

Regional Transport Committee Workshop

Thursday, 25 November 2010

Commencing at 9.30am

Duxton Resort

366 SH33 Mourea, Okawa Bay

Rotorua



File Reference: 2.00025
Significance of Decision:



Report To: Regional Transport Committee

Workshop Date: 25 November 2010

Report From: Mike Calvert, Transport Planner

Regional Land Transport Strategy Review Workshop

Executive Summary

This report will provide members with a summary of the Regional Land Transport Strategy (RLTS) development process to date and also present new information for members to consider.

1 Introduction

The following report provides the Committee with an overview of the process to develop the Regional Land Transport Strategy (RLTS) date and also greater detail on the background research being undertaken that will feed into the development of the RLTS.

The study 'Relationship between an Ageing Population and the Transport System in the Bay of Plenty Region' has recently been completed and a summary of the findings of the study are attached to this report.

The Bay of Plenty Demand Management Study has recently been completed and a summary of this report is also attached for committee member's information.

The last section of the report summarises the development of the 'Economic Development and Transport Study' which is currently being developed by the group of consultants from Ascari Partners Ltd, BERL Economics and Richard Paling Ltd. The study outputs were still being generated at the time of writing this report. These outputs will be workshopped with the Committee on the day. Staff from Ascari Partners Ltd, BERL Economics and Richard Paling Ltd, will be at the workshop to explain in more detail their work.

2 Review Process

The current review of the RLTS is now due for completion by August 2011.

The purpose of the RLTS is to provide guidance on the land transport outcomes sought by the region and the review provides the opportunity to re-examine issues and update the Strategy accordingly. The review

process is also an opportunity to better understand future regional trends and patterns, their implications for the transport system over the next 30 years, the funding implications of any changes, and to have these incorporated into the RLTS.

The overall process for the review is summarised in Figure 1.

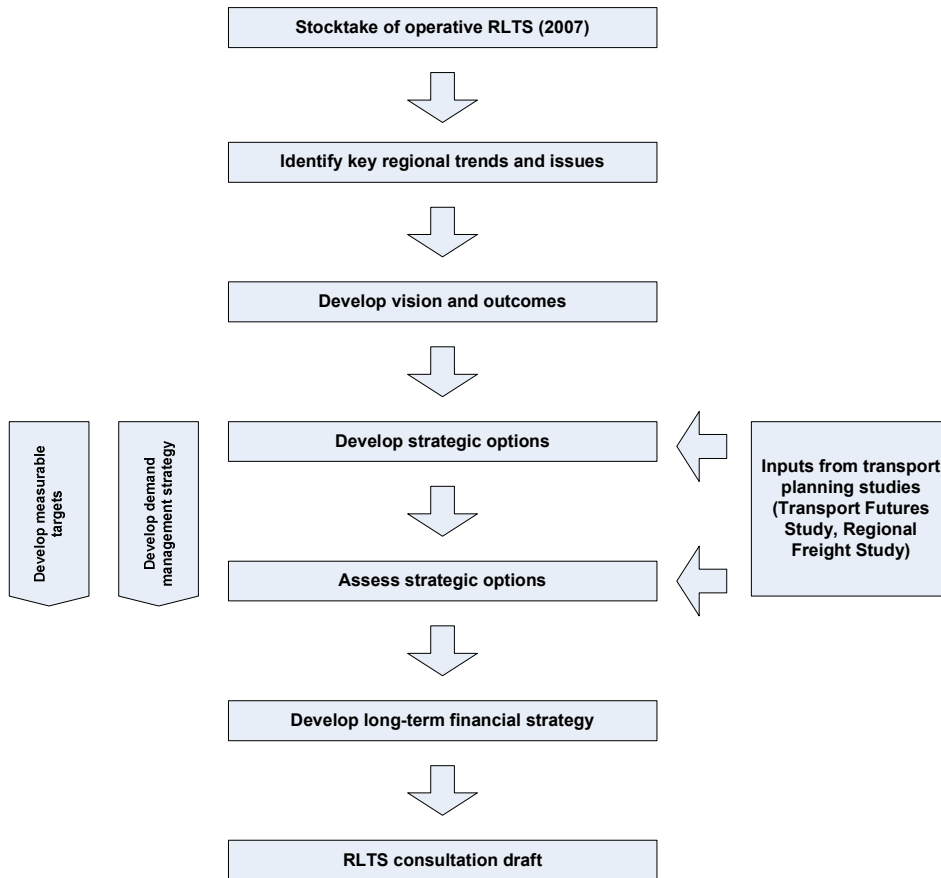


Figure 1 – Summary of RLTS review

2.1 Vision

The following draft vision for the region has previously been adopted by the Regional Transport Committee.

Best transport systems for a growing economy and a safe and vibrant Bay lifestyle

2.2 Issues

The regional transport issues have been identified from a range of sources, including:

- Regional Land Transport Strategy 2007;
- Regional Land Transport Programme development and submissions;
- Regional Focus Groups in Rotorua, Tauranga and Whakatane;

- Regional Reference Groups with stakeholders;
- Tangata Whenua Committees in the region;
- Consultation with other Regional Councils, NZTA and Ministry of Transport staff;
- Background research and analysis of trends; and
- Regional Transport Committee and Regional Advisory Group feedback.

The issues identified through these processes formed the basis of the initial list of issues that were presented at the March 2010 RTC workshop. They have been refined through the strategy development process and 18 major issues have now been identified (see Attachment 1)

2.3 **Outcomes Statements**

The six outcome areas for the RLTS reflect the five objectives from the New Zealand Transport Strategy, with the additional outcome of Integration and land use reflecting the emphasis on integrating land use and transport planning. The draft outcome statements were adopted at the September RTC meeting and are listed in Attachment 2 of this report.

The Outcome areas were prioritised by the committee and Figure 2 reflects the high priority given to economic development supported by the sustainability and integration and land use outcomes.

The prioritisation of the outcome areas does not mean that the three outcome areas of access and mobility, safety and personal security and public health are not important in the development of the transport system. It merely indicates that the other three outcome areas were seen to have a higher priority.

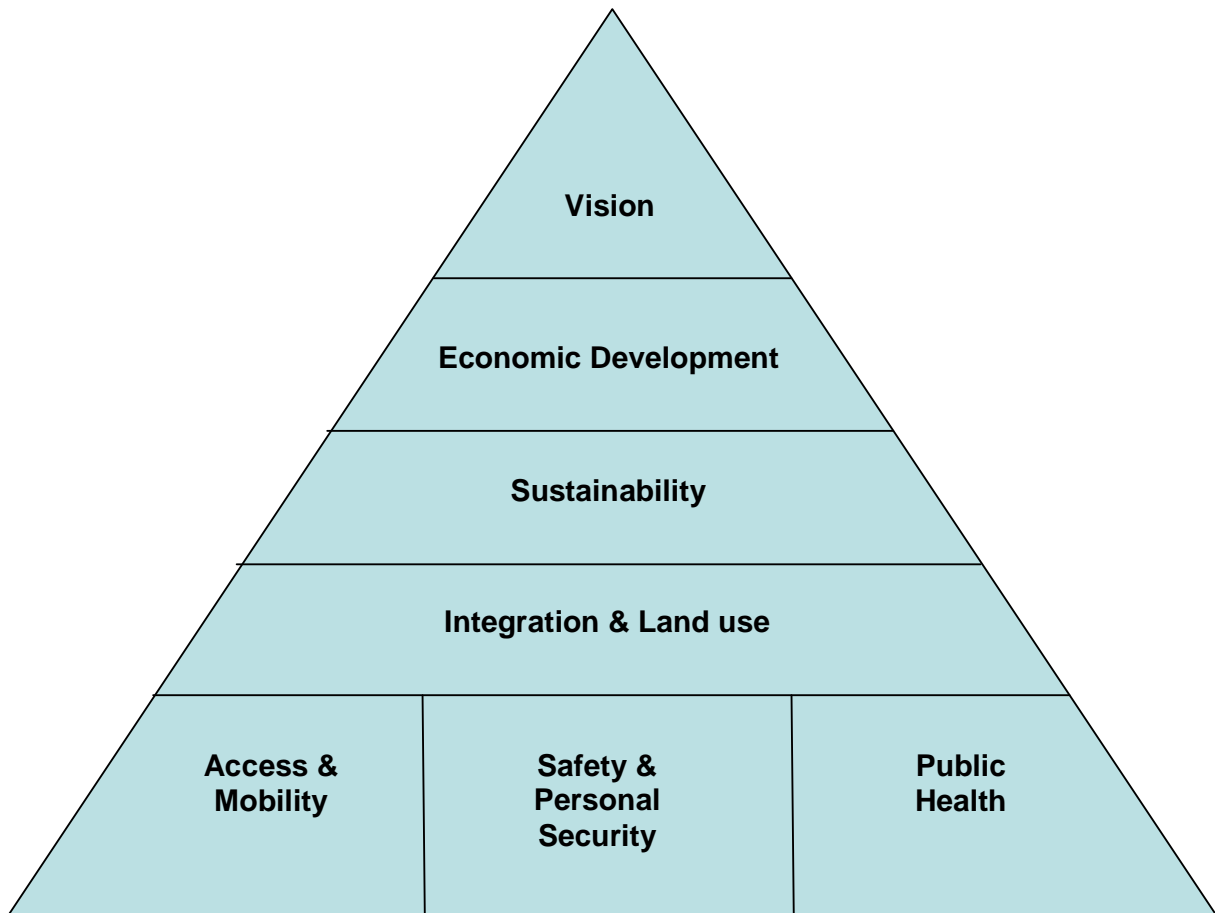


Figure 2 – Prioritisation of Outcome Areas for the RLTS

3 **Background Research**

A number of background research documents have been completed and the outputs from the studies have been used to identify trends and issues, provided technical input into the development of the preferred strategic option and have provided some direction for the development of the policies.

The studies completed to date are:

- Bay of Plenty Regional Trends
- Bay of Plenty Regional Freight Study
- Upper North Island Freight Study
- Bay of Plenty Road Safety Study
- Transport Futures Study

Studies that are presently ongoing, or near completion, are:

3.1 **Aging Population Study**

The study 'Relationship between an Ageing Population and the Transport System in the Bay of Plenty Region' has recently been completed and a summary of the findings of the study are attached to this report (Attachment 3). The report provides detail on the expected age distribution of the population in the Bay of Plenty and how this will impact on the transport system. The study also looks at infrastructural designs and systemic improvements that can be applied to the transport network to make it easier for older people to move around.

3.2 **Bay of Plenty Demand Management Study**

McCormick Rankin Cagney (MRC) was commissioned to undertake the Bay of Plenty Demand Management Study and the outcomes of this study will inform the review of the RLTS.

The report provides information on existing strategic documents at central, regional and local level and also reviewed the applicability of various demand measures to the Bay of Plenty as well as assessing their value and ease of implementation. This has resulted in the development of regional guiding transport management principles and implementation packages for the four area levels (regional, urban, town, rural) by determining the highest priority measures.

Appropriate targets and monitoring processes needed to track the effectiveness of the packages on travel patterns are also identified and recommendations made on additional areas for monitoring and targets.

A summary of the study is attached as Attachment 4 to this report.

3.3 **Economic Development and Transport Study**

It is widely recognised that there are strong connections between transport provision and economic growth. However, the nature of this relationship is complex and is subject to the interplay of a wide range of socio-economic and spatial factors. To develop a better understanding of the relationship between economic development and transport in the Bay of Plenty, the Regional Council commissioned Ascari Partners Ltd, BERL Economics and Richard Paling Ltd to investigate these linkages and to identify the ways in which the transport network should be developed to support economic development taking into account both the movement of freight and passengers. The main findings of that work to date are summarised in Attachment 5 to this report.

The outputs from the study will be workshopped with the Committee on the day. Staff from Ascari Partners Ltd, BERL Economics and Richard Paling Ltd, will be at the workshop to explain their work in more detail.

Mike Calvert
Senior Planner (Transport)

for Transport Policy Manager

19 November 2010

Regional Transport Issues

The following is a summary of the Bay of Plenty's regional transport issues. These are organised according to six key outcome areas.

Economic development

Planning for business and industry growth is not sufficiently integrated with the region's transport system to ensure the efficient movement of people and goods.

Modal pricing rarely covers the full cost of providing infrastructure and externality costs. The proportion of costs passed on to users also varies between modes. These factors can distort levels of supply and demand for different modes.

There are international trends towards larger ships visiting fewer ports less frequently. This has the potential to change supply chains by altering freight flows and increasing peaks, putting pressure on the transport networks serving the Port of Tauranga.

Further development of freight intensive industries within the region and forecast freight growth (inter and intra-regional) will increase demand on the region's transport system.

Sustainability

The region's transport system is overly reliant on non-renewable fuel sources making it susceptible to volatile oil prices.

Levels of national funding available for walking, cycling, public transport services and the rail network risks diminishing the value of previous investment in sustainable modes.

Limited public understanding of how individual lifestyle choices impact on the region's transport system and an unwillingness to change is a barrier to behaviour change towards sustainable travel patterns and modes.

Integration and land use

Ineffective integration between land use and the region's transport network can result in development patterns that increase the need for travel and reliance on motor vehicles. This in turn, increases road congestion, emissions and energy use and limits opportunities for more sustainable modes.

The region's transport system may lack the flexibility to cater for long-term changes in land use and demand if future transport corridors are not identified and protected.

A complex funding and planning environment, and a focus on short-term decision-making, is constraining efforts to develop and implement comprehensive land-use and transport strategies.

Safety and personal security

The design and management of transport corridors does not adequately provide for the safety and personal security needs of all users and activities.

Recent approaches to road safety have not achieved the desired improvements to the region's safety record.

Road safety initiatives in the region continue to be constrained by a limited safety culture within the wider community.

Access and mobility

There is limited planning for the access and mobility needs of small communities and more isolated parts of the region. These communities tend to be exposed to increased risk of transport network failure.

The volatility of fuel prices and an ageing population will mean increasing future demand for accessible travel amongst those with few mobility options.

Public health

A reliance on the movement of freight by heavy vehicles has wider public health impacts (noise and air pollution, safety, severance effects) than the use of other modes such as rail and shipping.

Increasing motor vehicle traffic is generating air and noise pollution and creating severance effects. This is affecting the quality of life of people living next to major roads and making it more unpleasant to walk and cycle along road corridors.

The convenience of motor vehicles is encouraging sedentary lifestyles, which are contributing to increasing rates of obesity related illness.

Transport outcomes

Our vision is supported by the following transport outcomes.

Economic Development

The transport system is integrated with well planned development, enabling the efficient movement of people and goods to, from and throughout the region. The transport system supports economic development by providing user options, applying efficient pricing mechanisms, and prioritising higher value trips.

Sustainability

The transport system is flexible, robust and resilient to external influences. People choose the best way to travel to improve energy efficiency and reduce reliance on non-renewable resources. Political leadership and support is shown at all levels supporting funding for the infrastructure required for all modes to be safe and easy ways to travel.

Integration and land use

Long term planning ensures that transport corridors are protected, and well designed transport infrastructure supports economic development. Regional growth patterns and urban form reduce travel demand, support public transport and encourage walking and cycling.

Safety and personal security

Deaths and serious injuries on the region's roads are reduced. People understand and contribute to a safety culture that is supported by a safe system approach to road safety. Transport corridors and public spaces are safe and secure environments to use and people feel safe using them.

Access and mobility

Communities have access to a reliable transport system that provides them with a range of travel choices to meet their social, economic, health and cultural needs.

Public health

The transport system minimises the health damaging effects of transport for all members of society. A wider choice of transport options allows all individuals to make social connections and travel choices that contribute to their health and wellbeing.

Study of the Relationship between an Ageing Population and the Transport System in the Bay of Plenty Region

Executive summary

Introduction

This report discusses the relationship between an aging population, and the transport system in the Bay of Plenty. It looks at how an older population will impact on the transport network, and it looks at how the transport network can help provide quality of life for older people.

Demographics

In 2041, 31% of the people living in the Bay of Plenty will be aged over 65 years. Over 9% of the total population will be over 80 years. It is expected that these people will want to 'age in place'.

People aged 65-80 years will be fit, independent and actively involved with their whanau and community. They will probably make most of their trips off peak. People over 80 years may have reduced functional capacity and so will make fewer trips per week. Those trips will be very necessary for their mental and physical health and wellbeing.

Providing for an older population

There are a number of infrastructural designs and systemic improvements that can be applied to the transport network to make it easier for older people to move around. It is also important for land use and transport planning to be well integrated.

The OECD has identified eight major policy priorities (listed below) to manage the mobility needs and safety issues for older people. These involve supporting older people as their transport needs change. It is also important that older people are included in making decisions about the transport network and about their own modes of transport.

- Support and funding to enable lifelong mobility.
- Support for older people to continue driving safely.
- Provision of suitable transport options to the private car.
- Safer vehicles for older people.
- Development of safer roads and infrastructure.
- Appropriate land-use practices.
- Involvement of older people in policy development.
- Educational campaigns to promote maximum mobility and safety for older people.

Implications

Having an older population means that there will be an increased demand for travel off peak, for Total Mobility and for PT services. There will be more older Māori people living in isolated rural communities. And there will be more people moving around the network off peak.

Benefits

By improving the age-friendliness of the transport network we will be providing a quality network that will provide for more people in the Bay of Plenty region.

Recommendations

Infrastructural improvements should be made in line with the World Health Organisations checklist (appended). It is also important to include older people in the planning process to ensure their perspective and needs are considered and integrated into plans.

There are also some flaws in the current assumptions made in transport modelling. Assumptions are currently based on the number of people in a household, rather than the age of people in each mesh-block. Age is perhaps a better indicator of the transport demand, and provides the option to differentiate between peak and off peak trips.

It is important to continue to monitor the trends. The Bay of Plenty needs to keep an eye on the population demographics to ensure we are providing an appropriate transport system. It is also important to monitor the travel behaviour of older people. This will mean that modelling can be tailored to more correctly plan for transport demand.

Conclusion

Most importantly the region needs to make an effort to provide an age friendly network because the rest of the people living in the Bay of Plenty region will also benefit.

Appendix 1 – WHO checklists

The World Health Organisation has identified a number of checklists for an age friendly city. The following are the relevant 'transportation', and 'outdoor spaces' checklists for an age friendly city:

Age-friendly transportation checklist¹

Affordability

- Public transport is affordable to all older people
- Consistent and well displayed transport rates are charged

Reliability and frequency

- Public transport is reliable and frequent (including services at night and weekends)

Travel destinations

- Public transport is available for older people to reach key destinations such as hospitals health centres public parks shopping centres banks entertainment centres and senior's areas
- All areas are well serviced with adequate well-connected transport routes within the city and between neighbouring cities
- Transport routes are connected between the various transport options

Age-friendly vehicles

- Vehicles are accessible with floors that lower, low steps, and wide and high seats
- Vehicles are clean and well maintained
- Vehicles have clear signage indicating the vehicle number and destination

Specialised services

- Sufficient specialised transport services are available for people with disabilities

Priority seating

- Priority seating for older people is provided and is respected by other passengers

Transport drivers

- Drivers are courteous, obey traffic rules, stop at designated stops, wait for passengers to be seated before driving off, and park alongside the curb so that it is easier for older people to step off the vehicle

Safety and comfort

- Public transport is safe from crime and is not overcrowded

Transport stops and stations

- Designated transport stops are located in close proximity to where older people live, are provided with seating and with shelter from the weather, are clean and safe and are adequately lit
- Bus stops and stations are accessible, with ramps, escalators, elevators, appropriate platforms, public toilets, and legible and well-placed signage
- Transport stops and stations are easy to access and are located conveniently
- Station staff are courteous and helpful

¹ Page 28 of World Health Organisation, *Global age-friendly cities : a guide*. 2007.

Information

- Information is provided to older people on how to use public transport and the range of options available
- Timetables are legible and easy to access
- Timetables clearly indicate the routes of buses accessible to disabled people

Community transport

- Community transport services, including volunteer drivers and shuttle services are available to take older people to specific events and places.

Taxis

- Taxis are affordable, with discounts or subsidized taxi fares provided for older people with low incomes
- Taxis are comfortable and accessible with room for wheelchairs and/or walking frames
- Taxi drivers are courteous and helpful

Roads

- Roads are well maintained, wide and well lit, have appropriately designed and placed traffic calming devices, have traffic lights and signals at intersections, have intersections which are clearly marked, have covered drains and have consistent clearly visible and well placed signage.
- The traffic flow is well regulated
- Roads are free from obstruction that might block a driver's view
- The rules of the road are strictly enforced and drivers are educated to follow the rules

Driving competence

- Refresher driving courses are provided and promoted

Parking

- Affordable parking is available
- Priority parking bays are provided for older people close to buildings and transport stops
- Priority parking bays for disabled people are provided close to building and transport stops the use of which is monitored
- Drop-off and pick-up bays close to buildings and transport stops are provided for handicapped and older people

Age-friendly outdoor spaces and buildings checklist

Environment

- The city is clean, with enforced regulations limiting noise levels and unpleasant or harmful odours in public places.

Green spaces and walkways

- There are well-maintained and safe green spaces, with adequate shelter, toilet facilities and seating that can be easily accessed.
- Pedestrian-friendly walkways are free from obstructions, have a smooth surface, have public toilets and can be easily accessed.

Outdoor seating

- Outdoor seating is available, particularly in parks, transport stops and public spaces, and spaced at regular intervals; the seating is well-maintained and patrolled to ensure safe access by all.

Pavements

- Pavements are well-maintained, smooth, level, non-slip and wide enough to accommodate wheelchairs with low curbs that taper off to the road.
- Pavements are clear of any obstructions (e.g. street vendors, parked cars, trees, dog droppings, snow) and pedestrians have priority of use.

Roads

- Roads have adequate non-slip, regularly spaced pedestrian crossings ensuring that it is safe for pedestrians to cross the road.
- Roads have well-designed and appropriately placed physical structures, such as traffic islands, overpasses or underpasses, to assist pedestrians to cross busy roads.
- Pedestrian crossing lights allow sufficient time for older people to cross the road and have visual and audio signals

Traffic

- There is strict enforcement of traffic rules and regulations, with drivers giving way to pedestrians.

Cycle paths

- There are separate cycle paths for cyclists.

Safety

- Public safety in all open spaces and buildings is a priority and is promoted by, for example, measures to reduce the risk from natural disasters, good street lighting, police patrols, enforcement of by-laws, and support for community and personal safety initiatives.

Services

- Services are clustered, located in close proximity to where older people live and can be easily accessed (e.g. are located on the ground floor of buildings).
- There are special customer service arrangements for older people, such as separate queues or service counters for older people.

Buildings

- Buildings are accessible and have the following features:
 - elevators
 - ramps
 - adequate signage
 - railings on stairs
 - stairs that are not too high or steep
 - non-slip flooring
 - rest areas with comfortable chairs
 - sufficient numbers of public toilets.

Public toilets

- Public toilets are clean, well-maintained, easily accessible for people with varying abilities, well-signed and placed in convenient locations.

Bay of Plenty Demand Management Study

Introduction

Bay of Plenty Regional Council has commissioned McCormick Rankin Cagney (MRC) to undertake the Bay of Plenty Demand Management Study. The outcomes of this study will inform the review of the Regional Land Transport Strategy (RLTS) that is currently underway. Demand management measures are especially important in rapidly growing regions, such as the Bay of Plenty, where the opportunity exists for policies to influence the structural determinants of travel demands, such as urban form and land use patterns.

While the scope of this study does not extend to the types of infrastructure that should be delivered in the Bay of Plenty region, it does consider how transport infrastructure can be delivered in a way that contributes to overall demand management objectives. One of the underlying aims of this study is to provide insight into a broader range of demand management measures than have been considered and delivered in the past.

Introduction to Demand Management

Demand Management (DM) refers to various policies and programs that both allow and encourage people to manage their demand for (i.e. consumption of) infrastructure. As New Zealand continues to grow, demand management is expected to play an increasingly important role in achieving economic development, social well-being, and environmental sustainability objectives. Demand management is particularly important to encourage more efficient consumption of water (Water NZ, 2009), electricity (Concept Consulting Group Limited, 2008), and transport (National Infrastructure Unit, 2010).

New Zealand's economic development has been underpinned by investment in relatively affordable infrastructure. Looking forward, it will become increasingly difficult to meet the transport and energy demands associated with current development patterns and lifestyles in a cost-effective and sustainable way. The growing need for DM measures in the transport sector is acknowledged in the Government's recently developed "National Infrastructure Plan," which provides the following comments on transport funding and pricing:

While there are immediate opportunities to improve key corridors in the roading network to provide better service levels at current and future traffic volumes, in the longer term building our way out of road congestion is unlikely to be an affordable or efficient strategy. As with any type of infrastructure investment, evidence of a capacity constraint does not automatically imply that more capacity should be built. With road transport, once a certain reasonable level of capacity is provided, the problems of limited land supply and environmental constraints point to the need for smarter solutions.

As referenced in the extract above, instead of responding to demand by simply increasing capacity, DM examines the primary drivers of demand and considers how these may be managed in a way that reduces total demand, especially at peak times. An example of these drivers may be transport pricing, which the "National Infrastructure Plan" discusses as currently not contributing to effective DM outcomes:

Current charges (particularly Fuel Excise Duty) are relatively unsophisticated and weakly targeted. For example, the charges don't discriminate on type of road or time of day. Use of the transport system should, ideally, be based on more accurate price signals to enable users to make informed decisions about which corridor delivers the

Attachment 4

best outcomes for the cost. Once this occurs, current infrastructure will be used more efficiently and, where additional investment is required, those investing will have a greater degree of confidence in the value generated by their investment.

Indeed, demand management measures tend to be most effective when there are large and transient (daily or seasonal) peaks in demand. For example, in Stockholm, Sweden, drivers are charged a variable fee to drive into the city centre according to the time of travel (Hugosson & Sjöberg, 2006). The fee comes into effect at 6am on weekdays and rises approximately every half an hour in 50 cent increments to reach a peak of approximately NZ\$3 during the most congested times. Since the implementation of the scheme, Stockholm has seen a 15-25% reduction in peak period vehicle volumes, with queues almost disappearing entirely (Hugosson & Eliasson, 2006; Richard, 2009). Research suggests that the benefits of the scheme, particularly faster and more reliable travel-times for high-value travel, such as commercial vehicles, exceed the costs. Furthermore, retail activity in the city centre does not appear to have declined, which was one of the key arguments by opponents of the scheme (Daunfeldt, Rudholm, & Rämme, 2006; Eliasson, 2007).

The aim of most of demand management measures consists of one or more of the following objectives:

- Increase transport options
- Prioritise travel so higher value trips and more efficient modes are given priority over low value travel and less efficient modes.²
- Improve the effectiveness, efficiency, and/or reliability of the transport system

The suite of measures developed should address all these objectives to ensure a robust overall demand management strategy.

Finally, it is worth distinguishing between demand management and traffic management. While DM addresses the strategic drivers of travel demand, traffic management is primarily concerned with reduction of vehicle traffic volumes and speeds, usually to improve network performance and safety through operational changes. Ultimately, DM measures seek to reduce the total amount of travel that occurs by examining the underlying need for travel, whereas traffic management aims to minimise the impact of traffic increase the efficiency of the existing transport network through measures to control traffic flows.

Summary and Recommendations

We have defined demand management as practices that both allow and encourage people to manage their demand for (i.e. consumption of) infrastructure. Demand management measures have one or more of the following objectives:

- Increasing transport choices;
- Prioritising high-value travel; and
- Improving the overall efficiency of the transport network.

¹ The prioritisation of high value trips will take the resulting benefits and cost into consideration. Based on this definition, high benefits and low cost trips will be prioritised over low benefit, high cost trips.

Methodology

In undertaking this study, we undertook the following tasks:

- Reviewed existing strategic documents at central, regional and local level;
- Conducted preliminary consultations with stakeholders in order to ascertain an understanding of local and regional issues relating to demand management;
- Assessed relevant demand management strategies and measures in view of their applicability to the Bay of Plenty, value and ease of implementation.
- Developed regional guiding transport management principles and implementation packages for the four area levels by determining the highest priority measures.
- Identified the appropriate targets and monitoring processes needed to track the effectiveness of the packages on travel patterns and made recommendations on additional areas for monitoring and targets

Strategic Areas

In developing this study, we have identified the following strategic areas that are important to the development of the regional demand management strategy;

- The impact of urban form;
- Parking management reform;
- Support for alternative transport modes, particularly public transport and active modes;
- Freight Prioritisation to support national and regional economic growth objectives; and
- Travel planning with large businesses and key organisations in the region.

Implementation Packages

Packages at four levels (regional, urban, town and rural) were developed, with each comprising a series of measures that reflect the differing priorities for demand management within the region. It is important that these packages contain action-orientated initiatives to ensure that they can be monitored and tracked.

We recognise that there will be costs associated with the implementation of these measures, in the form of staffing requirements, CAPEX and OPEX operating costs. It has been difficult to calculate the additional costs of implementing measures with existing demand management funding information. Costs will also depend on which measures selected for implementation. It is important that all Councils undertake further investigations in to costing implications before implementing any new initiatives in demand management.

Key Recommendations

This development of this study has revealed a number of key issues for demand management in the Bay of Plenty region. This has informed the following key recommendations for the Regional Council:

- There is a need for a regional commitment to parking reform which may include removal of minimum parking requirements, priced parking to manage demand and facilitation in the development of parking brokerage services.

Attachment 4

- At a regional level discussion on road pricing as a means to manage demand should be undertaken. Possible mechanisms to consider should include tolling and time-of-use pricing.
- Council should discuss with the Ministry of Transport the possibility of increasing the Household Travel Survey (HTS) sample size and advocate for the inclusion of questions on alternatives to travel within the HTS.
- Identify strategic transport routes in the region to allow for monitoring of the effectiveness of demand management measures. This will improve evaluation of demand management when used in addition to the HTS and census data. We also recommend that mode share targets be set for these specific routes.
- Implement processes to improve monitoring of the implementation of demand management measures through reporting on expenditure. This will also improve the ability of the Regional Council to estimate costs of demand management measures.
- Coordinate with NZTA to engage with freight operators to regularly extract and monitor information on the performance of the freight network including travel times and reliability.
- Reviewed existing strategic documents at central, regional and local level;
- Conducted preliminary consultations with stakeholders in order to ascertain an understanding of local and regional issues relating to demand management;
- Assessed relevant demand management strategies and measures in view of their applicability to the Bay of Plenty, value and ease of implementation.
- Developed regional guiding transport management principles and implementation packages for the four area levels by determining the highest priority measures.
- Identified the appropriate targets and monitoring processes needed to track the effectiveness of the packages on travel patterns and made recommendations on additional areas for monitoring and targets

Bay of Plenty Transport and Economic Development Study

Executive Summary

Introduction

Background to the Study

Draft

It is widely recognised that there are strong connections between transport provision and economic growth. However, the nature of this relationship is complex, and is subject to the interplay of a wide range of socio-economic and spatial factors. To develop a better understanding of the relationship between economic development and transport in the Bay of Plenty, the Regional Council commissioned work to investigate these linkages and to identify the ways in which the transport network should be developed to support economic development taking into account both the movement of freight and passengers. The main findings of that work are summarised in this report.

Key transport activities

In Tauranga, the Bay of Plenty contains New Zealand's largest port in terms of the volumes handled accounting for almost 25 per cent of all imports and exports. In part reflecting this, the density of use of the Regions road network by freight vehicles is high with Bay of Plenty having the greatest intensity of use in the country of 215,000 net tonnes per kilometre in 2002. This is over twice the New Zealand average of 105,000 net tonnes per kilometre.

The Region is a substantial producer of a range of basic commodities many of which are exported through the Port of Tauranga. These include logs and timber products, milk and dairy products and kiwifruit and other horticultural commodities as well as a range of products for internal use including aggregates. The port also handles considerable volumes of import and export cargoes for other regions which also place considerable demands on the regional transport networks. Both road and rail are heavily used for the movement of freight in the region.

The Region has also experienced considerable growth in population and employment, especially in the western part of the region with a strong focus on Tauranga and again these have placed increasing pressures on the transport network in the urban areas. To help to alleviate the problems arising from this, there has been considerable expansion in the public transport services in the area and also in Rotorua and Whakatane, although these only still contribute a relatively small proportion of the total traffic movements. The region particularly the areas to the west are also characterised by large and growing proportions of people over 65 and meeting the transport needs of these is becoming a greater problem, especially if it is desired to retain their skills in the workforce. There are also emerging issues of community access to work opportunities and education and health facilities in the east of the region where there are a number of relatively isolated communities.

Linkages between Transport and Economic Development: Some Key Issues

Although there is clear involvement of transport in some form in almost all types of economic activities, the question arises as to the extent to which changing the level or form of transport provision leads by itself to some form of change in the level of output. For freight, in many cases the transport network provides what can be considered a reasonable level of services and while improvements to this will allow transport resources to be used more efficiently they will not necessarily alter the level of output which may be determined to a large extent by production constraints or the demands of the market. While improvements in transport efficiency may alter the distribution of the value added from the product between producers and transporters, it may not alter the total value added in terms of its contribution to national totals.

In our study, we have therefore distinguished between:-

- the requirements for improved transport links which are necessary to support specific flows allowing increases in production of basic and in some cases processed commodities to be moved to ports or domestic markets and
- more general improvements to transport accessibility which will support increases in value added activities by increasing the interactions between firms and the sizes of the work forces on which they are able to draw.

The executive summary addresses the five main issues which are outlined in the Brief for the work:-

- What are the critical transport related factors underpinning economic development in the region?
- What will be the relative importance of these factors in the future?
- What deficiencies in the region's transport system need to be addressed to respond to these factors?
- What future transport system will provide the enabling conditions most likely to achieve the 'step change' in economic development that the Government is seeking?
- What pattern of future transport investment will make the greatest contribution to this desired transport system?

Each of these is addressed in turn.

The Transport Network in the Bay of Plenty

The key features of the transport network in Bay of Plenty include:-

- A network of State Highways providing connections from Waikato and Gisborne Regions and linking the major towns with each other and with the Port of Tauranga.
- The East Coast Main Trunk rail line providing a link between Hamilton and Tauranga where it is connected to a rail freight line to Kawerau and Murupara, mainly used for the movement of logs and timber products
- The port at Tauranga

- Regional airports at Tauranga, Rotorua and Whakatane with the facility at Rotorua accommodating a small range of international flights from eastern Australia.
- Urban bus networks in Tauranga, Rotorua and Whakatane.

Relative Importance of Transport Related Factors in Supporting Economic Development in the Bay of Plenty

The Theoretical Background

In investigating the potential linkages between transport and economic development, we have employed a variety of approaches to help provide an understanding of the connections and the ways in which changes in the level of transport accessibility and level of service might impact on economic development. This included a literature review of which the key findings were that transport infrastructure can make a positive contribution to economic development when it resolves isolation and bottleneck issues and a sound economic basis already exists for growth. Without these preconditions, investment in transport infrastructure and the provision of services cannot be assumed automatically to lead to economic growth and this may be an issue for much of the Bay of Plenty where a reasonably well developed network already exists.

In addition, there is an observable trend towards an increasing concentration of economic activity taking place in relatively small geographical areas. In approximately half of OECD countries, more than 40% of the national GDP is produced in less than 10% of all regions.³ In the United States 40% of employment is currently located in areas constituting just 1.5% of its total land mass. Economic geography also demonstrates the importance of concentrating knowledge intensive activities but also indicates that where primary production takes place a focus on spatial transactions costs will be important, although these savings will not prevent regions dependent on such outputs from falling behind regions producing higher value higher knowledge intensive outputs. So too will be opportunities to broaden and diversify the economic base of a region and also to seek opportunities to move production processes higher up the value chain.

Within this framework, we have used this study as an opportunity to profile the composition and changes within the Bay of Plenty economy and relate these to the observable trends in the wider national and international economy and to assist in painting a picture of the future opportunities and constraints this may reveal.

The Position in the Bay of Plenty

In order to help analyse the relative importance of transport related factors in supporting economic development we have developed a simple breakdown of economic activity in terms of employment by its potential use of freight and other transport services.

³ OECD, 2009, Regions at a Glance.

For this purpose employment has been defined in terms of three main groups

- Employment in sectors which generate major flows of bulk commodities often carried in large freight vehicles or on dedicated trains. (Agriculture mining and transport itself)
- Employment in sectors which typically are less freight intensive but which still make substantial use of transport in supporting their activities using a range of vehicle types ranging from courier vans to very large vehicles. For these sectors, access to a large and skilled labour force is in general only moderately important (Manufacturing, construction, gas, electricity and water, wholesaling and transport)
- Employment in other sectors typically in the service industries where freight uses are more limited and are often accommodated in courier vans and small freight vehicles. For these activities the ability to attract staff and customers and the provision of good transport links for these movements is more important than the movement of freight (All other sectors)

The breakdown of employment into these three sectors is set out in Table 2.1

| Transport Generating Category | Employment in 2006 | | GDP in 2006 | |
|-------------------------------|--------------------|----------|-------------|----------|
| | Workers | Per cent | \$bn | Per cent |
| High | 13236 | 13% | 1,325 | 13% |
| Medium | 38898 | 39% | 3,896 | 37% |
| Low | 48567 | 48% | 5,224 | 50% |
| Total | 100701 | 100% | 10,445 | 100% |

Source: Statistics NZ and Consultants Analysis. BERL (2007)

Using these categories the position in 2006 would suggest that with employment as a base, a relatively small proportion 13 per cent is associated with intensive freight 39 per cent with medium freight and almost half (48 per cent) with relatively low freight using activities.

It is also possible to break down employment in each of these transport using categories by district and this is set out in Table 2.2.

| | Transport Generating Category | | | |
|----------------------------|-------------------------------|--------|-------|--------|
| | High | Medium | Low | Total |
| Western Bay of Plenty | 4900 | 3900 | 4500 | 13300 |
| Tauranga | 2800 | 19200 | 22200 | 44100 |
| Rotorua | 2700 | 9500 | 14200 | 26300 |
| Whakatane | 1900 | 3700 | 5700 | 11300 |
| Kawerau | 100 | 2000 | 900 | 3000 |
| Opotiki | 800 | 700 | 1200 | 2600 |
| Total Bay of Plenty Region | 13200 | 38900 | 48600 | 100700 |

The main urban areas of Tauranga, Rotorua and Whakatane all have over half their employment in the "low" transport generating capacity with Western Bay of Plenty and Opotiki having high shares in the "high" category. Kawerau has a high "medium" share reflecting the high proportion of employment in manufacturing associated with the timber processing in the town.

Over the period from 1996-2006, the pattern of employment and hence of potential freight use has changed, and this is set out in Table 2.3

| Transport Generating Category | Employment | | |
|-------------------------------|------------|--------|--------|
| | 1996 | 2006 | Growth |
| High | 13446 | 13236 | -210 |
| Medium | 32214 | 38898 | 6684 |
| Low | 35460 | 48567 | 13107 |
| Total | 81120 | 100701 | 19581 |

Growth in activity has been concentrated in the service type activities which have relatively low freight demands but high demands for good worker access. In addition, on a spatial basis much of the growth for both medium and low freight using sectors has been focussed in Tauranga, accounting for 80 per cent and 65 per cent respectively of the regional growth in these categories.

A measure of the demand for the movement of persons is given by travel to work data and the position for 2006 is set out in Table 2.4.

| Residence of Workers | Workplace | | | | | | Total BOP | Other | Total Defined |
|----------------------|---------------|---------------|---------------|---------------|--------------|--------------|---------------|-------|---------------|
| | WBOP | Tauranga | Rotorua | Whakatane | Kawerau | Opotiki | | | |
| Western BOP | 10,551 | 5,286 | 234 | 129 | 30 | 6 | 16,236 | 1080 | |
| Tauranga | 2,091 | 37,554 | 348 | 219 | 60 | 12 | 40,284 | 1557 | 41,841 |
| Rotorua | 105 | 267 | 24,543 | 150 | 198 | 12 | 25,275 | 1302 | 26,577 |
| Whakatane | 69 | 123 | 243 | 10,005 | 1,176 | 168 | 11,784 | 372 | 12,156 |
| Kawerau | 21 | 24 | 57 | 360 | 1,473 | 6 | 1,941 | 69 | 2,010 |
| Opotiki | 9 | 9 | 18 | 195 | 24 | 2,343 | 2,598 | 72 | 2,670 |
| Total BOP | 12,846 | 43,263 | 25,443 | 11,058 | 2,961 | 2,547 | 98,118 | 4452 | 102,570 |
| Other | 447 | 864 | 891 | 213 | 87 | 75 | | 2577 | |
| Total Defines | 13,293 | 44,127 | 26,334 | 11,271 | 3,048 | 2,622 | 100,695 | | 1,667,283 |

Source: Statistics NZ

The commuting flows in 2006 display a range of patterns in terms of the extent to which areas are self-contained or attract or generate commuters from elsewhere. At one extreme Rotorua, Whakatane, and Opotiki are relatively self-contained with 93 per cent, 89 per cent, and 89 per cent of the workforce living in the area and with relatively little interaction with surrounding areas. At the other extreme is Kawerau, where less than half the workforce lives in the District and where there is substantial in-commuting from Whakatane, the neighbouring district but also further afield from Rotorua and Tauranga.

Tauranga itself has about 87 per cent of its workers living in the city with much of the balance (12 per cent) travelling in from Western Bay of Plenty. Of the balance, the rest of the Bay of Plenty Region including Rotorua contributes about 1 per cent and areas outside the region less than 1 per cent.

The analysis of the journey to work data emphasises the importance of the links within the individual areas as the routes that commuters use. The numbers making longer distance commuting trips between the areas or into and out of the Region are relatively small.

The Relative Importance of Transport Related Factors in the Future

Introduction

Over the period to 2041 it is forecast that population and employment in Bay of Plenty are likely to grow strongly. In the light of recent rapid growth in the Bay of Plenty and the Golden Triangle in general, we have used the high population growth forecasts made by Stats NZ for the period to 2031 and then extrapolated these to 2041. The population growth that results is set out in Table 3.1

| Area | Population in | | Average Annual Growth |
|----------------------------|---------------|---------|-----------------------|
| | 2006 | 2041 | |
| Western Bay of Plenty | 43000 | 71800 | 1.5% |
| Tauranga | 106900 | 204400 | 1.9% |
| Rotorua | 68100 | 85500 | 0.7% |
| Whakatane | 34500 | 38200 | 0.3% |
| Kawerau | 7150 | 6470 | -0.3% |
| Opotiki | 9200 | 9730 | 0.2% |
| Total Bay of Plenty Region | 268,850 | 416,100 | 1.3% |
| Total NZ | 4,184,080 | 6459750 | 1.2% |

The forecasts indicate particularly strong growth in the west of the region focussed on Tauranga with much lower increases forecast for areas further east.

For employment, we have assumed similar levels of growth, implying a stabilisation of the overall participation rate and have broadly assumed a continuation of the sectoral trends experienced over the last 10 years. The forecasts of employment that result are set out in Table 3.2.

| Sector | Employment in | | Growth |
|--|---------------|--------|--------|
| | 2006 | 2041 | |
| Agriculture and Mining | 9800 | 9800 | 0% |
| Manufacturing | 12100 | 14000 | 16% |
| Construction gas electricity and water | 7900 | 15500 | 96% |
| Wholesale | 4800 | 6700 | 40% |
| Transport | 3400 | 5000 | 47% |
| Retail | 14400 | 19400 | 35% |
| Accommodation | 5500 | 8300 | 51% |
| Communications, finance and business and property services | 14300 | 28400 | 99% |
| Government, health and education | 20400 | 37100 | 82% |
| Other support services | 6100 | 9700 | 59% |
| NES | 2000 | 2000 | 0% |
| Total | 100700 | 155900 | 55% |

Continuing the trends observed in the past, it is anticipated that the majority of growth in employment will be in the service type activities which have a relatively low usage of freight but with a greater emphasis on the movement of passengers and also with a concentration in and around Tauranga.

Freight

Although employment growth in the activities generating high levels of freight is likely to be relatively muted, the volume of freight traffic in the region will continue to grow. In part, this will be in response to particular tasks and opportunities, and in part to support activities servicing the growing population. Forecasts from the Bay of Plenty Freight Study indicate that the scale of the freight task in the region including both flows within and to and from the region will increase by about 60-65 per cent.

A number of specific areas have been identified which require enhanced levels of service and capacity from the freight sector if the full economic potential of the activities it serves is to be met. These include:-

- **The movement of logs**

The logs available for harvesting within the Bay of Plenty or adjacent in the central North Island and Eastland are likely to increase substantially and additional capacity will be required to move these for processing or export via Tauranga. This will put particular pressure on the transport links from Murupara and Kawerau to the port, both for road and rail and possibly also from Opotiki if the logs from Gisborne and the eastern parts of the region are routed in this direction. Other logs are likely to be processed at locations within the Bay of Plenty, primarily around Rotorua before being exported and this will also require the establishment of reliable transport links to support this expansion. This could also result in some demand for the movement of containerised products from Kawerau to support these activities

In addition, there are proposals to develop an industrial hub at Kawerau to make use of the timber resources available there and possibly including the production of biofuels. This would need to be supported by high quality and reliable transport links both for the movement of products to markets and also to allow the site to draw on a large workforce with the skills needed.

- **The movement of kiwifruit**

Although the majority of kiwifruit is produced in the western and central parts of the bay of plenty, there are proposals to expand substantially the volumes harvested in the east of the region particularly in and around Opotiki. This traffic is fairly peaked with a concentration of activity between March and October. The road network in this area is vulnerable to natural disasters particularly in the winter months and there is only very limited network resilience in the case of any disruptions.

- **Aquaculture**

There are proposals for the very substantial development of aquaculture in the sea off Opotiki. This would result in large movements of shellfish and possibly other products between Opotiki and processing plants likely to be located in Tauranga. Coupled with this development there are proposals to develop a small port at Opotiki to land the product which could also potentially be used for the movement of aquaculture products and possibly other products particularly logs by coastal barge. While the volumes that might transfer are potentially large,

especially if this route is used to export timber from Gisborne, the economics of such an operation are uncertain, and it is likely that the majority of this traffic will be moved by road.

- **Supporting the needs of the local population**

As the population grows, the demand for a wide range of commodities both for personal and commercial use will also grow and have to be supported by the freight transport system. However, in general while these demands are important they are probably less sensitive to the level of service provided and while transport supports these demands it is unlikely to act as a serious constraint on their expansion.

Movements of passengers

As Table 3.2 indicates, much of the forecast growth in economic activity is in the services sectors which will increasingly be focussed in the main urban areas, particularly Tauranga where population and employment are forecast to grow strongly. Satisfying the needs of these industries to attract workers and allow them to operate most effectively and in particular to gain from the agglomeration benefits gained when firms operate in close proximity to one another will require the provision of a high level of accessibility to the main urban centres. This will need to be achieved in a way which also supports the high level of urban amenity that such workers expect especially in a centre like Tauranga where lifestyle and quality of life may be particularly important. This would indicate a major role for quality public transport in supporting these movements and providing the necessary high level of accessibility in the urban cores.

Impacts of Possible Changes in Accessibility

A simple Regional Agglomeration Model has been developed following the approach established by NZTA, and this has been used to test the potential benefits from improving accessibility within and to and from the Region and the effects of changes in the balance of employment in the main urban centres.

Four hypothetical scenarios have been developed to consider the possible impacts of changes in accessibility and employment. These comprise:-

- Reducing travel times within three major urban areas by 30 per cent
- Reducing travel times within the Bay of Plenty outside the three major urban areas by 30 per cent
- Improving inter-regional connections with Auckland and Hamilton with the construction of the Waikato Expressway and the notional upgrading of the link across the Kaimai Ranges
- Changes in the balance of employment between Tauranga, Rotorua and Whakatane, with the total for Tauranga being reduced by 10,000 balanced by increases in Rotorua (7,500) and Whakatane (2,500)

Each of these would have an impact on the level of output in the Bay of Plenty Region in 2041 and these are summarised in Table 3.3. It should be noted that given the nature of the modelling these figures should be considered as illustrative of the general trends rather than as precise forecasts

Table 3.3 Applying the Regional Agglomeration Model; : Impacts of Changes in the Transport Network and Changed Distribution of Employment in the Region 2041 (\$bn in 2009 prices)

| | Impact on Regional GDP | |
|---|------------------------|----------|
| | \$bn | Per cent |
| Base Case Regional GDP in 2041 (\$bn) | 22.2 | |
| Impact of reducing travel times by 30 per cent within the three main cities | 0.15 | 0.7% |
| Impact of reducing all other travel times within region by 30 per cent | 0.08 | 0.4% |
| Impact of Waikato Expressway and Kaimai Improvement | 0.05 | 0.2% |
| Changes in balance of employment | -0.02 | -0.1% |

Although the impacts on regional GDP of the scenarios identified are fairly small in proportional terms, in absolute terms the impacts could be substantial. The greatest impact is achieved with improving accessibility within the three towns. There would be benefits from improving the other links within the Bay of Plenty and between the Bay of Plenty and the rest of the country but given the more limited interactions between the main areas; the effects of this are much smaller.

The results are also sensitive to the distribution of population within the Region. Rebalancing population growth away from Tauranga to Rotorua and Whakatane would reduce the scale of the major urban area within the region. As a result, this scenario is predicted to lead to an overall loss of economic output, because of the lower agglomeration benefits achieved.

Although the largest benefits are predicted to be achieved with improvements to accessibility within the three major towns, the modelling and more general analysis undertaken has demonstrated that improving interregional accessibility and particularly accessibility to Auckland is important despite the substantial distance between the two. Improved links to Auckland would allow employers in the Bay of Plenty to interact more effectively with firms and workers in Auckland, although because of the distances the effects of the improved transport links may be fairly limited. Improving the connections to Auckland Airport as an international gateway would also give better connections to the rest of the world, although in part this market is addressed with the air services from Tauranga and Rotorua to Auckland.

Tourism plays an important role in the Bay of Plenty, although much of this is focussed in trips from Auckland and Waikato either from residents or international travellers routing through these. Improving the links from Auckland and Waikato would therefore act to boost tourism in the Bay of Plenty. There are issues with mixing tourist traffic with other types of road traffic and measures which improved the capacity of the transport network would help to alleviate these.

Another growing source of tourists is from cruise vessels of which 54 are expected to berth in Tauranga over the 2010-2011 season. Each of these typically carries about 1500-1600 passengers of whom about 85 per cent are likely to go ashore. These tourists undertake a mixture of types of activities including trips to Rotorua, more local tours within Tauranga or just spend time independently in Mount Maunganui and Tauranga. Again, this last group would probably particularly benefit from bus services and walking and cycling facilities within the urban area allowing them to experience and spend money on a wider range of activities.

Deficiencies in the Region's Transport Infrastructure

The main current and potentially emerging future deficiencies in the Regions transport network which are likely to impact on economic growth include:-

- **Network Resilience**

This is particularly an issue to the east of the region where there is a very constrained transport network which is also particularly vulnerable to disruption from natural disasters. Past interruptions have had significant impact on the horticulture, agriculture, tourism and forestry industries in this part of the region. The impact on the economy of the eastern district will continue to compound as the aquaculture industry develops if issues of route security are not addressed.

- **Capacity of Transport Network for Freight within the Region**

There are possible constraints by the vulnerability of the transport network in the east of the region, where this could impact on proposals to expand the production of kiwifruit and also the scale of the proposals for aquaculture. In addition, there are also likely to be issues associated with the increased movement of logs and also processed timber, not just by road from the East, but also by rail from Murupara and especially Kawerau, where traffic flows are likely to grow strongly as the existing forests are harvested. There may also be a requirement to support a more diverse industrial base in Kawerau if proposals for the production of bio-fuels and other wood-based products eventuate. For all of these the lack of transport capacity may act to constrain development and thus detract from the levels of economic growth that might be achieved, although quantifying these effects is challenging.

- **Congestion and Interactions in Urban Areas**

There are also issues with the increased volumes of freight through the port and in particular, the way in which this interacts with the movement of travellers within Tauranga. The problem of increased traffic is likely to be compounded with the likely increase in big ships which would increase the peakiness of freight flows into and out of the port and also service rationalisation by the international shipping companies which may result in international traffic being diverted to Tauranga from other ports. All of these are likely to put pressure on the connections to the port where they will be competing with increased flows of commuter and other traffic wanting to share the same networks. Congestion on these links will reduce the effectiveness of Tauranga as a compact urban centre able to again the benefits of clustering of a range of economic activities.

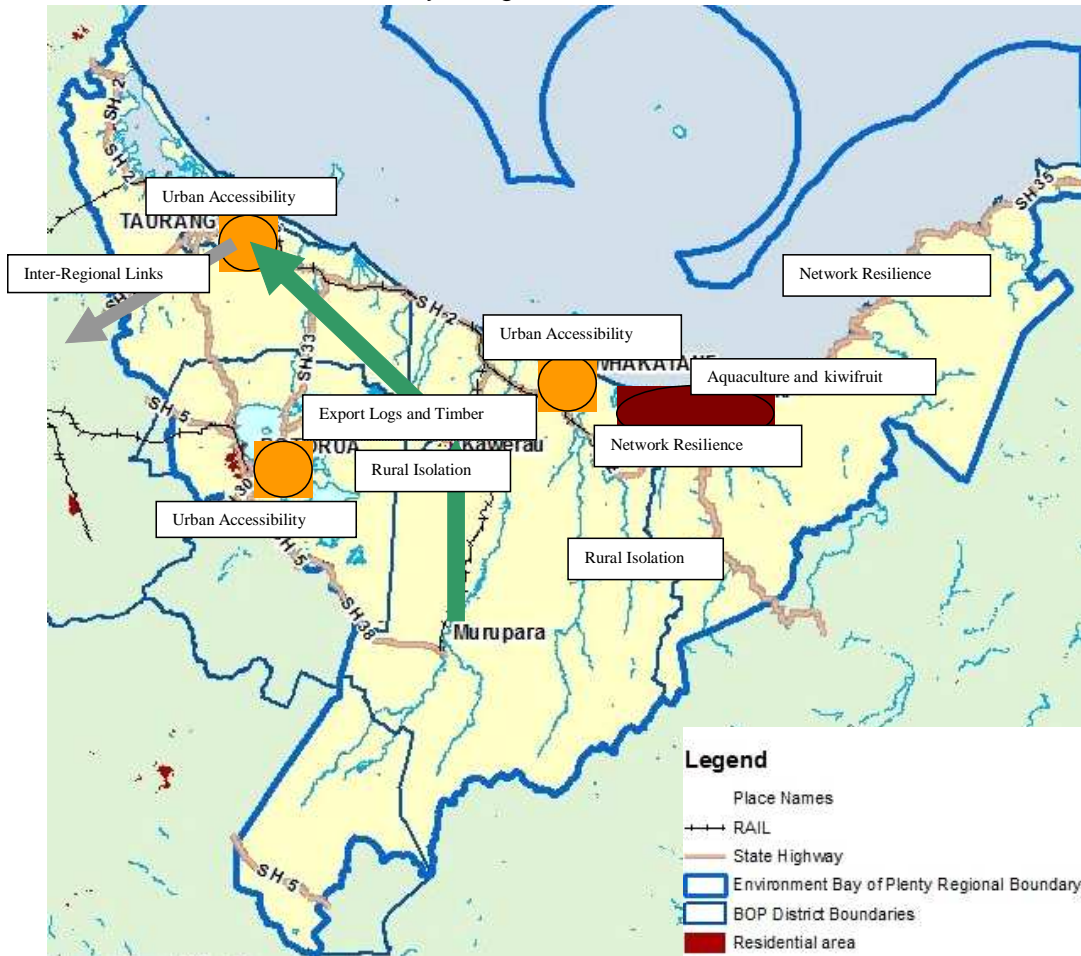
- **Inter-Regional Links**

While some increases in inter-regional capacity will be necessary to support higher flows of some basic commodities such as logs from the central North Island and from Eastland, the main function is—to increase the scope for interactions between firms and agencies, provide better connections with customers and suppliers and expand the work force available. For this, a key link is the connection between Tauranga and Hamilton where the Kaimai Ranges impose a substantial barrier to movement between Hamilton and Tauranga.

Rural Isolation

Many parts of the Bay of Plenty region, particularly in the east are relatively lightly populated and remote from the main urban centres. For these areas accessibility to a range of facilities is difficult, especially for those who have no or only limited options for travel by car. The difficulty of securing post school education for those who wish to remain in these communities, many of which have high Maori population may restrict their choices and economic potential, and may limit opportunities to establish or expand employment especially in industries using local raw materials. This currently represents a significant portion of the employees for both the kiwifruit and forestry industries and having access to transport is imperative. The solution provided to date has been the provision of private transport supported by the employees and/or education providers. Improving the availability of transport not only impacts on the overall level of economic output and in addition the local social benefits from measures to provide better connections with education facilities could be substantial. The ways in which these might be achieved would include the development of remote learning facilities (which have been tested somewhat to date) or more favourably, the development of some form of shared public transport.

These are illustrated schematically in Figure 4.1.



Enabling Conditions for a “Step Change”

A “step change” in economic development calls for the substantial expansion of highly productive value added activities, primarily focussed in the service or high level manufacturing sectors. Experience from around the world and also from New Zealand indicates that these are most likely to be achieved in the key urban clusters where a substantial economic base exists or can be readily developed. In these, the benefits of agglomeration arising from the interactions of firms and the availability of a large labour force can best be achieved. Using improvements in transport networks and services to increase the critical mass of cities therefore forms an important component of this strategy. The introduction or expansion of urban transport systems to allow higher levels of accessibility while seeking as far as possible to preserve urban amenity form the cornerstone of this approach.

In terms of the Bay of Plenty, this calls for a focus on Tauranga and to a lesser extent Rotorua as the key urban centres within the region with measures to improve travel connections into the central areas. Given the nature of the cities this calls for a balanced approach with both improvements to public transport and to the performance of the general highway network both playing an important part.

To support the possible public transport services which form an essential component of this approach and reduce increases in the demand for travel so relieving the general pressure on the highway network, it is important that any transport policies are supported by planning measures to support intensification of both commercial and residential areas. Intensification and shorter travel distances also provide some support against oil price shocks which may help to limit their impact on economic activity. With shorter distance travel and denser commuters come more opportunities for walking and cycling. Although as a travel mode their direct impacts on levels of economic activity are likely to be negligible, they do have a role within the central area of contributing to a higher level of urban amenity.

An area which may be important is the recognition of the needs of the older population groups who are likely to make up a larger proportion of the workforce as the population in general ages. The contribution that these may be able to give from their experience potentially adds to the range of skills available and encouraging these to continue working will add to the workforce. The travel needs of this group which may include shorter journeys overall coupled with increased use of public transport would need to be recognised.

Future patterns of transport development

The transport system that is likely to make the greatest contribution to the desired patterns of economic development is one with a substantial focus within the main urban areas. This will aim to provide good connections between residential suburbs and central areas and taking advantage of measures for traffic demand management seek to minimise the effects of congestions on these routes.

The proposed transport system will also need to recognise the importance of freight movements which are often required to share roads and corridors with cars and passenger transport and should seek to minimise conflicts between heavy vehicles

and other road users. This will have both highway and public transport components to give a balanced investment for all modes.

The proposed transport system will need to be accompanied by appropriate planning measures. These should aim to develop urban forms which provide the densities to support public transport schemes and which also encourage the development of an attractive urban form for the central areas and for those surrounding these. Improvements to walking and cycling may form part of these, particularly in providing enhanced urban amenity but their role in stimulating economic development is likely to be small.

The emphasis within the cities will need to be supported by a range of measures further afield to support the movements of freight for specific commodities. These include:-

- Improving the capacity and resilience of the key transport links with the east of the region especially out to Opotiki, to allow the resources in these areas including those from aquaculture, kiwifruit and logs to be effectively exploited to their potential.
- Improving the capacity of the road and rail links to Kawerau and points further south to allow effective exploitation of the forest resources available and also if possible to support the development of value added activities in what is a fairly remote part of the region
- Improving the links to Hamilton and Auckland to allow better connectivity with these cities and their surrounding regions and with the international gateway of Auckland airport. This would be important both for the movement of freight and of passengers

Issues of rural isolation also need to be addressed, possibly by the development of some form of public transport services shared between different groups of users.

The overall recommendations to give a transport system that is best able to support economic development therefore include a number of components. These have a focus in the main urban areas where the step change in economic activity is most likely to be achieved and supported by transport improvements, but also include improvements to the inter-urban transport networks to improve capacity and provide enhanced network resilience.

An Appropriate 'Mix' of Future Transport Investment across Activity Classes to 2040

Addressing the network deficiencies requires a balance of investment across a number of categories. The analysis we have set above suggests that in terms of the potential impact on economic activity, the priorities for investment should sit in the categories defined below.

- Improving urban accessibility while maintaining the amenity of the urban areas
 - Public transport services and infrastructure
 - Improving the effective capacity of the highway network through demand management and limited provision of new capacity to the extent that this can be incorporated without impacting on amenity
 - Provision of walking and cycling facilities to enhance urban amenity and support public transport
- Providing for inter-urban freight movements
 - Improvements of capacity to meet increases in flows for logging and timber traffic. This is likely to be focussed on rail and on the connections from Kawerau to cope with the movement of logs and possibly more sophisticated products but would also include improvements to the highway network particularly in the east where there are issues of network resilience and the capacity to meet potential conflicting demands
 - Improvements of capacity to meet the likely increases in production of kiwifruit again especially in the east
 - Provision of infrastructure for the movement of aquaculture products again especially from Opotiki. In principle there may be options for transporting material by sea but the feasibility of this would need to be demonstrated.
 - Improvement of the rail network supporting the inter-regional movement of products to and from the Port of Tauranga to ensure that there is sufficient capacity to meet the increased demands resulting from the overall growth of this traffic and from the changes in the patterns of demand resulting from the introduction of larger ships. Work is already being progressed on upgrading the capacity of the ECMT but this process will probably have to be continued as likely traffic flows continue to increase.
- Providing for improved inter-regional movements of passenger traffic, particularly for the connections to Auckland. This could probably most advantageously take advantage of the proposed construction of the Waikato Expressway, and include an improved route across the Kaimai Ranges, which would also improve the connections to Hamilton. Other modes such as air or rail may also play a part in the longer term

Attachment 5

- Providing for improved connections for inter-urban passenger movements within the Bay of Plenty. To some extent the construction of the Tauranga Eastern Link provides a major improvement to the east which will benefit passenger movements both within and to and from Tauranga as well as a number of the freight movements identified above. In part these should aim to address issues of rural isolation, and allow the training and entry to the workforce of potential workers living in remote communities.
- The key issues driving this investment are set out in Figure 7.1

Figure 7.1 Focus for Future Transport Investment

