

# Monitoring Wellington's Regional Land Transport Strategy

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## *Abstract*

*Given the high level of investment required, surprisingly little monitoring is undertaken of regional transportation networks to determine if planned outcomes are being achieved.*

*Whilst Regional Councils are required to report annually on the implementation of their RLTS, in practice this exercise appears to be of limited value.*

*At the request of Wellington Regional Council, a strategy for the monitoring of the Wellington RLTS has been developed. This makes use of a wide variety of information relating to the transportation network from a range of sources. Performance indicators and indices are proposed, which relate to each of the key objective areas of the RLTS. The strategy defines the tasks required for the production of an enhanced monitoring report each year.*

*Ideas are also advanced for ensuring the availability of this information to those involved in the planning of the regional transportation network.*

## **1. Introduction**

The provision of transportation infrastructure in New Zealand requires a significant investment of scarce capital. Despite this, surprisingly little monitoring is undertaken to ensure that the outcomes anticipated at the planning stages are actually achieved in practice. As a result, an essential feedback from actual outcomes to the planning stage is lost.

At a regional level, councils are required, by statute, to prepare an annual report as to progress achieved in the implementation of their Regional Land Transport Strategy (RLTS).

A review of these 'monitoring reports' from around New Zealand suggests that, in general, they are prepared in order to meet a legislative requirement, rather than to provide a useful tool with which to monitor and drive change. The lack of any guidance or feedback from the Ministry of Transport on the content of such monitoring reports exacerbates this situation.

In Wellington, the first Annual Monitoring Report (AMR) for the current RLTS, published in late 2000, describes change in a number of performance indicators against target values set for each of five key objective areas.

Whilst this document is of interest, Wellington Regional Council (WRC) has recognised that the process of preparing the AMR and the document itself offer great potential in terms of providing valuable information relating to the performance of the

regional transportation network. In the past, the division of this information between a large number of agencies means that it's collective potential for monitoring purposes has not been realised.

Tim Kelly Transportation Planning Ltd and Douglass Consulting Ltd were therefore appointed by WRC to critically review the current monitoring procedures and prepare a structured and budgeted programme for an enhanced level of monitoring in the Wellington region.

## **2. Content and Function of the Annual Monitoring Report**

The principal functions of the AMR should be to;

- report key performance indicators relating to the regional transportation system and the degree to which the objectives in the RLTS are being met
- report progress on the implementation of specific projects and policies as described in the RLTS
- identify the reasons why progress has not been achieved (impediments to the implementation of the RLTS)
- provide feedback between progress reporting and actions required by the various agencies required in transportation.

## **3. Performance Measurement**

*Why measure performance?*

Performance monitoring is essential in order to determine if the visions expressed in the Wellington RLTS are being achieved and hence whether funds are being efficiently allocated. Furthermore, the monitoring of the changing demands on the transportation network provides valuable information for planning purposes.

*What are we trying to measure?*

The overall vision of the Wellington RLTS is expressed through the five objective areas shown by **Table 1**.

RLTS Objective	RLTS Definition
Accessibility and Economic Development	To provide a transport system that optimises access to and within the region
Economic Efficiency	To implement the most efficient options
Affordability	To plan for a land transport system that recognises funding constraints and ability to pay
Safety	To provide a safer community for everyone through a transport system that achieves or improves on the targets of the National Road Safety Plan through the Regional Road Safety Strategy
Sustainability	To provide a land transport system that; <ul style="list-style-type: none"><li>operates in a manner that recognises the needs of the community</li><li>avoids, remedies or mitigates adverse effects</li><li>uses resources in an efficient way</li><li>supports an optimal demand for energy.</li></ul>

**Table 1 : Wellington RLTS Objectives and Definitions**

These objectives themselves are not capable of direct measurement. Hence, statistics are required which give an adequate indication of performance within each of these objective areas.

#### *Targets*

Measurement of the objectives on their own does not indicate whether the vision of the RLTS is being met. Targets are therefore required which provide a 'yard-stick' against which performance can be measured.

The establishment of target values is a difficult process. Setting values too high can give an impression that performance is not being achieved when it is, and vice versa. Target values, should in theory, be based upon the expected state of the transportation network if all of the provisions of the RLTS are achieved. In practice, targets tend to be set in a rather arbitrary manner with little justification.

#### *Sources and Types of Information*

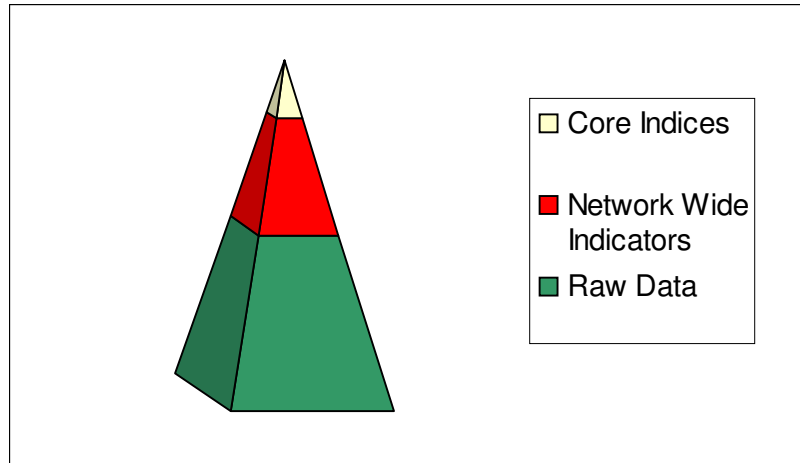
As part of this study, we have consulted with a wide range of agencies, including TLAs, Transit NZ, WRC, public transport operators, Statistics NZ, EECA. This established that a very significant volume of useful information relating to the regional transportation network is held by these agencies.

Such data, on its own, is of limited use. The information therefore needs to be organised in a manner which allows it to be used for performance monitoring purposes.

Performance indicators, whilst the primary focus of this study, should therefore be considered as part of a hierarchy of information at three levels (shown diagrammatically by **Figure 1**):

- a) **raw data** : this is the large volume of information available relating to results from surveys, the traffic model and other sources. Whilst valuable for specific applications, the presentation of information at this level in the AMR would distract from the key points

- b) **performance indicators** : these are the result of summarising the raw data to identify trends and patterns which usefully report the performance and operation of the regional transportation network
- c) **indices** : few in number, these offer a means of presenting a quick summary of each aspect of the regional transportation system.



**Figure 1 : Pyramid of Information**

Whilst in most areas these distinctions are clear, in others there is a considerable degree of overlap between the categories. Raw data may be used as the performance indicator directly, or a single performance indicator may be used also as an index.

#### *Criteria for Performance Indicators*

In selecting data and performance indicators it is important to remember that they should:

- a) reflect the objectives of the RLTS
- b) enable progress against the RLTS targets to be measured
- c) be capable of being consistently repeated at pre-determined time intervals
- d) be cost-effective in terms of supplying relevant information at reasonable cost.

It is also important that the indicators used should enable trends to be effectively measured. Trends which demonstrate success and failure in meeting the targets of the RLTS should be regarded as equally important. Thus, the indicators are designed to measure the outcomes and not the ways and means of achieving them.

#### *Recommended Performance Indicators for the Wellington RLTS*

**Table 2** shows the set of performance indicators which have been recommended to WRC. Performance indicators are recommended for each of the five objective areas previously described, under Sections (C) – (G).

In addition, demographic indicators relating to activity within the region (Section A) and across the regional boundaries (Section B). This are considered important in

order to provide the context within which the demands on the transportation network are changing over time.

Section H suggests some 'Community Satisfaction' indicators. However, the collection of such information, to be of value, would require extensive and expensive surveys. For this reason, the indicators in this category are not recommended at the current time.

For each proposed indicator, **Table 2** shows the source of the data to be used and the recommended frequency of reporting; whilst most indicators should be reported on an annual basis, for some a 5-year reporting cycle is sufficient.

For each of the indicators shown in **Table 2**, a detailed methodology has been provided, which describes how the raw data is to be obtained, processed and reported, and the months in which these actions should be undertaken as part of an annual programme.

For each of the categories shown by **Table 2**, a small number of indices have been recommended which summarise the performance indicators. These therefore provide a 'quick summary' of performance within each category. For example, the accessibility category has been summarised by indices of regional;

- road travel times
- public transport travel times
- traffic volumes
- road network level of service
- public transport patronage.

These could be further summarised to an overall index of accessibility, though this involves the summation of differing units of measurement and could be potentially mis-leading. These issues are currently being investigated.

#### **4. Progress Reporting**

The RLTS contains a large number of specific policy and project proposals for implementation. The achievement of the vision of the RLTS is, in large part, reliant upon this implementation programme.

However, as Regional Councils are not permitted to own infrastructure or run public transport services, they are reliant upon other agencies to implement the provisions of the RLTS.

It is therefore appropriate to review progress each year, not only in terms of each policy or project, but also in terms of the performance of each agency carrying out those actions which have been allocated to it. Whilst these agencies are involved in the development of the RLTS, the linkage between the achievement of the RLTS as a whole and their actions has, to date, been weak.

TABLE 2 :RLTS MONITORING STRATEGY - RECOMMENDED INDICATORS CHART							
	Indicator	Source of Data				Frequency	
		Survey	Model	Statistics	Agency	1 year	5 year
<b>A: DEMOGRAPHICS / ACTIVITY (Intra-Regional)</b>							
A1	Resident Population			✓	StatsNZ	✓	
A2	Households			✓	StatsNZ	✓	
A3	Employment			✓	StatsNZ	✓	
A4	Regional Economic Activity			✓	National Bk	✓	
A5	Building Activity			✓	StatsNZ	✓	
A6	Licensed Vehicles			✓	StatsNZ	✓	
<b>B: DEMOGRAPHICS / ACTIVITY (Inter-Regional / National)</b>							
B1	Inter-Regional Passengers			✓	WIAL, TranzRail, Inter-City	✓	
B2	Port Activity			✓	Report	✓	
B3	Airport Non-Passenger Flights			✓	Report	✓	
B4	Inter-Islander Freight / Commercial Vehicles			✓	TranzRail	✓	
B5	Rail Freight			✓	TranzRail	✓	
B6	Traffic Volumes at Regional Cordon			✓	TNZ	✓	
<b>C: ACCESSIBILITY / ECONOMIC DEVELOPMENT</b>							
C1	Key Route Travel Times : Road AM/IP/PM	✓			WRC	✓	
C2	Key Route Travel Times : Bus / Rail	✓			WRC	✓	
C3	State Highway Screenline Traffic Volumes			✓	TNZ	✓	
C4	Weekday Hourly Traffic Profiles			✓	TNZ	✓	
C5	CBD Cordon Counts			✓	TLAs	✓	
C6	Heavy vehicles on key routes	✓			TNZ/TLAs	✓	
C7	Commercial Veh Travel Times	✓			WRC		✓
C8	Road Network Usgae		✓		WRC		✓
C9	Total SH Vehicle-Kms	✓			TNZ	✓	
C10	Length of Journey to Work Trips			✓	StatsNZ		✓
C11	Road Network Level of Service		✓		WRC		✓
C12	Public Transport Service Patronage			✓	WRC	✓	
C13	Mode Split on Wellington CBD Cordon	✓			TLAs	✓	
C14	Vehicle Occupancy on Wellington Cordon	✓			TLAs	✓	
C15	Parking Supply in CBD	✓			TLAs	✓	
<b>D: ECONOMIC EFFICIENCY</b>							
D1	Road Network Congestion Costs	✓	✓		WRC	✓	
D2	Total System User Costs		✓		WRC		✓
D3	Public Transport Use Costs			✓	PT ops	✓	
D4	Vehicle Operation Costs			✓	AA	✓	
<b>E: AFFORDABILITY</b>							
E1	Cap Works Expend / Yr (Strategic Network)			✓	RCAs	✓	
E2	Maint Works Expend / Yr (Strategic Network)			✓	RCAs	✓	
E3	Household Travel Expenditure			✓	StatsNZ		✓
<b>F: SAFETY</b>							
F1	Total Casualties			✓	LTSA	✓	
F2	Total Fatalities			✓	LTSA	✓	
F3	Accidents / 100,000 population			✓	LTSA	✓	
F4	Casualties / 100,000 population			✓	LTSA	✓	
F5	Pedestrian Accidents			✓	LTSA	✓	
F6	Motorcycle Accidents			✓	LTSA	✓	
F7	Pedal Cycle Accidents			✓	LTSA	✓	
F8	Accidents per 10 <sup>6</sup> veh kms			✓	LTSA	✓	
<b>G: SUSTAINABILITY/ENVIRONMENT</b>							
G1	Fuel Consumption			✓	TLAs	✓	
G2	Air Quality	✓			WRC		✓
G3	Noise Adjacent to Arterial Routes	✓			WRC		✓
G4	Vehicle Exhaust Emission Standard	✓			MoT	✓	
G5	Surface Water Quality			✓	WRC		✓
<b>H: COMMUNITY SATISFACTION</b>							
H1	% people satisfied with roading network	✓			WRC		✓
H2	% people satisfied with PT network	✓			WRC		✓
H3	User Perceptions of Travel Costs	✓			WRC		✓
H4	Perceived Access to Modes, Opportunities	✓			WRC		✓
H5	Perceived Safety of Transport System	✓			WRC		✓
H6	Mobility Impaired Accessibility	✓			WRC		✓

It is proposed that, each year, WRC will issue a document to each agency confirming those projects / policies for which it is responsible. This will be completed by each agency with a brief report of progress and, if appropriate, reasons for progress not being achieved. These progress reports will be assimilated into the AMR. Importantly, these reports will form the basis of agreed actions and priorities to be undertaken in the coming year to provide feedback.

## **5. Development of a Monitoring Programme**

The Land Transport Act requires that the AMR should be made available within 3 months of the close of the financial year to which it relates.

A structured programme has therefore been developed for WRC which specifies, month by month, the tasks required in order to assimilate the information necessary for the production of the AMR in September each year.

These tasks relate to both the calculation of performance indicators and also the reporting of progress on projects and policy implementation.

For each task, an estimate of resources has been made. In this manner, WRC can allocate budgets and manpower throughout the year to ensure the preparation of the AMR on time.

## **6. Future Potential**

The proposals which have been made for the production of the AMR will lead to the assimilation and reporting of a considerable amount of information relating to the regional transportation network.

The background data which will have been collected for this process represents a significant resource for the regional transportation community for planning and evaluation purposes, and WRC are keen to make this available.

The idea of a co-ordinated regional database of transportation information has been raised.

The practical issues, benefits and costs associated with such a database would require detailed review. However, our initial thoughts on the issue are that the database could be developed in a staged manner, appropriate upon the resources available.

Initially, a simple register of the information available could be developed. This could be provided as a web page, giving details relating to the sources of information, contact details within the agencies concerned and links to the appropriate pages of the agency web site. This would be relatively quick and cheap to establish.

A second stage would involve all of the regional transportation information being transferred to and held by WRC. This would be stored in a 'manual' manner, but comprehensively indexed through a web site so that the availability of the information is known and copies could be supplied as requested.

A final stage in this process could be the development of a fully integrated electronic database using information imported from other sources, fully referenced through a web page with search functions. Users with access rights could then interrogate the database and download information via the Internet. This would obviously demand a much higher level of resourcing, and hence is only likely in the longer term.

These are simply ideas which elaborate upon the general theme of making consistent information more widely available to ensure good transportation planning practice within the region.

## **7. Conclusions**

Regional Councils are required, under the Land Transport Act, to prepare annual reports which describe progress in achieving the implementation of their RLTS.

However, the vague requirements of the Act and a lack of feedback from the reports to the RLTS results in documents that are, in general, of limited value for the purposes of regional transportation planning.

Wellington Regional Council have recognised that there is value in comprehensively monitoring the performance of the regional transportation network, beyond the requirements of the Land Transport Act.

This study has developed a comprehensive monitoring strategy for the Wellington region. The numerous sources of available information have been identified, together with the means, timing and resources required to process this information to a set of performance indicators which relate to the key objective areas of the RLTS.

A process has been recommended by which the agencies within the region take ownership of the responsibility to implement the policies and projects within the RLTS.

Reference has also been made to the potential for the development of a regional database of transportation information. Whilst details need to be developed, this offers great potential in making available comprehensive and consistent information to those involved in the planning of the regional transportation network.

Whilst this study has been specific to Wellington, many of the principles established in the derivation of data relating to regional transportation networks would also apply elsewhere in New Zealand.