

**Ministry of Economic Development
Transit New Zealand
Gisborne District Council
Wairoa District Council**

**Tairāwhiti Regional Development Plan
(Gisborne & Wairoa Districts)**

Report On

**Integrated Transportation Strategy –
Volume 1 of 4 – Recommended Scenario**

June 2001



GHD Limited

Level 1 Merial Building Putney Way Manukau City New Zealand

PO Box 76477 Manukau City 1730 New Zealand

Telephone: 64 9 261 1400; Facsimile: 64 9 262 8340; Email: auckmail@ghd.co.nz

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Document Status					
Rev No.	Author	Reviewer	Approved for Issue		
			Name	Signature	Date
1	B Peacocke	G Payne	G Payne		June 2001

Contents

1. Executive Summary.....	1
2. Introduction.....	6
2.1 Background	6
2.2 Scope of Study	7
2.3 Study Objectives.....	9
3. Study Methodology.....	10
3.1 Introduction.....	10
3.2 Data Collection	10
3.2.1 <i>Published Reports</i>	10
3.2.2 <i>Woodflow Data</i>	10
3.2.3 <i>Meetings</i>	10
3.2.4 <i>Phone Contact</i>	11
3.2.5 <i>Validity of Data</i>	11
3.3 Data Limitations.....	11
3.3.1 <i>Commercial Sensitivity</i>	11
3.3.2 <i>Availability of Data</i>	11
3.4 Stakeholder Consultation.....	12
3.4.1 <i>Consultation Objectives</i>	12
3.4.2 <i>Key Stakeholders</i>	12
3.4.3 <i>Consultation Process</i>	13
3.5 Roading Drive-Overes	13
3.6 Scenario Development	14
3.7 Indicative Economic Analyses	15
4. Stakeholder Consultations	16
4.1 Introduction.....	16
4.2 Road Controlling Authorities	16
4.3 Forestry Industry.....	16
4.3.1 <i>Sources of Data</i>	16
4.3.2 <i>Destinations</i>	17
4.4 Individual Workshops	18
4.4.1 <i>Workshop Logistics</i>	18
4.4.2 <i>Workshops Programme and Agenda</i>	18
4.4.3 <i>Recurring Workshop Themes</i>	19
4.5 Group Meetings.....	21
4.5.1 <i>General</i>	21
4.5.2 <i>Group Meeting No. 1</i>	22
4.5.3 <i>Group Meeting No. 2</i>	22
4.6 Other Consultations.....	23

5. Future Traffic Demands	24
5.1 Introduction.....	24
5.2 Wood Flow Analysis	24
5.3 Traffic Volumes	25
6. Port Development Proposals.....	28
6.1 Port Gisborne Development	28
6.1.1 Outline Development Plan	28
6.1.2 Principle Issues.....	29
6.2 Tolaga Bay Port Proposal.....	30
6.2.1 Outline Development Plan	30
6.2.2 Principle Issues.....	31
6.3 Hicks Bay Barging Proposal	32
6.4 Other Port Consultations	33
6.4.1 Port of Napier.....	33
6.4.2 Port of Tauranga.....	33
6.5 Other Potential Port Locations.....	33
7. Roothing Improvements.....	34
7.1 Introduction.....	34
7.2 Local Road Network – Gisborne District	34
7.3 SH35 Route – From Potaka to Gisborne	35
7.4 SH2 Route – From Matawai, Gisborne, Wairoa to Napier	36
7.5 Local Road Network – Wairoa District	37
8. Rail Transport – Tranz Rail Limited	38
8.1 Tranz Rail – EMS Report.....	38
8.2 Rail Transport Workshop.....	39
8.3 Recommendations.....	40
9. Environmental Aspects	41
9.1 Introduction.....	41
9.2 Acknowledgement of Environmental Issues	41
9.3 Assessment of Environmental Effects (AEE).....	42
9.3.2 Specialist Studies	42
9.3.3 Stakeholder Consultation.....	42
10. Recommended Transportation Scenario	44
10.1 Guiding Principles.....	44
10.2 Scenario Recommended	44
10.2.1 Export Port Facilities.....	44
10.2.2 Primary Log Collector Route.....	46
10.2.3 Access to Port Gisborne.....	46
10.2.4 Additional Log Storage.....	47
10.2.5 Further Wood Processing.....	48
10.2.6 Gisborne Log Haul Routes	48
10.2.7 State Highway No. 2.....	50

10.2.8	<i>Wairoa District Local Roads</i>	51
10.2.9	<i>Napier to Gisborne Railway</i>	51
10.3	Advantages and Disadvantages of Scenario	52
10.3.1	<i>Advantages of Coastal Route</i>	52
10.3.2	<i>Disadvantages of Coastal Route</i>	53
10.4	Standards Adopted	54
10.5	Indicative Economic Analyses	55
10.5.1	<i>Estimated Cost of Improvements</i>	55
10.5.2	<i>Indicative Programme of Improvement Works</i>	56
10.5.3	<i>Estimated Total Cash Flow</i>	56
10.5.4	<i>Implementation Plan Assumptions</i>	59
10.6	Roading Improvement Priorities	60
10.6.1	<i>State Highways (Transit)</i>	60
10.6.2	<i>Local Roads (Gisborne District)</i>	60
10.6.3	<i>Local Roads (Wairoa District)</i>	61
11.	Recommendations for Future Action	62
11.1	Analyse and Process the Proposed Road Improvements (Benefit-Cost Ratio Greater than 2.0)	62
11.2	Assess Intangible Benefits (Benefit-Cost Ratio Less than 2.0)	62
11.3	Develop a Model for Non-qualifying Works	62
11.4	Accept Woodflow and Traffic Flow Models	63
11.5	Establish a Transportation Control Group	63
11.6	Develop a Tairāwhiti Transportation Plan	63
11.7	Implement the Tairāwhiti Transportation Plan	63
11.8	Monitor Port & Rail Developments	63
11.9	Implement Partnering Approach	64
11.10	Revalidate Basic Woodflow Assumptions	64
11.11	Update Evaluation of State Highways & Local Roads	64
11.12	Update the Gisborne Transportation Study	65
11.13	Improve Access to Port Gisborne	65
11.14	Provide Additional Log Storage Areas	66
11.15	Investigate and Monitor Tolaga Bay Port Development	66
11.16	Investigate Potential Use of Rail Corridor	66
11.17	Extend Time-Frame of Study	67
12.	Report-Comprising Four Volumes: Integrated Transport Strategy	68

Appendices

- A** *Map of the Tairāwhiti Region*
- B** *Original Scope of Study (Phase 1)*
- C** *Extended Scope of Study (Phase 2)*
- D** *Schedule of "Reference Data"*
- E** *Minutes of "Group Meeting No. 1" (Gisborne – 8 March 2001)*
- F** *GDC Responses to Draft Transportation Scenario*
- G** *(Group Meeting No. 1–8 March 2001)*
- H** *Standard Road Cross-Sections*
- I** *Schedule of Key Contact Personnel*

1. Executive Summary

The Tairawhiti Development Taskforce has identified forestry and wood processing as one of the most significant high-value economic development opportunities able to create sustainable jobs within the Tairawhiti Region, particularly as tree plantings mature over the next 20 years and beyond. (Refer to Appendix A for a map of the Tairawhiti Region.)

The volume of forestry woodflow, including logs and wood products, is forecast to increase generally by a factor of five, from below 0.8 million tonnes per year to an average of about 4 million tonnes per year, over the next 20 years and beyond. (From 2001 to 2020, plus.) This is supported by forest harvest projections prepared by both the forest industry and the Ministry of Agriculture and Forestry, and reflects the growing forest maturity and the increasing areas of forests scheduled for harvesting within the Tairawhiti Region this century.

The purpose of the Integrated Transportation Strategy study is to develop a strategy to address the immediate and future transport needs of the Tairawhiti Region to accommodate the increasing woodflows as forecast by the forest industry. However, the Strategy study recognises that there will be traffic flow implications on State Highway routes beyond the boundaries of the Tairawhiti Region, some of which have been acknowledged within this report (eg: The State Highway 2 route south of the Wairoa District through to the Port of Napier.)

The Strategy Study seeks to establish the direction of the next phase of the study, and the subsequent implementation phases, by examining the major transportation issues identified by all stakeholders in relation to the forecast increase in forestry woodflow, the extent of the challenges facing the owners of the transportation infrastructure, what needs to be done, and how and when it should be done. The parameters for the Integrated Transportation Strategy have been determined by utilising the Transfund New Zealand funding procedures and testing them against the relevant funding criteria.

The work carried out to date in the Transportation Strategy Study focuses on establishing a framework for the proposed transportation improvement works for the Tairawhiti Region and is of a preliminary and indicative nature only. Further work will need to be carried out in the next phase of the study to ensure that the proposed transportation improvement work packages and funding requirements are subjected to more rigorous and in-depth economic analyses.

This report presents the findings and recommendations of an Integrated Transportation Strategy study carried out for the Tairawhiti Region, comprising Gisborne District and Wairoa District, for the 20 year period from 2001 to 2020. The report document consists of four individual volumes, comprising the 'Recommended Scenario' (Volume 1), together with three further volumes of supporting material and strategic analytical data. It is suggested that this

Integrated Transportation Strategy may provide a significant component of the proposed Tairāwhiti Regional Development Plan.

The Integrated Transportation Strategy study had its genesis in the deliberations of the Tairāwhiti Development Taskforce, which was established in May 2000. The study has been carried out on behalf of the Project Sponsors, comprising the Ministry of Economic Development, together with Transit New Zealand, Gisborne District Council, and Wairoa District Council.

The approach to the Integrated Transportation Strategy study was:

- To carry out extensive consultations with forest industry groups and other key stakeholders associated with the Tairāwhiti Region;
- To determine the volumes of forestry woodflows and forecast traffic flows for the 20 year period from 2001 to 2020;
- To recommend a strategic Transportation Scenario for the Tairāwhiti Region;
- To attempt to quantify the extent of the proposed improvement works as accurately as practicable within the limited timeframe available, and to determine the approximate costs of the proposed roading improvement programme required to implement the recommended strategic Transportation Scenario; and
- To carry out a range of indicative cost-benefit analyses, being a measure of economic efficiency, for the roading improvement programme, and to gain an indication of the maximum amount of the programme which may qualify for subsidy, in accordance with the criteria detailed in Transfund's Project Evaluation Manual.

The economic assessment carried out during this study was underpinned by the following assumptions:

- That the economic assessment was undertaken on the possible improvement works needed along a route, not on individual projects;
- That the economic assessment focused on potential capital improvements;
- That the economic assessment was based on indicative cost-benefit analyses, not on cost-effectiveness; and
- That more detailed cost-benefit analyses would form part of the next phase of the Transportation Study project.

The basis of the recommended strategic Transportation Scenario for the Tairāwhiti Region comprises the following key points:

- The selection of Port Gisborne as the primary log and wood products port, and the expeditious expansion of Port Gisborne's trade capacity accordingly;
- The preference for the Coastal Route (SH35) as the primary log traffic collector route between the East Coast forests generally north of Ruatoria

and Gisborne, rather than the development of an inland log haul route via Ihungia, Tuakau, Fernside, Hokoroa, and Waimata Valley Roads;

- The provision of improved heavy-vehicle access to, and additional log storage capacity for, Port Gisborne;
- The selection of Gisborne City, or its environs, as the preferred location, in the medium term, for further wood processing facilities within the Gisborne District;
- The provision of selected log haul routes around and through the urban area of Gisborne City to Port Gisborne;
- The identification of areas of the Tairāwhiti roading network that need improvement to meet the forecast increase in volumes of logs and wood products, and the setting of priorities for that work; and
- The recognition of the potential need for the improvement and enhancement of other supporting transport infrastructure, such as rail transport and alternative port facilities.

The total cost of improving the local roads and state highways alone within the region, to a minimum standard suitable for the forecast levels of logging traffic, is estimated to be of the order of \$120 million, most of which would need to be spent over the next ten years to serve the transportation needs of the forest industry for the next 20 years, through to 2020. This figure reflects the high relative cost of roading within the Tairāwhiti Region. However, it does not include the cost of improvements to other supporting infrastructure, such as port development work.

Following the completion of a range of indicative cost-benefit analyses based on the simplified Transfund New Zealand economic evaluation procedures, indications are that a range of proposed improvement works would qualify for funding from the National Roads Fund.

The Integrated Transportation Strategy study concludes by recommending that the project sponsors and key stakeholders further progress the study by initiating several ongoing courses of action, as detailed in Section 11 of Volume 1 of this report, and as summarised below:-

- That Transfund New Zealand acknowledges and accepts the roading improvement works, recommended for the Tairāwhiti Region, amounting to a maximum works cost of \$60 million and with an indicative benefit-cost ratio of 2.0 and greater, for more detailed assessment, processing, and actioning in accordance with Transfund's economic evaluation procedures. (ie: Transfund also to provide sufficient funding to enable the more-detailed investigation and reporting activities recommended for the next phase to be carried out);
- That the remaining roading improvement works recommended for the Tairāwhiti Region, at an estimated further minimum cost of \$60 million and with an indicative benefit-cost ratio of less than 2.0, be assessed in

detail to expand and further quantify the full range of benefits, including strategic and intangible benefits, accruing from the proposed works, and to identify and investigate appropriate funding mechanisms;

- That Central Government, lead by the Ministry of Economic Development, develops a model for the funding of the proposed roading improvement works which cannot be funded from the National Roads Fund;
- That Transfund New Zealand and the respective Road Control Authorities accept the predictive woodflow and traffic flow models developed during the Strategy Study as the basis for justifying the proposed road improvement works for the roading network within the Tairāwhiti Region for the five year period from 2001 to 2005, with the expectation that the forestry industry would be resurveyed after 2005 and the various wood harvesting plans updated accordingly.
- That the Project Sponsors establish and fund a Transportation Control Group responsible for managing the development and implementation of the Tairāwhiti Transportation Plan;
- That the Transportation Control Group liaises with key transportation stakeholders and manages the development and implementation of a comprehensive Tairāwhiti Transportation Plan which will establish the framework for the proposed roading improvement programme for the Region and which, in conjunction with Transit New Zealand, Gisborne District Council, Wairoa District Council and the forest industry, will identify, confirm, and prioritise the roading improvement works to meet the demands of the forestry industry over the next 20 years until 2020;
- That Transit New Zealand, Gisborne District Council, and Wairoa District Council implement the specified roading improvement works, for the areas of the road network for which they are responsible, in accordance with the Tairāwhiti Transportation Plan, ensuring:
 - That the highest priority is given to implementing those road improvement works required in the next five years to meet the demands of the forest industry, utilising the information developed during this study;
 - That immediate progress is made on those improvement works which qualify for funding from the National Roads Fund;
 - That the most efficient solutions (either capital works, or non-capital works – such as traffic management) are identified for road improvement works which cannot be funded through Transfund New Zealand because either they do not meet the benefit-cost ratio cut-off level, or the District Councils are unable to meet their share of the requisite funding;
 - That the relevant roading authority implements the selected non-capital solutions, as appropriate; and

- That a similar approach is adopted for the implementation of the balance of the proposed road improvement works over subsequent years of the programme.
- That the Project Sponsors and key stakeholders maintain a watching brief on the progress of port developments and rail service improvements which remain key elements of the Integrated Transportation Strategy for the Tairāwhiti Region.

2. Introduction

2.1 Background

The Integrated Transportation Strategy is one element of the proposed Tairāwhiti Regional Development Plan which was initiated by the Tairāwhiti Development Taskforce, a forum which was established and met during 2000 under the Chairmanship of the Deputy Prime Minister, The Hon. Jim Anderton MP. The findings and recommendations of the Taskforce are contained in the 'Report on the Tairāwhiti Development Taskforce', published in November 2000.

The two most significant economic development opportunities able to create sustainable employment in the Tairāwhiti Region were identified in the Taskforce report as (page 32):

- Forestry and wood processing.
- Improved land utilisation – in particular Maori land.

However, after considerable industry and regional consultation, the Taskforce reported that the condition of the existing roading infrastructure emerged as the largest single barrier to economic development within the Tairāwhiti Region.(page 33).

Part IV of the report issued by the Taskforce indicated that the principle areas of concern revolved around:

- the Central Government's current roading policies, and the level of funding allocated to roading;
- the constraints of the existing benefit-cost ratio criteria for the funding of roading, as administered by Transfund, such that road improvement lags demand, rather than leading it;
- the difficulty faced by Local Government in funding its share of the future local roading improvement programme;
- the tensions arising from the implementation and administration of the Resource Management Act;
- and the urgent need to upgrade both local roads and state highways, and to develop the necessary rail and export facilities, to provide the infrastructure required by the forest industry to transport logs and wood products as forests mature and forest harvesting, wood processing, and export volumes increase.

The Taskforce concluded that an integrated and action-focused strategic planning process should now be put into place to address the issues identified and to deliver the outcomes desired in a cost-effective and timely manner.

In response to the recommendations of the Tairāwhiti Development Taskforce, the owners of the various transportation and export infrastructures within the Tairāwhiti Region have now embarked on a range of strategic and development planning studies as the next step in the development of the Region. (Refer to Appendix A for a map of the Tairāwhiti Region.)

2.2 Scope of Study

In October 2000, the Gisborne District Council and Transit New Zealand engaged GHD Limited (GHD) initially to manage, implement, and report on a Forestry Roding Strategy Study (Phase 1) for the local roads and state highways within the Gisborne District. This Phase 1 study was jointly funded by Gisborne District Council and Transit New Zealand and comprised four stages, namely; Data collection; Consultations; Options relating to the development of forestry routes, road upgrades, log storage, wood processing locations, and port development; and Refinement of Options and a Final Report by 29 June 2001.

In late December 2000, in response to questions raised by the Ministry of Economic Development, the Gisborne District Council initiated the broadening of the scope of the study being carried out by GHD to include a number of other key transport generators and transportation modes, to extend the study over the whole of the Tairāwhiti Region, including the Wairoa District Council, and to complete an initial Phase 2 Report by 30 April 2001. This extended Phase 2 study was funded by the Ministry of Economic Development, and was identified as the Integrated Transportation Strategy Study which was seen to be a key component of a future Tairāwhiti Regional Development Plan.

Subsequently, in February 2001, in order to determine a Recommended Transportation Scenario by an accelerated time-frame of early-March, the Ministry of Economic Development, together with GHD, further amended and consolidated the scope of work for the Integrated Transportation Strategy Study (Phase 2), as outlined below.

The updated Scope of Study included the following work activities:

- Extending Phase 1 work to cover the local and state highway roading network within the Wairoa District.
- Consultative workshops with the key industry groups and stakeholders within the Tairāwhiti Region. (Gisborne – late-January 2001).
- Recording and approving the proceedings of the consultative workshops.
- Reviewing existing reports and the best information currently available.
- Determining the most appropriate transport options and solutions.
- Selecting the ‘Recommended Transportation Scenario’ for the Region.

- Preparation and presentation of the preliminary draft of the Recommended Transportation Scenario to meeting of Key Stakeholders within the Region. (Gisborne - 8 March 2001).
- Recording proceedings, decisions and commitments by attendees.
- Drive-over of the state highways and local roads forecast to carry significant logging traffic within the Tairāwhiti Region (Phase 1).
- Determination of initial road improvement priorities and costings.
- Indicative cost-benefit analyses for upgrading of roads forecast to carry significant logging traffic over the next 20 years.
- Initial first-order estimate of the approximate 'funding gap' between the estimated total costs of the road improvement works and the costs likely to be funded by Transfund under its existing criteria.
- Re-evaluation of the 'Recommended Transportation Scenario'.
- Final report on Phase 2 strategic study by May 2001.

By way of clarification, the following activities were not included in the updated Phase 2 scope of work, and while recognising their importance, they were postponed until a later phase (Phase 3) in the strategic planning process:

- Presentations at subsequent meetings with members of the steering group, key industry groups and other key stakeholders beyond the date of this report.
- Independent testing and verification of the reports and information gathered by GHD up to the date of this report.
- Detailed economic analyses of alternative transport route options and scenarios.
- Detailed cost-benefit analyses of proposed roading improvement programme using Transfund's 'full procedure' approach
- More accurate determination of the 'funding gap' between the estimated total costs of the road improvement works and the costs fundable by Transfund under its existing benefit-cost ratio criteria, as calculated by the 'full procedures' approach.
- Determination of the appropriate funding options for state highways and local district roads.
- Peer review of the port development proposals and rail information provided up to the date of this report.
- Review of the funding requirements for future port developments and rail retention options.
- Future work activities recommended in Section 11 of this report.

2.3 Study Objectives

The objective of the Phase 1 Study was to determine the most cost-effective road improvement strategy for forestry roads within the Gisborne District.

In addition, the objectives of the Phase 2 Study, as covered by this report, were:

- To determine the most cost-effective integrated transportation improvement options across the Tairāwhiti Region (comprising the Gisborne District and the Wairoa District);
- To determine a ‘best fit’ and Recommended Transportation Scenario;
- To assess the environmental effects of the recommended scenario;
- To carry out a range of strategic economic analyses for the ‘Recommended Transportation Scenario’;
- To determine the initial extent of the approximate ‘funding gap’ between the forecast actual cost of road improvements and the cost likely to be subsidised by Transfund, based on indicative cost-benefit analyses.
- To prepare an Integrated Transportation Strategy Report (Phase 2) for discussion and acceptance by the Study Steering Group, industry groups, and other key stakeholders.

3. Study Methodology

3.1 Introduction

This section of the report covers the methodology of carrying out the study and focuses on the processes involved, including data collection and its limitations, stakeholder consultation, roading drive-overs, the development of the recommended transportation scenario, and the indicative economic analyses carried out to date.

3.2 Data Collection

3.2.1 *Published Reports*

Data Collection involved the gathering of all base data relevant to the Integrated Transportation Strategy, including data published in reports commissioned and / or held by the many organisations responsible for strategic planning for, or operations within, the Tairāwhiti Region.

The published reports which provided base data for this report have been summarised in a Schedule of “Reference Data” (Refer to Appendix D).

3.2.2 *Woodflow Data*

General

Using key groups and contacts provided by the Gisborne and Wairoa District Councils, a list of potential contacts within the Forestry Industry, Road Transport Industry, Ports, specific industry groups and interest sectors, and various industry advisors was established. Liaison with one group would often lead to a new contact being made.

During this process, GHD became aware that Stephen Strand of Strand & Associates was collecting similar data for the Port of Gisborne. In some instances, GHD has shared collected data, in order to avoid having two separate groups seeking similar information from the industry at the same time.

A record of contacts has been kept

3.2.3 *Meetings*

Where possible, face to face meetings were held and an outline of the GHD study project was provided in order to explain why GHD was collecting data. A questionnaire was developed that was completed during the meetings where possible, or left with forest industry representatives to allow them time to source the data required.

Stand data, woodflows, access roads, destinations, routes and associated maps were also obtained where available at the meetings, or requested to be forwarded.

3.2.4 Phone Contact

Where people were unable to meet, discussions were held by telephone and if appropriate the questionnaire was faxed or e-mailed and subsequently returned to GHD with the relevant data.

3.2.5 Validity of Data

Where both GHD and Strand and Associates have obtained similar data, this has been compared and anomalies checked and confirmed with the appropriate industry organisation.

The area reconciliation between the total National Exotic Forest Description (NEFD) reported area of forest, and the forests incorporated into the database as part of this report, shows that the report has identified approximately 92% of the wood that has been planted. The assumption is that the remaining 8% is attributable to either younger stands maturing after 2020, or minor area discrepancies relating to small woodlots, the sum of which will not affect the outcome of this report.

3.3 Data Limitations

3.3.1 Commercial Sensitivity

During liaison with the forestry industry, it has been made very clear to GHD that log flow data being supplied is of a commercially sensitive nature. Therefore, the data that has been supplied to GHD is provided on the understanding that it is not to be published or released in any form that would result in commercial advantage or disadvantage for any particular company.

It can therefore be assumed that GHD has a significant amount of commercially sensitive data that will not be provided in the data collection report either in the text or within appendices. All woodflow data has been converted to numbers of laden log trucks entering the local or state highway network and then the number of laden log truck-loads have been summed at a particular node. Information has not been provided that would allow assigning of volumes to particular industry groups.

3.3.2 Availability of Data

In consulting and collecting data, it should be noted that forest industry members were happy to meet and discuss log transport and storage issues. However, information provided has sometimes been incomplete, or of insufficient detail.

3.4 Stakeholder Consultation

3.4.1 Consultation Objectives

The proposed Integrated Transportation Strategy has the potential to create a number of traffic and environmental effects within the Region, both actual and perceived, particularly within the environs of Gisborne City. A high level of interest in the study was anticipated, and encountered, from Statutory Authorities and from various industry, business and community groups.

For this reason alone it was considered essential to engage key stakeholders effectively in the consultation process from the outset and to channel their current base information, constraints, ideas, suggestions and other inputs into the study process and the strategy outcome.

The principle objectives of the consultation process were threefold:

- To build a high level of confidence and trust between the key stakeholders and the sponsors of the study project.
- To build a consensus agreement between the affected stakeholders and the project sponsors on the key performance factors and the various transport route and mode options selected.
- To gain industry and community support for the recommended Transportation Scenario as a key component of the Regional Development Plan for the Tairāwhiti Region.

This approach was essential to achieving acceptance of the Strategy by the key stakeholders and the community as a whole, and will be fundamental to successful outcomes in the resource consent and landowner agreement areas which may be required in the future.

3.4.2 Key Stakeholders

Owing to the short timeframe available to carry out the Phase 2 Study, the initial consultation process was limited in the first instance to key stakeholders who were considered to be able to contribute materially to the development of a recommended Transportation Scenario.

Consequently, the key Stakeholders for the Integrated Transportation Strategy, and hence for the consultation process, were selected accordingly and comprised six broad interest groups representing the Tairāwhiti Region, namely:

- The Steering Group for the Study Project (Project Sponsors)
- Representatives of Government Departments, State Owned Enterprises, District Councils and relevant Statutory Authorities
- Forest Industry Sectors – Forest Owners and Wood Processors
- Local Road Transport Representatives

- Other Transport Infrastructure Interests – Rail, and Export Port Facilities
- Regional Rural Production Sector and Business Interests

Owing to the exigencies of the forecast growth in forest harvesting, and the urgency of developing an Integrated Transportation Strategy in order to meet the increasing transportation demands of the forest industry, there has not been the opportunity for extensive Iwi and public consultation to date. However, further consultation will follow in various forums in due course.

3.4.3 Consultation Process

The consultation process for the Phase 2 Study was targeted at the key stakeholders and comprised a combination of individual stakeholder consultations and workshops, together with joint meetings of specific interest groups.

A detailed review of recorded material (minutes and notes) was carried out by both the relevant contributors and the Project Sponsors. Also, opportunities were given for further individual submissions, discussions, and follow-up in order to clarify any uncertainties or to outline specific capital development proposals.

3.5 Roothing Drive-Overs

The roads were inspected by driving over them during five days starting on Monday, 19 February 2001 and finishing Friday, 23 February 2001. The objective of the drive-over was to identify the deficiencies in the State Highways and local roads, the locations of such deficiencies, the categories of treatment required, and the extent of treatment required for particular sections of State Highways and local roads to cater for the predicted volume of logging trucks. This was achieved by using a vehicle fitted with a rally type trip meter, and one passenger recording notes.

Interviews and discussions were held with the local engineering staff prior to each drive-over and, where it was considered appropriate, local engineering representatives were accommodated as passengers to provide local knowledge during the drive-over itself. The respective roading authorities were represented on the various days of the drive-over, as noted below.

	GHD (Driver)	GHD (Recorder)	
<u>Day</u>	<u>Road</u>		<u>Representation from</u>
Mon	Waimata (Inland Route)		Gisborne District
Tues	SH 35		Transit
	Gisborne Local Roads		Gisborne District
Wed	Gisborne Local Roads		Gisborne District (1/2 day) Transit
	Gisborne SH2		Transit (1/2 day)

Thurs SH2 & Wairoa Local (Not available)

Fri Wairoa Local Roads (Not available)

Roads were chosen on the basis of demand to carry the predicted loaded log truck volumes. The roads were not necessarily driven full length depending on a number of factors, mainly the ability of the car to traverse the road any further.

3.6 Scenario Development

The development of the recommended Transportation Scenario was an iterative process carried out by members of the GHD project team, together with several key stakeholders, and was based on an amalgam of information obtained from industry standards, previously published reports, individual consultations, interest group workshops, group meetings, and written and verbal feedback from workshop participants.

In summary, the critical factors which were considered in sequence in developing the recommended Transportation Scenario included:

- Development of the Tairāwhiti Region over a 20 year horizon up to 2020;
- Location of the ‘centroid’ of forest harvesting operations with time;
- Forecast of total export wood flows (logs and processed wood products);
- Distances from ‘centroid’ of log harvest to storage and port facilities;
- Optimal location of the port for export of range of forest products;
- Location of log storage and handling facilities;
- Location of industrial land for wood processing operations;
- Selection of land transport modes (Road and/or Rail);
- The forecast wood flows and traffic flows on regional roads and rail with time;
- Selection of major log haul route to minimise capital and operational costs;
- Given the foregoing haul route decision, recheck of forecast traffic flows;
- Following the drive-over of the selected route, calculation of costs of route improvement works;
- Indicative cost-benefit analyses against Transfund’s existing criteria;
- Determination of the approximate ‘funding gap’ between actual and subsidisable costs; and
- Confirmation of recommended Transportation Scenario for the Region.

These factors are expanded in detail in the subsequent sections of this report. (Sections 4 to 10 inclusive.)

The recommended scenario was then tested by presenting it to a group meeting of the key Stakeholders for review, comment and acceptance, with the final Scenario being refined and reported accordingly.

3.7 Indicative Economic Analyses

The economic analyses carried out to date have been at a strategic level to identify indicative benefit-cost ratios, and should be regarded as preliminary in nature only. It is intended that more detailed and rigorous cost-benefit analyses will be carried out in accordance with Transfund's 'full procedures' in the next phase of the Strategy Study.

The initial economic justification of road improvement works was measured by the indicative cost-benefit analytical process, which is recognised as an 'economic efficiency' analytical process, rather than a 'cost effectiveness' analytical process. The method used was Transfund's Project Evaluation Manual 'simplified method' for General Roothing Improvements. However Transfund's worksheets were not used due to the repetitive nature and number of calculations that had to be performed. It was considered more expedient to use a spreadsheet designed specifically for the task. Transfund recommends a study period of 25 years. In this study a period of 19 years has been used, as this was the period that traffic counts for the forestry were provided. This difference will have negligible effect on the resulting B/C ratios. A detailed narrative of the indicative cost-benefit analytical process can be found in 'Volume 4 – Cost-Benefit Analyses'.

Local knowledge was used to supply estimated costs for road improvements, or to check estimates that had originated elsewhere.

Within the flexibility of the preliminary cost-benefit analyses a number of options were studied. These involved;

1. a basic run using the 'simplified procedures' over the full length of roads, (route analysis);
2. the same values as for the basic run were used over the shorter distances to determine the localities which would be treated, (site analysis);
3. an option was studied for sealing throughout, thus claiming road comfort and reduction in dust benefits; and
4. an option was considered using running cost values for laden log trucks on the proportion of heavy vehicles rather than using general "all vehicles" to represent the total traffic flow.

These options had little effect on raising the indicative benefit-cost ratio significantly above those resulting from the first basic option, although the fourth option merits further consideration as it can be shown that costs are sensitive to the proportion of laden log trucks in the vehicle flow which has a significant impact on the analyses and levels of subsidisable maintenance costs.

4. Stakeholder Consultations

4.1 Introduction

Owing to the time constraints imposed on the Transportation Strategy Study, the extent of consultation carried out to date has been limited, in the first instance, to key stakeholders, including the Project Sponsors, the three road controlling authorities, Government Agencies, the forestry industry, the transport industry, port and rail interests, representatives of user groups, and other local and regional organisations, together with consultants and advisors assisting the key stakeholders.

It is expected that additional and more extensive consultation will take place as part of the resource consent processes prior to the implementation of the various road improvement work packages proposed for the Tairāwhiti Region.

4.2 Road Controlling Authorities

Considerable assistance has been extended to GHD by Gisborne and Wairoa District Councils and Transit New Zealand in providing detailed information on the roading networks under their authority.

The information provided has included road improvement options and proposals, proposed projects, planning and resource consent issues, funding issues, and copies of previous reports and studies, together with RAMM inventory information, traffic count data and typical costs of physical works for the respective road networks.

Further knowledge of the status and condition of the roading network has been provided through extensive and on-going consultation and feedback between the respective road controlling authorities and GHD.

4.3 Forestry Industry

4.3.1 Sources of Data

GHD has approached the majority of forest owners, forest managers, and other parties associated with the forestry industry to source the data required for the Strategy Study.

Data has been provided with respect to the following aspects of the forestry industry:

1. Stand Data, i.e. planting area, year of planting and species;
2. Harvest age for pruned and unpruned wood;
3. Forecast woodflows;

4. Access road which is the first public road utilised for the transportation of the wood from the forest; and
5. The destination and the route to the currently proposed destination.

Where suitable data was provided, this has been converted to numbers of laden log trucks on road.

The forest data for the Gisborne District has been collected in conjunction with Steven Strand & Associates who have undertaken a study for Port Gisborne Ltd.

A questionnaire was completed by the bigger forestry companies, i.e. PF Olsen, Rayonier, Hikurangi Forest Farms, Ngati Porou Whanui Forests and Juken Nissho

The following forestry related industries were contacted:

1. PF Olsen & Co Ltd
2. Rayonier NZ Ltd/East Coast
3. Hikurangi Forest Farms Ltd
4. Juken Nissho Ltd
5. Ngati Porou Whanui Forests Ltd
6. Forest Enterprises Ltd
7. Port Gisborne Ltd
8. Mangatu Corporation
9. Ernslaw 1
10. Roger Dickie
11. Kohntrol Forest Services Ltd
12. Carter Holt Harvey Forests
13. Fletcher Challenge Forests Ltd
14. Ministry of Agriculture and Forestry
15. Pan Pac Forest Products Ltd

4.3.2 Destinations

All companies contacted were asked to provide the destination for the logs and wood product based on the currently available infrastructure (roads, log and woodchip storage, wood processing, ports), and to indicate how they anticipated the destinations and associated routes changing with possible infrastructure and market changes.

The responses of the industry are summarised in Section 5 of this report.

4.4 Individual Workshops

4.4.1 *Workshop Logistics*

The methodology adopted for the workshops provided for a number of common interest, or industry specific, workshops to be held in order to enable the interest groups concerned to focus on and articulate issues which were particular to the group concerned. This workshop format also enabled the specific interest groups to probe more deeply on a particular issue on an informed basis and to develop a range of responses and a group view on an issue, together with possible solutions to the issue. Generally, this approach was successful, with interest groups being smaller, more focused and more productive than would have been the case otherwise.

Following consultation with the Project Sponsors, GHD elected to hold a total of nine workshops and three review meetings over the four day period from 23 to 26 January 2001.

GHD developed the programme and agenda for the workshops, while Gisborne District Council selected and notified the attendees. The workshops and meetings were hosted and chaired by Gisborne District Council in its Engineering Offices in Gladstone Road, Gisborne.

4.4.2 *Workshops Programme and Agenda*

The Workshops Programme comprised nominally nine workshops and three review meetings. However, as the programme unfolded, the number of workshops decreased to eight, as summarised below:

1. Strategy Scoping Workshop No. 1 (Steering Group)
2. Forest Industry Workshop No. 2
3. Review Meeting (Project Sponsors / Steering Group)
4. Road Transport Industry Workshop No. 4
5. Rail Transport Industry Workshop No. 5 (Tranz Rail Limited)
6. Port Gisborne Limited Workshop No. 6
7. Gisborne Chamber of Commerce Workshop No. 7
8. Tolaga Bay Port Proposals Workshop No. 8 (Two groups)
(Extended over Workshop No. 9 as well)
9. (Formerly Hicks Bay Barging Proposal Workshop No. 9 – proposal not represented at the workshop)
10. Rural Sector Interests Workshop No.10
11. GHD meeting – Update Scope of Work
12. Review Meeting – Conclusion (Project Sponsors / Steering Group)

Copies of the Workshop Programme and Agenda, together with the Workshop Minutes and ‘whiteboard’ Notes, have been included in the separately bound Volume accompanying this report. (Refer to Volume 3 of this report.)

4.4.3 Recurring Workshop Themes

Several distinct themes emerged during the workshops, as summarised below:

- **Port Selection and Development**

The first priority was to reach agreement on which port development proposal should be promoted, as the overall Integrated Transportation Strategy would be driven by the port selected. Commonly expressed issues included:

- Port capacity for log export vessels;
- Road access to port area;
- Log storage and handling capacity;
- Conflicts over land use in vicinity;
- Funding of development costs;
- Community acceptance; and
- Timing of resource consents.

- **Tolaga Bay Port Development Proposals**

It was considered that:

- The two groups involved should be more collaborative;
- Both groups have a complementary approach;
- Port Gisborne appeared to be more flexible and able to stage its development to complement any port development carried out at Tolaga Bay;
- Tolaga Bay Port proposal could also complement Port Gisborne's activities;
- The interests of the Region as a whole would over-ride any partisan interests or tensions at local level;
- The Tolaga Bay Port Proposal may be viable, but needs considerable additional and on-going work; and
- Support for the Tolaga Bay Port proposal was ambivalent, depending on economic impact on the Regional overall, and the national interest.

- **Napier to Gisborne Branch Railway**

The Region was not confident of being able to persuade Tranz Rail to keep the branch line operational for the next five years, until 2006, pending the generation of economic levels of freight. Other common themes were:

- The Region considered the rail link to be a strategic regional asset;
- The Region considered rail to be a strategic transport link to the Hawkes Bay and beyond;
- Tranz Rail was not aggressive enough in its marketing;
- Sufficient freight potential was available in the short term to run an economic rail freight service;
- Rail should not be subsidised at the expense of road improvements;
- However, support from the workshops for the retention of the existing rail link was not unanimous.

- **State Highways and Local Roading**

The workshops did not call for extensions to the existing local District roading networks or to the State Highway network. The major roading issues revolved around the improvement of the existing roading network, and the improvement of the level of service and safety in order to accommodate both existing road-users and the forecast increase in logging traffic over the next 20 years and beyond, within acceptable environmental criteria and limits. Generally, the commonly required improvements included:

- Improved road maintenance techniques and performance;
- Priority improvements to road geometry, paved width, and shoulders, and easing of bends to improve sight-lines;
- Provision of adequate passing lanes and slow-traffic lanes to preserve and improve the safety and amenity of existing roads under the predicted increase in logging traffic;
- Replacement of the remaining one-lane bridges;
- Major re-alignment of 'trouble-spots', easing of gradients, and upgrade of pavements and surfaces, as required;
- Intersection improvements up to an acceptable standard;
- Mitigating the impact of logging traffic on urban and residential areas of Gisborne, Wairoa, and other smaller townships and settlements; and
- Preferred log haul route(s) for heavy traffic to be investigated and implemented if economic. (eg: Waimata Valley and Hokoroa Roads; and a preferred access route to Port Gisborne.)

- **Funding Issues**

The question of “who should pay” for improving the Regional Transportation Infrastructure drew vigorous comment and debate, but, in the absence at that stage of robust cost figures, few ‘breakthrough’ ideas were tabled. Generally the workshops supported the concept that the users, or those who benefit, should pay the most. There was recognition that Central Government would need to provide the initial impetus, or ‘kick-start’ through one or a combination of the following actions:

- Declaring the Tairāwhiti Region a ‘special economic zone’ with access to development funding at favourable rates and with appropriate tax incentives;
- Central Government to provide development funding, and to bankroll Regional development and of the Regional infrastructure, with appropriate contributions from the local industries and communities to service / amortize the debt on a capability-to-pay basis;
- District Councils to borrow to assist with the funding of the costs of infrastructure development or improvement, but ability to service an increased debt burden is limited;
- External investment partners to share in the costs and the benefits; and
- The forest industry was willing to consider a road toll, or wharf toll, system to assist in providing a proportion of the funding required for infrastructure development.

- **Overview Comment on Workshops**

The general mood and response from the participants in the workshops and meetings were open, frank, positive, and helpful, with no inherent conflict evident. Despite being involved in a number of consultative processes over recent years, all attendees engaged fully in the workshops and were realistic in their expectations, but keen to arrive at practical and economic solutions as soon as practicable.

The participating groups agreed that the Tairāwhiti Development Taskforce was considered to be a catalyst for Regional Development, and were willing to contribute to the Integrated Transportation Strategy as a cornerstone of the Regional Development Plan. All emphasised that the time for action was ‘Now’.

4.5 Group Meetings

4.5.1 General

Following the workshops held in Gisborne at the end of January 2001, meetings of the Project Sponsors and the combined Interest Groups were held in Gisborne, generally at monthly intervals, to update attendees on overall

progress, to submit detailed proposals for review and discussion, and to receive early feedback on proposals as they were developed.

Group Meeting No. 1, chaired by the Ministry of Economic Development, was held at the premises of Gisborne District Council on Thursday, 8 March 2001. A copy of the minutes, together with the attendance register, of this meeting are included as Appendix E to Volume 1 of this report.

4.5.2 Group Meeting No. 1

The agenda for Group Meeting No. 1 focused on the review and discussions of the preliminary draft Recommended Transportation Scenario developed by GHD up to that date. Owing to the principle focus of the meeting being on the roading elements of the Scenario, the attendees comprised those groups who had a key interest in road transportation, including the Project Steering Group, representatives of Transit, the District Councils, Government Departments, the Road Transport Industry, and the Forest Industry, together with GHD.

This meeting gave a good opportunity for key stakeholders to participate in the decision-making processes relating to the recommended Transportation Scenario, and, in particular, was able to give GHD a firm direction relating to the unacceptability of routing heavy logging traffic through the urban area of Gisborne City.

At the date of Group Meeting No. 1, the costings and indicative benefit-cost ratio aspects of the roading improvement programme had not advanced sufficiently for detailed discussion. These issues were addressed subsequently during Group Meeting No. 2.

4.5.3 Group Meeting No. 2

Group Meeting No. 2 was held in Gisborne on Wednesday, 18 April 2001 to review and comment on the findings of the draft report.

The purpose of Group Meeting No. 2 was to review the Recommended Transportation Scenario, and to reach regional agreement on the overall Integrated Transportation Strategy for the Tairāwhiti Region. The key agenda items reported on included:

- Review of SH35 coastal log haul route
- Port Options and Port Access Roading
- Heavy-traffic (logging) routes through Gisborne City
- Costings and indicative cost-benefit analyses for the Recommended Transportation Scenario.
- Extent of Scenario which maybe fundable by Transfund
- Determination of the apparent ‘funding gap’ between the total cost of the proposed road improvement works and the level of funding likely to be provided by Transfund under its existing funding criteria.

Thirty-five (35) draft copies of Volume 1 were distributed to the attendees at the meeting for subsequent detailed review and comment by early May 2001. The final copy of Volume 1 has incorporated the comments and amendments suggested through the review process.

4.6 Other Consultations

In order to gain a comprehensive view of other issues or specific details which may impinge on the Tairāwhiti District, further consultations, either by way of meetings or telephone calls, have been held with a number of other external authorities and agencies, including:

- Environment Bay of Plenty;
- Hastings District Council;
- Hawkes Bay Land Transport Committee;
- Port of Napier;
- Port of Tauranga; and
- Consultants and advisors assisting the key stakeholders.

5. Future Traffic Demands

5.1 Introduction

This section of the report considers future traffic demands relating to the increasing volumes of laden log trucks forecast for the regional road networks over the next 20 years.

The future traffic demands of laden log trucks has been derived from the analysis of forecast woodflows for the region as described in the following paragraphs.

5.2 Wood Flow Analysis

After extensive consultation, two woodflow scenarios have been considered. The first scenario is based on no further processing being carried out within the region, with the second scenario being based on all Hikurangi Forest Farms wood being processed at a site near the Juken Nissho mill at Gisborne from 2005.

The resultant woodflows and associated averaged laden log truck numbers per day for both scenarios have been shown in the appended Volume 2. (Note that Wairoa District data is shown only in Scenario 1 as the data for Scenario 2 is identical).

The woodflows are based on information supplied to GHD and the destinations of the wood are as indicated to GHD by the forestry companies and forestry managers.

The principal proposed destination for all wood in the Gisborne District, apart from most pruned wood, is Port Gisborne, with the notable exception that all Juken Nissho wood goes to the Juken Nissho mill in Gisborne. Processed product from this mill goes primarily to Port Gisborne with a small volume going by truck to the Port of Napier. This is expected to remain as such.

Pruned logs from the forests managed by P F Olsen will also go to the Juken Nissho mill. Pruned logs from Hikurangi Forest Farms and the Port of Gisborne forests will go to Port Gisborne. Whereas, pruned logs from Ngati Porou Whanau Forests Limited may be exported via Port Gisborne, but no commitment has been made at this stage.

Rayonier pruned logs will be transported to the Bay of Plenty. Those from all Rayonier forests north of Taitai Forest (essentially Ruatoria) will travel north on SH 35, whereas the pruned logs from Taitai forest and the Rayonier Forests south of Ruatoria will travel on SH35 to Gisborne, then west on SH 2. Pruned logs from Rayonier's Mangatu Forest will also travel west on SH 2.

Pan Pac logs travel to Whirinaki mill via SH2. Carter Holt Harvey logs from their Wairoa District forests also travel south to Napier on SH2.

The resultant woodflow to Port Gisborne shows an increase from 2001 to 2010, with a decline until 2016, with an increase until 2020 and beyond.

The estimated volume of wood through Port Gisborne decreases with processing in the second scenario, but the traffic flows do not alter markedly, except for the increase in cross city traffic from the northern forests, via SH35, to the proposed new HFF mill, via Awapuni Road, with mill product travelling to Port Gisborne by the same road.

It is predicted from the data collected, that there will be a significant increase in woodflow in 2021, but this is not shown in the study period ending 2020.

5.3 Traffic Volumes

The data collection has shown that there will be considerable increases in log laden log truck traffic on many of the roads during the study period of 2000 to 2020, especially the State Highways.

The estimated woodflow volumes and the associated averaged laden log truck numbers per day for each year at the nodes are shown in Volume 2 of the report - appended. The traffic volumes at each node exclude the return journeys of unladen log trucks. These woodflow volumes are indicative only as the woodflows are subject to alteration through smoothing to optimise harvesting resource, through market demand, and through refining of strategic harvest planning. Also, the truck numbers are an average number of laden log trucks throughout the year, and actual daily numbers will vary somewhat.

In determining the potential numbers of laden log trucks at various locations within the roading network, it was necessary to make a number of assumptions. These are as follows:

1. Log volumes are provided in cubic metres, and the conversion factor from cubic metres to tonnes is assumed to be 1.0;
2. Logs are transported by 44 tonne gross weight truck-and-trailer units carrying 28.5 cubic metres of logs. (each unit is referred to as a 'laden log truck');
3. Logs are transported 10 hours per day, 235 days per year. Peak volumes may be considerably greater than the daily averages shown;
4. Truck numbers discussed within the report are for laden vehicles only;
5. The forest industry has not made any commitment, to date, to transport logs by rail;
6. Harvested wood volumes have not been 'smoothed' or levelled;
7. Woodflows, routes and destinations utilised in the report are those provided by the forest owners, or forest managers, and only where the information

provided has been insufficient, has the stand data / yield / harvest age information been used to estimate woodflows;

8. Current harvest age / practices / yield will remain constant throughout the period of the study;
9. Projected woodflows are not affected by external factors such as fire, disease, volcanic activity, or cyclones;
10. The base data for 2000 is incomplete, as some companies provided log harvest data only for 2001 onwards; and
11. The log harvest data provided for 2021 onwards has not been used in this report for forecasting woodflows. However, there is considerable evidence that the volume of log harvest will increase markedly from 2021 onwards.

The traffic volumes for each of the public access roads were derived from the woodflow from all forests using the access road. The total volume at each node is the sum of the volumes from the access roads pertaining to the node, plus the volumes from the adjacent nodes. At certain nodes, namely Nos. 8, 11A, 20, B2, 42, and 27, there are laden log trucks travelling in both directions, together with the transport of wood product from the Juken Nissho mill to Port Gisborne and to the Port of Napier. The wood product is assumed to be transported at the same capacity as for logs. (ie: 28.5 tonnes per unit.)

The nodes were chosen to enable easy appreciation of the volumes in particular sections of the roading network. For indicative cost-benefit analyses, the volumes in the access roads leading to the nodes were used. The locations of the nodes are shown on map 17241- F02 (Revision E) appended to Volume 2 of the report.

The log traffic flows are predominantly in an easterly direction out to SH 35 north of Tolaga Bay, then to Port Gisborne and, in Scenario 2, to the proposed Hikurangi Forest Farm mill via Awapuni Road. The volumes on SH 35 just north of Tokomaru Bay (Node #32) show an increase to a peak in 2010, with a significant decrease thereafter. The same trend is shown at Node #33 on SH 35 just north of Tolaga Bay, with the peak volume of approximately 200 laden log trucks per day average flow in 2010. Further south on SH 35, at Wainui (Node #41) the trend is similar with a peak flow of 350 laden log trucks per day. These peak log traffic flows are likely to be levelled or 'smoothed out' in practice. It should be noted that the graphs for each node exclude the return journeys of unladen log trucks.

Log traffic will also travel south via Hokoroa Road and Waimata Valley Road from forests adjacent to these roads, with a marked peak in 2008, followed by a decrease until 2018.

This log traffic will use Harper Road and SH 2 to access either Port Gisborne or the Hikurangi Forest Farm mill in the two scenarios, rather than use Back Ormond Road for access to Port Gisborne

Node #11A shows the traffic flow on SH 2 between Harper Road and SH 35. This node incorporates traffic from the west together with that from Waimata Valley Road, as well as pruned wood travelling from the north via Gisborne City, then to the west via SH 2.

The log traffic on Awapuni Road (Node # 42) varies in the two scenarios, with an average of approx 100 laden log trucks per day from 2003 to 2009. A marked peak occurs in 2020 in Scenario 1, with a significant increase in Scenario 2 to a peak of approx 380 laden log trucks per day in 2010, and an average of approximately 300 laden log trucks per day thereafter.

Log traffic from the south of Gisborne City to just south of the Wairoa District boundary predominantly travels to the Juken Nissho mill and Port Gisborne, with the majority of the product from the JNL mill going to Port Gisborne also, and the balance travelling south to Napier via SH 2. The volumes on SH 2 (Node # 21) near Gisborne City indicate a steady increase until 2007 with approximately 80 laden log trucks per day average flow, and variations around this amount until a decrease in 2015, followed by a marked peak in 2017.

For the remainder of Wairoa District the traffic flow is predominantly south via SH 2, with the volume at the Wairoa/Hastings boundary (Node # B4) showing a marked increase from 2005 to 2010 (45 to 130 laden log trucks per day), followed by an abrupt decrease to approximately 50 laden log trucks per day. This decrease is likely to be lessened by the amount of farm forestry wood becoming available, but not considered in depth in this study. The majority of the wood at Node # B4 comes from Willowflat Road.

6. Port Development Proposals

6.1 Port Gisborne Development

6.1.1 Outline Development Plan

Over the last year or two, Port Gisborne has prepared a Port Development Plan for the expansion of the port facilities in order to meet the export demand forecast by the forest industry. The Port Gisborne Development Plan, as presented in the document entitled 'Forward Planning and Development', prepared by Turnpenny Associates Limited – February 2001, was approved by the Board of Port Gisborne Limited in February 2001 to progress to the developed planning phase and on to the resource consent application stage.

(The Powerpoint presentation document has been included in the Minutes and Notes relating to Workshop No. 6 – Refer to the associated Report Volume 3)

The key elements of the Development Plan are outlined below:-

- The current log and chip export trade over Port Gisborne is 0.7 million tonnes per year and is forecast to increase in significant steps to about 3.2 million tonnes over the next 25 years
- The existing capacity of Port Gisborne is approximately 1.2 million tonnes per year (Berths 7 and 8), provided:
 - On-port log and woodchip storage can be maximised at 11 ha by 2002 by removing the existing Caltex fuel tanks. (Part of area is on a 15 year lease to Rayonier – 12 years to run);
 - Additional on-port log storage of 2ha can be provided in the vicinity of the old freezing works site and Crawford Road area by 2003; and
 - Off-port log storage of up to 5 ha can be arranged as a short-to-medium term measure by 2006, and up to 10 ha by 2011.
- Present wood flow forecasts indicate the following export trade peaks over the port:
 - 1.5 million tonnes by 2007;
 - 2.2 million tonnes by 2020; and
 - 3.2 million tonnes by 2025.
- The capacity of the existing berths alone at Port Gisborne is forecast to be exceeded by 2006;
- Together with accompanying additional storage areas, seawalls, and dredging, new berths at Port Gisborne will be required, as follows:
 - Berth No. 8 (Extended) - 2005 Capacity – 1.4 million tonnes;

- Berth No. 9 - 2006 Capacity – 2.2 million tonnes;
- Berth No.10 - 2020 Capacity – 3.0 million tonnes;
- Berth No.11 - 2025 Capacity – 3.8 million tonnes.
- Additional access and log and woodchip storage investment requirements:-
 - Development of new access link road form SH35 to port, via Hirini Street, by 2002;
 - Maximising and optimising the storage areas on the existing port property and adjacent Weddell site, as well as neighbouring properties, by 2001;
 - Potential development of industrial and log storage area in the vicinity of Crawford Street, adjacent to the port area, by 2002;
 - Reclamation of additional land at south end of port adjacent to Kaiti Beach, being the initial stage of the implementation of the proposed Port Gisborne Development Plan, progressively from 2004;
 - Investigation of the possible development of an off-site log storage at the Sponge Bay Road / Rifle Range area, by 2007; and
 - Investigation of a possible alternative access road, via Sponge Bay Road (Rifle Range) and Kaiti Beach to the port, in the longer term, and possibly dedicated to port traffic only, by 2010.
- Approximate capital development budget:-

- Stage 1 (2001 to 2008)	\$25 million
- Stage 2 (2009 to 2020)	\$21 million
Total	\$46 million
- Potential sources of funding:-
 - Capital reserves from within Port Gisborne Limited;
 - Sale of surplus assets (Proposed sale of port farms with Privy Council for decision);
 - Capital injection by shareholder (Gisborne District Council);
 - Joint Venture with a second NZ port company;
 - External investor groups; and
 - Development funding from Central Government, with servicing and debt repayment from increasing port revenue.

6.1.2 *Principle Issues*

The principle issues relating to Port Gisborne’s 30 year development planning horizon include:

- The incremental provision of increased port export capacity over the next 20 years;
- The provision of adequate log and woodchip storage capacity on-site, together with additional log storage capacity off-site, to support the demand growth in port capacity;
- Provision of new access routes to the port:
 - Via Hirini Street in the short term as a matter of priority;
 - Via a possible haul road, dedicated to port traffic only, from the Sponge Bay Road / Rifle Range area, via Kaiti Beach Road, in the longer term;
- Resource consent issues – progressing;
- Utilising existing assets to the maximum (eg: potential storage areas; existing rail link to the port – but has constraints for log transport);
- Encroachment of alternative incompatible land use into the port area;
- Competition from, or collaboration with, adjacent port companies;
- Funding of port development plan; and
- The necessary level of confidence that Port Gisborne needs to have in aligning its port development programme with the woodflow volumes forecast by the forestry industry.

6.2 Tolaga Bay Port Proposal

6.2.1 *Outline Development Plan*

Two separate groups are promoting the proposed development of a log and woodchip export port facility at Tolaga Bay, namely:-

- East Coast Ports – promoted by Tauranga / Gisborne based interests; and
- East Ventures – promoted by Tolaga Bay based interests .

These two groups were in collaboration initially, had drifted apart over issues of priorities, timing, and funding, but have now undertaken to work together again as a combined entity to the advantage of the port development proposal.

Investigations to date by the two groups involved indicate that a new export port at Tolaga Bay is feasible. Coupled with associated timber processing and storage facilities for the future expected woodflows, the project promoters visualise a number of benefits accruing to the forest industry and the region, including:

- Shorter trips for logging trucks;
- Reduced costs to the forest industry;
- Potential value-adding processing at Tolaga Bay;

- Employment and economic benefits for the Tolaga Bay area; and
- Reduced logging traffic on residential streets in Gisborne.

It is envisaged that the new deep-water export port will be developed on the northern edge of Tolaga Bay, adjacent to a wave-cut rock platform foreshore, immediately below a row of cliffs which have been given a heritage protection status. The initial capacity of the port would be three shipping berths which would provide an export capacity of up to 1.5 m tonnes per year.

It is proposed that the log storage and marshalling area would be located on generally level land immediately to the north of the cliffs. Some of this land is already owned by interests associated with the port promoters. Access to the proposed storage and industrial areas would be available directly from SH35, and access to the port area itself would be via two tunnels to be constructed through the cliffs.

The group's proposed development programme is:

- Detailed development planning and consent application - 2001
- Obtain resource consent for port development - 2002
- Commence construction—port, tunnels and industrial area - 2003
- New port, tunnels, and industrial area completed and operational - 2005

The group has indicated that it has sufficient independent funding in hand to take the port development proposal through to the obtaining of the necessary resource consents.

6.2.2 Principle Issues

Several major issues confront the promoters of the proposed Tolaga Bay Port development, namely:

- Welding the 'business-based' group and the 'community-based' group into one coherent project-focused entity;
- The national economic implications of a new port at Tolaga Bay;
- Securing support from the local community and Iwi, or Hapu, for the proposal;
- Port technical design issues and satisfying peer review requirements;
- Ecological and social impacts from the proposed development;
- Rezoning of land and securing the necessary resource consents;
- Improving the regional roading infrastructure (by Gisborne District Council);
- Arranging commercial export commitments from the forest industry;
- Encouragement of value-added processing at Tolaga Bay;
- Availability of skilled labour resource;

- Providing sufficient energy capacity to the site;
- Supporting infrastructure requirements;
- Woodwaste disposal; and
- Sources of funding.

6.3 Hicks Bay Barging Proposal

The development of Hicks Bay as a potential deep water log export port was first considered as part of the planning study that was carried out in the 1970's prior to the planting of pine forests in the East Cape area, and at that time was considered to be an economic option. However, subsequent port investigations carried out on Hicks Bay from 1983 to 2000 have focused more on using the bay as a barge terminal to provide a log feeder service to the ports of Tauranga or Gisborne.

A report, dated May 2000, by Opus International Consultants Limited to Environment Bay of Plenty concluded:-

“The analysis undertaken indicates that when the overall costs to the nation of road transport are taken into account, then barging of logs is a cost effective option in its own right and the overall benefits of removing log transport from roads are substantial.”

The report considered that the barging of logs from Hicks bay was economic for forests located between Te Kaha and Tikitiki, and that this economic zone could be extended significantly if ‘Alternative to Road’ (ATR) funding was available from Transfund. Such a funding application would be made through Gisborne District Council.

A more recent report, dated 20 December 2000, from Industry New Zealand to the Tairāwhiti Development Taskforce comments:-

“Obviously there is a trade-off between the costs of road haulage, and the additional costs a barging operation would incur. For the time being it is cheaper to avoid the double handling (associated with barging), and so logs are being hauled by road”

Discussions with Gisborne District Council, the various port companies, and other parties have not revealed that a commercial barging operation is being planned at this stage. Both Port Gisborne and the Port of Tauranga are not yet convinced that the proposal to establish log barging operations from Hicks Bay is commercially viable. No potential promoters of the barging proposal attended the January 2001 workshops held in Gisborne.

Consequently, for the purposes of this study, GHD has assumed that the logs harvested from the East Cape area, including those harvested from forests between Te Kaha and Tikitiki, will be transported to the nearest export ports or wood processing plants by road, namely SH35.

6.4 Other Port Consultations

6.4.1 *Port of Napier*

As part of the consultation process for the Gisborne District Council Forestry Roding Strategy, GHD contacted Chris Bain of the Port of Napier, who provided similar information to that provided in June 1999 to Environmental Management Services (EMS) as part of the State Highway Strategy Study for Transit New Zealand, Napier.

The Port of Napier is the principal log export port for the Lower North Island. This includes the Port of Wellington, as harvested logs have to travel further to Wellington than to Napier. Currently most of the logs from the Wairarapa and from south of Wanganui go to Wellington.

Available shipping services are good at Napier and the port receives continuous information on expected log flows by maintaining close contact with the forest industry.

The majority of logs and wood product arriving at the Port of Napier, arrives by road from an area ranging from Masterton to Gisborne and across to Wanganui.

Based on the expected future woodflows, the capacity of Port of Napier would be required to increase between 50-70% in 10 years' time. However, the available area for log storage may be an issue and some reclamation work may be necessary to accommodate the predicted levels of growth.

6.4.2 *Port of Tauranga*

The Port of Tauranga has indicated its interest in being involved in the Gisborne Region. Its interest could parallel its investment in forestry in Northland through its JV ownership of the port development at Marsden point. Both the Port of Tauranga and Port of Gisborne share common forestry customers. The interest of the Port of Tauranga would not involve the direct export of logs hauled out of the district, but would be focused more on working with Port Gisborne to service the forestry industry within the Gisborne Region.

6.5 Other Potential Port Locations

Consultations carried out to date with several port companies and other key stakeholders indicate that no other viable locations, other than Tolaga Bay, exist within the Tairāwhiti Region for a commercial export port, nor that any other development proposals are currently under consideration.

7. Roothing Improvements

7.1 Introduction

The report published by the Tairawhiti Development Taskforce in November 2000 (page 33) states that ‘the road network in the Tairawhiti Region emerged as the largest single barrier to economic development.’

A number of key issues were identified, including:

- The three roading authorities are facing enormous pressure to improve the local roads and State Highway routes to handle logging trucks;
- The roading authorities are constrained by the present system of allocating funding by way of the cost-benefit analytical approach, which does not allow a value for economic development, social issues, subjective values, and other intangible benefits;
- The present system does not allow roads to be funded in advance of their needs, nor recognises the economic value of products carried on the roads; and
- The roading authorities have different needs and limited funds, with the two District Councils very limited in their ability to meet their share of the cost of roading improvement works.

Given these background comments and burgeoning need for improvements to the roading network, the strategic study has identified broad categories of minimum levels of improvements required for both the State Highways and the local district roads, on a route basis, to meet the immediate and longer term transportation needs of the forest industry.

The categories of improvement works have been generated in consultation with the three roading authorities concerned, as well as the forest industry and other key transportation stakeholders.

Following a drive-over of key routes, an indicative quantum of road improvement works has been identified. However, the extent of works will require more detailed physical and economic analysis in the next phase of the Strategy Study.

7.2 Local Road Network – Gisborne District

The majority of roads driven amongst Gisborne’s local network were rural backcountry metalled roads. In addition there were the inner city urban roads, although not as significant in length. Most of the rural roads were one-laned and very winding. Driver visibility was often poor which meant speeds were low. There were three types of road encountered in the rural area; firstly flat

sections along river plains, secondly hilly sections along ridge tops, and thirdly the steep climbs in between. Some of these roads currently carry less than 50 vehicles per day. In their current state, it would be difficult for logging trucks heading in opposite directions to pass each other on these roads. One consistent treatment commonly involves upgrading the intersections of the local roads with the main road or State Highways. Also the majority of these roads have small one-lane bridges for which bridge widening has been allowed in a number of critical locations. Curve easing and some widening of the carriageway should assist in truck passing manoeuvres.

The urban roads are all sealed and a minimum of two lanes in width. The main problem will be the integration of the logging trucks with the regular vehicle flows. There are options available for new roading links to be constructed which would assist in separating the logging trucks from other traffic. For example the extension of Harper Road to SH2, together with other route improvement works, and the upgrading of the intersections of SH2 with SH35 and the local roads in the Matawhero area, are potential route improvements that would assist the laden log trucks to negotiate around the urban areas of Gisborne. There will be some inner city roading features that cannot be avoided. Some intersections will need upgrading and maintenance of pavements will become an issue.

The total cost of the recommended works for improving the local roads within both the rural and urban areas of Gisborne District is estimated to be of the order of \$40 million.

7.3 SH35 Route – From Potaka to Gisborne

SH35, from Potaka in the north to Gisborne in the south, generally has been constructed to a good standard for existing traffic volumes and is in relatively good condition, particularly in its northern section where it carries a low traffic volume. One of the main features of concern to the ongoing maintenance of this road is the high amount of slip terrain that the road crosses and is built upon. The road traverses river flats that separate very hilly sections that give the road a winding hilly nature overall. It would appear geometrically possible to add overtaking lanes in a number of places although the stability of the ground would play a part in determining the cost of such works and whether they are practical. The recommendations for treatment are based on additional overtaking lanes north of Ihungia Road, and two rest areas between Ihungia Road and Tolaga Bay. The provision of adequate overtaking lanes and rest areas on State Highways within the region is considered to be an important aspect in gaining community and regional acceptance of the proposal to utilise the SH35 'Coastal Route' as the principle log haul route from the northern forests to Port Gisborne, rather than developing an alternative 'Inland Route'.

During the drive-over, SH35 was divided generally into three sections, namely:

1. Potaka (Northern Boundary) to Ihungia Road;

2. Ihungia Road to Tolaga Bay; and
3. Tolaga Bay to Gisborne.

Section 1

From Potaka to Ihungia Road (88 km), SH35 is highlighted by the number of existing bridges which are inadequate for heavy logging traffic. It was identified that there needs to be three new bridges and two others require widening. Also seven intersections need upgrading. The other category of work comprises about 18km of seal widening to improve the existing sealed road to closer to the SH cross section standard.

Section 2

SH35 from Ihungia Road to Tolaga Bay (64 km). The main work required is construction of 9km of overtaking lanes. A small 1km of road requires reconstruction, and an allowance has been made for 6km of seal widening. Two rest areas have been allowed for.

Section 3

SH35 from Tolaga Bay to Gisborne (52 km). Eight kilometres of overtaking lanes have been allowed for, together with two rest areas. Half a kilometre of rehabilitation work is required with 1 intersection to be upgraded.

Estimated Cost

The total cost of the recommended works for improving the State Highway 35 route from Potaka to Gisborne is estimated to be of the order of \$16 million.

7.4 SH2 Route – From Matawai, Gisborne, Wairoa to Napier

The 72 km length of the SH2 route from the Gisborne District boundary, located north-west of Matawai and the Motu River area, to Gisborne is fully sealed but has lengths in need of further widening up to the state highway standard. Bridges are inconsistently treated with guardrails and allowance needs to be made to guardrail those bridges either currently lacking guardrails or having substandard guardrails. It has been identified that some further passing lanes should be installed, and that the bridge at the bottom of Trafford's Hill should be widened to a two-lane structure.

The sections of State Highway 2 from Gisborne to Wairoa and south of Wairoa, located within the Gisborne and Wairoa Districts, have recently been the subject of a study as part of a greater Gisborne to Napier Strategy Study for State Highway 2.

It is recommended that the shoulders of these sections of State Highway 2 be improved throughout its full length, together with the easing of bends and the provision of passing lanes.

Also, south of Wairoa, between Mohaka and Whirinaki, Transit New Zealand has identified four locations on State Highway 2 where traffic flow constrictions exist and where potential capital improvements works ideally

should be carried out in advance of the forecast increase of traffic resulting from the operations of laden log trucks.

They are, from north to south:

1. Raupunga Gorge:
 - Mohaka Viaduct- foundation impingement of traffic lanes;
2. Waikare Gorge (Putorino):
 - Major realignment and new bridge;
3. Matahorua Gorge:-
 - 4 km of high-level realignment and new bridge; and
4. Devil's Elbow:-
 - General improvements and upgrading.

The total cost of the recommended works for improving the State Highway 2 route, from near Matawai in the north-west to Whirinaki in the south, is estimated to be of the order of \$50 million.

7.5 Local Road Network – Wairoa District

The majority of roads driven amongst Wairoa District's local network were rural back-country metalled roads. Similar to Gisborne's local roads, most of Wairoa District's local roads were one-laned and very winding. Driver visibility was often poor which meant speeds were low. All intersections of local roads with either State Highway 2 or State Highway 38 need some form of upgrading. Most bridges need widening as they are considered to be inadequate for the future heavy log traffic flows forecast for the District by the Forest Industry. Widening of the road carriageways wherever possible was also recommended.

The total cost of improving the local roads within the Wairoa District is estimated to be of the order of \$14 million.

8. Rail Transport – Tranz Rail Limited

8.1 Tranz Rail – EMS Report

Originally, detailed consultation was to be undertaken with Tranz Rail Limited. However, following receipt of the recent Environmental Management Services (EMS) report for Transit New Zealand, Napier, “Road/Rail Study, Napier – Gisborne State Highway and Rail Line”, it was apparent that this data had already been obtained.

Tranz Rail has three scheduled return rail-freight trips per week between Napier and Gisborne, which run north on Wednesday, Friday and Sunday.

Annual cartage has been of the order of 43,000 tonnes/annum with approximately 27,000 tonnes/annum being fertiliser, while the remainder is a mixture of general freight.

From GHD’s consultation with the forestry industry, it was apparent that logs were not being transported by rail within the Gisborne District.

If the rail service was to be discontinued, the above freight tonnage equals a range of 5-8 laden log trucks per day, 312 days per year depending on whether 28.5 tonne truck and trailer units or 16 tonne trucks are utilised.

Tranz Rail provided the following additional comments to EMS, which have been reproduced below.

“Tranz Rail acknowledges that the economics of log haulage by rail wagon between Wairoa and either Napier or Gisborne currently make rail an unattractive option for most of the forest industry in the region. In normal circumstances rail would only begin to compete if the distances involved were more or less equivalent to that of the entire stretch between Gisborne and Napier.

We also understand from Tranz Rail that there is currently a national shortage of log carriages – particularly as the entire 4-wheel log wagons in the country are in the process of being retired. These wagons carry a maximum load of about 15 tonnes with a maximum speed of only 40-50 km/hr. They are therefore a cause of inefficiency across the whole of the rail fleet where they are run with 100 km/hr rated wagons.

Once these older wagons are disposed of Tranz Rail plan to ensure that the remainder of the log wagon fleet is used intensively. At a capital cost of about \$100,000 per wagon the incentive is to make sure that these higher rated wagons are not left to stand idle for any period of time. This means that for a log carriage service to operate between Napier, Wairoa and Gisborne a more or less continual usage would be expected for Tranz Rail to consider the service worth while.

Logging trains in the central North Island are capable of carrying around 1,200 tonnes of logs per run. In its present condition the Gisborne line would be able to carry about half that amount (600 tonnes per trip). This is the equivalent of about 21 conventional logging trucks per trip.”

Tranz Rail Limited was represented at the subsequent industry workshop held in Gisborne in January 2001.

8.2 Rail Transport Workshop

At the Rail Transport Workshop No. 7 held in Gisborne on 24 January 2001, Tranz Rail’s representative advised the workshop attendees that Tranz Rail’s earlier decision in 2000 to close the Napier to Wairoa to Gisborne branch line had been put ‘on hold’ pending the completion of a Tranz Rail study into the future economics of the branch line operations. This study is due to be completed in May 2001.

Tranz Rail also clarified certain aspects of the freight capacity of the Napier to Gisborne branch railway line for the benefit of the workshop attendees:

- The capacity of the existing Napier to Gisborne branch rail line, given a minimum of additional expenditure on upgrading works and deferred maintenance works, is in excess of the likely woodflow originating from within its catchment;
- The minimum economic rail freight loading on the Napier to Gisborne branch line is about 100,000 tonnes per year. (Equivalent to about 13 fully laden log trucks per day on SH 2, which is considered to be a small proportion of the growth in heavy traffic levels predicted for SH 2 over the next 20 years);
- The current rail freight loading for the branch line is of the order of 40,000 tonnes for the 2000 year (five laden log trucks per day), and falling; and
- The branch line may be able to provide an economic service to handle the growth in the rural produce industry, the wood processing industry, and the future development of the export container trade – currently being exported via the Port of Napier.

A consensus of the comments made by workshop attendees has been summarised below:-

- Given the necessary commercial will by Tranz Rail and the appropriate level of commitment and marketing effort by its staff, a number of potential customers from within the Region, as represented at the recent strategy workshops, estimated that of the order of 200,000 tonnes of freight per year (excluding logs and wood products) would be available for cartage by rail within five years, dependent on the freight rates and the level of service provided by Tranz Rail. Any contracts to transport logs or wood products would increase the tonnage of freight on the branch line accordingly;

- Several members of the forest industry were ambivalent in their support for rail transport as, given the current status of rail in the Region, it does not run through the majority of forests nor provide an economic service for log transport;
- Workshop attendees were emphatic that rail should not be subsidised at the expense of roading improvements within the Tairāwhiti Region;
- Wairoa District Council considered that the retention of an effective and economic rail service was essential to a number of strategic and developmental initiatives currently being undertaken within the District;
- A number of key business and industry stakeholders within the Tairāwhiti Region considered the Napier to Gisborne rail line to be both a strategic asset and a key transportation link of considerable regional importance to both the Wairoa District and the Gisborne District, and would argue for and support its retention; and
- However, the workshop attendees were not confident of being able to persuade Tranz Rail to keep the branch line operational for the next five years, at which stage the forest industry-related traffic was forecast to increase significantly. (Refer also to the recommendations on the branch rail line – Section 10.2.9)

8.3 Recommendations

It is recommended that the Project Sponsors review Tranz Rail's report as soon as practicable after its release for any impact it may have on the Integrated Transportation Strategy for the Tairāwhiti Region.

It is further recommended that the Project Sponsors monitor the outcome of the report and the resultant decisions that may be made by Tranz Rail Limited in relation to the future of the Napier to Gisborne branch railway line.

9. Environmental Aspects

9.1 Introduction

The Tairāwhiti Region comprises the lands currently under the jurisdiction of the Gisborne District Council and Wairoa District Council. The region extends from Potaka at the northern end of the East Coast to the Waikare River south of Wairoa and inland to Matawai and Waikaremoana. The region spans more than 12,000 square kilometres of land, with a topography ranging principally from steeply dissected hill country to river plains and coastal plains.

Many areas and aspects of the region are environmentally sensitive and the potential impact of the proposed transportation improvement works need to be carefully assessed accordingly. Some areas of hill country are prone to erosion which has led to changes in traditional farming practices and the a forestation of more unstable areas. Commercial forestry is also becoming a dominant land use in the hill country areas. Most areas of the fertile alluvial plains support intensive agriculture and horticulture production and in some areas a fine balance is maintained between existing land use and the need to protect the plains from excessive sediment build up. The coastal environment presents an unique blend of ecological and cultural attractions, aqua-cultural opportunities, eco-tourism attractions and recreational growth opportunities, and existing lifestyle features for the local population.

The existing environmental features of the Tairāwhiti Region are unique to the region, hold a special place in the lives of the local inhabitants and are important in the planning of future development opportunities. As such, the existing environment demands protection, preservation and enhancement for the benefit of today's inhabitants and for future generations.

9.2 Acknowledgement of Environmental Issues

The Integrated Transportation Strategy Study recognises the critical nature of the interrelationship that exists between the existing natural, cultural, and social environments and any future development proposals, and the importance of minimising the potential for adverse impacts arising from such proposals and of maintaining an optimum balance between the various interests involved.

Accordingly, the sensitive environmental aspects of the region would require close examination and informed assessment of environmental effects as part of the resource consent process, required under the provisions of the Resource Management Act, prior to the development and implementation of any road improvement programme for the Tairāwhiti Region.

9.3 Assessment of Environmental Effects (AEE)

9.3.1 *General*

An Assessment of Environmental Effects (AEE) is required to support the resource consent applications to the respective District Councils when seeking approval to implement the individual work packages which would comprise the proposed road improvement programme for the Tairāwhiti Region.

The AEE process involves the identification and assessment of both the potential and the perceived physical, social and cultural impacts that the proposed road improvement works may have on the existing regional environment, and includes the examination and comparison of options and alternatives for mitigating any identified adverse effects, and the confirmation and recommendations on the preferred options and course of action.

The critical environmental factors requiring consideration are anticipated to be the geological and geotechnical effects on the and stability of the topography of carrying out the proposed route and road improvements, the ecological and biological effects of crossing water-courses, and the cultural, archaeological and social effects on the environment as the works cross the landscape, together with noise, air quality, and visual effects, a number of which will require specialist study and consultation with the local communities.

Positive effects, including major reductions in traffic congestion and travel times and the resultant improvements in air quality, noise levels and general visual amenity within the urban areas will need to be balanced against the adverse effects identified in the AEE.

9.3.2 *Specialist Studies*

The completion of an AEE is a key element of the implementation phase for the proposed road improvement programme for the Tairāwhiti Region. It is anticipated that a number of specialist studies would be completed as part of the AEE, including:

- Geotechnical Assessment;
- Ecological Assessment;
- Archaeological Assessment;
- Landscape and Visual Assessment;
- Noise Impact Assessment; and
- Air and Water Discharge.

9.3.3 *Stakeholder Consultation*

Similarly, as part of the AEE process, extensive consultation would be carried out within the following stakeholder groupings:

- Public Consultation;

- Iwi Consultation;
- Landowner Consultation; and
- Specific Interest Group Consultation.

9.3.4 Specific Interest Group Consultation

The consultation process, which commenced during the Integrated Transportation Strategy Study phase, would continue with Transit, Transfund, the District Councils, Government agencies, representatives of the forestry industry, forest owners, and other forestry and transportation interests, together with the ports and Tranz Rail, as the route and road improvement programme was refined and specific implementation plans developed.

In addition, the consultation process would be extended to all other key stakeholders in the region's transportation system, including the Land Transport Safety Authority, the Police, the NZ Fire Service, the St. John's Ambulance Association, the Automobile Association, the NZ Road Transport Association, the NZ Heavy Haulage Association, the NZ Bus and Coach Association, the Chamber of Commerce and the various local agricultural, horticulture, viticulture and produce organisations.

All significant issues arising from the assessment of environmental effects and consultation processes would be documented and included in the AEE Report.

10. Recommended Transportation Scenario

10.1 Guiding Principles

In developing a Recommended Transportation Scenario, GHD adopted the following seven guiding principles, which attempted to give recognition to the attributes considered to be important by the Tairāwhiti Region.

It was considered that the recommended Scenario should:

- Provide the optimal scenario for the transportation of the future log harvest from within the Tairāwhiti Region to its export port(s) for the 20 year strategic planning period from 2001 to 2020 inclusive;
- Realise the full value of existing assets. (ie: Utilise existing assets to the maximum);
- Select the transport route scenario which:
 - minimises the capital development cost;
 - minimises the route operational costs; and
 - in case of competing demands, optimises capital and operating costs over time.
- Give preference to the further development of existing infrastructure in order to realise its full potential and increase development certainty. (By minimising land acquisition issues, resource consent issues, development time, development costs, and hence development risks);
- Minimise financial impact on the normal commercial decisions of the key stakeholders and forest industry interests;
- Enhance amenity of Gisborne City and coastal environment by minimising the impact and conflict with logging traffic as far as practicable; and
- Not preclude the opportunities for future development projects to be implemented elsewhere within the Tairāwhiti Region on the basis of their commercial merits.

10.2 Scenario Recommended

10.2.1 *Export Port Facilities*

A basic premise articulated during the Industry Groups workshops was that the recommended Transportation Scenario for the Region would be structured around, and 'driven' by, the Port selected as the primary export port for the Region. This study endorses that premise, and the following recommendations and comments are made accordingly accordingly:

- That Port Gisborne be retained as the primary log and wood products export port for the Tairāwhiti Region. It is recognised that economics will dictate that a certain proportion of logs and wood products from the southern Wairoa District will continue to be exported through the Port of Napier, as at present;
- That Port Gisborne's proposed port development plans be given a high priority and be implemented progressively in a cost-effective and timely manner in order to optimise the economics of its operations and to service the needs of its export customers over the next 20 years plus. Such development plans include the provision of additional interim and long term log storage areas, both alongside the wharf and remote from the wharf, in increments to accommodate the forecast export flow of logs and wood products. It is acknowledged that Port Gisborne may require some assistance in ensuring that its proposed port development plans are implemented in time to accommodate the increased export volumes of logs and wood products by the key milestone dates, as forecast by the forest industry;
- That the development of a Proposed Port at Tolaga Bay not be accorded a special priority, but that Tolaga Bay not be precluded from potential development as a log export port in the future. It is anticipated that such development would proceed on the basis of its commercial merits, and possibly may be in co-operation with Port Gisborne; and
- It is considered that the proposed development of a new port at Tolaga Bay would be vulnerable to a significant reduction in export log supply should further wood processing capacity be established within the Gisborne area and wood supply be diverted away from Tolaga Bay accordingly. It is expected that a decision on the Tolaga Bay Port proposal would be made by the private sector promoters before further berths are able to be provided at Port Gisborne.

However, should the proposed port development at Tolaga Bay proceed, then it would not be considered to be incompatible with the remainder of the Integrated Transportation Strategy. In this case, the plans for development at Port Gisborne may need to be reviewed and the extent and timing of the development adjusted to some degree. Also, the timing of the proposed route improvement works for State Highway 35 between Tolaga Bay and Gisborne may be amended accordingly. Nevertheless, even with the establishment of a new port at Tolaga Bay with an export capacity of the order of 1 million tonnes of logs per year by 2007, Port Gisborne would still require expansion to handle existing and forecast woodflows and processed wood products from within its own catchment, but the timing of the development may change.

The progress of the Tolaga Bay Port development proposals requires close monitoring, both by the Roading Control Authorities within the region and by Port Gisborne Limited. The timing and extent of the proposed road

improvement works for State Highway 35 between Tolaga Bay and Gisborne, and the proposed development programme for Port Gisborne, will require precise management in accordance with the prior commitments made by the promoters of the proposed Tolaga Bay Port development.

10.2.2 Primary Log Collector Route

Having ascribed a high priority to the development of Port Gisborne, it is recommended that the primary log collector route to service the forests to the north of Gisborne be developed on the following basis:-

- That, in general, logs harvested from forests located on the East Coast to the north of Gisborne, including forests as far north as Potaka (Regional Boundary), be transported south and east to the coast and then south to Port Gisborne, and Gisborne-based wood processors, by the SH35 coastal route. It is recognised that a proportion of harvest logs from the northern forests will continue to be transported west to the Bay of Plenty via SH 35;
- That the coastal route (State Highway No. 35) be selected as the primary log collector route from the northern forests, and be improved progressively and as a matter of priority, generally in accordance with the demand and priorities derived from forest harvesting plans and woodflows, and the forecast log traffic and other heavy traffic flows on SH 35. Such improvements are to include the provision of extensive slow-traffic and passing lanes in both directions as predicated by log traffic and heavy traffic flows, the realignment of approaches and replacement of a number of one way bridges, and the potential bypassing of Tolaga Bay township;
- That the local lateral roads feeding on to SH 35 be upgraded progressively in accordance with the demand and priorities derived from forest harvesting plans and predicted woodflows;
- That the Waimata Valley Road and the Hokoroa Road, together with their local lateral roads, be upgraded progressively, eventually as far north as Tauwhareparae, in accordance with the demand and priorities derived from forest harvesting plans and predicted woodflows; and
- By way of clarification, that the inland route (Waimata Valley – Hokoroa – Fernside – Tuakau – Ihungia) **not** be upgraded to the status and standard of a preferred log haul route.

10.2.3 Access to Port Gisborne

In order to improve heavy vehicle access into the Port Gisborne site, it is recommended:-

- That, as an immediate measure, log traffic from SH 35 to Port Gisborne be routed along Wainui Road and a new link road via Hirini Street directly to the port thereby avoiding Crawford Road and the Esplanade, as shown on the recent Port Development plans, and that the intersections on this route be upgraded accordingly. Such an extended link road would need to be a

public road, as it would provide public access to Kaiti Beach and access for residents living in the vicinity of Kaiti Beach;

- That steps be taken to improve the layout of the internal roading access routes within the confines of Port Gisborne in order to improve vehicle circulation and log handling efficiencies; and
- That, as a longer term measure, the development of a new heavy-duty access road from SH 35 to Port Gisborne, via the southern side of Kaiti Hill, be investigated and tested economically. It is proposed that the access road would be routed via the existing Rifle Range area near Sponge Bay, south of Wallis Road, through part of the Titirangi Domain, joining Kaiti Beach Road, and approaching the port area from the seaward side. It is proposed that, in the future, this access road would provide primary access for laden log trucks both from the forests north of Gisborne and from the proposed Rifle Range log storage area to the port via the southern seaward side, and possibly provide an alternative route for logs destined for further wood processing in the Gisborne area. The economic viability of such an access road would be dependent on the woodflow volumes from the northern forest catchment areas and the woodflow volumes which may be stored on a future Rifle Range storage area, together with any woodflow or wood product volumes which may be transported on this road to and from wood processing facilities.

10.2.4 Additional Log Storage

The lack of adequate log storage facilities in the vicinity of Port Gisborne has been identified as a critical constraint and issue for both the forest and transportation industries and for Port Gisborne. Therefore it is recommended that the early mitigation and resolution of this issue be accorded a high priority.

In particular, owing to the imminent shortage of effective log storage areas adjacent to the wharves, it is recommended:-

- That the highest priority be given by Port Gisborne and the Gisborne District Council to the investigation and provision of the Crawford Road area as a potential industrial area, or log storage area, through the acquisition of residential properties and the closure of roads in the vicinity;
- That an additional log and wood-chip storage area be provided, in the medium term, through the staged reclamation of the foreshore adjacent to the existing port, in accordance with Port Gisborne's proposed development plan. (Refer Volume 3 – Workshop No. 6 – Proposal dated February 2001); and
- That an additional log marshalling and storage facility, remote from the wharf, be investigated for development in the longer term, on the existing Rifle Range area, near Sponge Bay Road and adjacent to a possible new port access road. Such log storage area and access road would be designated as 'on-port' area in order to facilitate the management of the site and the equity of log storage and handling charges.

Port Gisborne has acknowledged its responsibility for initiating and providing additional log storage facilities as a matter of urgency to adequately serve the port area.

10.2.5 Further Wood Processing

The forest industry has indicated that it may be economic to expand the wood processing capacity within the Tairāwhiti Region over the next five to ten years, depending on log availability and overseas market conditions for wood products at the time.

Both Wairoa District interests and Tolaga Bay interests, together with forest industry interests in the northern East Coast area, are actively promoting the establishment of primary wood processing facilities within their particular areas.

However, as a consequence of the selection of Port Gisborne as the primary forestry export port for the region, and due to the existing levels of service infrastructure within Gisborne, it is likely that further wood processing operations planned for the region would be located in the vicinity of Gisborne City, in the first instance.

This being the case, the forest industry has the opportunity of investigating several options for optimising the location of the additional wood processing facilities, either to the west of the City within the existing Willows Road industrial area, or to the east of the City on an undeveloped site which would be located adjacent to the SH35 woodflow route between the majority of the forest resource and the port.

Should a site east of the City be selected for a new wood processing facility, there would be considerable benefit accruing to the Gisborne community by reducing the volume of the four-way heavy traffic flow generated both by carrying logs through the urban area to the Willows Road industrial area and returning empty, and by carrying wood products back through the urban area to the port and returning empty.

In the longer term, it is considered that the on-going development prospects and economics of the proposed port development at Tolaga Bay would be affected to some extent by the level of additional wood processing capacity that may be established within the Gisborne area over the intervening period from 2005 to 2015.

10.2.6 Gisborne Log Haul Routes

In order to minimise the impact of future log traffic on the residents of the northern urban areas of Gisborne City, it is recommended:

- That the existing log haul route comprising Back Ormond Road, Ormond Road, and the Esplanade **not** be retained as a route for laden log trucks from the South, the North-west (Mangatu area), and from the Waimata Valley Road to Port Gisborne, **nor** be used as a return route for unladen log trucks;

- That all log traffic be directed to use the proposed Western Bypass (see below) and the Awapuni Road route to the port, via Customhouse Street and Wainui Road. In order to ensure community acceptance of these proposals, it is recognised that it is important to preserve the general residential amenity of the Hospital, Mangapapa, Whataupoko, Esplanade, and Kaiti areas of the City;
- That Awapuni Road (SH 35) be designated as the primary haul route for the transport of logs from the South, West, and North-west areas of the Region, and for the transport of finished export wood products from the Willows Road industrial area to Port Gisborne, using Customhouse Street, Turanganui Bridge, and Wainui Road, and via Hirini Street and its extension to the port, in the first instance; and
- That immediate steps be taken:
 - To improve the existing SH35 heavy traffic route through Gisborne City by upgrading intersections, improving traffic capacity, and providing for increased volumes of heavy vehicles; and
 - To upgrade and extend Hirini Street as the primary access route to Port Gisborne, in accordance with Port Gisborne's current development plans.
- That, should the volume of traffic increase to a point where additional traffic capacity is required, the feasibility of the following five route improvement alternatives across Turanganui River would be further investigated and tested economically:-
 - Adding a third lane, dedicated to heavy vehicle traffic to the port, to the south side of the SH 35 – Wainui Road bridge across the Turanganui River, linking Customhouse Street to Wainui Road and Hirini Street, and thence to the port;
 - Providing a new road bridge between the existing SH35 bridge at Gladstone / Wainui Roads and the existing rail bridge;
 - Utilising the existing rail track and rail bridge to provide a shuttle service from the Willows Road industrial area to Port Gisborne both for logs and for finished export wood products. Additional rail siding loops would be required at the port and there would be an increased impact on the new riverside developments and the existing use of the harbour basin area. Also, following a report by Tranz Rail Limited, it is considered that the structural and geometric capacity of the existing rail bridge, which is owned by Port Gisborne, would require careful assessment;
 - Alternatively, converting the existing rail bridge to a heavy-duty road bridge; and

- Providing an additional low-level bridge, from either Childers Road, or Pitt Street, or Kahutia Street extension, to the south of the existing rail bridge but north of the major export shipping berths.
- That a new local log transport route, to be identified as the Western Bypass Route, be established to the west of Gisborne City to link the lower end of the Waimata Valley Road, (via Harper Road, and SH 2) to the existing Willows Road industrial area, west of Gisborne Airport, and that intersections be upgraded accordingly, and where necessary, signalisation installed; and
- That the provision of a new log transport route and bridge from the south, from SH 2 near Muriwai, over the Waipaoa River, to the Willows Road industrial area be investigated and economically tested (Route security, route shortening, and separation of log traffic?)

10.2.7 State Highway No. 2

As an integrated component of the roading improvements considered necessary within the Region under the Transportation Scenario, it is recommended:-

- That the State Highway No. 2 route, from the regional boundary, north-west of Matawai, to Gisborne, be improved progressively in accordance with the demand and priorities derived from forest harvesting plans and woodflows, and the forecast heavy traffic and log traffic flows on SH 2. Such improvements should recognise the existing and potential two-way log traffic flows both out of and into the Region via SH 2 extending to Opotiki and beyond; and to include the provision of extensive slow-traffic and passing lanes in both directions as predicated by the forecast heavy traffic and log traffic flows; together with, as a priority, the realignment of the approaches and the replacement of the one way bridge across the Motu River at the bottom of Trafford's Hill;
- That State Highway No. 2 route, from Gisborne to Napier be improved as a matter of priority to service the demand and priorities derived from forest harvesting plans and woodflows, and the forecast log traffic flows on SH 2. Subject to the outcome of current investigations, and the economic assessments in relation to Transfund's funding criteria, such improvements would focus immediately on addressing the existing traffic flow restrictions through the Wharerata Ranges – north of Morere between Gisborne and Wairoa; and at Raupunga Gorge (Mohaka Viaduct), Waikare Gorge at Putorino, Matahorua Gorge, and 'Devil's Elbow' between Wairoa and Napier; and the provision of extensive slow-traffic and passing lanes in both directions on SH2 as predicated by forecast traffic flows; and
- That general road user amenities be investigated and provided on both SH2, SH35 and SH38, as appropriate, including:
 - Provision of adequate carriageway geometry and shoulder width to enable heavy vehicles to pull off the carriageway safely;

- Provision of standard rest areas at sufficiently close intervals to enable motorists to stop safely and to recover from 'heavy-traffic fatigue'; and
- Accommodating cyclists within the standard highway cross-section, so that cyclists are not intimidated by heavy traffic.

10.2.8 Wairoa District Local Roads

For the local roads within the Wairoa District, it is further recommended:

- That the local lateral roads feeding on to SH 2 be upgraded progressively in accordance with the demand and priorities derived from forest harvesting plans and predicted wood flows, and;
- That priority to be given to the following local roads within Wairoa District, namely:- Willow Flat Road; Putere Road; Cricklewood Road; the intersection of Tunanui Road with SH 2; and Tunanui Road itself.

At present the main access to the Mohaka State Forest, located in the southern sector of Wairoa District, is via Willow Flat Road which connects to SH2 in the vicinity of Kotemaori. As advised by both Transit New Zealand and Wairoa District Council, an optional logging route, known as Heay's Access Track, exists from the south-western side of the Mohaka State Forest and joins the local roading network within the Hastings District.

The Forest Industry within this area appears to be supportive of upgrading Heay's Access Track to a standard suitable for logging traffic, primarily because of the significant reduction in route haul distance to the Port of Napier which would result. An economic analysis has been carried out by the Hastings District Council on the proposed upgrading of Heay's Track resulting in an economically justifiable benefit-cost ratio for funding purposes. Transit New Zealand has indicated that the Forest Industry may be willing to contribute to the cost of the necessary road improvements.

The potential of upgrading Heay's Access Track was also discussed with Wairoa District Council. However, such a project was not accorded a high priority as only one or two kilometres of the proposed route falls within the south-west corner of Wairoa District, with by far the most significant portion of the route lying within Hastings District. Consequently, the Strategy Study has not considered this potential route improvement any further at this stage.

10.2.9 Napier to Gisborne Railway

Consultation with interested parties to date indicate that opportunities exist for Tranz Rail limited to grow the rail freight business within the Tairāwhiti Region, but that Tranz Rail needs to be pro-active in attracting an economic level of business from potential customers.

Given the reasonably sound condition and existing freight capacity of the Napier to Gisborne branch line, as reported by Tranz Rail Limited, and the inherent potential for significant growth in rail freight, even without a

contribution from the forest industry, the study endorses the comments made at the workshop and makes the following recommendations:

- That Tranz Rail Limited considers the opportunities for potential growth in non-forestry rail freight alone, estimated to be of the order of 200,000 tonnes per year, determining whether Tranz Rail is able to offer a regular and economic service to customers within the region. (Refer Section 8.2);
- That Tranz Rail considers the opportunities that need to be explored and realised for it to capture a significant and economic proportion of the future growth in the log and wood products transport business forecast for the region, particularly in the possible transportation of packaged wood products from the Gisborne area to the Port of Napier for containerisation prior to export;
- That Tranz Rail Limited completes its report on the future of the Napier to Gisborne branch railway line and, and as soon as practicable, distributes copies of the report for the information of the Ministry of Economic Development, Transit New Zealand, the Gisborne District Council, the Wairoa District Council, and other key stakeholders involved in the Integrated Transportation Strategy for the Tairāwhiti Region. It is understood that Tranz Rail has commissioned Booz-Allen Hamilton to produce an 'Alternative to Roding' proposal as the basis for a possible application to Transfund New Zealand for financial support; and that the report is due for completion by the end of May 2001; and
- Given the strategic nature of the Napier to Gisborne branch railway line with respect to the overall transportation network of the Tairāwhiti Region, that the Ministry of Economic Development, Transit, the District Councils, and other key stakeholders closely follow the outcomes of the Tranz Rail's study on the existing branch railway line and consider the impact of any of Tranz Rail's recommendations and decisions on this Strategy Study and on other transportation network initiatives planned for the Tairāwhiti Region.

It is understood that, subject to further detailed investigation, Transit New Zealand is of the view that the possible utilisation of certain sections of the existing rail corridor and rail infrastructure as a new roading alignment for parts of SH2 may provide an economic alternative route compared with improving the existing critical sections of the existing SH2 route between Napier and Wairoa and Gisborne.

10.3 Advantages and Disadvantages of Scenario

10.3.1 Advantages of Coastal Route

The selection of the SH35 Coastal Route, as the preferred log haul route from the northern forests, provides the following advantages compared with an equivalent Inland Route:

- More direct and established route from the majority of the forests to the port;
- The log traffic travels predominantly ‘downhill’ from the hinterland to the coast;
- Fewer changes in elevation and gradient;
- Fewer and easier bends to upgrade;
- Route easier and faster to upgrade;
- Considerably cheaper to upgrade than the Inland Route (By a ratio of almost 1 : 3):
 - Improving Coastal route – approximately \$28 million;
 - Constructing Inland Route – approximately \$81 million;
- Preferred route for log traffic from the northern forests (ie:- forests north of Ihungia Road);
- Slightly shorter route from north of Ihungia Road:
 - direct to port – existing route (6km / 5%);
 - direct to Rifle Range – Proposed storage area (11km / 10%);
- Reduced vehicle operational costs;
- Reduced road maintenance costs;
- Increase in passing lanes giving increased opportunities for overtaking;
- Road-users and coastal communities gain benefits from the road improvements to the Coastal Route;
- Bulk of logs from the northern forests travel directly to the port; and
- Minimises the impact of log traffic on the northern urban area of Gisborne City.

10.3.2 Disadvantages of Coastal Route

Conversely, the selection of the SH35 Coastal Route may be seen as having the following inherent disadvantages:

- Increases the level of heavy logging traffic and other forestry traffic on the SH35 Coastal Route;
- From the Tauwhareparae area, only, it provides a slightly longer log haul route (10km / 13%) for a lower proportion of logs;
- Logs from the north, destined for wood processing, will be routed through Gisborne City (Unless it proves feasible to develop a wood processing facility at the Rifle Range area);
- Still need to upgrade, to a minimum standard, the Waimata Valley Road and part of the Hokoroa Road as feeder roads progressively over time;

- Unlikely to be able to use larger log rigs on SH35;
- Slightly increased lengths and costs of improving the link roads from inland to the Coastal Route; and
- Improvement works would disrupt both log traffic and existing traffic on SH35 to some extent in the short term.

Most of the disadvantages could be mitigated readily at a small fraction of the cost of constructing the Inland Route for log haulage. On balance, it is considered that the ‘advantages’ of improving the SH35 Coastal Route decisively outweigh the ‘disadvantages’ inherent in such a route.

10.4 Standards Adopted

In determining the extent of the proposed road improvement works, initial reference was made to the existing road standards applied within the region. The Strategy Study team has adopted the relevant standards detailed by the State Highway Control Manual and recommends that these standards apply to the road improvement programme proposed for the Tairāwhiti Region, where it can be demonstrated that the total length of the route can be improved to the recommended standard for a benefit-cost ratio greater than 1.0.

It is accepted that, in a number of cases, the recommended standards may be higher than the standards applied in the past to roads controlled by Transit New Zealand, Gisborne District Council, and Wairoa District Council respectively, where the applicable standards generally have been governed by traffic volumes. Further detailed work to be carried out under the next ‘Investigation and Reporting’ phase will confirm whether or not the volumes of log traffic forecast for the regional roading network will justify the adoption of a higher standard.

The standards which are finally selected and applied to the proposed roading improvement works will govern the specification for the physical works, the costs of the work packages, and the levels of expenditure incurred by the regional road improvement programme.

The roads can be grouped into two categories depending on which of the two types of road-controlling authorities have jurisdiction over them. The two categories respectively are either a Local Authority controlled road (Gisborne or Wairoa Districts), or a Transit New Zealand controlled State Highway. Generally, these two categories of road vary markedly in their appearance, which is principally a function of the varying traffic volumes on each category of road. The Transit New Zealand standards can be found in its publication - “State Highway Control Manual”, whilst the Local Authorities’ standards will be found in their District Plans and Engineering Standards that they have adopted.

The standard for road “cross section” was the most referred to standard when examining the condition of the roads. (Refer to Appendix G of Volume 1)

Basically the “cross section” standard, when compared with the existing road, will determine whether the road is wide enough and whether the shoulders are sufficiently constructed. The State Highway cross-section standards are classified according to traffic volume. For the State Highways in this study the following standard is appropriate for 500 to 2000 vehicles per day.

A 3.5m lane with 750mm sealed shoulder and 100mm metal strip then 5:1 shoulders

(“Figure A3A.1 Cross-section guidelines for two-lane rural road” - State Highway Control Manual, Transit New Zealand). The local authority rural standard does not provide dimensions. However, it does have similar features as the State Highway Standard, except that 3.0m lanes are acceptable. (Refer to Appendix G of Volume 1)

Transit also has standards for the application of overtaking lanes, bridge guardrail treatment, guardrails in general, and slip-lane treatment at intersections. Although these standards will need to be adhered to at design and construction stage, the drive-over team gave due consideration to the standards at the time. Rather, the nomination of a treatment at a particular site was based on experience and considered judgment as to whether it was needed to accommodate the increased flows of heavy log traffic. The standards have been used when determining the cost of work at each site, particularly with respect to road widening.

10.5 Indicative Economic Analyses

10.5.1 Estimated Cost of Improvements

The study has examined the two State Highway routes of SH2 and SH35, together with sections of more than 30 local district roads. The total cost of works required for improving these roads to meet forest industry demands is estimated to be of the order of **\$120 million**, as summarised below:

Category of Road	Estimated Cost
State Highway 2 Route (Transit)	\$ 50 million
State Highway 35 Route (Transit)	\$ 16 million
Local Roads (Gisborne District)	\$ 40 million
Local Road (Wairoa District)	\$ 14 million
Total Estimated Cost of Improvements	\$ 120 million

Based on the range of indicative cost-benefit analyses carried out to date, it is estimated that of the order of half the cost (\$60 million) of the proposed road improvements is likely to achieve a benefit-cost ratio of 2.0 and above, of which approximately \$30 million is likely to achieve a benefit-ratio of 3.0 and above.

Further detailed cost-benefit analyses, including and examining the impact of intangible benefits, would be required in the next phase of the study to quantify the actual benefit-cost ratios of individual packages of improvement works for specific sections of roads with greater accuracy.

10.5.2 *Indicative Programme of Improvement Works*

Based on the assumptions outlined in the following Section 10.5.4 of this report, an indicative programme of improvement works, required to meet the demands of the forestry industry, has been prepared for each broad category of the State Highway routes and local roads comprising the road network for the Tairāwhiti Region, as tabulated below.

(Refer also to the shaded areas on the accompanying 'Implementation Plan & Cash Flow' diagram included in Section 10.5.3.)

Category of Road	Duration	Start	Finish
State Highway 2	8 years	2001	2008
State Highway 35	8 years	2002	2009
GDC Local	10 years	2001	2010
GDC Local	2 years	2015	2016
WDC Local	13 years	2001	2013

The timing of such improvement works has been driven by the need to have completed the works in time to accommodate any significant increase in levels of laden log truck traffic for the route or local road concerned, as identified from the woodflow and traffic flow graphs for each node of the road network, as contained in Volume 2 of this report.

For a number of local roads (Eg: Tarndale Road, Mangatu Road, Armstrong Road, Whatatutu Road, Tunanui Road, Willowflat Road), as well as for a number of sections of the State Highway routes, significant scheduled increases in the flow of laden log trucks are already occurring, thereby placing considerable pressure on the existing road network and a high level of urgency on the implementation of the proposed road improvement programme.

It is recommended that work commence immediately on the development of a detailed implementation plan for the road improvements proposed for the Tairāwhiti Region, and that this plan be implemented with the degree of urgency warranted by the forecast traffic flow demands for each of the route sections and local roads concerned.

(Refer also to Section 10.6 which gives an indication of the roading improvement priorities for the region.)

10.5.3 *Estimated Total Cash Flow*

The following 'Implementation Plan & Cash Flow' diagram depicts the indicative total cash flow requirements for the implementation of the proposed road improvement programme for the Tairāwhiti Region.

This diagram is based on the assumptions outlined in Section 10.5.4, and the indicative programme of works shown shaded on the spreadsheet section of the diagram. The proposed annual expenditure on improvement works for each category of road has been allocated accordingly, and total proposed cash flow graphed on an annual basis.

The cash flow diagram indicates that approximately \$117 million of the estimated \$120 million cost of the proposed road improvement programme is expected to be spent over the nine year period, from 2001 to 2009. The annual level of annual expenditure is expected to peak at \$21.4 million in 2003, with the level of expenditure averaging about \$19 million per year for the five year period from 2002 to 2006.

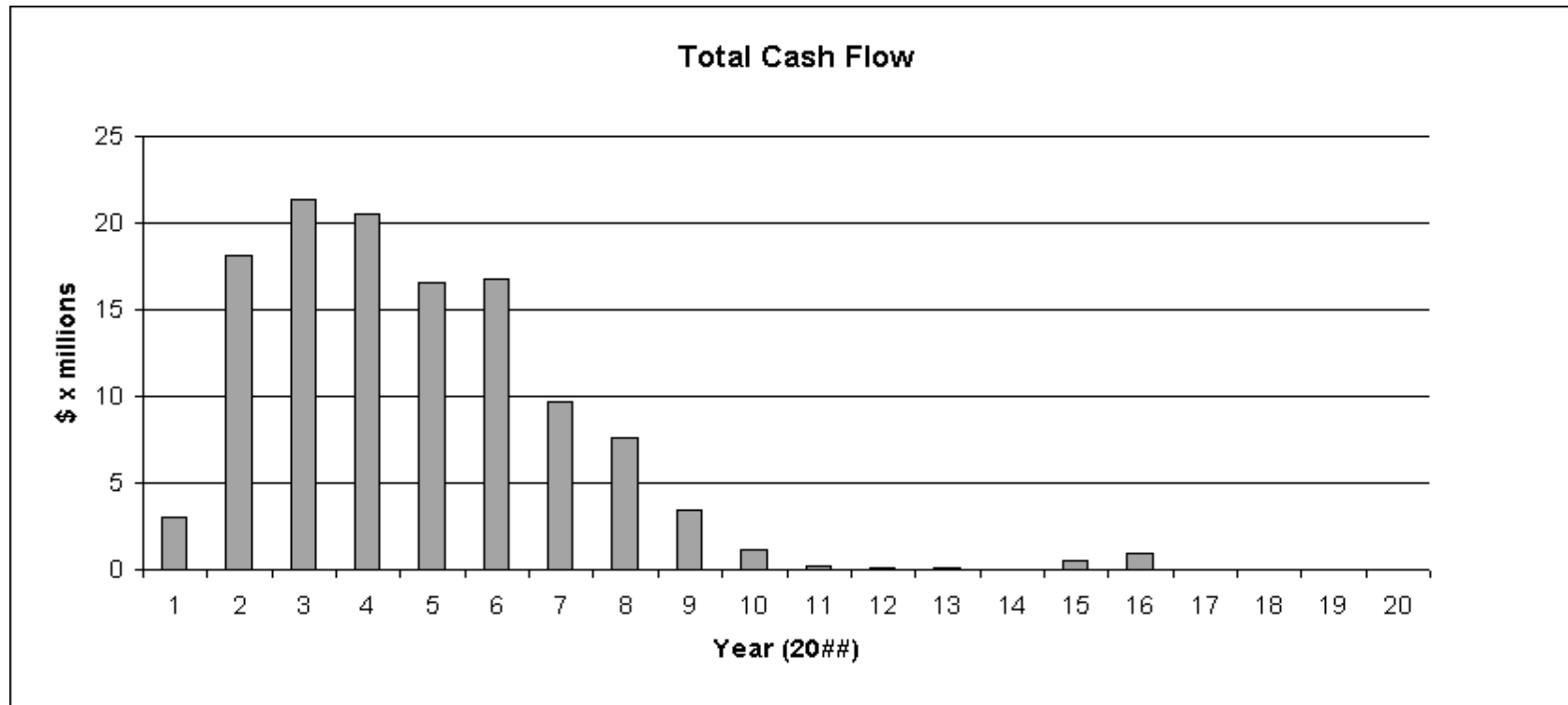
(Indicative 'Implementation Plan & Cash Flow' diagram follows overleaf)

TAIRAWHITI REGIONAL DEVELOPMENT PLAN - INTEGRATED TRANSPORTATION STRATEGY

Proposed Route Improvement Programme

Implementation Plan & Cash Flow

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
WDC	0.6	3.6	3	2	0.8	0.9	0.7	0.7	0.7	0.6	0.2	0.1	0.1	0	0	0	0	0	0	0	14.0
GDC	0.6	5.2	3.7	3.8	7.5	8.1	4.6	3.7	0.9	0.5	0	0	0	0	0.5	0.9	0	0	0	0	40.0
Transit SH 2	1.8	8.9	13.2	11.1	5.6	5.4	2.6	1.4	0	0	0	0	0	0	0	0	0	0	0	0	50.0
Transit SH 35	0	0.4	1.5	3.6	2.7	2.4	1.8	1.8	1.8												16.0
Total	3	18.1	21.4	20.5	16.6	16.8	9.7	7.6	3.4	1.1	0.2	0.1	0.1	0	0.5	0.9	0	0	0	0	120



10.5.4 Implementation Plan Assumptions

The assumptions applying to the implementation plan for the proposed road improvement programme for the Tairāwhiti Region are summarised below:

- The Woodflows and Traffic Flows, as summarised in Volume 2 of the report, reasonably represent the harvesting intentions of the Forest Industry within the Tairāwhiti Region over the 20 year period from 2001 to 2020 inclusive;
- The scope of the Roothing Improvement Programme has been based on the Improvement Options outlined in Section 3 of Volume 4 of this report;
- The estimated costs of roading improvements are based on check rates and estimates provided by the roading authorities concerned (Transit, GDC, WDC);
- The estimated roading improvement costs include allowances for 30% overall project contingency provision and 10% professional services;
- Benefit-cost ratios have been calculated in accordance with the existing Transfund criteria for cost-benefit analyses, as detailed in Transfund's Project Evaluation Manual, simplified procedures (updated 1999);
- The benefit-cost ratios have been calculated in accordance with the assumptions outlined in Section 4 of Volume 4 of this report;
- The proposed timing and cost of implementing the proposed Roothing Improvement Programme within the Tairāwhiti Region are depicted on the 'Implementation Plan & Cashflow' chart included in this section, where the total costs have been estimated to be of the order of \$120 million, and the bulk of the expenditure occurs over the ten year period 2001 to 2010;
- The timing of expenditure on roading improvements has been determined by the need to ensure that improvements works are completed:
 - as soon as practicable for roads already experiencing significant growth in log traffic and for which peak traffic flows are expected to occur within the next five years (eg: by 2005);
 - as late as practicable for roads not expected to experience significant growth in log traffic within the next five years, but in time to accommodate significant forecast traffic flows;
- In developing the Implementation Plan and Cashflow for each individual works project comprising a route section or local road locality, the following assumptions have been made:
 - duration of investigation work, design, resource consent, and simpler land acquisition aspects for each separate project – 12 months;
 - duration of more complex land acquisition aspects – 24 months;

- priority given to resolving more complex land acquisition issues where normal durations would provide a critical constraint to the regional road improvement programme;
- improvement works are able to be implemented elsewhere on the State Highway routes and local roads where land constraints either are not an issue or are less severe, and funding is able to be reallocated accordingly to meet the overall regional roading improvement programme and cashflow;
- construction season – 01 October to 30 April (depending on weather-related circumstances at the time); and
- maximum cashflow allowance per route or road project – about \$3.0 million per year - in order to break down each route or road project into manageable proportions and to encourage the utilisation of local resources across the spectrum of the roading improvement works.

10.6 Roading Improvement Priorities

Based on the best information and indications currently available, the following schedule of roading improvement priorities has been prepared generally over a 10 year horizon for each of the following three categories of the road network within the Tairāwhiti Region.

10.6.1 State Highways (Transit)

- SH2 South (Wairoa to Whirinaki). (2001 – 2006);
- SH2 South (Gisborne to Wairoa). (2002 – 2004);
- SH35 North (from Gisborne – progressively). (2002 – 2008);
- SH2 North-West (from Gisborne to Matawai & beyond). (2003 – 2007);
- SH38 West (from Wairoa towards Waikaremoana). (2002 – 2004).

10.6.2 Local Roads (Gisborne District)

- Tarndale / Tarndale bypass / Armstrong Roads. (2001 – 2003);
- Mangaoporo Road (three bridges). (2001 – 2002);
- Kokomuka / Kopuapounamu Roads. (2001 – 2002);
- Whakaangi Road. (2002 – 2003);
- Harper Road / Western Bypass. (2002 – 2003);
- Ihungia / Waimata Valley Roads. (2003 – 2005);
- Makarika Road. (2004);
- Lower Tauwhareparae Road (five bridges). (2004 – 2006);
- Poroporo / Mata / Hokoroa / East Cape Roads. (2005 – 2008);
- Paroa Road. (2007 – 2008);

- Waingake Road. (2008 – 2009);
- Tarewa / Tokonui Roads. (2010); and
- Kanakanaia / Tiniroto Roads. (2015 – 2016).

10.6.3 Local Roads (Wairoa District)

- Tunanui Road (plus SH2 intersection). (2001 – 2002);
- Willowflat / Cricklewood Roads. (2001 – 2003);
- Putere Road. (2002 – 2004);
- Kokohu Road (limestone quarry for roading). (2004);
- Patunamu / Ruapapa / Titirangi Roads. (2003 – 2005);
- Mangaone Road. (2005 – 2006); and
- Te Kahu / Woodland / Kakariki Roads. (2011 – 2014).

11. Recommendations for Future Action

Having completed Phase 2 of the Integrated Transportation Strategy, it is recommended that the following activities are initiated by the Project Sponsors as part of an on-going series of Phase 3 tasks, as outlined below.

11.1 Analyse and Process the Proposed Road Improvements (Benefit-Cost Ratio Greater than 2.0)

Provide sufficient funding to enable the more-detailed investigation and reporting (I & R) activities to be carried out on the proposed road improvement works, as recommended in this report for the subsequent phases of the road improvement programme for the Tairāwhiti Region.

(Transfund NZ)

Evaluate, process and action, in accordance with Transfund's economic evaluation 'full procedures', the proposed road improvement works recommended for the Tairāwhiti Region which have an indicative benefit-cost ratio of 2.0 or greater, and which are estimated to cost a maximum of \$60 million.

(Transfund NZ/Transit NZ/GDC/WDC)

11.2 Assess Intangible Benefits (Benefit-Cost Ratio Less than 2.0)

Carry out a detailed assessment of the remaining proposed road improvement works recommended for the Tairāwhiti Region which have an indicative benefit-cost ratio of less than 2.0, and which are estimated to cost a minimum of a further \$60 million, including the assessment of the full range of strategic and intangible benefits accruing from the proposed works, and identifying and investigating appropriate funding mechanisms.

(MED)

11.3 Develop a Model for Non-qualifying Works

Develop a model for the funding of the proposed roading improvement works for the Tairāwhiti Region which are not able to be funded from the National Roads Fund.

(MED)

11.4 Accept Woodflow and Traffic Flow Models

Accept the predictive woodflow and traffic flow models developed during the Strategy Study as the basis for justifying the proposed road improvement works for the roading network within the Tairāwhiti Region for the five year period from 2001 to 2005 inclusive. (The Forestry Industry would be resurveyed and harvesting plans updated after 2005)

(Transfund NZ / Transit NZ / GDC / WDC)

11.5 Establish a Transportation Control Group

Establish and fund a Transportation Control Group, and other resources as necessary, to manage the development and implementation of the Tairāwhiti Transportation Plan, which is to be implemented by the relevant roading authorities for the roading network within the Tairāwhiti Region.

(MED)

11.6 Develop a Tairāwhiti Transportation Plan

Task the Transportation Control Group with liaising with key transportation stakeholders and with managing the development and implementation of a comprehensive Tairāwhiti Transportation Plan which will establish the framework for the proposed roading improvement programme for the Region and which, in conjunction with Transfund New Zealand, Transit New Zealand, Gisborne District Council, Wairoa District Council and representatives of the forest industry, will identify, confirm, and prioritise the roading improvement works required to meet the demands of the forest industry over the next 20 years.

(MED)

11.7 Implement the Tairāwhiti Transportation Plan

Implement the specified roading improvement works for the various areas of the road network for which each roading authority is responsible, in accordance with the Tairāwhiti Transportation Plan.

(Transit NZ/GDC/WDC)

11.8 Monitor Port & Rail Developments

Maintain a watching brief on the progress of the development programmes for the two port proposals, together with the recommendations for the Napier to Gisborne branch railway line, all of which remain key elements of the Integrated Transportation Strategy for the Tairāwhiti Region.

11.9 Implement Partnering Approach

The primary objective of Partnering is to create an environment of trust and co-operation where all parties involved in the Integrated Transportation Strategy for the Tairāwhiti Region would establish an effective working relationship with the view of achieving a number of shared objectives, and where the achievement of these objectives is jointly monitored, such that stakeholder expectations are identified and satisfied.

Implement the initial phase of the Partnering Approach which would comprise a “Strategic Partnering Workshop and Partnering Charter” involving the active participation of all key transportation stakeholders within the Region. (It is considered that such an approach would be a key component in delivering a successful Integrated Transportation Strategy for the Tairāwhiti Region.)

(MED/All Involved Parties)

11.10 Revalidate Basic Woodflow Assumptions

Revalidate the basic forest harvesting assumptions surrounding the calculation of future wood flows by the Forest Industry Companies (FIC) on an annual basis to include:

- Those plantations recently and currently being planted;
- The likely extent of forests which will not be harvested by plantation maturity date;
- The extent of forests to be replanted once harvested;
- The forecast forest crop rotations; and
- An update of external market forces.

(Note: The woodflow data and traffic flow data utilised in this report do not include forest plantings beyond 2000, nor future crop rotations.)

(FIC/MED)

11.11 Update Evaluation of State Highways & Local Roads

Update and extend the cost-benefit analyses and economic evaluation for the proposed route improvement works for the State Highway network and local roading network within the Tairāwhiti Region, comprising SH2, SH35, and SH38, and the local district roads, to include the full impact of the forecast traffic volumes and the extent of the likely strategic and intangible benefits, as outlined in Section 11.3 above.

(Transit NZ / GDC / WDC)

11.12 Update the Gisborne Transportation Study

Review and update the 'Gisborne Area Transportation Study- 1975', in conjunction with Transit New Zealand with respect to SH35, with the initial focus as outlined below:

- Improving access to the port immediately by upgrading Hirini Street and providing a link road through to the port property;
- Providing a Western Bypass heavy traffic route from Waimata Valley Road (via Harper Road and SH2) to Willows Road industrial area, including upgrading of the SH2 intersections in the area;
- Providing a link road from SH2 at Muriwai, over the Waipaoa River, to Dunstan Road / Willows Road industrial area;
- Improving the SH35 route via Awapuni Road; and
- Monitoring the traffic capacity of SH35 over the Turanganui River to Port Gisborne and, if necessary, investigating future options for improving heavy traffic flow, including:
 - Improving intersections and traffic management on the route to the port;
 - Widening the existing Wainui Road bridge;
 - Providing a new road bridge between the existing Wainui Road bridge and the existing rail bridge;
 - Utilising the existing rail bridge to provide a shuttle train service for wood products from the Willows Road industrial area to the port;
 - Utilising the existing rail bridge for road access to the port by heavy vehicles; and
 - Providing a new low-level road bridge immediately south of the existing rail bridge, but north of the existing major export shipping berths.

(GDC)

11.13 Improve Access to Port Gisborne

Improve the road access route from SH35 to Port Gisborne for laden log trucks and other heavy vehicles by:

- Upgrading Hirini Street and providing a new link road, suitable for high volume heavy traffic flows, directly to the port in accordance with Port Gisborne's current development plans (By 2002); and

- Investigating the longer term potential of a new heavy vehicle access road on the seaward side of Kaiti Hill from Sponge Bay Road, via the Rifle Range area and Kaiti Beach, to Port Gisborne. (By 2010.)

(GDC/PGL)

11.14 Provide Additional Log Storage Areas

Provide additional log and woodchip storage areas in the vicinity of Port Gisborne, as a matter of high priority, by:

- Rearranging and optimising the existing wharf storage areas more efficiently and effectively (By 2001);
- Maximising the storage area on the old Weddell site and adjacent areas (By 2001);
- Extending the port industrial area for log storage into the Crawford Road residential area (By 2002);
- Reclaiming additional land at the south end of the port adjacent to Kaiti Beach, being the initial stage of the current Port Development Plan (Progressively from 2004);
- Investigating the possible development of the Sponge Bay Road / Rifle Range area for future log storage (By 2007); and
- Utilising the Willows Road industrial area as an overflow log storage area. (As required)

(PGL/GDC)

11.15 Investigate and Monitor Tolaga Bay Port Development

Continue with the investigation of the Tolaga Bay Port Proposal by East Coast Ports and East Ventures, and other supporting interests, possibly in conjunction with Port Gisborne.

(GDC/ECP/EVL/PGL)

Liaise with the promoters of the proposed Tolaga Bay Port development and monitor development progress with a view to managing the extent and timing of both the proposed road improvement works for State Highway 35 between Tolaga Bay and Gisborne, and the development programme for Port Gisborne.

(Transit NZ / PGL)

11.16 Investigate Potential Use of Rail Corridor

In the event that Tranz Rail Limited elects to further curtail, or close, the Napier to Gisborne branch railway line, Transit may elect to investigate an option for the potential utilisation of sections of the existing rail corridor and



rail infrastructure for improving the route alignment of SH2 between Napier and Gisborne.

(Transit NZ)

11.17 Extend Time-Frame of Study

Extend the timeframe of the Integration Transportation Study by a further 10 years from 2020 to 2030 to coincide with the forecast peaks for forest harvesting and woodflows identifiable to date for that period, which are currently being investigated by Port Gisborne.

(MED)

12. Report-Comprising Four Volumes: Integrated Transport Strategy

- Volume 1 - Recommended Scenario (plus three associated volumes Volumes 2 to 4 inclusive - as follows).
- Volume 2 – Woodflows and Traffic Flows.
- Volume 3 – Workshops – Minutes and Notes.
- Volume 4 – Cost-Benefit Analyses.

Appendix A

Map of the Tairāwhiti Region

- State Highway and Local Rooding Network

Appendix B

Original Scope of Study (Phase 1)

- Gisborne District Council – Request for Tender.
Forestry Roding Strategy (October 2000) – Section 6 – Methodology.

Appendix C

Extended Scope of Study (Phase 2)

- Gisborne District Council – Regional Forestry Strategy Study – Terms of Reference – Extension to Scope of Works (December 2000).
- Ministry of Economic Development – Tairāwhiti Regional Development Plan – Report on Integrated Transportation Strategy Volume 1 of 4 – Recommended Scenario. (May 2001)
 - Part Section 2.2 – Scope of Study.



Appendix D

Schedule of “Reference Data”



Appendix E

**Minutes of “Group Meeting No. 1”
(Gisborne – 8 March 2001)**

Appendix F

GDC Responses to Draft Transportation Scenario

(Group Meeting No. 1–8 March 2001)

- E.1 - E-mail, dated 08/03/2001 – Recommended Scenario (Louis Boeyen, GDC).
- E.2 - E-mail, dated 15/03/2001 – Gisborne Central Area Roading (Bruce Harrison, GDC).

Appendix G

Standard Road Cross-Sections

- Typical State Highway.
- Typical Rural Road (With Shoulder).
- Typical Rural Road (Without Shoulder).



Appendix H

Schedule of Key Contact Personnel