substantiate crash savings benefits from CAS reports.

Two authorities reported that some of their projects are not always as successful as they had hoped. Both believe strongly in community participation, one having delegated project authorisation powers to community boards; the other through intensive community consultation prior to project design.

Objective 4 : To determine whether in light of answers to the above questions what changes might usefully be made in present procedures.

Road controlling authorities' representatives stressed the importance to them of retaining the freedom to respond quickly to changed circumstances, by being able to select projects and to

change priorities freely. We note that in those instances where authorities have changed priorities, the choices have been between projects ranked high in their priority lists. We thus conclude that choices are being made between projects of comparable merit.

We believe CAS is providing useful confirmation that projects are worthwhile, above the more subjective assessments of authorities that have not adopted it. We do not think Transfund should attempt to change its requirements for this work category to prevent poor practices by introducing new rules that inhibit or disadvantage those authorities that are using the allocation well. Poor administrative processes are best addressed between councils and Transfund's liaison staff.

We note that the present distinctions between MSW projects and Construction projects are defined by cut-off values in economic justification and in estimated project cost. These may be worth review in light of decisions stemming from the New Zealand Transport Strategy. We believe that road controlling authorities are largely using their Minor Safety Works allocations well and that tightening of the rules would be likely to reduce the ability of those authorities to respond to and to anticipate safety needs.

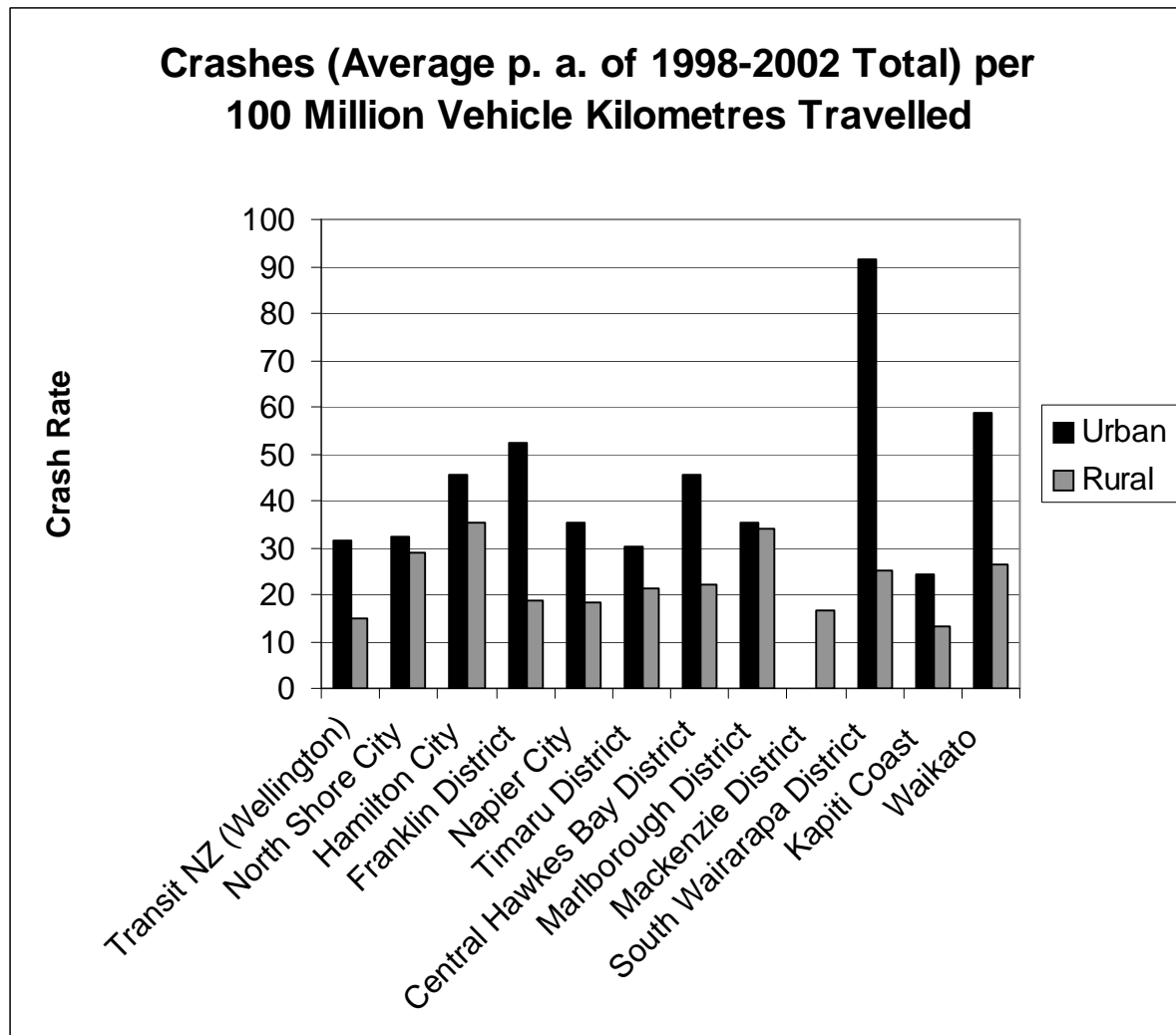
4. OVERVIEW

4.1 Introduction

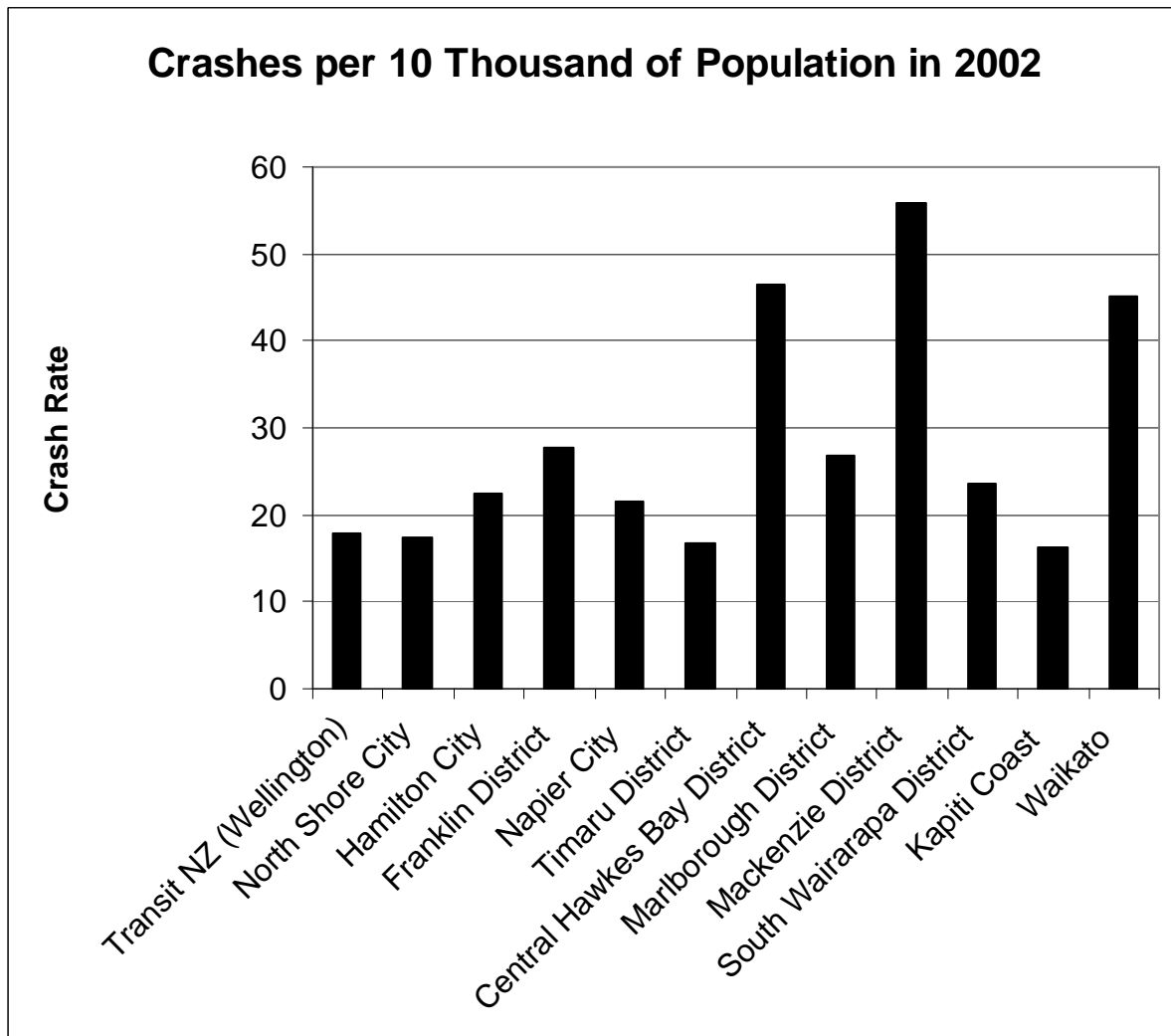
Road controlling authorities selected for this review have been picked on the basis of choosing one Transit New Zealand region and 12 territorial local authorities, equally divided between primarily urban and primarily rural in nature. These latter were then cross-divided between authorities having large, medium and small District Roding Programmes.

Information obtained from Land Transport Safety Authority is summarised in the two graphs following below. This information relates to the 13 road controlling authorities included in our review. The Transit New Zealand data has been selected to only cover Wellington local government region and is included in following sections of this report. It does not include statistics from State highways in the upper part of the South Island that are controlled by Transit's Wellington Regional office. In all cases, the data used refers only to those roads under the direct control of the authority named. State highway data is excluded from local authority statistics and vice versa.

Graph 1: Crash Rates by Authority Sampled, 2002: Travel-Based



Graph 2: Crash Rates by Authority Sampled, 2002: Population-Based



Graphs 1 and 2 relate the numbers of recorded crashes in 2002 only, relative to best available information on vehicle kilometres travelled and to population within those authorities.

Mackenzie, South Wairarapa and Waikato Districts are outliers in Graph 1 that deserve comment.

Mackenzie District is an isolated rural District having a low population and high tourist and recreational traffic. There is good cause to believe that a particularly low proportion of road crashes are reported. Mackenzie District has a low permanent population (3,700 approximately) which understates the total motoring population using local roads. Much traffic in this District is recreational or tourist in origin, as a result of which the following influences affect the crash rates observed:

- drivers' unfamiliarity with driving on unsealed roads;
- speeding to get to destinations;
- higher likelihood of using high centre of gravity 4WD vehicles; and
- towing of boats or caravans.

South Wairarapa District is another isolated rural District with three townships of moderate population. LTSA staff commented that some 75% of urban crashes in this authority occur at intersections, which is a higher rate than for this Council's peer group (40% average). We note that the total number of crashes in this District is relatively small and traffic volumes low, so that any change of crash numbers makes a disproportionate difference in comparison with other Districts when plotted as in graph 1.

Similarly, Waikato District is a primarily rural authority that has a number of townships of varying size. Council staff considered that in this District comparative crash records are likely to be influenced by a higher proportion of crashes in their larger townships being reported than in the rural area.

It is noteworthy that the rural authorities Central Hawkes Bay, Mackenzie and Waikato Districts show up on Graph 2 as having higher crash rates per 10,000 of population. We note that, as referred to on the previous page, Mackenzie has a small, highly scattered population. Central Hawkes Bay and Waikato districts are rural in nature with a number of townships, those in Waikato District being appreciably larger than those in the other Districts. They have a mix of difficult hill country roads and flat areas with long high-speed environment roads.

4.2 Summary of Expenditure

Table A summarises the information for the 2002/03 financial year given us in questionnaires returned by road controlling authorities surveyed. A fuller breakdown by type of project and authority is provided at Appendix B, below.

Road controlling authority identifications below do not necessarily reflect the sequence of authorities as listed in Graphs 1-2.

Table A: Expenditure on MSW Projects in 2002/03

Column:	(1)	(2)	(3)	(4)=(2)/(1)	(5)=(2)/(3)
Road Controlling Authority	Construction Cost (\$000)	Professional Services Cost (\$000)	Total Cost (\$000)	Ratio Prof. Services : Cost of Constr'n. (%)	Ratio Prof. Services : Total Cost as Claimed. (%)
1	560.8	51.4	612.2	9.2	8.4
2	469.0	42.0	511.0	9.0	8.2
3	376.8	37.7	414.5	10.0	9.1
4	99.4	6.4	105.8	6.4	6.0
5	195.5	8.5	204.0	4.4	4.2
6	55.0	3.9	58.9	7.1	6.6
7 ^(1,2)	127.1	48.1	162.2	37.8 ^(1,2)	29.7
8	405.2	11.8	417.0	2.9	2.8
9 ⁽²⁾	156.6	47.5	204.1	30.3 ⁽²⁾	23.3
10	162.1	16.2	178.3	10.0	9.1
11	108.1	14.0	122.1	13.0	11.5
12	188.4	18.8	207.2	10.0	9.1
13	103.6	8.6	112.3	8.3	7.7
Totals:	3,007.6	314.9	3,323.4	10.5	9.5

Column:	(6)	(7)	(8)	(9)=(8)/(6)	(10)=(8)/(7)
Road Controlling Authority	Approved Allocation (\$000)	Approved Final Claim (\$000)	Total Cost (\$000)	Ratio Total Cost : Approved Alloc'n. (%)	Ratio Total Cost : Final Claim. (%)
1	Not available	Not available	612.2	-	-
2	511.0	511.0	511.0	100	100
3	445.6	414.5	414.5	93.0	100
4	103.2	102.7	105.8	102.5	103.0
5	194.8	191.0	204.0	104.7	106.8
6	53.6	53.6	58.9	109.9	109.9
7 ⁽¹⁾	355.0	355.0	162.2	45.7 ⁽¹⁾	45.7 ⁽¹⁾
8	414.5	412.5	417.0	100.6	101.1
9	162.2	144.3	204.1	125.8	141.4
10	247.7	178.3	178.3	72.0	100
11	132.0	119.8	122.1	92.5	101.9
12	212.3	207.1	207.2	97.6	100
13	112.3	111.0	112.3	100	101.2
Totals:	N/A	N/A	3,323.4	-	-

Notes: ⁽¹⁾ This authority was late completing its programme of Minor Safety Works for 2002/03, with individual projects not being completed until August 2003. Council representatives noted that they only claimed the cost of work completed to 30 June, hence in part the high cost of professional services relative to the cost of construction. See also note (2), following.

⁽²⁾ Two authorities have a ratio of professional services cost to construction cost exceeding 30%. Both are urban in nature. The councils attach a lot of importance to consultation with affected people when planning Minor Safety Works projects. Both obtain professional services from their own professional services business unit and state that these cost reflect the level of effort put into consultation and reaching agreement with all parties likely to be affected.

The table shows clearly that councils aim to spend the full allocation in any given year. The one exception was a council that finished its construction programme later than 30 June, resulting in projects being only partly brought to charge in 2002/03 financial year.

The ratio of professional services costs to construction cost varied markedly, with seven authorities lying in the range 8-13%. Four have a lower ratio, and there are the two as noted above, where the ratio is significantly higher.

4.3 Analysis of Expenditure

Tables B & C are based on the information supplied by road controlling authorities surveyed in the course of this review, as summarised in the table “Cost of Projects Listed by Road Controlling Authorities”, at Appendix B. That Appendix also summarises the number of projects undertaken by authorities. As some councils have reported a number of small projects under one general listing, we consider it is a less meaningful statistic than is the cost data.

Table B: Relative Proportions of Expenditure by Type of Project

Road Controlling Authority:	1	2	3	4	5	6	7	8	9	10	11	12	13	Totals
Types of Safety Projects	Proportionate Cost of Projects (%)													
Small isolated geometric improvements		63	5	25	23			25		63	18	33	51	23.4
Intersection improvements	50	15	8	32	4	0	74	25	90	10	13	39	0	28.9
Traffic calming measures	3		23		18		18	3		3	50			5.7
Lighting improvements		5	25					15		5			11	7.1
Provision of guardrailing	24							14		4			8	5.0
Sightbenching		10			30	36		5		15				5.1
Pedestrian crossings	17		20		2		8		10		15	24		8.4
Stock underpasses				26				13						2.8
Formation of trailer parks														0.0
Safety footpaths		7	5										30	4.6
Other	6	0	14	17	23	64	0	0	0	0	4	4	0	9.0
Totals:	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Note: Professional services costs are additional to the construction costs considered in the above table.

Table C: Relative Proportions of Expenditure by Type of Project and Nature of Authority

Road Controlling Authorities:	Mainly Urban Councils (6 No.)	Mainly Rural Councils (6 No.)	All RCAs (13No.)
Types of Safety Projects	Proportionate Cost of Projects (%)		
Small isolated geometric improvements	12.0	41.9	23.4
Intersection improvements	27.9	21.2	28.9
Traffic calming measures	14.1	0.2	5.7
Lighting improvements	9.9	7.8	7.1
Provision of guardrailing	0.7	0.5	5.0
Sightbenching	5.5	6.9	5.1
Pedestrian crossings	10.5	3.3	8.4
Stock underpasses	0	6.0	2.8
Formation of trailer parks	0	0	0.0
Safety footpaths	10.0	2.2	4.6
Other	9.4	10.0	9.0
Totals:	100	100	100

These two tables show clearly that the majority of expenditure (52%) has been spent on small isolated geometric improvements and intersections improvements. Urban councils expenditure has a small bias towards intersections improvements over small isolated geometric improvements projects. Rural councils have the reverse, a strong bias towards small isolated geometric improvements, rather than intersections improvements.

As far as possible, councils try to carry out MSW projects co-ordinated with other, larger projects. This is done to enhance these latter projects, obtaining greater safety benefits in the process. A side-benefit is that the impact of professional services costs is lessened as overheads are spread across a larger total expenditure.

Councils' overall priority orders for their spending on MSW in 2002/03 are given in table D below:

Table D: Priorities Orders for Types of Projects by Expenditure

Road Controlling Authorities: Priority Order by Expenditure	Mainly Urban Councils (6 No.)	Mainly Rural Councils (6 No.)	All RCAs (13No.)
1	Intersection improvements	Small isolated geometric improvements	Intersection improvements
2	Traffic calming measures	Intersection improvements	Small isolated geometric improvements
3	Small isolated geometric improvements	Other	Other
4	Pedestrian crossings	Lighting improvements	Pedestrian crossings
5	Safety footpaths	Sightbenching	Lighting improvements
6	Lighting improvements	Stock underpasses	Traffic calming measures
7	Sightbenching	Pedestrian crossings	Provision of guardrailing
8	Other	Safety footpaths	Sightbenching
9	Provision of guardrailing	Provision of guardrailing	Safety footpaths
10	Stock underpasses	Traffic calming measures	Stock underpasses
11	Formation of trailer parks	Formation of trailer parks	Formation of trailer parks

4.4 Administration Processes

Most of the road controlling authorities visited had informal procedures for choosing and prioritising MSW projects, lists being built up by roading asset managers using all available sources of information. Three have formal systems for this, as detailed in Appendix D. In addition to these three, three councils have a policy statement covering this procedure. Transit New Zealand has its own system as set out in its manuals.

Seven of the road controlling authorities sampled left the decision-making on project choice and priority to technical officers. Transit New Zealand is one of this group, with the decisions being made in each of its several relevant Regional Offices. Projects are funded from previously approved budgets.

Within the other six authorities, councils approve both budgets and projects for construction. Councils reserve the right to adjust priorities and may nominate projects from time to time. We note that where councils adjust priorities this is done from lists of projects submitted by technical officers and that choices are made between projects that have been recommended as worthwhile safety projects.

In one authority, priority lists are submitted to Community Boards for consideration. This council has delegated authority to its Community Boards to authorise expenditure. Over a period that Council has tended to accept recommendations of Community Boards over those of its technical staff and advisors. Council's acceptance of Community Board wishes extends

to details of the work, as well as to priorities and the authorisation of projects. Council representatives noted that such decisions can be contrary to accepted traffic engineering practice. They further stated that problems of gaining approval under this procedure can arise especially when projects are proposed that are intended to avert developing situations not yet apparent to lay people.

Some other councils consult with community boards in an informal manner that successfully manages differing opinions on projects and priorities.

In two rural authorities, we found that safety needs of townships were not always being recognised. In one case, small and isolated communities are now subject to holiday/tourist developments that are changing or on the verge of changing traffic conditions markedly. The council needs to recognise that the effects of such relatively large changes need to be responded to. The second council we refer to needs to reconsider the balance between rural and urban works, again to reflect changing circumstances.

We are aware from reference material passed to us that an authority, not one of those included in this review, has had a procedure under which “Any [Minor Safety Works] projects over \$75,000 [total cost] must apply for capital works budget or be staged.” Such staging of MSW projects is not permissible under Transfund financial rules. Transfund states clearly in the Programme and Funding Manual (section 2.2.3, page 2-29),

“Rule: The value of individual projects is limited to a maximum of \$75,000.

“Note: All projects require the specific approval of the [Transfund] regional manager. Details of individual projects must be held by the road controlling authority for audit purposes.”

Subsequent to the printing of the last amendment to the Programme and Funding Manual, the cap on the maximum cost of any single MSW project has been raised to \$150,000. The other relevant Transfund requirements have not been varied.

Representatives of one urban authority commented that prior to 2003/04, the council had carried out MSW projects using dayworks rates under its maintenance contract. It has now changed to letting a separate contract for these construction activities. They said that preparing and advertising tenders had cost some \$4,000, but they expected to save through obtaining better prices for the work.

4.5 Traffic Management at Roadworks

Transit New Zealand has substantially reviewed its policy and procedures for the temporary management of traffic at worksites. The Road Controlling Authorities Forum is now considering the extent to which the Transit procedures should be modified to take account of the less severe traffic conditions prevailing at most local authority worksites. Transit representatives commented to us that their costs of temporary traffic control are significant. They gave as examples of typical costs:

- Shoulder closure: \$450 per closure;
- Lane closure (one direction only): \$1,500 per closure;
- Lane closure (affecting two directions of travel): \$2,500 per closure.

For two typical smaller motorway projects in 2003, the cost of traffic management was approximately 20% of total contract costs. We think it unlikely that territorial local authority costs for traffic management will normally be that high, except in the major metropolitan areas. However, we expect that the cost of traffic management will become more significant in the total cost of projects in the future.

4.6 Long Term Council Community Plans and Safety Management Systems

Selection of projects and establishment of Council's priorities for projects are processes that bridge between technical considerations and community perceptions. Councils sampled were evenly divided on whether the selection of projects should be left to the technical staff or whether the council should at least ratify the choice and have the opportunity of adjusting priorities. In the case of Transit New Zealand, discretion lay with the Regional Manager.

Most Councils are in the process of establishing Long Term Council Community Plans, these requiring a greater amount of planning ahead and community consultation than formerly. Establishment of a priority list of MSW is likely to fall within this process and it is likely that some adjustment of existing priorities may be requested. This process is compatible with Transfund's requirements. Roading asset managers commented that they needed to retain freedom to respond to changing circumstances and to public requests where considered necessary. They therefore requested that any procedural changes to work justifications for the Minor Safety Work category that Transfund might consider making should take this operational need into account.

Similarly, councils are encouraged by LTSA to establish formal Safety Management Systems. These also involve the setting up of prioritised work programmes. As noted above, Safety Management Systems need to strike a balance between the orderly planning of work programmes and the need to be able to respond in a timely manner to changed circumstances.

4.7 Technical Processes

Input information used by road controlling authorities in preparing lists of projects and priorities includes the following:

- LTSA crash reduction studies;
- LTSA road safety reports;
- Register of roadside hazards/hazard management study;
- Lighting upgrade strategy;
- Complaints and requests from the public, Councillors, Community Boards and Councils; and
- Monitoring of crashes.

Only one authority had no LTSA crash reduction study (CRS) performed on its network. This was a small rural authority, where traffic volumes are low. We summarise in Table E following, findings based on questions put to roading asset managers visited.

Respondents reported that the recommendations of crash reduction studies were mostly acted upon and that the remainder would be. Some urban authorities and Transit had made sufficient progress that they were beginning to find difficulty in identifying projects that could be completed within the former cap of \$75,000 total cost.

We visited one urban authority where council representatives commented that there was a history of projects not always achieving their objectives. Contributing reasons stated to us included that:

- the measures adopted were not always sufficient for site conditions;
- traffic patterns may change following other changes elsewhere in the network;
- land purchase at intersections was avoided for cost and community relations reasons; and
- measures to be adopted had to be acceptable to adjoining land occupiers and the public.

We remind road controlling authorities that LTSA's CAS system is available for the recording and monitoring of the effects of any construction project, including those built under the MSW allocation.

4.8 LTSA Expert Systems and Liaison

LTSA liaison with councils appears to vary widely. At one time crash reduction studies were being advocated and supported. We were told that LTSA went through a period of staff changes that tended to disrupt its follow up on these studies and its relationships with councils. Relationships are now being rebuilt in conjunction with encouraging councils to use LTSA's newer crash analysis system (CAS).

One weakness of LTSA expert systems has been that crash information has not been entered into them consistently. Councils are being encouraged to become CAS users, drawing on and inputting data as information becomes available.

We did not ask in the questionnaire about councils' linking into CAS. It became clear from discussions during visits that only a minority had done so. Principal reasons for this uneven establishment of links are related to work pressure on both LTSA and councils' staff. Some proprietary computer systems used by councils are not easily compatible with CAS, but we note that councils are overcoming these problems by a variety of means, including (when all else fails) independent personal computers which may already be independently used for RAMM operations.

One council that is one of the three most advanced towards completing their Safety Management Systems is using a computer based project prioritisation system previously developed by its consultants. This council has an operational link into CAS.

LTSA officers concurred with road controlling authorities' staff in their conclusion that MSW projects are effectively enhancing road safety. (We note that in two specific authorities this conclusion may be qualified for some projects.)

4.9 Questionnaire Responses

Table E: Summary of Answers to Questionnaire

Question		Answers	No. of RCAs		
			Mainly Urban (6 No.)	Mainly Rural (6 No.)	All RCAs (13 No.)
2	What is your Council's process or criteria for choosing MSW projects?	Formal	2	0	2
		Informal	4	6	11
		Totals:	6	6	13
6	What is Council's approvals procedure?	Council approval	2	3	6
		Officers approve	4	3	7
		Totals:	6	6	13
7	When did LTSA last carry out a CRS on your Council's network? <i>(Note: One respondent of the 13 questioned had not had any CRS.)</i>	2000 or earlier	0	1	1
		2001	2	0	2
		2002	3	1	4
		2003	1	2	4
		2004	0	1	1
		Totals:	6	5	12
8	How many crash reduction studies have LTSA assisted your Council to complete? <i>(Note: One respondent of the 13 questioned had not had any CRS.)</i>	5 or more	4	0	5
		4	0	1	1
		3	2	1	3
		2	0	1	1
		1	0	2	2
		Totals:	6	5	12
9	Over what period have these studies been carried out? <i>(Note: One respondent of the 13 questioned had not had any CRS.)</i>	>20 years	3	2	7
		>15 years	2	1	3
		>10 years	1	2	2
		Totals:	6	5	12
10	Which of your Council's MSW projects in 2002/03 originated from LTSA supported CRS? <i>(Note: One respondent had not had any CRS.)</i>	All	0	0	0
		Majority	1	0	1
		Minority	3	3	6
		None	2	2	6
		Totals:	6	5	13

Question		Answers	No. of RCAs		
			Mainly Urban (6 No.)	Mainly Rural (6 No.)	All RCAs (13 No.)
12	When evaluating projects for consideration, what formal method did you use, if any?	Council's formal system	2	0	2
		Peer review	0	1	1
		Benefit/cost analysis	1	0	1
		None	3	5	9
		Totals:		6	6
13	What checks are applied to projects after their completion? <i>Note: There were some multiple answers to this question.</i>	Post construction audit	0	1	1
		Monitor CAS	3	0	4
		Feedback monitored	4	4	8
		Inspect on completion	1	0	2
		None	1	1	1
		Totals:		9	6
14	Do you report completed projects to LTSA for inclusion in its monitoring programme?	Yes	1	3	4
		On request	1	0	1
		No	4	3	8
		Totals:		6	6
15	What does LTSA monitoring of previous years' projects show in relation to their effectiveness?	Crash savings achieved	2	2	4
		"Successful"	0	2	2
		Not known	4	2	7
	Totals:		6	6	13
16	What is the overall conclusion on MSW projects of any such CRS strategy report?	Successful	3	4	8
		No report	3	2	5
		Totals:		6	6

Answers to questions 7-9 show that primarily rural authorities have been slower to commence and undertake crash reduction studies than have primarily urban authorities, reflecting the lower traffic volumes using their networks.

A relatively low proportion of projects had originated from crash reduction studies (question 10). In primarily urban authorities most low cost recommendations of such studies had already been implemented; in rural authorities there have been few studies to generate recommended projects. For both urban authorities and for Transit, the former cap of \$75,000 for total cost on projects had been making it increasingly hard to identify prospective projects, we were told. The only formal project evaluation systems found had been developed by Transit and by city councils (question 12).

A majority of respondents monitor the outcome of projects, the formality of this varying depending on councils' own systems (question 13). A minority of authorities monitor sites using LTSA's Crash Analysis System (CAS). Reasons for this include shortage of council staff able to take the time to operate CAS; some interface difficulties between CAS and some proprietary computer systems used by councils; and difficulty in maintaining working relationships at times when LTSA liaison staff were changing rapidly.

Some 62% of the sample of road controlling authorities report completed projects to LTSA for inclusion in its monitoring programme (question 14). Changes of policy and staff in LTSA appeared to have been an influence on the take-up of CAS. We note that LTSA is actively encouraging councils to take advantage of CAS. Where monitoring is in place, councils have been able to establish that there is a positive trend of crash reduction and to relate that to regional and national values and trends.

- 62% of respondents consider their overall MSW programme is contributing to a reduction in crashes.
- 31% are able to substantiate this from CAS reports.
- An equal number of urban and of rural authorities surveyed reported CAS crash rates in support of their answers to the questionnaire.

4.10 Transfund Processes

We asked the following questions of Transfund National Office and Regional Offices. Answers received were as follows:

Table F: Summary of Transfund Processes

	Questions	Answers Received
1	What do you do to review Transit's proposed Minor Safety Works programme? (National Office was asked this in relation to Transit NZ, with which a head office/head office relationship has traditionally been maintained.)	Details of Transit's Minor Safety Works programme have not been seen or reviewed.
	What do you do to review Council's proposed Minor Safety Works programme? (Regional Offices were asked this in relation to territorial local authorities visited.)	1. Receive list of projects each year and question any that appear to be marginal. 2. Inspect sites as part of general inspections. 3. Obtain a list each year and review. 4. Discuss with councils what work they intend to do at each annual LTP negotiation. No physical inspection of sites.
2	What do you do to review Council's Minor Safety Works programme after projects have been completed?	1. Only discuss particular sites when inspecting on other issues. 2. Council staff show me sites during other inspections. 3. A sample is inspected with Council staff. 4. No review after projects have been completed..
3	What do you do to liaise with LTSA on Councils' Minor Safety Works programme?	1. Respond when questions are asked, including site visit if necessary. 2. None done. 3. Nothing. 4. No liaison on this with LTSA.

4.11 Financial Delegations

Financial delegations to chief executive officers and to roading asset managers within the road controlling authorities surveyed are as follows:

Table G: Summary of Financial Delegations

Chief Executive Officers		Roading Asset Managers	
Maximum Delegated Authority (\$000)	Number of Authorities	Maximum Delegated Authority (\$000)	Number of Authorities
\$1 million or greater	2	Work within approved budget.	4
500	1	100	1
300	1	50	2
200	1	25	1
150	1	20	2
		15	1
		10	1
Not stated	7	5	1
Totals:	13		13

4.12 Good Practice

We have identified administration practices and processes we consider good as follows:

- The establishment and use of formal systems as an aid in choosing projects and setting priorities. Some examples of systems are attached at Appendix D.
- The recording of construction and safety projects on the LTSA's CAS system for the monitoring of the effects of those projects.
- The regular review of priorities for projects.
- The construction of MSW projects in conjunction with projects at the site funded from other allocations, leading to an enhanced result from the combined expenditure.
- A formal system of post-construction safety auditing of council projects. Under this, an interim report lists recommended remedial measures, and a later final report follows up on implementation of safety recommendations.
- A requirement under the professional services contract for the assessment and review of all MSW projects.

We believe these are practices that are worth drawing to the attention of other road controlling authorities. Some are practiced by the majority of authorities, others we believe to be worth consideration and adoption by those that do not already have comparable practices.

4.13 Practices Suggested to be Reviewed

Similarly, we have identified practices we suggest be reviewed in preparing for subsequent years' DLTPs:

- The over-riding of professional advice by lay opinion at Community Board level.
- Dividing safety construction projects into successive stages, each of which will fit inside the financial cap set for MSW projects in any given year.

- Lack of follow-up after construction, checking the changes to crash rates. LTSA's CAS is now accessible by all roading asset managers, limited only by councils' computer systems capability and the availability of council staff.
- Lack of council resources able to record and monitor crash data.
- Some lower financial delegations may unduly limit the ability of roading asset managers to respond to changing circumstances in a timely way. We note that Transfund has recently raised the cap on individual project cost to \$150,000.
- Some urban councils report very high community consultation costs. If these costs are brought to charge against individual projects, they could inhibit appropriate and necessary projects from being constructed.

Some of these items listed are common concerns across a number of authorities. While councils' internal procedures and operating rules are not the direct concern of Transfund, we believe these listed can impinge on achieving the most effective use of Transfund's allocations for the construction of Minor Safety Works.

5. METHODOLOGY

5.1 Scope of Review

MSW projects programmed in 2002/03 in a sample of 13 road controlling authorities were reviewed 21 January-20 February, 2004. This review was conducted as part of Performance Monitoring Group's business plan for 2003/04.

Objectives of the audit were:

1. To review the achievements of the MSW allocation.
2. To review procedures for choosing, prioritising and committing MSW projects.
3. To review the extent to which MSW projects realise their objectives.
4. To determine whether in light of answers to the above questions what changes might usefully be made in present procedures.

5.2 Authority to Review (*Transfund Requirement to Audit*)

The Land Transport Management Act 2003, Section 69(1)(f), requires Transfund to "audit the performance of approved organisations in relation to activities approved by Transfund". The Transfund Performance Monitoring Group's Charter describes the way this statutory requirement will be performed. The charter refers to regular procedural audits and regular technical reviews of local authorities. This report is of a technical review.

The Land Transport Management Act, Section 69(1)(g), requires Transfund to "assist and advise approved organisations in relation to Transfund's functions, duties, and powers under this Act and the Land Transport Act 1998". Technical reviews provide one opportunity for this.

5.3 Review Team

The review team consisted of Rob. Merrifield, Technical Auditor, assisted by:

- Ralph Hall, Regional Liaison Engineer, Auckland;
- Cambell Snook, Regional Liaison Engineer, Hamilton;
- Ken Gilberd, Regional Liaison Engineer, Wellington;
- Robyn Denton, Regional Engineer, Land Transport Safety Authority, Hamilton;
- Tim Selby, Regional Engineer, Land Transport Safety Authority, Wellington;
- Chris. Hewitt, Area Engineer, Land Transport Safety Authority, Auckland;
- John Jenssen, Area Engineer, Land Transport Safety Authority, Auckland;
- Colin Goble, Senior Traffic Engineer, Land Transport Safety Authority, Napier;
- Lisa Bridson, Area Engineer, Land Transport Safety Authority, Wellington;
- Rosie Dempster, Area Engineer, Land Transport Safety Authority, Wellington; and
- Steve Parry, Area Engineer, Land Transport Safety Authority, Christchurch.

These individual officers attended visits to those authorities with which they normally work.

5.4 Fieldwork

We visited 13 road controlling authorities through the period 21 January-20 February, 2004. Two pilot visits were carried out in December 2003 but the information gained from these visits was only used to develop the questionnaire that was used in this review.

5.5 Consultation on the Draft Report

Completed questionnaires as summarised and collated in Appendix B were checked with the individual authorities as soon as possible after fieldwork had been completed.

All 13 road controlling authorities surveyed have been sent the draft report together with an invitation to comment on it before it is adopted by Transfund. Comments received have been taken into account in preparing the final report. One authority of those surveyed did not respond to our invitation to comment on the draft report.

6. ACKNOWLEDGEMENTS

We are grateful for the time and effort spent by staff and consultants working for the road controlling authorities we visited, in preparing for and taking part in the review. The time they spent in discussion and inspections with us was appreciated, as was the hospitality extended by Councils.

I wish to thank Land Transport Safety Authority for making road safety engineering staff available to help with the fieldwork of this review and the individuals for their contributions to discussions and the final report.

Rob. Merrifield
for Review Team

APPENDIX A

Audit Plan 2003/04: Technical Review of Minor Safety Works Projects

- Sponsor:** Performance Monitoring Manager.
- Project Manager:** Rob. Merrifield, Technical Auditor.
- Intended Outputs:** A report to the Transfund New Zealand Chief Executive assessing the findings of the review.
- Review Objectives:**
- 1 To review the achievements of the Minor Safety Works allocation.
 - 2 To review procedures for choosing, prioritising and committing Minor Safety Works (MSW) projects.
 - 3 To review the extent to which Minor Safety Works projects realise their objectives.
 - 4 To determine whether in light of answers to the above questions what changes might usefully be made in present procedures.
- Target Audience:** Transfund New Zealand Chief Executive and Councils.
- Review Team:** Rob. Merrifield, safety auditor or another, relevant Transfund and LTSA liaison engineers.
- Methodology:**
- Pilot review to cover two TLAs close to Wellington and test questionnaire, field procedure.
 Select a sample of up to 12 authorities according to size, urban /rural orientation and one Transit New Zealand region.
 Send questionnaire in advance of survey and check, amplify or complete this during visit to TLAs sample.
 Visit a sample of MSW projects to discuss physical works and changes in safety records achieved.
 Perform peer review of the draft report before being sent to Councils for formal comment.
 Submit report to Transfund Chief Executive.

Projected timing:

Stage/task	Begin	End
Define objectives, methodology	Immediate	Immediate
Arrangement of fieldwork	Immediate	December, 2003
Fieldwork for pilot visits	December, 2003	December, 2003
Fieldwork for principal visits	February, 2004	February, 2004
Prepare draft report.	After fieldwork.	29 February, 2004
Preparation of final report.	After peer review.	15 March, 2004

APPENDIX B

SUMMARY OF RESPONSES TO QUESTIONNAIRE