Incorporating Sustainable Land Transport into District Plans: Discussion Document and Best Practice Guidance

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An important note for the reader

The NZ Transport Agency is a Crown entity established under the Land Transport Management Act 2003. The objective of the NZ Transport Agency is to undertake its functions in a way that contributes to an affordable, integrated, safe, responsive, and sustainable land transport system. Each year, the NZ Transport Agency invests a portion of its funds on research that contributes to this objective.

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Abbreviations and acronyms

CO_2:	Carbon dioxide
DfT:	Department for Transport (UK)
EECA:	Energy Efficiency and Conservation Authority
LTA:	Land Transport Act
LTCCP:	Long-Term Council Community Plan
LTMA:	Land Transport Management Act
LTNZ:	Land Transport New Zealand
MED:	Ministry of Economic Development
MfE:	Ministry for the Environment
MoT:	Ministry of Transport
NZTA:	NZ Transport Agency
NZTS:	New Zealand Transport Strategy
OECD:	Organisation for Economic Co-operation and Development
PCE:	Parliamentary Commissioner for the Environment
RLTS:	Regional Land Transport Strategy
RMA:	Resource Management Act
RPS:	Regional Policy Statement
WBCDS:	World Business Council for Sustainable Development

Contents

Executive summary

Transport legislation and policy in New Zealand calls for an affordable, integrated, responsive, safe and sustainable land transport network. The Resource Management Act (RMA) 1991 is the guiding piece of legislation in New Zealand for the sustainable management of natural and physical resources. Transfund New Zealand (now part of the NZ Transport Agency (NZTA)) commissioned a research project to determine how the concept of sustainable land transport could be incorporated into district plans prepared under the RMA 1991. This discussion document presents the outcome of that research.

Specifically, the research project has three objectives:

- to introduce sustainable land transport in the context of the New Zealand Transport Strategy (NZTS) and the Land Transport Management Act (LTMA);
- to discuss the interaction between land use planning and sustainable land transport; and
- to introduce guidance on objectives, policies and methods for sustainable land transport to be incorporated into district plans.

The document is targeted primarily at two groups:

- territorial authority (council) planners, and
- transport planners and planning consultants.

District plans are the primary land use planning documents that control the effects of activities on natural and physical resources in New Zealand. They can incorporate methods and provisions that may provide for activities that affect sustainability, and have the ability to provide mechanisms to address these effects through mitigation or remediation. The opportunity exists to incorporate sustainable land transport issues into decision-making under the RMA specifically within district plans. The discussion document does not attempt to analyse existing district plans critically. Instead, it draws on the general conclusions of the overall research as well as information from other relevant sources. It provides a background for the development of the concept of sustainable land transport systems relevant to district plans.

Whilst being a relatively new concept in land transport legislation, the NZTS has encouraged the adoption of sustainability within the land transport sector by calling for an integrated, safe, responsive and sustainable land transport system. Development is considered to be sustainable if it is able to fulfil present needs while not compromising the ability of later generations to do the same.

Consistent with international perspectives, transport should be underpinned by the wider principles of sustainability, and the transport system will need to be improved in ways that enhance economic, social and environmental well-being. These matters are relevant to decisions regarding sustainable land transport. Local authorities, through the RMA (and other mechanisms), can promote a sustainable land transport system through district plan provisions.

Government policy and legislation seem to exist to establish the fundamentals for sustainable land transport systems. The incremental method of transport planning has shifted toward a more balanced management of transport demand, reasons for travel and choice of travel mode.

The review carried out in the current research has highlighted a number of issues and concepts that can form the building blocks of a sustainable land transport system. These sustainable 'building blocks' represent the outcomes sought to achieve a sustainable land transport system and can be summarised as:

- environmental sustainability,
- accessibility,
- improved health,
- functional transport networks,
- economic development,
- integrated urban form, and
- safety.

District plans provide an opportunity to indirectly and directly influence some of the national outcomes sought in relation to sustainable land transport planning. District plans can have a direct influence on environmental sustainability, accessibility, integrated urban form, safety and functional transport networks. They have an indirect influence on public health and economic development. Predictably, the outcomes envisaged by national land transport policy documents are being addressed at the district plan level.

However, in light of issues considered as part of the wider and historical sustainable land transport planning context, a wider focus is required to implement legislation and government policies. It is necessary to integrate land use and transport planning, take external costs into account, introduce better measures of land transport outcomes and plan for alternative modes of transport.

The RMA provides a framework for the sustainable management of physical resources, which includes aspects of land transport. Local authorities have the responsibility of preparing district plans that could include mechanisms to promote the sustainable management of land transport systems.

A key stage in preparing plans is determining whether sustainable land transport is a district issue that needs to be addressed through provisions in the district plan. The process for determining this matter includes analysing information, identifying the elements of the land transport system in the district that need addressing, applying a 'significance filter', and developing appropriate objectives, policies and methods for the plan.

The degree to which the district plan assists in promoting the sustainability of land transport will depend on the nature of the district, the elements of the land transport system that need addressing and the ability of the council to address the issues through the district plan.

Five key components of a district plan are:

- **Issues:** What are the problems/concerns?
- **Objectives:** What do we want to achieve as outcomes? What will be achieved when the issue is resolved?
- **Policies:** How are we going to achieve the objective, or what position are we going to take? What is the intended course or general plan of action?
- **Methods:** How will we implement the policies (including regulatory and non-regulatory methods)? What will actually be done?
- **Expected Environmental Result:** What do we expect will be the combined effect of the objectives, policies and methods?

Table XS1 relates best practice model provisions to resource management issues. An important part of any plan-making process is to ensure that the issue is a resource management issue, and not something which is outside the scope of the RMA or outside the functions of the council under Section 31 of the RMA.

Table XS1 Resource management issues related to sustainable land transport.

Outcome	Issue	National policies	RMA issue?	Significant?
Environmental sustainability (air, noise, discharges, visual, water, energy use, habitat and landscape protection, climate change...)	Avoiding, remedying or mitigating adverse effects on the environment from land transport networks and associated infrastructure to ensure environmental sustainability	Kyoto Protocol NZTS LTMA LTA EECA Strategy Energy Strategy	Yes	Yes
Accessibility	Maintaining and improving access (e.g. public transport, multi-modal transport networks, freight access) including alternative forms	NZTS LTMA LTA MoT	Yes (Section 5)	Possibly
Improved health	Protect and promote (improve) public health through land transport networks and modes, including provision for alternative forms (e.g. walking and cycling)	NZTS LTMA LTA MoH MoT	Yes (through urban design and Section 5)	Yes
Functional transport networks	Avoiding reverse sensitivity effects on land transport networks to retain their function and integrity	LTMA NZTS	Yes	Yes
Economic development	Land transport networks which assist economic development	NZTS LTMA LTA	No	No
Integrated urban form	Integrating land transport networks with land use and population demands	MfE MoT MoH	Yes	Yes
Safety	Safe land transport networks	NZTS LTMA LTA MoT	Yes (Section 5)	Possibly

The model provisions of best practice guidance for key sustainable land transport issues are addressed using the following format:

- Issue: What is the problem or concern?
- Objectives: What will be achieved when the issue is resolved?
- Policies: What is the intended course or general plan of action?
- Methods: What will actually be done?

Abstract

This report is a discussion document introducing the concept of sustainable land transport, discussing the interaction between land use planning and sustainable transport, and introducing some guidance to incorporating sustainable land transport into district plans. It will assist local authorities when reviewing district plans, and assessing resource consent applications and notices of requirement. The content of the discussion document includes definition of a sustainable land transport system, issues facing sustainable land transport systems in New Zealand, options to address these issues, and provisions that could be included in district plans. Model provisions for best practice are included, along with a checklist of rules that could be included in district plans.

1. Introduction

1.1 Introduction

Transport legislation and policy in New Zealand calls for an affordable, integrated, responsive, safe and sustainable land transport network. The Resource Management Act (RMA) 1991 (New Zealand Government 1991) is the guiding piece of legislation in New Zealand for the sustainable management of natural and physical resources. Sustainable management requires those who have authority under the RMA to manage:

> *the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic and cultural well being and for their health and safety while-*
>
> *a) Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and,*
> *b) Safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and*
> *c) Avoiding, remedying, or mitigating any adverse effects of activities on the environment* (RMA, Section 5(2)).

However, sustainability is a relatively new concept in land transport legislation. It has primarily been given a focus through the New Zealand Transport Strategy (NZTS) introduced in 2002 (Ministry of Transport (MoT) 2002), and the Land Transport Management Act (LTMA) 2003 (New Zealand Government 2003a).

Transfund New Zealand (now part of the NZ Transport Agency (NZTA)) commissioned a research project to determine how the concept of sustainable land transport could be incorporated into district plans prepared under the RMA 1991. This Discussion Document presents the outcome of that research.

Specifically, the research project has three objectives:

- to introduce sustainable land transport in the context of the NZTS and the LTMA;
- to discuss the interaction between land use planning and sustainable land transport; and
- to introduce guidance on objectives, policies and methods for sustainable land transport to be incorporated into district plans.

1.2 District plans

District plans are the primary land use planning documents that control the effects of activities on natural and physical resources in New Zealand. They can incorporate methods and provisions that may provide for activities that affect sustainability, and have the ability to provide mechanisms to address these effects through mitigation or remediation.

The opportunity exists to incorporate sustainable land transport issues into decision-making under the RMA, specifically within district plans.

District plans developed under the RMA to date have sought, to varying extents, to provide for sustainable land transport. However, the methods of implementing this objective have focused on a narrow interpretation of 'sustainability'. Most frequently, these plans address only safety, parking and loading, and road function. Additional issues such as the intensification of land use, road corridor management, route function, congestion and social severance have often remained unaddressed.

The RMA provides for ongoing review of district plans. Therefore, at any stage, an opportunity exists to improve the integration between land use and transport. Accordingly, this document has been prepared to assist local authorities understand why and how sustainable land transport can be incorporated into district plans.

Two aspects should be kept in mind when considering sustainable land transport:

- the effects of land transport on the environment, and
- the effects of land use on the land transport system.

This document has been prepared with two main user groups in mind:

- **Local authority policy and planning staff,** who can be guided by this document when reviewing their district plans. The document provides discussion on the 'bigger picture' concept of sustainable land transport, based on international literature and New Zealand's current statutes; develops a 'filter mechanism' to determine the issues in a particular district; and suggests approaches in district plan objectives, policies and methods to achieve the Expected Environmental Results and promote sustainable land transport within a district.
- **Transport planners and planning consultants,** who will find the document useful as they look to improve land transport networks and consider the impact of land uses on existing and proposed systems.

This discussion document has the following objectives:

- to introduce sustainable land transport in the context of the NZTS 2002 and the Land Transport Management Act 2003;
- to discuss the interaction between land use planning and sustainable land transport; and
- to introduce guidance on formulating objectives, policies and methods for sustainable land transport to be incorporated in district plans.

The document has been prepared based on research and consultation with key parties. It is essentially a discussion document, but incorporates guidance for district planning.

The preparation process included the establishment of a technical working group, consultation with key stakeholders and the preparation of discussion papers. The discussion document includes the definition of a sustainable land transport system, issues facing sustainable land transport systems in New Zealand, options to address these issues, and guidance on provisions that could be included in district plans.

1.3 Structure

To fulfil these objectives, this discussion document is presented as follows:

- **Sustainable transport perspectives:** This introduces the concept of sustainable transport. International is reviewed and summarised to develop an international perspective of sustainable transport. This is built upon by considering sustainability in New Zealand's land transport sector in the context of New Zealand case law and government policy (Chapter 3);
- **National policy and legislative framework:** New Zealand's national policy and legislative framework is reviewed with particular attention to New Zealand's commitment to the Kyoto Protocol (United Nations 1997), the NZTS (MoT 2002), and other legislation, strategies and mechanisms available to address sustainable land transport. The outcomes sought by the NZTS are identified, and an assessment is made regarding whether a district plan can directly or indirectly influence the achievement of the outcome. The review of policy and the legislative framework provides an overview of all the initiatives that are in place to achieve a sustainable land transport system (Chapter 4); and,
- **Best practice discussion and guidance:** The third part of the document comprises a guide to assist those involved in preparing and reviewing district plans to incorporate sustainable transport into those plans. This is presented in three separate chapters which help a user filter and select the relevant issues when developing a second-generation district plan.
  - Chapter 5 contains a discussion of what district plans have done well to date, and what they have not done so well. This discussion is supplemented by a 'gap' analysis of existing district plan provisions to determine how well the outcomes sought in the NZTS (MoT 2002) are being implemented in district plans. The gap analysis provides a basis for further work developed in the best practice guidance.

- Chapter 6 contains a discussion on district plans in the context of the outcome sought through the NZTS and the RMA, the functions of local authorities, the process for preparing district plans, and a discussion on how local authorities can decide whether sustainable land transport is an issue for their district. A significance filter is developed which can be used to identify key sustainable transport matters that can be directly addressed in district plans (while they are reviewed) when considering the outcomes sought by the NZTS. This provides an important tool to help integrate land use and sustainable land transport decision making, and also provides the background needed for the evaluation required by s. 32 of the RMA. The section also includes a discussion on objectives, policies and methods that could be incorporated into a district plan.
- Chapter 7 offers guidance on 'good' provisions and appropriate measures in general.

The overall document is not intended to provide standards or detailed designs for addressing the sustainable land transport issues that could be addressed in district plans. The main focus is on providing guidance on best practice which can be included in district plans in future (e.g. during a review or Plan Change process) to meet the gaps identified in the research. In particular, the 'significance filter' developed in the document will help in identifying and assessing issues, and identifies methods to implement policies and objectives, and monitor approaches.

Throughout the guidance section, two relevant considerations need to be kept in mind:

- the effects of land transport on the environment, and
- the effects of land use on the land transport system.

The challenge is to ensure provisions that are not at cross-purposes are developed.

1.4 Definition of land transport

'Land transport' is defined in the Land Transport Act 1998 as:

> *transport on land by any means and the infrastructure facilitating such transport; and includes rail, surface-effect vehicles, and harbour ferries* (New Zealand Government 1998).

The LTMA goes on to specify that:

> *Land transport —*
>
> *(a) means —*
>
> *(i) transport on land by any means:*
>
> *(ii) the infrastructure, goods, and services facilitating that transport; and*
>
> *(b) includes —*
>
> *(i) coastal shipping (including transport by means of harbour ferries, or ferries or barges on rivers or lakes) and associated infrastructure;*
>
> *(ii) the infrastructure, goods, and services (including education and enforcement), the primary purpose of which is to improve public safety in relation to the kinds of transport described in paragraph (a)(i).*

Thus land transport is much wider than just considering vehicles on roads, which has been the focus of transport planning in the past.

2. Purpose of discussion document

2.1 Background and methodology

NZTA's role in the transport industry is wide ranging. In relation to land transport, its role includes funding for:

- the construction and maintenance of state highways and local roads,
- passenger transport services (e.g. commuter trains, buses and ferries),
- alternatives to roading proposals (e.g. rail freight and barging),
- projects which support regional development, and
- travel demand management.

It also includes the assessment of walking and cycling projects.

District plans prepared under the RMA contain planning instruments that provide for land use activities that directly affect the sustainability of land transport systems. They also have the ability to require mechanisms to be put in place to address adverse environmental effects, in a manner that avoids, remedies or mitigates those effects.

Accordingly, the opportunity exists for provisions to be put in district plans that encourage sustainable land transport, either through encouraging specific transport forms or encouraging specific land uses and activities that avoid adverse effects on land transport.

This discussion document has been developed using the following methodology:

- **Legislative and policy review:** an analysis of the LTMA, RMA and related strategies to identify objectives and outcomes that should be taken into account in district plans if sustainable management is to be addressed;
- **Literature review:** a review of previously completed research by the NZTA and international organisations. The literature review sought to identify potential policy responses that may be considered by councils in developing their district plans. It has also sought to identify possible methods of putting these policy responses into effect;
- **Gap analysis:** this reviewed a number of district plans (representing urban, rural or rural/urban, and North Island/South Island councils) to determine whether they currently address the outcomes sought from the NZTS;
- **Discussion document:** this was prepared by combining the findings from the previous three steps, and by developing suggested approaches to issues, objectives, policies and methods that could be incorporated into district plans in future;
- **Workshop and reporting:** Consultants, and representatives of Transit New Zealand (now part of the NZTA), and regional and district councils attended a workshop that had the aim of evaluating the draft discussion document and discussing alternative methods that could contribute to an analysis of sustainable land transport and appropriate provisions within district plans; and

- **Best practice guidance:** best practice guidance resulting from all the previous steps was incorporated within the final discussion document.

The draft discussion document was prepared to form the basis for discussions with council planners and representatives of the transport industry to ensure the advice within the guidance section was relevant and accurate.

2.2 Purpose and benefits of the discussion document

The document is targeted primarily at two groups:

- territorial authority (council) planners, and
- transport planners and planning consultants.

The purpose of the document is principally to help local authority planners include good planning provisions in district plans and to address district-wide issues relating to the provision of sustainable land transport through district planning.

The discussion document does not attempt to analyse existing district plans critically. Instead, it draws on the general conclusions of the overall research as well as information from other relevant sources. It provides a background for the development of the concept of sustainable land transport systems relevant to district plans.

As resource management decision-makers, councils stand to benefit from practices that will:

- make their decision-making task easier and more readily transparent, and
- clearly reflect a consistency in approach in the consideration of any proposal that may impact on a sustainable land transport system.

District plans that include provisions relating to outcomes sought by the NZTS will help the NZTS to be implemented. This will have positive flow-on benefits for local, regional and national communities.

Impacts need to be considered in terms of:

- the land transport network that any particular development may affect, and
- the potential impact that developing a sustainable land transport network may have on land uses.

This research project is quite timely, as a number of councils are initiating the process of reviewing their district plans, whether in total or on a chapter by chapter basis, and preparing the 'second generation' plans. The aim is to provide a document including best practice guidance that can be used by council planners so they can consider sustainable land transport concepts while drafting their second generation plans. This document should also assist transport planners and planning consultants to determine how they can link their district plans with other mechanisms that are being used to achieve a sustainable land transport system for New Zealand.

3. Sustainability and land transport

3.1 Overview

This chapter firstly explores what sustainability means. It then examines how the concept of sustainability can be used in a land transport context. This context will form the basis for determining how sustainable land transport relates to the wider responsibilities of territorial local government under the RMA to achieve the purpose of the RMA through district plans.

3.2 What does sustainability mean?

The concepts of sustainability and inter-generational equity were first established internationally by the United Nations in a report entitled *Our Common Future* (Bruntland 1987). This report called for:

> *A form of sustainable development which meets the needs of the present without compromising the ability of future generations to meet their own needs.*

The concept of sustainability has been embraced in various pieces of New Zealand legislation, but differing terms have been adopted over time:

- the RMA (New Zealand Government 1991) uses the term 'sustainable management',
- the NZTS (MoT 2002) uses 'environmental sustainability' (without providing a definition), and
- the Local Government Act 1974 (New Zealand Government 1974) calls for a 'sustainable development' approach.

Papers presented by the government (Parliamentary Commissioner for the Environment (PCE) 2002) favour a return to the use of the term 'sustainable development' as defined by the Local Government Act (1974). The proposed further review of New Zealand's sustainable development progress in 2006/07 by the PCE demonstrates that this approach remains relevant (PCE 2007). However, no proposals currently exist to change the concept of sustainable management within the RMA.

The PCE has criticised the level of uptake and integration of sustainability into social and economic policies adopted by New Zealand's government. The PCE's office has provided four principles of sustainability (PCE 2002):

- *The finite reserves of non-renewable resources and the importance of using them wisely and, where possible, substituting them with renewable resources;*
- *The limits of natural life-supporting systems (ecosystems) to absorb the effects of human activities that produce pollution and waste;*

- *The linkages and interactions between environmental, social and economic factors when making decisions, emphasising that all three factors must be taken into consideration if we are to achieve long-term sustainable outcomes; and,.*
- *The well being of current and future generations.*

The third principle is particularly relevant. Decisions that relate to sustainable land transport must take the linkages and interaction between environmental, social and economic factors into account, and should consider the role of district plans in this process.

In terms of the RMA, the purpose of the Act is to 'promote the sustainable management of natural and physical resources'. Sustainable management is defined in Section 5(2) of the RMA to mean:

> *…managing the use, development, and protection of natural and physical resources in a way, or at a rate which enables people and communities to provide for their social, economic and cultural well being and for their health and safety while –*
>
> *(a) Sustaining the potential of natural and physical resources to meet the reasonably foreseeable needs of future generations; and*
>
> *(b) Safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and*
>
> *(c) Avoiding, remedying, or mitigating any adverse effects of activities on the environment*.

Some key principles from the interpretation of Section 5 through case law are:

- The sustainability framework aims to ensure that resources are not used up at a rate greater than their recuperative properties allow[1], and
- Sustainability looks to the future rather than the past.

The three paragraphs of Section 5 (2) quoted above from the RMA do not merely express 'environmental bottom lines'. Each should be afforded full significance and applied according to the circumstances of the particular case.[2]

Section 5 of the RMA requires an overall broad judgement approach on whether or not a proposal promotes the sustainable management of natural and physical resources. That approach allows for a comparison of conflicting considerations, their scale or degree and their relative significance.[3]

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1 *PT Marlborough DC v Southern Ocean Seafoods Ltd (1995) NZRMA 220 & 336.*

2 *RFBPS v Manawatu Wanganui* RC A86/95 (PT) (1995), and *Mangakahia Maori Komiti v Northland RC* A107/95 (PT) (1996).

3 *Ngati Rangi Trust v Manawatu-Wanganui RC* EnvC 67/2004 (2004), following *Aquamarine Ltd v Southland RC* EnvC C126/97 (1997), and I*ndependent News Auckland Ltd v Manukau CC EnvC* A103/2003 (2003).

These principles arise from the expanding case law that surrounds the implementation of the RMA.

3.3 Sustainability in New Zealand's land transport context

3.3.1 NZTS 2002

The NZTS (MoT 2002) introduced by the government in 2002 is New Zealand's core policy for land transport. The NZTS responds directly to the broader social, economic and environmental needs of the country by introducing five objectives:

- assisting economic development,
- assisting safety and personal security,
- improving access and mobility,
- protecting and promoting public health, and
- ensuring environmental sustainability.

Importantly, the NZTS has set the scene for legislative changes that encourage adoption of the sustainability concept within the land transport sector. The strategy calls for an integrated, safe, responsive and sustainable land transport system. This aim is reflected in the operational legislation of national and local road controlling authorities (under the Transit New Zealand Act 1989 (New Zealand Government 1989), the Land Transport Act 1998 (New Zealand Government 1998), and the LTMA 2003 (New Zealand Government 2003a)). The NZTS calls for an integrated approach to transportation management, and specifically notes that:

> *To ensure that transport is underpinned by the principles of sustainability and integration, transport policy will need to focus on improving the transport system in ways that enhance economic, social and environmental well being, and that promote resilience and flexibility. It will also need to take account of the needs of future generations, and be guided by medium and long-term costs and benefits* (MoT 2002).

Significantly, this statement acknowledges that:

- transport should be underpinned by the principles of sustainability;
- the transport system will need to be improved in ways that enhance economic, social and environmental well-being; and
- the principles of resilience and flexibility in the transport system need to be promoted.

This approach of the NZTS is generally known as the 'triple bottom line' concept, where transport management will have benefits in three different areas: social, environmental and economic. The statement above also acknowledges that the transport system will need to take inter-generational medium and long-term costs into account.

In December 2007, the Ministry of Transport (MoT 2007b) published a discussion paper on sustainable transport as a precursor to a proposed 2008 update document on the NZTS. The proposed update provides direction for the transport sector until 2040 in the context of government sustainability agenda, and other energy and energy efficiency

strategies. The update will translate that direction into high-level targets for the transport sector and intermediate targets for sub-sectors to help achieve the high-level targets.

The discussion paper is the first step towards updating the NZTS. The discussion paper sets out the issues and proposes a series of transport specific targets within the context of overarching targets already decided by the government in the areas of sustainability, energy and climate change.

3.4 Sustainability principles and land transport

3.4.1 Introduction

Internationally and within New Zealand, a great deal of debate has surrounded what a sustainable land transport system would include, or may look like, and how it would operate. The following subsections summarise the research on this topic.

3.4.2 New Zealand government perspectives

3.4.2.1 Relevant agencies

The two government agencies charged with integrating sustainability principles into land use and transport planning are the Ministry for the Environment (MfE), which provides national direction on environmental matters through the RMA; and the MoT, which manages the outcomes of the NZTS.

3.4.2.2 Ministry for the Environment

The MfE considers sustainable land transport is 'about finding ways to move people, goods and information in ways that reduce its impact on the environment, the economy and society' (MfE 2008a).

Although this definition does not mention the potential positive effects upon environmental, social and economic well-being, it follows the 'triple bottom line' approach of the NZTS. MfE provides a number of options which may help to achieve sustainable land transport including:

- *Using transport modes that use energy more efficiently, such as walking or cycling and public transport;*
- *Improving transport choice by increasing the quality of public transport, cycling and walking facilities, services and environments;*
- *Improving the efficiency of car use, such as using more fuel-efficient vehicles, driving more efficiently, avoiding cold starts, and car pooling;*
- *Using cleaner fuels and technologies;*
- *Using telecommunications to reduce or replace physical travel, such as tele-working or tele-shopping;*
- *Planning the layout of our cities to bring people and their needs closer together, and to make cities more vibrant and walkable; and*

- *Developing policies that allow and promote these options, such as the New Zealand Transport Strategy* (MfE 2008a).

These options reflect the range of approaches that may be adopted in any particular situation. However, sustainable transport is specifically identified as being involved in planning the layout of cities.

3.4.2.3 Ministry of Transport

MoT's *Statement of Intent 05–06* (MoT 2005b) set the course of action for its activities between 2005 and 2008. The Statement explains that sustainability of the land transport system will require three broad approaches:

- **appropriate use of resources:** ensuring the transport system uses all resources efficiently, reduces use of non-renewable resources and makes more use of renewable resources;
- **modal shifts:** more use of transport modes that enhance community health and well-being and have less impact on the natural environment;
- **an integrated approach:** ensuring that policy and infrastructure decisions consider wider environmental implications, including implications for future generations.

These approaches largely focus on the function of the transport system. MoT's programme of work in this area in 2005–2008 included researching the effects of transport on public health and the environment, investigating options for incorporating the cost of environmental externalities into the transport system, and encouraging the use of more fuel-efficient vehicles.

The Ministry of Transport's more recent *Statement of Intent 2007–2010* (MoT 2007a) identifies addressing sustainability, especially climate change, as a considerable challenge to New Zealand's transport sector.

3.4.3 International perspectives

3.4.3.1 Organisation for Economic Co-operation and Development

The Organisation for Economic Co-operation and Development (OECD) noted in a 2002 report entitled *OECD Guideline towards Environmentally Sustainable Transport* (OECD 2002) that:

> *A sustainable transport system is one that throughout its full life-cycle operation:*
>
> - *Allows generally accepted objectives for health and environmental quality to be met, for example, those concerning air pollutants and noise proposed by the World Health Organization...;*
> - *Is consistent with ecosystem integrity, for example, it does not contribute to exceedence of critical loads and levels as defined by*

> [The World Health Organisation] *for acidification, eutrophication and ground level ozone; and*
>
> - *Does not result in worsening of adverse global phenomena such* as *climate change and stratospheric ozone depletion.*

The OECD (2002) has concluded that a sustainable transport system will require:

- a significant reduction in car ownership and use, and shifts to more efficient vehicles;
- reduced long distance passenger and freight travel, particularly air travel, and increased non-motorised short distance travel;
- energy-efficient, electric-powered, high-speed rail;
- energy-efficient, less polluting shipping;
- more accessible development patterns;
- increased use of telecommunications to substitute for physical travel; and
- more efficient production to reduce long-distance freight transport.

The OECD paper recognises that enhancing the accessibility of development patterns is a core outcome of urban design and planning. In this context, the district plan has a supporting role to play in facilitating reduced car ownership and increasing the use of non-motorised short distance travel by the way urban form is structured.

3.4.3.2 World Business Council for Sustainable Development

The World Business Council for Sustainable Development (WBCSD) (2004) refers to the term 'sustainable mobility', which means:

> *The ability to meet the needs of society to move freely, gain access, communicate, trade and establish relationships without sacrificing essential human or ecological values today or in the future.*

In order to achieve sustainable mobility, the WBCSD proposes seven goals that, if achieved, will substantially improve the prospects for sustainable mobility:

- *Reduce conventional emissions from transport so that they do not constitute a significant public health concern anywhere in the world;*
- *Limit greenhouse gas emissions from transport to sustainable levels;*
- *Reduce significantly the number of transport-related deaths and injuries worldwide;*
- *Reduce transport related noise;*
- *Mitigate traffic congestion;*
- *Narrow 'mobility divides' that exist within all countries and between the richest and poorest countries; and,*
- *Improve mobility opportunities for the general population in developed and developing societies* (WBCSD 2004).

3.4.3.3 Centre for Sustainable Transportation

The Centre for Sustainable Transportation (2005) provides a wider interpretation of sustainable transportation:

> *A sustainable transportation system is one that:*
>
> - *allows the basic access needs of individuals and societies to be met safely and in a manner consistent with human and ecosystem health, and with equity within and between generations;*
> - *is affordable, operates efficiently, offers choice of transport mode, and supports a vibrant economy; and*
> - *limits emissions and waste within the planet's ability to absorb them, minimizes consumption of non-renewable resources, limits consumption of renewable resources to the sustainable yield level, reuses and recycles its components, and minimizes the use of land and the production of noise* (Centre for Sustainable Transportation 2005).

3.4.3.4 Department for Transport UK

The release of the *A New Deal for Transport – White Paper* (Department for Transport (DfT) 1998) in the United Kingdom set a new framework for transport decision-making on the basis of sustainable development. The paper is an outcome-based document that seeks to improve the sustainability and integration of the transport system in the United Kingdom. The White Paper refers to the Bruntland (1987) definition of sustainable development and, in the context of transport, states:

> *We need a transport system which supports our policies for more jobs and a strong economy, which helps increase prosperity and tackles social exclusion. We also need a transport system which doesn't damage our health and provides a better quality of life now - for everyone - without passing onto future generations a poorer world. This is what we mean by sustainable transport.*

While *A New Deal for Transport* is quite specific in its outcomes, much of the paper's framework for delivering a sustainable transport system is mirrored in the NZTS. For ease of reference, Table 3.1 compares the NZTS's objectives and *A New Deal for Transport's* framework.

Table 3.1 Comparison of NZTS's objectives (MoT 2002) and *A New Deal for Transport – White Paper* framework (DfT 1998).

NZTS	*A New Deal for Transport*
Assisting economic development	Ensuring a strong economy
Assisting safety and personal security	Travelling safely Streets for people A fairer, more inclusive society
Improving access and mobility	A modern, integrated transport system More choice in transport mode Integrated public transport Streets for people Better use of trunk roads Embracing technological advances Better integration of airports and ports
Protecting and promoting public health	Improving public health Changing travel habits
Ensuring environmental sustainability	Seeking a better environment

The UK Sustainable Development Strategy (Department of Environment, Food and Rural Affairs 2004) requires all government departments to produce a sustainable development action plan. The UK's Department of Transport's vision for transport over the next 30 years is set out in *Future of Transport – White Paper* (DfT 2004) and adheres to the shared principles set out in the sustainable development strategy.

Future of Transport – White Paper makes it clear that good transport is central to a prosperous economy, facilitating better access and greater mobility. The paper also recognises the adverse effects of transport (including greenhouse gas emissions, air pollutants, and damage to both the natural and built environment), and therefore takes a balanced approach to meeting its environmental, economic and social objectives. DfT has a commitment to work in partnership with others to tackle congestion, improve accessibility, reduce road traffic casualties, respect the environment and support the economy. In this way, the transport policies developed by DfT will contribute to the government's wider priorities as set out in the UK Sustainable Development Strategy:

- sustainable consumption and production,
- climate change and energy,
- natural resource protection and environmental enhancement, and
- sustainable communities.

3.5 Summary

This section has examined how the concept of sustainability can be integrated into a land transport context. Whilst being a relatively new concept in land transport legislation, the NZTS has encouraged the adoption of the sustainability concept within the land transport sector by calling for an integrated, safe, responsive and sustainable land transport system.

Consistent with international perspectives, transport should be underpinned by the wider principles of sustainability and the transport system will need to be improved in ways that enhance economic, social and environmental well-being. Some key examples of how the sustainability concept can be integrated with land transport include:

- enabling economic development by allowing access and mobility, including reducing congestion;
- enhancing economic and social development by planning the layout of cities to bring people and their needs closer together, with more accessible development patterns;
- ensuring transport modes are safe and secure, and that they help to avoid or reduce transport related injuries and deaths;
- ensuring public health is appropriately protected, for example from discharges of contaminants to air and in stormwater (that may reach rivers or the coast, or contaminate soil or groundwater);
- providing flexibility and a range of transport options;
- providing or encouraging energy-efficient transport options, for example walking, cycling and public transport;
- by protecting key elements of finite resources such as significant or endangered habitats; and
- ensuring impacts of transport from emissions (e.g. from vehicles, dust or noise) and discharges (for example stormwater and contaminants from road surfaces) are within the assimilative capacity of the local environment.

These matters are relevant to decisions regarding sustainable land transport. Local authorities, through the RMA (and other mechanisms), can promote a sustainable land transport system through district plan provisions.

4. National policy and legislative framework

4.1 Overview

This chapter examines in more depth the national policy and legislative context behind the sustainable management of natural and physical resources, and the land transport sector in New Zealand. It identifies the outcomes envisaged from these national policies, strategies and Acts, and examines their application through the district plan framework.

The most significant pieces of legislation and policy are presented in chronological order of being adopted into New Zealand's legislation, followed by less significant strategies.

4.2 Resource Management Act

4.2.1 Resource Management Act 1991

The RMA (New Zealand Government 1991) provides a decision-making framework in the shape of policy statements and plans that promote the sustainable management of natural and physical resources. The purpose of the RMA, as set out in Part II of that document, is to 'promote the sustainable management of natural and physical resources'. This purpose is of prime importance, as it sets the ground rules for interpretation of all other processes and functions under the Act.

Within the context of the RMA (Section 5), land transport is recognised as a physical resource that includes airports (Waiheke Island Airfields v. Auckland City Council 1993), state highways (Campbell v. Southland District Council 1994) and the tools that provide for these physical resources (e.g. a designation) (Te Runanga o Ati Awa ki Whakarongotai Inc v. Kapiti District Council 2002). In addition, territorial authorities may also regulate the rate at which natural and physical resources may be used, including rationing the supply of the resources or judging each case on its merits in the context of its locality (Suburban Estates Ltd v. Christchurch City Council 2001).

It is clear that a legislative mandate exists for the land transport resource to be considered in the context of Part II of the RMA. Therefore, land transport may be specifically considered and necessary management tools applied within a district plan.

Section 6 of the RMA recognises matters of national importance. Although land transport (or any component of the land transport system) is not specifically listed, the High Court has determined that a state highway can be considered as a matter of national importance in terms of Section 5 of the RMA. This is consistent with the Environment Court's determination which has considered the Interisland ferry link a matter of national importance in Marlborough District Council v NZ Rail (1993).

In Takamore Trustees v Kapiti Coast District Council (2003), the Court said:

> *It is accepted that the state highway system is of national importance although not specifically mentioned in the RMA under that heading. That matter was considered in terms of section 5 in the case of Marlborough District Council v NZ Rail (1995) NZRMA 357. The Court was there considering the Interisland ferry link which is the sea link for New Zealand-wide road and rail services. It is held that in a particular circumstance it is possible to hold that a particular activity assumes such importance in the context of sustainable management of New Zealand as a whole that it can of itself assume national importance and be considered accordingly.*

This comment suggests that a transport hierarchy based upon the function of the routes (i.e. access on an international/national/regional and district scale) could be developed. Such an approach would be independent of the mode and could be a tool for use in asset management (i.e. setting the level of service) and in land use planning.

4.2.2 Resource Management Amendment Act 2005

The Resource Management Amendment Act 2005 (New Zealand Government 2005) has a number of matters that are relevant to this current project:

- Regional councils have a new function: the strategic integration of infrastructure with land use (Section 30(1)(gb));
- Regional Policy Statements are to provide clearer and stronger directions on how environmental issues of the region are to be managed by local authorities;
- District and regional plans are required to 'give effect' to regional policy statements (Section 67(3)(c) & s75(3)(c)); and
- The Minister for the Environment can direct regional councils to develop plans or parts of plans to address specific resource management issues (which could, for example, include a sustainable land transport system).

These changes increase the power of the RPS (i.e. they can 'give effect to' rather than 'not be inconsistent with') and allow more input from regional councils in integrated land transport, giving more strength to Regional Land Transport Strategies.

4.2.3 Resource Management Amendment Act 2004

The Resource Management (Energy and Climate Change) Amendment Act 2004 (New Zealand Government 2004) introduced a new 'other matter' into Part II of the RMA, requiring particular regard to be given to the effects of climate change (Section 7(i)). Section 7 of the RMA was amended to ensure councils have particular regard to 'the efficiency of the end use of energy' (Clause (ba)) and 'the benefits to be derived from the use and development of renewable energy' (Clause (j)).

In relation to Clause (ba), little or no case law exists as yet that defines or gives direction to what may be meant by the clause. However, it can be assumed that a sustainable land transport system will contribute to the efficient end use of energy.

4.3 Land Transport Act 1998

Section 175 of the Land Transport Act (LTA) 1998 (New Zealand Government 1998), as amended by the LTMA, requires regional councils to adopt an RLTS to achieve an integrated, safe, responsive and sustainable land transport system, which is the LTA's purpose.

Under the LTA, the RLTS must also 'take into account', among other matters, how the strategy:

- *Assists economic development;*
- *Assists safety and personal security;*
- *Improves access and mobility;*
- *Protects and promotes public health; and*
- *Ensures environmental sustainability.*

These are the same matters that the NZTS takes into account. The RLTS therefore addresses at a regional level the directions established at the national level through the NZTS. The RLTS must also take into account any National Energy Efficiency and Conservation Strategy.

In addition, Section 175(3) of the LTA states that:

> *A regional land transport strategy may not be inconsistent with any regional policy statement or plan that is for the time being in force under the Resource Management Act 1991.*

Under existing Regional Policy Statements (RPS), which are prepared under the RMA, little guidance or consistency is likely to exist for the RLTS, as the legislative environment that existed pre-LTMA placed less emphasis on an integrated approach. However, with the passing of the Resource Management Amendment Act 2005 (discussed in Chapter 5.5.2), the role of the RPS has been strengthened and it is likely that more directives relating to integrated land transport systems will be included in the 'second generation' RPS. This may mean that the RLTS will need to be reviewed and aligned with the new directives.

In relation to the reference to 'plans' in Section 175(3) of the LTA, it is not clear whether the RLTS should be consistent with only a regional plan, or with both regional and district plans. It is reasonable to assume that Section 175(3) refers to both regional and district plans, considering that Section 2 of the RMA defines 'plan' as being a regional or district plan.

It therefore appears that the strategic management of the land transport system is intended to be responsive to land use and transport management decisions made within the development of district plans, and vice versa.

4.4 The New Zealand Transport Strategy

As identified in Chapter 3.2 of this document, the NZTS (MoT 2002) sets out the New Zealand Government's vision for transport and confirms the approach it is taking towards transport now and in the future. While the NZTS is not a statutory document, it is reflected in the Land Transport Management Act 2003. This Act broadened the responsibilities of Land Transport New Zealand[4] (LTNZ) to achieve an integrated, safe, responsive and sustainable land transport system. As noted previously, the objectives of the NZTS require councils to account for how land transport:

- *Assists economic development;*
- *Assists safety and personal security;*
- *Improves access and mobility;*
- *Protects and promote public health; and*
- *Ensures environmental sustainability.*

This is a holistic view of the land transport network that recognises the relationship between land use, transport choice (or lack of choice), lifestyle, the environment and other factors. It requires an integrated approach to transportation management which cannot be undertaken in the absence of sound land use planning. District plans are a mechanism that can be used to achieve this integration.

4.5 Kyoto Protocol

The New Zealand Government ratified the Kyoto Protocol (United Nations 1997) at the Framework Convention on Climate Change in 2002. This requires New Zealand to reduce emissions of greenhouse gases into the atmosphere to 1990 levels. The land transport sector is the single largest contributor of carbon dioxide (CO_2) emissions among the sectors monitored by the government. Transport sector emissions are continuing to grow rapidly and now make up almost 19% of New Zealand's total greenhouse gas emissions.

To achieve New Zealand's obligations under the Kyoto Protocol, transport emissions from motorised land transport need to be significantly reduced. District planning can help achieve this target over the long term by promoting urban forms that:

- reduce the need for motorised transport,
- encourage the use of alternative means of transport (walking, cycling and mass transit), and
- protect the function of arterial roads for through traffic.

The New Zealand Office of Climate Change made the following statement in relation to land transport[5]:

> *The New Zealand Transport Strategy defines the Government's vision of an affordable, integrated, safe, responsive, and sustainable transport system by 2010. One of its aims is to ensure environmental sustainability – policies will*

[4] Land Transport New Zealand is now part of the NZ Transport Agency.
[5] Retrieved from a New Zealand Office of Climate Change website that is no longer available.

> *encourage usage of more energy efficient modes of transport and contribute to reducing greenhouse gas emissions from the transport sector.*
>
> *We have come to rely on cars as a quick and convenient way of getting from place to place, but we need to reduce the number of cars on the road. Ways to do this include:*
>
> - *Use public transport and walk or cycle more often;*
> - *Car pool when possible;*
> - *Do you really need that second car? Consider upgrading your bicycle instead;*
> - *Set concrete goals at home and at work for reducing your travel;*
> - *Choose a place to live where you can drive less;*
> - *Consider telecommuting and video conferencing as options to reduce the need to travel; and,*
> - *Make use of a Walking School Bus if available in your area.*

The practical considerations suggested by the Office of Climate Change may require people to make conscious decisions that apply to their everyday life. The government can assist by developing strategies and policies that facilitate a sustainable land transport system which would include the availability of alternative transport modes, and district plans can provide planning mechanisms to help implement such policy.

4.6 Land Transport Management Act 2003

4.6.1 Purpose of the LTMA

The Land Transport Management Act (LTMA) 2003 (New Zealand Government 2003a) represents the biggest change to land transport legislation in New Zealand since the late 1980s. The LTMA envisages an integrated long-term approach to land transport funding and management, with more emphasis on social and environmental needs.

The LTMA provides transport planners with a number of tools (toll roads, private/public partnerships etc.) and includes a broader emphasis on alternative transport modes (walking, cycling, public transport) to help achieve the purpose of the LTMA.

Section 3 of the LTMA defines that purpose as:

> *The purpose of this Act is to <u>contribute to</u> the aim of achieving an integrated, safe, responsive and sustainable land transport system* [emphasis added].

This statement recognises that the LTMA cannot deliver a sustainable land transport system on its own. Other social and economic factors will need to be implemented to achieve the intent of the NZTS, including the manner in which the transport network is accessed, used and developed, and how the transport network is integrated into land use decisions.

4.6.2 Land Transport Management Amendment Bill 2008

While this Discussion Document was being prepared, the Land Transport Management Amendment Bill was enacted on the 1st August 2008. The Land Transport Management Amendment Bill implemented the main recommendations of the *Next Steps* review (State Service Commission 2007) of the land transport sector.
The main recommendations of the *Next Steps* report included:

- filling the strategic gap between the broad strategic direction of transport in the NZTS, and the delivery of a programme of works and services;
- enabling a more consistent approach to integrated transport planning at a regional level and greater input to land transport programming by local government;
- creating a new Crown entity by merging LTNZ and Transit New Zealand to form the NZ Transport Agency; and
- introducing a Government Policy Statement setting out the government's high-level strategic priorities for land transport.

4.7 Energy efficiency

4.7.1 Aims

In 2007, the New Zealand Government published the New Zealand Energy Strategy (Ministry of Economic Development (MED) 2007) and the New Zealand Energy Efficiency and Conservation Strategy (Energy Efficiency and Conservation Authority (EECA) 2007). These strategies are aimed at taking sustainability to new levels by introducing initiatives that champion renewable energy across, among other things, transport.

4.7.2 The New Zealand Energy Strategy to 2050

The MED (2007) sets the strategic direction for the energy sector to contribute to New Zealand's future prosperity and sustainability. The strategy seeks to secure durable, ongoing CO_2 emissions in the transport sector via a long-term strategic approach to reducing transport energy demand and by looking at supply options.

The key areas of focus for achieving ongoing reductions in CO_2 emissions include:

- using more efficient and lower impact transport modes,
- using alternative renewable fuels,
- increasing the efficiency of the vehicle fleet, and
- reducing vehicle-kilometres travelled through smarter planning.

4.7.3 The New Zealand Energy Efficiency and Conservation Strategy

The Energy Efficiency and Conservation Strategy 2007 (EECA 2007) is the second five-year strategy under the Energy Efficiency and Conservation Act 2000 (New Zealand Government 2000). The original Energy Efficiency and Conservation Strategy (EECA 2001) promoted energy efficiency, energy conservation and renewable energy, and aimed to move New Zealand towards a sustainable energy future. The strategy's overall aim was to improve New Zealand's energy efficiency by 20% by 2012 and to increase the amount of renewable energy used.

The second five-year strategy focuses on actions and sets challenging targets to:

- clean up the vehicle fleet with more efficient vehicles, biofuels and new technologies; and
- reduce the number of one-person car trips through provision of better public transport, safer walking and cycling routes, and better planned cities.

4.8 Other strategies

A number of other strategies exist in the public arena which promote better use and management of land transport infrastructure and travel choice. These strategies often deal with only one aspect of land transport matters (e.g. public health or energy efficiency), but, in combination, they contribute towards achieving a sustainable land transport system. A number of these strategies are addressed below.

- **The New Zealand Cycling and Walking Strategy** (*Getting there – on foot, by cycle)* (MoT 2005a) was finalised in February 2005. The vision is 'a New Zealand where people from all sectors of the community walk and cycle for transport and enjoyment.' The vision is supported by three goals:
  - transport systems and community environments which support cycling and walking;
  - a greater amount of people who chose to walk and cycle more frequently; and
  - better security and safety for people walking and cycling.

- **The Ministry of Health** (MoH) developed a *Healthy Eating – Healthy Action* strategy (MoH 2003). This strategy called on the health sector to re-orient its funding and delivery of services to provide a more integrated approach to physical activity, nutrition and achieving a healthy weight. Key outputs of this strategy that have relevance to this project are to:
  - *Integrate with key service providers within and outside the health field, including local authorities;*
  - *Deliver programmes and services that support physical activity, nutrition and healthy weight in a range of settings/areas including education, workplaces, transport and local government (particularly to encourage active commuting – cycling and walking), institutions, and the food and weight-loss industries; and*

- *Identify programmes that increase participation in physical activity at school (e.g. the 'walking school bus').*

- MfE released the ***New Zealand Urban Design Protocol*** (MfE 2005) as part of the Government's Sustainable Development Programme of Action (New Zealand Government 2003b) and Urban Affairs Portfolio. The purpose of the protocol is to accelerate quality urban design to 'create places that work and people use and value'. The intention is that the protocol can be used as a voluntary commitment to improving urban forms. Urban design is a core function of planning, and methods adopted in district plans can directly influence the shape, form and character of urban centres.

  The protocol identifies seven essential design elements. Two elements that are particularly relevant to this project include:

  - **Choice:** Offering diversity of urban form, densities, building types, public spaces and transport modes, and providing more opportunities for all people;
  - **Connections:** Enhancing the way our infrastructure and urban form work together.

  Both these outcomes are reflected in the NZTS and the LTMA, which call for an integrated and accessible land transport system.

- MfE has produced a ***Land Transport Best Practice Guide*** (MfE 2008b), which addresses the issue of transport planning within the context of district plans. This guide comments that land transport provisions in district plans should:

  - allow for the development and management of safe and efficient transportation networks;
  - seek to address environmental effects of transportation on land use and the effects of land use on transportation; and
  - have regard to national and regional transport strategies.

  While it provides a capability framework for incorporating sustainable transport into district plans, the guide does not specifically address land transport sustainability.

4.9 Summary

Government policy and legislation seem to exist to establish the fundamentals for sustainable land transport systems. The former incremental method of transport planning has shifted toward a more balanced management of transport demand, reasons for travel and choice of travel mode.

The review carried out in the current research has highlighted a number of issues and concepts that can form the building blocks of a sustainable land transport system. These sustainable 'building blocks' represent the outcomes sought to achieve a sustainable land transport system and can be summarised as:

- environmental sustainability,
- accessibility,
- improved health,
- functional transport networks,
- economic development,
- integrated urban form, and
- safety.

5. District plan influence and current practice

5.1 Overview

This chapter considers the influence of the district plan in respect of national outcomes sought. It also analyses existing plan provisions in a number of district plans to identify gaps in district plan provisions that appear when aiming to achieve a sustainable transport system. It also identifies and indicates whether a district plan, either directly or indirectly, can play a role in the sustainable land transport outcomes sought at the national level.

5.2 Tools of the trade

A number of planning tools can influence pattern, distribution and mode of transport. These measures potentially enable a district to move towards a more sustainable land transport system. The manner in which these tools are used will influence the transport solutions.

Transport planners can use:

- traffic modelling and prediction models;
- relevant standards (e.g. AUSTROADS 2002);
- guidelines – e.g. signs, safety, traffic noise; and
- road hierarchy – level of service (this is a tool used by land use planners as well, though interpretation may differ).

Land use planners can use:

- zoning (including plan changes) – segregates activities into 'like' effects, e.g. residential or commercial;
- zone standards – e.g. density of development, lot sizes and noise standards to be met at the boundary of a zone;
- road hierarchy – level of service;
- standards for a particular site – e.g. parking and vehicle access;
- noise contours – protecting areas of transport investment from reverse sensitivity[6];
- designations; and
- structure plans.

These tools are discussed in detail in Chapter 6.6.4.

[6] 'reverse sensitivity' refers to a situation where a new land use becomes established in an area (e.g. residential development) adjacent to a pre-existing use (e.g. airports, roads, ports) and conflict arises from the effect of the pre-existing use on the new land use.

5.3 Influence of the district plan on national outcomes sought

Table 5.1 identifies the 'building blocks' of sustainable transport and indicates whether the district plan can have a direct, indirect or no influence on the outcomes sought at the national level. The outcomes identified as being influenced by the district plan become the building blocks for the mechanisms that may be adopted in district plans to support and develop a sustainable land transport system. The assessment below provides a good basis for the development of the best practice guidance in Chapter 7.

Table 5.1 Outcomes of national land transport policy documents and the role of district plans in achieving those outcomes.

National policy	Outcomes sought	District plan influence	What the RMA says	Issue/outcome
Kyoto Protocol	Reduction in CO_2 emissions	Direct	Decisions relating to the shape of our urban environments and the infrastructure that supports it will have a direct influence on this outcome.	• Environmental sustainability • Accessibility • Integrated urban form
New Zealand Transport Strategy, LTMA, LTA	Assist economic development	Indirect	The RMA enables the economic development of communities provided they avoid, remedy or mitigate adverse effects.	• Accessibility • Functional transport networks • Integrated urban form
	Assist safety and personal security	Direct	The definition of environment includes people and communities. Adverse safety effects need to be avoided, remedied or mitigated.	• Safety
	Improve access and mobility	Direct	The definition of environment includes people and communities. The community priorities for access and mobility may be promoted through the district plan.	• Accessibility • Functional transport networks • Integrated urban form
	Protect and promote public health	Indirect	The definition of environment includes people and communities. Public health should be improved through active modes of transport and essential qualities of life (air, water) must not be degraded by transport activities.	• Public health
	Ensure environmental sustainability	Direct	Land transport activities should not adversely affect the surrounding environment (including, but not limited to, air and water quality, habitats, noise, vibration, safety, social severance etc.).	• Environmental sustainability • Accessibility • Integrated urban form

Table 5.1 cont. Outcomes of national land transport policy documents and the role of district plans in achieving those outcomes.

National policy	Outcomes sought	District plan influence	What the RMA says	Issue / outcome
MfE 2005	**Choice:** Diversity of urban form, densities, building types, public spaces and transport modes	Direct	Decisions relating to the shape of our urban environments and the infrastructure (for cycling and walking) that supports it will have a direct influence on this outcome.	• Integrated urban form
	Connections: Enhancing the way infra-structure and urban form work together	Direct	Decisions relating to the shape of our urban environments and the infrastructure (for cycling and walking) that supports it will have a direct influence on this outcome.	• Integrated urban form
MOT 2005a	Promote pedestrian- and cycle-friendly communities	Direct	Decisions relating to the shape of our urban environments and the infrastructure (for cycling and walking) that supports it will have a direct influence on this outcome.	• Accessibility • Functional transport networks • Integrated urban form
	Encourage people to choose walking and cycling	Indirect	While the shape of our urban environment can encourage these movements, other methods, such as environmental education, can be promoted through the district plan.	• Accessibility • Functional transport networks •
	Improve safety for pedestrians and cyclists	Direct	The definition of environment includes people and communities. Adverse safety effects need to be avoided, remedied or mitigated.	• Safety
Ministry of Health 2003	Integration with service providers and local authorities	None	These processes and programmes are delivered outside the district plan, but can be supported through infra-structure such as reserves, roading standards and urban form.	• Accessibility
	Deliver programmes and services that support physical activity	None		• Public health
	Programmes to increase physical activity at school	None		• Public health

Table 5.1 cont. Outcomes of national land transport policy documents and the role of district plans in achieving those outcomes.

National policy	Outcomes sought	District plan influence	What the RMA says	Issue / outcome
EECA 2001 and 2007	Energy efficiency	Direct	Section 7(ba) has particular regard to the efficiency of the end use of energy. Promote efficient use of transport modes and transport networks.	• Environmental sustainability • Functional transport networks • Integrated urban form
	Energy conservation	Indirect	Avoids energy waste and reducing energy use. Also helps to avoid the localised effects of energy used (air quality).	• Environmental sustainability • Functional transport networks • Integrated urban form
	Renewable energy	None	The definition of renewable energy relates primarily to the production of energy (solar, wind, hydro etc.), so it has limited relevance to this discussion.	• Environmental sustainability
MED 2007	More efficient and lower impact transport modes	Direct	Section 7(ba) has particular regard to the efficiency of the end use of energy. Promote efficient use of transport modes and transport networks.	• Environmental sustainability • Functional transport networks • Integrated urban form
	Renewable fuels	None	Limited relevance.	• Environmental sustainability
	Vehicle fleet efficiency	Indirect	Promote efficient use of transport modes and transport networks.	• Environmental sustainability
	Reducing vehicle kms travelled	Indirect	Promote efficient use of transport modes and transport networks.	• Environmental sustainability

The extent to which the district plan may influence the outcome depends on the make-up of the district (rural or urban or rural/urban), the resource management issues in the district, the directions in the NZTS, RLTS, RPS and regional plans, and the appropriateness of adopting mechanisms in the district plan.

A significance filter mechanism has been developed as part of this report (Chapter 6.6.4). This can be used to determine the significance of the outcomes sought to a specific district, plus the elements that need to be addressed in the district in order to ensure the outcomes are achieved.

5.4 Gap analysis

A gap analysis has been undertaken of a sample of district plans to see whether the outcomes summarised in Table 5.1 have been followed through into district plans. The plans were chosen in order to achieve a good representation of urban, rural and urban/rural districts, and a mix of North Island/South Island councils. The analysis is summarised in Tables 5.2–5.4.

Table 5.2 Summary of district plans reviewed to determine whether outcomes envisaged in National Land Transport policy documents with a direct influence are being included in plans.

National policy	Outcome/issue	District plan												
		Marlborough[a]	Kapiti	Tauranga	Far North	Wellington City	Nelson[a]	Gisborne	Buller	Hamilton	Stratford	Central Otago	Christchurch	Timaru
Kyoto Protocol	Reduction in CO_2 emissions	b	–	b	–	–	–	–	–	b	–	–	√	–
New Zealand Transport Strategy, LTMA, LTA	Assist safety and personal security	√	–	–	√	√	–	√	–	–	–	–	–	√
	Improve access and mobility	√	√	√	√	√	√	–	–	√	√	√	√	√
	Ensure environmental sustainability	√	√	√	√		√	√	√	√	√		√	√
MfE 2005	Diversity of urban form, building types, public spaces and transport modes	√	√	√	√	√	√	√	√	√	√	√	√	√
	Enhancing the way infrastructure and urban form work together	√	√	√	√	√	√	√	√	√	√	√	√	√
MoT 2005a	Promote pedestrian and cycle friendly communities	√	√	√	–	c	√	–	–	√	√	–	√	√
	Improve safety for pedestrians and cyclists	√	√	√	√	√	√	–	–	√	√	–	√	√
EECA 2001 and 2007	Energy efficiency	–	√	–	–	√	–	–	–	–	–	√	–	–
MED 2007	Energy efficiency		√			√						√		

Notes to Table 5.2:
a Combined District/Regional Plan
b Does not necessarily relate specifically to CO_2 but does relate to vehicle emissions
c Uses mechanisms other than the plan

Table 5.3 Summary of district plans reviewed to determine whether outcomes envisaged in National Land Transport policy documents with an indirect influence are being included in plans.

National policy	Outcome/issue	District plan												
		Marlborough*	Kapiti	Tauranga	Far North	Wellington City	Nelson[a]	Gisborne	Buller	Hamilton	Stratford	Central Otago	Christchurch	Timaru
New Zealand Transport Strategy, LTMA, LTA	Assist economic development	–	–	–	–	–	–	√	–	–	–	–	√	–
	Protect and promote public health	√	√	√	√	√	√	–	√	√	–	–	√	√
MoT 2005a	Encourage people to choose walking and cycling	–	–	–	–	–	–	–	–	–	–	–	–	–
EECA 2001 & 2007	Energy conservation	–	–	–	–	–	–	–	–	–	–	–	–	–

*Combined District/Regional Plan

Table 5.4 Summary of district plans reviewed to determine whether outcomes envisaged in National Land Transport policy documents with no influence are being included in plans.

National policy	Outcome/issue	District plan												
		Marlborough[a]	Kapiti	Tauranga	Far North	Wellington City	Nelson[a]	Gisborne	Buller	Hamilton	Stratford	Central Otago	Christchurch	Timaru
MoH 2003	Integration with service providers and local authorities	√	–	√	–	b		√	√	–	√	–	√	√
	Deliver programmes and services that support physical activity	√	–	–	–	–	–	–	–	–	–	–	√	–
	Programmes to increase physical activity in school	–	–	–	–	–	–	–	–	–	–	–	–	–
EECA 2001 and 2007	Renewable energy	–	–	–	–	–	–	–	–	–	–	–	–	–
MED 2007	Renewable energy	–	–	–	–	–	–	–	–	–	–	–	–	–
	Sustainable energy technology	–	–	–	–	–	–	–	–	–	–	–	–	

a Combined District/Regional Plan
b Uses mechanisms other than the plan

The gap analysis shows that a considerable number of plans identified sustainable transport systems as an issue that needed to be addressed, and a number followed this through with objectives and policies. However, many plans lack mechanisms to implement these objectives and policies, and do not include monitoring. This is an important finding from the research that needs to be addressed as district plans are reviewed. The best practice guidance in Chapter 7 is intended to address this imbalance.

Predictably, all plans reviewed address urban form, building types, public spaces and transport modes, and enhancing the way that infrastructure and urban form work together. Most plans address access and mobility, protecting and promoting public health, ensuring environmental sustainability, and promoting walking and cycling. Some plans address reducing vehicle emissions, ensuring personal safety and security, and assisting economic development, energy efficiency and personal physical activity.

None of the plans reviewed addresses energy conservation, renewable energy and physical activities in schools.

This gap analysis provides some useful results which show that the outcomes envisaged by national land transport policy documents are being addressed at the district plan level. However, determining whether the provisions in the district plans are being effective, or whether overall sustainable land transport is being achieved, is more difficult.

It is also unclear whether decisions regarding land use projects that may affect sustainable land transport systems are considering the outcomes sought, or whether the current district plan provisions provide clear guidance for good decisions to be made.

Establishing best practice for inclusion in district plans would benefit local authority policy and the planning staff who are responsible for preparing and reviewing district plans.

5.5 Wider context and historical planning context

5.5.1 Introduction

The district plan role review (Table 5.1) and the gap analysis (Tables 5.2–5.4) have identified the extent to which district plans potentially can and are influencing sustainable land transport planning. However, a look at the breadth of sustainable land transport planning in the past has identified some key issues. These issues are discussed below.

5.5.2 Integration of land use and transportation

5.5.2.1 Key points

Two key points have been identified which require consideration:

- legislative structure, and
- leadership.

However, one further issue is worth noting: that is, the lead time between the preparation of a proposed District Plan and when it eventually becomes operative tends to be long. Policy analysis and response may easily be out of date before the policy is fully implemented. With the increasing development of second-generation plans, this short-coming may be reduced to some extent, as the timeframes for plan development may be lessened.

5.5.2.2 Legislative structure

The present legislative structure (Land Transport Act 1998) provides that an RLTS cannot be inconsistent with a regional policy statement or district (or regional) plan. Thus RLTSs are guided by those documents that set land use policy (i.e. where demand for travel is generated). However, district plans have largely not acknowledged this leadership role.

In its *National Land Transport Programme 05–06,* LTNZ stated that:

> *In last year's* [National Land Transport Programme], *Land Transport New Zealand emphasised the need for long-term thinking, and in particular, the need to recognise the impacts that planning and land-use decisions have on the effectiveness of transport networks. Land Transport NZ reiterates the need for decisions about land use to take full account of the effects on transport networks. Duplication of existing networks driven by short-sighted land use decisions is simply not affordable. Over 80 new cars are registered in Auckland every day. At this rate, it is not physically, socially, or financially affordable to build tarmac to accommodate them. But the problem is not restricted to Auckland. New Zealand must move beyond the 'predict and provide' model of transport funding; we can predict demand but we cannot always provide for it at the rate it is growing. We must look for other models. These include more effective use of existing networks through managing demand and the greater use of more efficient modes* (LTNZ 2005).

This statement presented a major challenge for planners in New Zealand. It recognised that transport serves a particular urban form and that our present urban form favours the private passenger vehicle.

5.5.2.3 Leadership

In the past, it has been hard to identify the leadership role that regional councils can play. While regional councils deal principally with air, water and coastal issues in relation to transport, they also have a role in co-ordinating land transport across the region. However, as discussed above, an issue arises in that the LTA only states the RLTS cannot be inconsistent with the RPS and/or regional and district plans. In essence, this approach may have limited the leadership role regional councils have demonstrated when preparing regional plans.

However, the role of regional councils has been strengthened by the RMA Amendment Act 2005 (discussed in Chapter 4.5.2) through strengthening of the RPS, and regional and district plans are now required to give effect to the RPS. This directive provides regional councils with the opportunity to provide leadership that has possibly been vague in the past.

5.5.3 External costs

The external costs of transport are not well reflected in policy decisions and are not placed back onto transport users. External costs include social costs (for example, health effects of air quality) and environmental costs (for example, CO_2 emissions, stormwater run-off). These are not reflected at the petrol pump, in road user charges, registration or insurance levies.

In a report to MoT (Fisher et al. 2002), it was estimated that the number of people over 30 years of age who die prematurely in New Zealand as a result of exposure to emissions of PM_{10} particulates[7] from vehicles is about 400 per year.

In a Canadian study, Litman (2006) estimated that:

> *In total about a third of automobile costs are external, and a quarter are internal-fixed [borne by the motorist as a fixed fee]… As a result, motorists perceive less than half of the total costs imposed by their vehicle use when making individual trip decisions... Put differently, motorists only receive part of the savings that result when they drive less.*

While air quality is primarily a regional issue managed through regional air plans, other social, economic and environmental effects should be taken into account by district plan decisions. This can occur through Section 32 (of the RMA) evaluation required when plan provisions are first introduced, and through resource consents for particular projects.

[7] PM_{10} particulates are airborne particles with a diameter of 10 micrometres or less.

5.5.4 Transport outcomes

Evaluation of transportation options (in the wider context) considers a range of criteria:

- level of service;
- travel time, including predictability of travel time;
- congestion rates;
- crash rates per million vehicle-km travelled;
- average vehicle speeds; and
- parking convenience and price.

Often, such an evaluation leads to a result favouring the private passenger car; for example, higher levels of service and convenience, or shorter travel times. These measures can be used to justify capacity expansion of road and parking facilities, and can tend to reinforce dependence on private vehicles through land use and transport infrastructure.

Transport planning today, however, is increasingly focusing on sustainability as well as affordability. While private vehicles are recognised as being important, particularly in providing quality of life outcomes, they are considered alongside other modes of transport.

5.5.5 Planning for alternative modes of transport

New Zealand's land use planning has been dominated by private vehicles, so roads have been the main focus of transport planning over the past 30 years. Other modes of transport for private use include cycles and walking. Public transport includes bus, rail and boats.

Some planning for alternative modes of transport has occurred in some major cities (such as commuter rail and buses in Wellington, and provision of cycle lanes and bus-only lanes in other centres), but other modes of transport have been poorly planned for. One reason for this is likely to be the lack of integrated land use and transport planning that was discussed above. However, the financial viability of public transport in areas outside the main centres is also a major factor.

5.5.6 Assessment of cumulative effects

While the RMA requires an effects-based approach to land use planning, identifying potential cumulative effects and the weight given to such effects is often not well done. Adverse environmental effects are often assessed and addressed (by avoiding, mitigating, remedying or off-setting the effects) on an individual basis. When the cumulative effects get to a point where they can not be avoided, remedied, or mitigated, and where they are inappropriate or unacceptable to the community, they are much harder to resolve.

5.5.7 Reactive planning

In New Zealand, the approach taken to land use planning has largely been reactionary rather than pro-active. A land owner or developer is usually the proponent of a project, and the local authority then reacts to the proposal. While land zoning can provide clear direction to land use form and patterns, some land owners/developers want to develop their land for uses that are not zoned for (particularly on the fringe of zones), and either seek consents or a zone change (via a plan change) to allow the activity to proceed. This reactionary approach has led (in some cases) to poor planning, and in particular the provision for only 'one transport mode' systems. This has led to a case-by-case approach to development that does not promote an integrated sustainable land transport system.

5.6 Summary

District plans provide an opportunity to indirectly and directly influence some of the national outcomes sought in relation to sustainable land transport planning, as outlined in Table 5.5.

Table 5.5 District plan influence on national sustainable land transport outcomes.

Direct influence	Indirect influence
Environmental sustainability	Public health
Accessibility	Economic development
Integrated urban form	
Safety	
Functional transport networks	

Predictably (because of the direct and indirect influence of district plans upon sustainable land transport), the outcomes envisaged by national land transport policy documents are being addressed at the district plan level.

However, in light of issues considered as part of the wider and historical sustainable land transport planning context, a wider focus is required to implement legislation and government policies. It is necessary to integrate land use and transport planning, take external costs into account, introduce better measures of land transport outcomes, and plan for alternative modes of transport.

6. District plan preparation and land transport

6.1 Assumptions

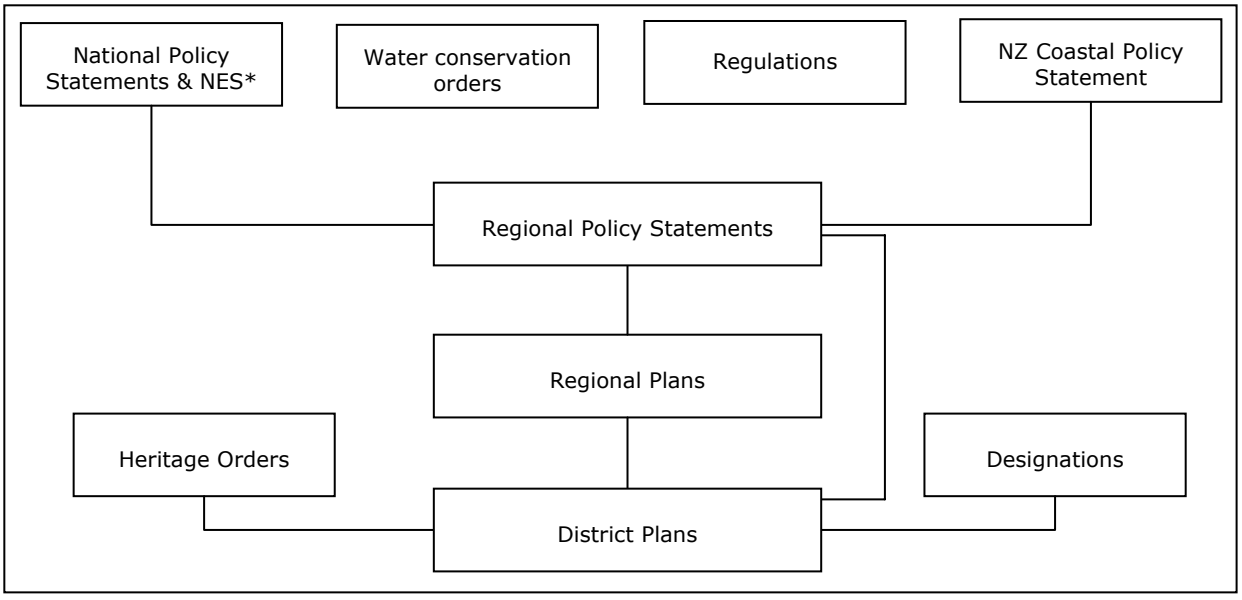
This chapter summarises the preparation of district plans and their application in land transport. It assumes that readers are generally familiar with the legislative process for formulating a district plan.

6.2 Plan preparation process

The responsibilities of local authorities are prescribed in Section 31 of the RMA and include controlling use of land (including designations such as for transport networks), subdivision, and noise and hazard mitigation.

Local authorities are also responsible for the mandatory preparation of district plans, which must demonstrate how any national or regional plan or policy statement is being given effect (according to Section 75(3)). District plans form part of a hierarchy of planning instruments under the RMA as shown in Figure 6.1.

Figure 6.1 Hierarchy of planning instruments under the RMA.



*National Environmental Standard

The matters to be considered and contents of a district plan are set out in Sections 74 and 75(1) of the RMA. The process for preparing or changing a district plan is set out in Section 74 and the First Schedule to the RMA.

Land transport infrastructure is provided by a variety of agencies under various pieces of legislation. Some of these agencies are able to use tools that will have de facto controls

on land use independent of the RMA. It is therefore important that when preparing a district plan, these agencies are consulted and that local authorities recognise others' responsibilities in contributing towards a sustainable land transport system.

District plan development includes identifying issues, setting objectives, establishing policies, methods and stating expected environmental results. During this process, specific assessments need to be undertaken including:

- What are the significant resource management issues of the district (Section 75(2)(a))?
- Do the proposed objectives meet the purpose of the RMA (Section 32(3)(a))?
- Are the proposed policies, rules or other methods the most appropriate for meeting the objectives (Section 32(3)(b))?

An important first step in promoting sustainable land transport through district plan provisions is for local authorities to recognise this as a significant resource management issue that needs to be addressed.

This work should not be undertaken in isolation; the district plan provisions must aim to achieve national and regional objectives in land transport. This will partly depend on the timing of preparing or reviewing plans in relation to national and regional planning objectives.

The remainder of this chapter presents a process for incorporating sustainable land transport initiatives in a district plan.

6.3 Is sustainable land transport an issue for a specific district?

An 'issue' is a clear statement about something that needs to be addressed in order to achieve the purpose of the RMA. Although the RMA does not require a district plan to include issues in the plan itself, Section 75(2)(a) of the RMA requires a district plan to respond to the 'significant resource management issues of the district'. This implies that an in-depth understanding of the issues facing the district is required as well as an ability to select those issues that are considered to be significant. When considering land transport within the district plan, the question must be asked: is the sustainability of the land transport system significant to our district?

This question is fundamental to an analysis of how a sustainable land transport system is treated within a district plan. To answer this question, local authorities will need to be:

- well informed so they understand their land transport system; and
- able to identify whether significant land transport issues are evident, or whether they may arise within the planning cycle.

This requires three steps to determine whether sustainable land transport is significant for the district:

1. analysing the available information (see Section 6.4);
2. identifying elements within the land transport network that need addressing in the plan (congestion, safety, social severance, integration with land use, protection of the transport network etc.) (see Section 6.5); and
3. using tools such as a significance filter (see Section 6.6.4) to determine whether sustainable land transport is a significant issue for the district. Cumulative impacts on sustainability at a national level may mean that sustainable land transport is a significant issue for all districts.

6.4 Analysis of information

Information required for using the significance filter can be sourced from documents and consultation and/or specific studies undertaken for the purpose of plan development. These can be summarised as follows:

- national transport policy or direction;
- Regional Policy Statements and plans;
- Transport policy, indicators and targets of the district potentially sourced from the RLTS and associated annual implementation reports;
- environmental performance indicators for transport (MfE 2004);
- Long-Term Council Community Plans (LTCCPs), Annual Plans and Strategic Plans;
- social indicators (population profile, regional growth pressures, community safety); and
- consultation with stakeholder groups including road controlling authorities, road transport user groups and the wider community. Wider consultation is undertaken in the development of the RLTS – this is a good place to start when considering who to consult.

6.5 Identification of land transport elements

Identifying land transport elements would involve a review of the RLTS and the annual implementation reports. The local authority could also consult with land transport agencies such as the Regional Land Transport Committee, which develops and monitors the RLTS. Other agencies include the MoT, the Road Transport Association, the NZTA, and rail organisations such as ONTRACK and KiwiRail.

In addition, local authorities can use regional growth strategies, regional economic development strategies, asset management plans and LTCCPs to identify outcome statements and barriers to growth that may guide decisions on what elements need addressing.

'Bigger picture' thinking can consider what legislative, financial, supply/availability or other factors may influence communities' and individuals' choices of transport, and

therefore what changes may occur in demand for land transport and the types of land transport.

For example, predicted or actual changes in fuel costs and in availability and cost of private vehicles may lead to greater demand for:

- public transport,
- services such as 'swipe and ride' rental bicycles, and
- greater use of two-wheeled vehicles (scooters and motorcycles).

These all lead to demand for additional infrastructure and services, including parking and dedicated lanes.

Other aspects may include moves by vehicle manufacturers to produce smaller and more efficient vehicles to offset fuel cost increases and greenhouse gas emissions.

Changes in fuel availability and types (which may encourage electric vehicles) may generate demands for the provision of different facilities and infrastructure.

Local authorities should use the available sources and predictions to prioritise issues. Depending on those issues, they should determine what focus the district plan should have in recognising the land transport elements and any relevant/associated issues that need addressing.

The elements of the land transport system identified may include:

- congestion,
- safety and efficiency (including fuel efficiency),
- environmental effects (greenhouse gas emissions),
- social severance,
- integration with land use,
- access to public transport services, and
- lack of land transport options.

Even if these (and other) elements are identified, a process must still determine whether the district plan has a role to play in addressing the issue. For example, an integrated approach may be needed which addresses issues associated with elements such as funding, engineering and education. While the district plan can regulate some aspects of the elements, a clear understanding of how the plan is to be used in conjunction with other mechanisms needs to be included in the explanations and reasons in the plan.

6.6 Significance filter

6.6.1 Introduction

A significance filter may be used to determine the scale of potential land transport effects over the planning cycle, and whether these effects are significant for the district. The basis of the significance filter is to provide a series of targets for transport elements within the district.

Targets have often been established during other local authority processes, or they may have to be established as part of a consultative exercise or as part of a specific study. The target is then benchmarked against current performance and a projected ten-year performance which assumes no action is taken.

The process for developing the information for the significance filter involves:

- identifying the transport elements and likely trends (as discussed above);
- identifying the targets/indicators and monitoring information from the RLTS/LTCCP/Regional Growth Strategy etc.;
- developing a table to undertake the significance filter process (see Table 6.1 below for an example);
- using the results of the significance filter process to discuss the mechanisms to address the significant issues, including the role of the district plan, with the Regional Land Transport Committee; and
- linking any district plan objectives and policies and methods to the issues identified.

This significance filter process would also become a useful basis for input into the evaluation that the local authority is required to undertake under Section 32 of the RMA when preparing the district plan.

The outcome of the 'significance filter' process may identify land transport issues across the district that need to be addressed through district-wide provisions in the district plan (such as personal security, access to a range of services, etc.), or location-specific issues that can be dealt with through specific planning mechanisms (such as access points, social severance, etc.).

An example of a filter using a theoretical situation is summarised in Table 6.1 below. This type of table could be established for particular land use activities such as forestry, quarrying, etc.

Table 6.1 Example of a significance filter table*.

Transport elements	Source of data	Accepted target source	Current performance	20-year performance	Location
Commuter transport mode	Census Predictions of cost of fuel	RLTS			
Safety	Crash statistics	Road Safety 2010			
Level of service (road)	Congestion/ delay time surveys	AUSTROADS guide			
Level of service (port)	Ship loading time surveys/ modal surveys				
Travel time	Traffic surveys	RLTS			
Air quality	Monitoring	MfE Guidelines			
Etc.					

* This would need to be completed by the roading authority for a particular transport resource.

6.6.2 What are the district's objectives?

An objective is a statement in a district plan of what will be achieved when the issue is resolved.

The primary purpose of land transport systems and infrastructure is to enable people to access social, recreational and commercial opportunities. This access is provided within and through a district on the following scales:

- local (subdivision access road, footpath and cycleways),
- regional (rail, arterial roads and cycleways),
- national (state highways, coastal shipping, airports and rail), and
- international (airport and shipping).

Each mode of transport and the function it performs will affect the local economy and society in various ways, and provide different challenges in terms of environmental management.

The objectives of the district plan will be to assist in achieving the outcomes sought in the national policy and legislation, as well as by RPSs relating to economic development, safety and personal security, access and mobility, public health and environmental sustainability.

6.6.3 What are the district's policies?

Policies describe the position, consideration or criteria applied in deciding whether an activity or effects should be allowed. They guide the local authority on what will be allowed in any a given circumstance.

> *Policies should describe how a particular objective is to be achieved, i.e. general course of action to be pursued to achieve certain environmental outcomes. A policy will thus need a specific programme of actions to carry it out* (MfE 2008b).

Policies in the district plan need to outline how the objectives for sustainable land transport included in the plan will be achieved.

6.6.4 What methods are appropriate?

6.6.4.1 Evaluation methods used by local authorities

Section 32 of the RMA sets out a process for local authorities to test the appropriateness of any proposed provisions for district and regional plans. It requires councils to consider a broad range of policies, objectives and methods, and to use a rigorous analysis of the benefits and costs in deciding which provisions are the most efficient.

The methods evaluated can be regulatory or non-regulatory, and may include: designations,

- zoning for land use,
- standards,
- structure plans, and
- other tools.

6.6.4.2 Designations

Designation procedures are prescribed in Part VIII (Sections 166–186) of the RMA. They provide requiring authorities, who have financial responsibility for public works, with the ability to set aside land for certain purposes. Designations are recorded in a district plan.

In relation to land transport, district councils, the NZTA and ONTRACK are all network utility operators or requiring authorities for public works under the RMA. Each of these authorities can therefore use designation procedures to implement national, regional and district sustainable land transport strategies. In this way, the district plan can play a key role in providing for sustainable land transport outcomes and improving the certainty around those outcomes through the protection afforded by the designation process.

The designation procedure is particularly useful in dealing with a transport network or another linear infrastructure, such as roads and railways. A designation can be used to protect existing and identified transport routes (for example, setting aside corridors to be developed when funding becomes available) for suburban rail networks, rapid transit links, new strategic roads, etc. They can be 'rolled over' as new district plans are developed or reviewed (see 'Proposed District Plans' (McCallum-Clark 2003)).

Provided the proposed works are in accordance with a designation's specific purpose (for example, road or railway works), it gives the requiring authority rights to undertake activities on land without the need for resource consent. It also gives the requiring authority primacy over any other activity that may affect the designated land. These rights essentially give primacy to the designation over other provisions of the existing district plan or proposed district plan. Resource consents are only required for activities outside of the scope of a designation.

Designations can also protect designated land from inappropriate development adjacent to the transport corridor (avoiding future reverse sensitivity issues). Furthermore, designations allow land to be purchased for transport.

When designations are at the planning stage, authorities should be careful to ensure enough area is available to allow possible future requirements of the transport corridor to be met. For example, they should allow for future road widening, provision of footpaths and cycleways, bus lanes, park and ride facilities, cycle parks etc. (see Table 7.2).

6.6.4.3 Land use zones

District councils can use zoning as part of achieving sustainable land transport outcomes. Zoning allows local authorities to identify those land use activities that may have acceptable effects in a particular area. For example, activities such as construction, operation and maintenance of roads/rail can be permitted (within certain thresholds) in specific zones.

Zoning also allows for further growth in accordance with regional growth strategies and is an opportunity to assess the effects of land use activities on land transport systems. Zoning can also expressly provide for things that will promote sustainable transport (e.g. making cycleways, walkways and transport interchanges permitted or controlled activities) in appropriate locations and areas.

Within zones, specific activities (or effects) may be allowed as of right while others may require resource consent. District plans may, for example, require resource consents to consider the effects of particular activities on land transport systems. This process allows local authorities to require developers to undertake certain works and services, or provide financial contributions to promote sustainable land transport and ensure any adverse effects are avoided, remedied or mitigated as required by the RMA. The MfE Quality Planning Website (MfE 2008b) has the following quote from the Guidance Note on Land Transport:

> *Consideration should be given to the following in the district plan:*
>
> - *Zoning provisions that also take account of public transport systems, roading networks and parking. Residential communities need to be close to good transport systems that include primary and secondary roads and rail and bus networks.*

Within zones, authorities may also adopt a series of performance standards relating to matters of interest to sustainable land transport systems (such as noise, vibration or air quality) that employ threshold tests/figures or mechanisms, e.g. building setbacks, or AUSTROADS or New Zealand and Australian standards (NZS/AS).

However, it may be difficult to identify all the actual and potential adverse environmental effects that may come from the use of zoning; zoning on its own is unlikely to address all effects. From this perspective, zoning could be considered far too coarse a tool to manage

the adverse environmental results from activities that could affect the sustainable management of transport systems.

The Land Transport Guidance Note (MfE 2008b) identifies issues when considering using zoning:

- *Zoning may avoid the need to designate existing networks. However, a plan change would generally be required for new routes or additions to existing routes not included in the zone.*
- *Note that, particularly for new routes (where land is required to be purchased) a designation may be a more appropriate or effective mechanism for achieving the purpose of the activity. Eg, if transport corridors are zoned, a plan change would be required to widen the corridor (or extend the boundary), and therefore in such cases an alteration to a designation may create more certainty.*

6.6.4.4 Standards

A variety of industry standards are available to planners to address a range of technical and environmental matters. These include technical engineering/safety issues that are linked with AUSTROADS (including sight distances for access, parking requirements, etc.) or NZS/AS standards (including assessment of sound/environmental noise).

For example, NZS4404:2004 (Land Development and Subdivision Engineering (Standards New Zealand 2004) requires allowance to be made in road design for cycles, in general compliance with AUSTROADS guides. Separate bicycle tracks are required – good design requires separation from the carriageway or a different route to be selected. The standard requires stormwater disposal and lighting to be provided for all off-road carriageways, and cycleways to be designed to the standards set out in *AUSTROADS Guide to Traffic Engineering Practice Part 14: Bicycles (AUSTROADS 1999).*

Other issues relating to urban form/amenity issues could involve permitted activity standards or Urban Design Guidelines for specific urban areas.

6.6.4.5 Structure plans

Structure plans can be incorporated into district plans as a method of managing areas where growth is likely to occur in the future. A structure plan commonly provides for the layout of roads and the provision of land transport options within a development area (Goodwin et al. 2000).

The structure plan for the Cambridge North Deferred Residential Zone, for example, considers the traffic flow to and from main roads and within the subdivision, safety, staging and interaction with the State Highway 1 bypass (Tonkin & Taylor Ltd 2004).

Structure plans also have the potential to consider other aspects of sustainable land transport. These include social and economic aspects, and the provision of services (such as cycleways, bus services, light rail modes and interchanges between transport modes).

6.6.4.6 Other tools

Limited access roads

The roading provisions of the Local Government Act 1974 (New Zealand Government 1974) are still in effect. They allow for the creation of limited access roads (for example, the Transit New Zealand Act 1989 (New Zealand Government 1989) allows for NZTA Limited Access Roads). Once declared, a limited access road is no longer considered a road for the purpose of subdivision, and title can only be issued by Land Information New Zealand with the approval of the road controlling authority. This tool is commonly used by the NZTA on strategic sections of state highways to help maintain the function of the route.

Non-regulatory methods

Specific land transport tools are often identified within an RLTS to target specific sectors of the land transport infrastructure. Common tools are:

- **Freight action plans:** Strategies with a specific freight focus. Freight action plans may contain a set of issues, a series of actions under objectives, and/or a framework for moving forward on identified specific actions. Action plans can be a component of an RLTS and hence must be consistent with the overall framework and direction of an RLTS;
- **Indicative cycle routes/walkways and interchanges/connections (bus/rail stations/park & ride etc.):** Networks of cycle routes that are defined by local authorities and may include design guidelines. Indicative cycle routes aim to have a significant influence on providing for cyclists in new developments. To make these provisions effective, territorial authorities will need to ensure developers either contribute to the cost of these facilities through financial or development contributions, or at least set aside land for future provision;
- **Workplace travel plans:** A package of measures to discourage people from driving to work alone, and to encourage them to use more environmentally friendly

forms of transport such as walking, cycling and public transport. These measures can include providing better cycle parking and improving shower, changing and locker facilities for staff after running, cycling or walking to the office in all weathers;

- **School travel plans:** Community-based road safety programmes designed for use in high-risk areas aimed at making children's journeys to and from school safer. These programmes bring key stakeholders together to collaborate in addressing road safety issues. The model is intensive and data-based, and relies on facilitation;
- **Public transport initiatives:** Local bus, rail and ferry services with rate-payer funding through Annual Plans, LTCCPs and Regional Passenger Transport Plans;
- **Urban Design Guidelines:** Guidelines to assist with best practice urban design, and to address the social, economic and environmental aspects of good urban design. These can be incorporated into district plans either by applying them specifically to zones to achieve a particular urban design for a defined area, or by requiring projects to be assessed against the guidelines to determine whether the project will result in good urban design outcomes. The urban design outcomes can have specific sustainable land transport aspects; and
- **Road safety education:** This can include:
  - facilitators working alongside Police Education Officers to support and facilitate the use of road safety as a context for teaching and learning in schools;
  - schools participating in workshops/training days;
  - the ongoing development of quality resources (including websites) to promote road safety and enhance existing classroom programmes; and
  - the creation of partnerships and networks between agencies, schools, teachers and students in order to reflect on, talk about and change road safety practice.

Many of these tools will help in the delivery of outcomes sought in the district plan.

6.6.5 Expected environmental results

It must be remembered that each district is different, so their sustainable transport outcomes will differ. Two aspects district planners should consider are:

- provision of sustainable land transport networks (including alternative transport); and
- appropriate protection of other aspects of the physical and social environment from the adverse effects of land transport.

Some basic principles may include:

- **Rural districts:** basic issues such as safety, long-term efficiency of arterial transport networks, protection of key transport hubs (ports, airports, railheads) from reverse sensitivity issues, protection of the structural integrity of roads from impacts such as forestry/quarries, and protection of key environmental features may be all that need to be addressed;
- **Urban areas:** more complex issues. These are likely to include the issues faced by rural districts, but also include noise around sensitive activities, vibration, social

severance, congestion and air quality. Good environmental outcomes will also include good access to land transport networks and alternative means of travel (efficient road, bus, rail and ferry services) as well as ensuring other aspects of the physical and social environment are appropriately protected (such as protecting key view shafts and protection of environmental features); and

- **Rural/urban areas:** While issues are not complex yet, they may become more acute as pressure is applied by development. District plans should adopt methods to ensure decisions on future land use activities incorporate sustainable land transport outcomes.

The Expected Environmental Results (EERs) are required to be identified in district plans by the RMA. EERs should reflect the outcomes that the implementation of the objectives and policies will produce, i.e. the EERs identified should be consistent with the outcomes sought at a national level for sustainable land transport systems.

6.7 Summary

The RMA provides a framework for the sustainable management of physical resources, which includes aspects of land transport. Local authorities have the responsibility of preparing district plans that could include mechanisms to promote the sustainable management of land transport systems.

A key stage in preparing plans is determining whether sustainable land transport is a district issue that needs to be addressed through provisions in the district plan. The process for determining this matter includes analysing information, identifying the elements of the land transport system in the district that need addressing, applying a 'significance filter', and developing appropriate objectives, policies and methods for the plan.

The degree to which the district plan assists in promoting the sustainability of land transport will depend on the nature of the district, the elements of the land transport system that need addressing and the ability of the council to address the issues through the district plan.

7. Best practice guidance

7.1 Introduction

This chapter identifies best practice as shown in existing planning documents and examples from international literature. It combines the sustainable land transport research in the previous chapters, and sets out guidance for sustainable land transport in district plans. The approach used is similar to that in the Standards New Zealand *Model General Bylaws* (Standards New Zealand 1999), which provides a range of model bylaws (as examples) which, in turn, form the basis for drafting many local government bylaws.

In a similar way, this chapter intends to provide a set of model (example) objectives, policies and methods for the most common land transport issues. A comprehensive review of district plans in 2003 found that a large amount of available information and guidance was not in a usable format for local planning purposes (Department of Ecology, Washington 2008). This discussion document addresses this issue by providing model provisions which can be assimilated into local planning through district plans. A template is provided which can be adopted or modified as appropriate. A rule table is also provided, which acts as a checklist for sustainable land transport rules which may be relevant to the district.

7.2 Key contents of district plans

Five key components of a district plan are:

- **Issues:** What are the problems/concerns?
- **Objectives:** What do we want to achieve as outcomes? What will be achieved when the issue is resolved?
- **Policies:** How are we going to achieve the objective, or what position are we going to take? What is the intended course or general plan of action?
- **Methods:** How will we implement the policies (including regulatory and non-regulatory methods)? What will actually be done?
- **Expected Environmental Result (EER):** What do we expect will be the combined effect of the objectives, policies and methods?

Table 7.1 relates the best practice model provisions to resource management issues. An important part of any plan-making process is to ensure that the issue is a resource management issue, and not something which is outside the scope of the RMA or outside the functions of the council under Section 31 of the RMA. The issues in Table 7.1 may not be relevant to all districts, but will be common to many.

Table 7.1 Resource management issues related to sustainable land transport.

Outcome	Issue	National policies	RMA issue?	Significant?
Environmental sustainability (air, noise, discharges, visual, water, energy use, habitat and landscape protection, climate change...)	Avoiding, remedying or mitigating adverse effects on the environment from land transport networks and associated infrastructure to ensure environmental sustainability	Kyoto Protocol NZTS LTMA LTA EECA Strategy Energy Strategy	Yes	Yes
Accessibility	Maintaining and improving access (e.g. public transport, multi-modal transport networks, freight access) including alternative forms	NZTS LTMA LTA MoT	Yes (Section 5)	Possibly
Improved health	Protect and promote (improve) public health through land transport networks and modes, including provision for alternative forms (e.g. walking and cycling)	NZTS LTMA LTA MoH MoT	Yes (through urban design and Section 5)	Yes
Functional transport networks	Avoiding reverse sensitivity effects on land transport networks to retain their function and integrity	LTMA NZTS	Yes	Yes
Economic development	Land transport networks which assist economic development	NZTS LTMA LTA	No	No
Integrated urban form	Integrating land transport networks with land use and population demands	MfE MoT MoH	Yes	Yes
Safety	Safe land transport networks	NZTS LTMA LTA MoT	Yes (Section 5)	Possibly

This table shows that economic development is not a matter which falls within the scope of a district plan. Similarly, while safety is considered a resource management issue, it may not be significant enough in a particular district to justify a regulatory planning response.

Having defined the resource management issues, the following guidance provisions follow the standard district plan format (and minimum requirements) of objectives, policies, methods and rules.

Although methods other than rules are optional under the RMA, this best practice guidance also includes such methods as a non-regulatory checklist for promoting sustainable land transport. The guide does not, however, include the following:

- environmental results expected (shown as the national policy outcomes expected),
- monitoring processes, or
- a process for dealing with cross-boundary effects.

7.3 Definitions

The following model provisions variously refer to land transport infrastructure, networks, and systems. These components should be separated in order to meet the specific needs of each. They are defined as follows:

- **Land transport infrastructure:** the physical built form which facilitates the movement of people and goods, e.g. roads, railways, cycleways, footpaths, ferry terminals, wharves and associated facilities;
- **Land transport network:** an interlinked network of different transport modes (cars, buses, trains, freight vehicles, pedestrians, cyclists, boats, aircraft); and
- **Land transport system:** the entire system, comprising both the infrastructure and the networks, which form the distribution system for the movement of people and goods.

7.4 Model provisions to address key sustainable land transport issues

7.4.1 Structure

The following subsections set out model provisions for key sustainable land transport issues. These are set out in the following format:

- Issue: What is the problem or concern?
- Objectives: What will be achieved when the issue is resolved?
- Policies: What is the intended course or general plan of action?
- Methods: What will actually be done?

7.4.2 Environmental and amenity values

7.4.2.1 Issue

Land transport networks have the potential to adversely affect:

- air quality, through vehicle emissions;
- water resources, through contamination from stormwater or suspended sediment from earthworks, and/or disruption of water bodies and fish passage through installation culverts and piping;
- ecological habitats, through removal of vegetation and/or wildlife corridors (ore through providing corridors for rodents and pests);
- natural hazards;
- climate change/CO_2;
- energy usage;
- community cohesion;
- community/building displacement;
- cultural and/or historical resources;
- amenity values (noise, vibration and visual);
- availability of productive land, through land take; and
- pedestrian and cyclist safety and amenity including availability and safety of walkways, footpaths, cycle lanes and tracks, and the level and impacts of weather protection (including shade).

Land use activity can also adversely affect aspects of the district's transportation system. Adverse effects on the efficiency and safety of the system may occur, such as:

- generation of traffic and increased volumes of traffic,
- parking and loading impacts,
- effects on vehicle visibility and safe sightlines,
- implications for accessways and crossings,
- location of hazardous substance storage facilities in relation to the network,
- effects on traffic safety from signage and distractions at intersections, and
- reverse sensitivity effects from locating residential activities close to busy transport areas.

7.4.2.2 Objectives

- Land transport systems which minimise adverse effects and which promote energy efficiency, and
- communities where land transport systems and components of those systems have an overall positive (rather than an adverse) effect.

7.4.2.3 Policies

- Provide for the development and operation of land transport systems, networks and infrastructure in areas where they do not result in significant adverse effects on the environment or the community;
- Ensure potential adverse effects on the environment and wider community are taken into account in any development or upgrade of land transport systems;
- Ensure alternatives are considered in the development of land transport systems, networks and infrastructure;
- Design the land transport infrastructure to ensure environmental sustainability;
- Assess and control the combined effects of both transport infrastructure and the alternative transport mechanisms designed to use that infrastructure; and
- Provide for and support land transport systems and transport modes which promote energy efficiency and conservation, in preference to systems and modes which result in inefficient energy use and consumption. This includes providing for and supporting alternative forms of transport (cycleways, walkways, bus lanes, rail networks).

7.4.2.4 Methods

- Develop rules which control the adverse environmental and amenity effects of transport systems, including new systems and upgrades to existing systems. For example:
  - maximum limits on habitat removal and areas of earthworks (to stimulate more detailed ecological impact assessment and requirements to provide appropriate mitigation),
  - setbacks from waterways,
  - construction noise standards, and
  - Setbacks from sites of significance;

- Develop rules which enable the development of facilities and infrastructure that provide for or encourage non-motorised transport as permitted activities;
- Develop rules that require new developments, subdivisions etc. to incorporate appropriate setbacks from land transport corridors;
- Develop rules that require new developments, subdivisions etc. to incorporate provisions for parking, sight distances etc.;
- Implement subdivision controls, urban design guides, council engineering standards and other zoning controls;
- Where possible and appropriate, advocate and promote energy-efficient transport systems to the NZTA and through councils' own roading projects;
- Establish the roading network/hierarchy in the plan, with associated rules;
- Require financial contributions which mitigate the adverse environmental effects of roads;
- Identify and protect future transport corridors (usually by designation/zoning);
- Provide for designations for existing and future transport routes, and for upgrades to the roading system, including sufficient area to accommodate cycleways, walkways, bus lanes and other transport modes (for example, rail); and
- Develop assessment criteria for consent applications for subdivision and developments that include traffic assessments, including identifying and providing for sustainable land transport alternatives.

7.4.3 Accessibility

7.4.3.1 Issue

While the main purpose of land transport networks is to provide accessibility, such transport networks sometimes fail to provide full access by:

- not providing for different transport modes (for example, cycling, walking and public transport); or
- not adequately providing for people's access to and through places of living, places of work and places of recreation.

7.4.3.2 Objectives

- To enable multi-modal land transport networks and infrastructure which are easily accessible for all sectors in the community to be established and effectively operated.

7.4.3.3 Policies

- Develop a planning and regulatory framework which enables transport systems and infrastructure that include an adequate number of easily accessible links to existing and future transport networks, including air and water networks; and
- Ensure that development and subdivision along or adjacent to primary transport networks are designed to ensure appropriate accessibility.

7.4.3.4 Methods

- Develop assessment criteria for development and subdivision which include transport network permeability and accessibility;
- Develop assessment criteria for development and subdivision which include identifying and providing for sustainable land transport alternatives;
- Provide for designations for existing and future transport routes, and for upgrades to the roading system, including sufficient area to accommodate cycleways, walkways, bus lanes and other transport modes (for example, rail);
- Advocate the development of asset management plans and engineering standards which require a minimum level of service for network linkages; and
- Encourage development within close proximity to transport corridors and nodes.

7.4.4 Public health

7.4.4.1 Issue

Land transport networks provide an opportunity to improve public health through:

- avoiding, remedying and mitigating the adverse effects of discharges to air and water;
- promoting and providing for healthy transport modes, e.g. cycling and walking; and
- promoting the establishment of sensitive land uses (e.g. child care facilities) away from the adverse effects of major transport networks.

7.4.4.2 Objectives

- Enable the development of transport facilities and networks which take sensitive land uses and environments into account;
- Enable transport facilities and networks which provide for appropriate management of services (for example, stormwater reticulation, management, treatment and discharge); and
- Encourage land transport systems which encourage non-motorised transport modes and make adequate provision for these.

7.4.4.3 Policies

- Ensure that compatibility between transport networks and sensitive land uses and environments is taken into account when considering the development of land transport networks; and
- Provide incentives for and give preference to land transport systems which provide for non-motorised modes of transport, primarily walking and cycling, but also others such as roller blading.

7.4.4.4 Methods

- Advocate for the location of sensitive land uses away from major transport infrastructure where the effects are incompatible;
- Require the inclusion of measures to reduce the adverse effects of transport related activities on sensitive environments (for example, stormwater treatment);
- Advocate for and promote multi-modal transport systems which include cycling and walking as a core part of the system;
- Develop rules which control the adverse environmental and amenity effects of transport systems, including new systems and upgrades to existing systems. For example:
  - construction noise standards,
  - noise standards or management measures for operating transport systems that are appropriate to protect sensitive neighbouring land uses, and
  - setbacks for sensitive sites or land uses (e.g. child care facilities);
- Develop rules which enable the development of facilities and infrastructure that provide for or encourage non-motorised transport as permitted activities;
- Use the resource consent and council asset planning processes to seek opportunities to integrate non-motorised transport modes in the design and construction of transport systems, including off-road networks;
- Provide for designations for existing and future transport routes, and for upgrades to the roading system, including sufficient area to accommodate cycleways, walkways, bus lanes and other transport modes (for example, rail); and
- Incorporate multi-modal transport options in council planning documents and funding strategies, e.g. LTCCPs, road asset management plans, physical activity plans and pedestrian/cycle strategies.

7.4.5 Functional land transport networks

7.4.5.1 Issue

Land uses can adversely affect or restrict the ability of land transport networks to function efficiently or as they were designed to. For example, networks should be protected from reverse sensitivity, and arterial routes should also be protected.

7.4.5.2 Objectives

- The ability of land transport systems to distribute people and goods efficiently and effectively is protected from the adverse effects of land uses.

7.4.5.3 Policies

- Control land uses which may adversely affect land transport systems through traffic generation or through otherwise affecting the function of the network.

7.4.5.4 Methods

- Develop a zoning and land use pattern which avoids land uses being located or operating in a way which is incompatible with transport systems;
- Provide for designations for existing and future transport routes, and for upgrades to the roading system, including sufficient area to accommodate setback distances for sensitive land uses; and
- Encourage development within close proximity to transport corridors and nodes as a means of encouraging public transport.

7.4.6 Functional and integrated urban form

7.4.6.1 Issue

Land use activities, public places/spaces, and land transport networks have the potential to generate incompatible effects.

7.4.6.2 Objectives

- A pattern of land uses and land transport networks which are functional, compatible and well integrated.

7.4.6.3 Policies

- Adopt a long-term planning approach to development and urban form with a broad scope, in order to ensure land use and transport networks are integrated;
- Apply best practice urban design principles in the planning and design of urban areas; and

- Provide for an increased density around public transport nodes and primary public transport networks (e.g. a minimum of 38 residential units per hectare gross).[8]

7.4.6.4 Methods

- Develop rules which require, promote and provide incentives for development and integrated urban form around public transport nodes;
- Prepare urban design guides for new developments;
- Adopt the New Zealand Urban Design protocol (MfE 2005) or some other urban design best practice for a council's own transport planning; and
- Set a maximum number of car parks for activities in the CBD areas, rather than minimum numbers.[9]

7.4.7 Safety

7.4.7.1 Issue

Land transport networks have the potential to adversely affect the safety of people and communities through a range of factors such inappropriate siting in relation to sensitive land use and community facilities, and inadequate provision of safety measures such as pedestrian and cycle access.

7.4.7.2 Objectives

- Encourage a land transport system which enhances and promotes the safety of all users and those adjacent to the system.

7.4.7.3 Policies:

- Provide for the development and operation of land transport systems, networks and infrastructure in areas where they do not result in significant adverse effects on the community; and
- Encourage land transport systems, networks and infrastructure that provide for the safe functioning of adjacent communities.

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[8] A density of 17.5 units/ha (571 m^2/unit) is sufficient to support a basic bus service with 30–60 minute headways. Increasing the density to 37.5 units/ha (266 m^2/unit) supports a bus service at 15 minute headways (Dunphy et al. 2003).

[9] A number of plans (e.g. Wellington City) have maximum parking requirements for CBD areas instead of minimum parking requirements. This is also a common technique in the UK for managing traffic demand. Maximum parking requirements have a number of sustainable land transport benefits which minimum standards do not. Maximum parking requirements allow better and more efficient use of valuable land space; promote centralised parking in the CBD instead of dispersed parking, leading to a more functional land-use pattern; promote cohesive urban and building design; promote walking and public transport; reduce private car use within CBD areas; and help reduce CBD congestion from private cars.

7.4.7.4 Methods:

- Encourage the inclusion of safety considerations in other council planning documents, e.g. pedestrian/cycle strategies, road asset management plans;
- Ensure transport designations are sufficient to accommodate multiple transport modes and interchanges/connections between them where appropriate; for example, road vehicles, walkways, cycleways and bus lanes; and
- Develop rules to ensure safety requirements are included in the design of transport infrastructure and connections, for example:
  - standards for visibility from access ways,
  - standards for vehicle crossings, and
  - standards for manoeuvring of delivery and freight vehicles on commercial and industrial premises.

7.5 Methods common to all the land transport issues

- Establish a multi-department transport forum of management staff within council to ensure the council's land transport projects are designed and built to integrate sustainability, urban design and accessibility principles;
- Develop rules which give effect to and implement the RLTS and RPS for the region;
- Develop design controls and/or development incentives to promote transit-oriented developments along transport networks; and
- Develop rules which control parking, off-site manoeuvring and access.

7.6 Checklist of rules

Table 7.2 provides a checklist for rules that could be included in district plans, where appropriate, to address sustainable land transport issues.

Activity	Suggested rules	Best practice notes
Site access & safety	• Minimum distances of vehicle crossings from other vehicle crossings, including railway crossings; • minimum distances of vehicle crossings from intersections; • maximum number of vehicle crossings per site or per *x* metres of road frontage; • access design standards, e.g. widths, queuing length, manoeuvring; • facilities for pedestrians and cyclists; • ensure visibility standards are suitable to allow vehicles to move into the accessway safely and consider pedestrian/cycle movements; • ensure on-site loading facilities do not adversely affect road or pedestrian safety.	The document *Road signs and markings for railway level crossings* produced by LTNZ (2000) provides guidance for drafting sightline standards in district plans.
Parking	*City: CBD and suburban areas* • Maximum number of parking spaces (parking ratio). Typical ranges are from 3.5 to 5 spaces per 100 m^2 leasable floor area, depending on the type of retail activity[a]. These figures closely match actual figures in a recent parking survey for Nelson City, which showed actual parking demand ranged between 2 to 5 spaces per 100 m^2 gross floor area[b]. Recommended parking requirements are listed in Appendix A. *Other areas* • Minimum number of parking spaces (parking ratio) listed by activity; • avoid impacts of parking on visual amenity through landscaping where appropriate; • accommodate parking requirements for different activities on the same site, and varying parking demands at different times of day; • provide for sufficient access and safety in each parking area; • provide for cycle parking; • provide for park & ride facilities adjacent to public transport interchanges.	Parking controls are a key to establishing the urban land use pattern, and a powerful tool in traffic demand management. The primary objective is to achieve high-density nodes which have shared (centralised) parking and reduced private vehicle use. Amongst others, the Proposed Auckland City Central Area Plan (1997) and Wellington City District Plan (Central Area) specify a maximum, rather than minimum number of car parking spaces that can be provided as a permitted activity.

Table 7.2 Checklist for rules applicable to sustainable land transport.

Activity	Suggested rules	Best practice notes
Off-site manoeuvring	• Restrictions on the off-site (on-road) manoeuvring associated with land use activities, e.g. no reversing onto the carriageway of collector, principal, arterial or state highway roads; no queuing on roads; or swinging into the paths of other vehicles.	These rules are important to avoid vehicle conflict and congestion, and to maintain road user safety.
Noise (including vibration)[c]	• Maximum noise standards; • design standards for road/rail construction, e.g. noise bunding, acoustic fences along roads where roads are built near existing residential areas. Consideration should be given to visual impacts of fences/bunds etc.; • design standards for houses, e.g. noise attenuation in houses, acoustic insulation in houses where residential activities built around existing roads/railways; • restrictions on certain land uses near existing or planned roads/railways or other transport infrastructure; • placing conditions on resource consents; • buffer zones.	The RMA duty to avoid unreasonable noise (Section 16) is imposed on the occupier of land (the roading authority), not on the users of roads (Walker v Manukau City Council Environment Court 1999[d]). Traffic regulation, administered by the Police, directly controls noisy vehicles. Noise can be modelled for transport corridors to estimate existing and future noise levels. The UK Calculation of Road Traffic Noise is the most widely recognised in New Zealand. The Kapiti Coast District Plan (1999) requires habitable rooms of new dwellings within certain distances of some transport corridors to meet a specified noise standard. The Proposed Hamilton City Plan contains rules relating to land transport noise and sets maximum acceptable noise levels within different zones.

Table 7.2 cont. Checklist for rules applicable to sustainable land transport.

Activity	Suggested rules	Best practice notes
Road hierarchy	• Set out a road hierarchy for the district based on carrying capacity (e.g. rural, local, collector, principal, arterial and state highway) and indicate the hierarchy in the district plan. • Require resource consent for the non-designation construction or upgrade of collector, principal or arterial roads[e]. • Rules relating to : – traffic speeds, – road construction and geometry standards, – traffic generation rates, – access and parking effects of adjacent land use activities, – design and amenity standards, – provision for pedestrian, cyclists and public transport (including bus lanes) within the hierarchy.	A road hierarchy essentially provides the framework for the road transport network. A fundamental principle is to retain the functionality and capacity of the higher level roads, and to create low speed local roads which serve local communities rather than act as 'rat run[f]' through-roads. As well as managing roading infrastructure, road hierarchies can be used as an environmental management tool to assist controlling effects, e.g. noise, amenity protection.
Transit-oriented development design standards and incentives (also promote energy efficiency)	*Density plot ratio* • Permit increased density or higher plot ratios around primary public transport networks, e.g. 38 dwellings/ha (gross) supports a bus service with 15 minute headways[g]. • Provide a density bonus where developments actively promote and integrate public transport, reduce energy consumption, and/or provide improved transport connections, e.g. buildings integrated with public transport transfer stations, or high employment densities (a density of 125 employees/ha will support a frequent bus service). *Site Coverage* • Permit high site coverage around public transport nodes and along primary public transport networks to encourage better site use and to discourage dispersed car parking. • Provide a site-coverage bonus where developments actively promote or integrate public transport, reduce energy consumption and/or provide improved transport connections.	Bulk and location design standards are another powerful tool for promoting sustainable land transport. Used judiciously, these standards have the potential to significantly enhance urban form, land use patterns and transport functionality. However, implementing these rules requires a close working partnership and the co-operation of developers to be fully effective.

Table 7.2 cont. Checklist for rules applicable to sustainable land transport.

Activity	Suggested rules	Best practice notes
Subdivisions	*Subdivision roading design standards* • Require road layouts that integrate with and enhance existing transport networks, promote low speed local roads and avoid 'rat runs[f]'; • Require footpaths and cycleways or shared foot paths/cycleways to be provided as standard; • Retain flexibility to reduce carriageway widths where footpaths, cycleways and/or parking are located off-road; • Restrict the number of lots that can be created in specific areas; • Encourage developments within close proximity to transport corridors and nodes. • Promote higher public transport use (e.g. allow medium/high density within, say, 400/800 m of a railway station; reduce car parking requirements near public transport nodes); and • Zoning provisions that take account of public transport systems, primary and secondary roading networks, and parking. *Financial contributions* • Include financial contributions for the construction of new roads and public transport networks to mitigate the environmental effects.	Subdivisions provide the best opportunity to create a roading/transport pattern which serves an area into the future. Developers and planners should look 10–20 years ahead to ensure these systems continue to be functional and integrated. Auckland City & Waitakere City Councils encourage high density residential development along transport routes and arterial roads. This is consistent with the wider regional growth strategy of urban intensification.
Earthworks/ stormwater	• Include both maximum volume limits and maximum area limits for earthworks to allow the effects of large scale earthworks during construction and maintenance to be adequately assessed; • Consider reasonable controls within underlying zones for earthworks related to the building and maintenance of land transport routes for amenity purposes; Have regard to the setting of conditions on any designation when setting controls; and • Make provision for swales/retention ponds as a permitted or controlled activity.	Both volume and area limits are required for earthworks controls to be fully effective.

Table 7.2 cont. Checklist for rules applicable to sustainable land transport.

Activity	Suggested rules	Best practice notes
Street trees and landscaping	• To mitigate adverse visual effects.	
Zoning	• Avoid zoning for commercial/high density areas directly opposite each other on any principal, arterial or state highway road – allow sufficient separation between these areas to avoid choking the road; • Zone for vehicle-oriented commercial activities, high vehicle-generating activities and bulk retail activities to be located along, or have direct access to, principal, arterial or state highway roads.	Zoning sets out the primary land use pattern and provides a structure for the urban form. Zoning should be based on the basic principle that 'form follows function', with the transport network (principal, arterial and state highway roads) forming a durable and lasting backbone around which the various zones are developed.
Designations	• Designate new routes as an effective mechanism (as opposed to zoning) to avoid plan changes to widen corridors (or extend the zone boundary) for example, cycle and bus lanes or bus stops to give greater certainty; • Provide underlying zones for non-designated activities and which activities would revert to if the designation were removed. Activities potentially not provided for in the designation would be assessed in terms of the underlying zones; • Consider future transport corridors with particular focus on: – future strategic transport links in the district, – identifying and consult with owner/managing body of the transport provider, – provide designations/rules that include the ability to address potential adverse effects from transport activities such as noise, location and design of the route (including access and integrated transport linkages), design and appearance, and lighting and landscaping; • Have regard to the setting of conditions of any designation when setting controls (note regional provisions will still apply). Consider the provision of the following: – bus stops, – public utilities, – cycle lanes, – bus lanes, – provision of swales/stormwater systems, and/or – park and ride facilities, including changing facilities.	

Table 7.2 cont. Checklist for rules applicable to sustainable land transport.

Activity	Suggested rules	Best practice notes
Signs	• Controls on roadside signage – maximum number, maximum heights and sizes, minimum lettering height, controls on moving signs (e.g. flashing, rotating); • Provide for signs as a permitted activity to encourage safe movements of traffic.	Signs can be used to improve sustainability through the efficient movement of people and therefore increased safety.
Financial contributions	• Require financial contributions with development to avoid, remedy or mitigate adverse effects on or of land transport. Contributions can be in the form of cash or bonds, or a requirement for physical work (e.g. upgrading of the local road to	
Habitat protection	• Include maximum limits on habitat disruption to trigger more detailed ecological impact assessments and requirements for appropriate mitigation measures. • Provide buffers between sensitive habitats/streams and development.	Northern Gateway Alliance: Case study – Otanerua Eco-viaduct (unpublished).

Table 7.2 cont. Checklist for rules applicable to sustainable land transport.

Notes to Table 7.2
a Dunphy et al. 2003
b Traffic Design Group 2005
c The RMA definition of 'noise' also includes vibration.
d *Walker* v *Manukau CC* (EnvC) C213/99
e Road construction and upgrading is usually dealt with through a designation process. However, a control on construction and upgrades provides a 'fall back' position if a designation is not undertaken, and allows consideration of adverse effects through the consent process. Non-designation control of roads has been endorsed by the Environment Court (Hall v McDrury, 1996).
f A rat run is defined as the use of secondary roads or side strets rather than main roads in urban/suburban areas in order to avoid congestion, traffic signals or other potential obstacles or hold-ups.
g Dunphy et al. 2003.

8. References

Aquamarine Ltd v. Southland Regional Council Environment Council C126/97. 1997.Noted 1997 *BRM Gazette 5*.

AUSTROADS. 2002. Guidelines for community input into setting level of service and intervention standards for road networks. *Standards – AP-R201/2*. Sydney, Australia: AUSTROADS.

AUSTROADS. 1999. *Guide to Traffic Engineering Part 14: Bicycles*. Sydney: AUSTROADS.

Bruntland, G. (Ed.). 1987. *Our Common Future: The World Commission on Environment and Development*. Oxford: Oxford University Press.

Campbell v Southland District Council. W114/94 (PT), noted [1995] *BRM Gazette 3.*

Centre for Sustainable Transportation. 2005. Defining sustainable transportation. *http://cst.uwinnipeg.ca/documents/Defining_Sustainable_2005.pdf*.

Department of Environment, Food and Rural Affairs. 2004. *The UK Government Sustainable Development Strategy*. London: Department of Environment, Food and Rural Affairs.

Department for Transport (DfT), UK. 1998. *A New Deal for Transport: Better for Everyone – White Paper*. London: Department for Transport.

DfT. 2004. *Future of Transport – White Paper*. London: Department for Transport.

Dunphy, R., Cervero, R., Dock, F., McAvey, M., Porter, D. 2003. *Developing Around Transit.* London, UK and Washington DC, USA: Urban Land Institute.

Energy Efficiency and Conservation Authority (EECA). 2001. EECA Strategy 2001: Towards a Sustainable Energy Future. *http://www.eeca.govt.nz/eeca-library/eeca-reports/neecs/report/national-energy-efficiency-and-conservation-strategy-01.pdf*.

EECA. 2007. New Zealand energy efficiency and conservation strategy: making it happen. *http://www.eeca.govt.nz/eeca-library/eeca-reports/neecs/report/nzeecs-07.pdf.*

Department of Ecology, Washington. 2008. Planning for sustainability checklist. *http://www.ecy.wa.gov/sustainability/Team/sustainability_checklist.htm*.

Fisher, G.W., Rolfe, K.A., Kjellstrom, T., Woodward, A., Hales, S., Sturnam, A.P., Kingham, S., Petersen, J., Shrestha, R., King, D. 2002. *Health Effects Due to Motor Vehicle Air Pollution in New Zealand*. Wellington: Ministry of Transport.

Goodwin, J., de Lambert, R., Dawson, S., McMahon, S., Rackham, A. 2000. *The Impact of Development on Rural Landscape Values*. Wellington: Ministry of the Environment.

Hall v McDrury, 1996.

Independent News Auckland Ltd v Manukau CC EnvC A103/2003. 2003. Noted in *BRM Gazette*.

Land Transport New Zealand (LTNZ). 2000. *Road signs and markings for railway level crossings*.

LTNZ. 2005. *National Land Transport Programme 2005/06*. Wellington: LTNZ.

Litman, T. 2006. Transportation market distortions: a survey. Victoria Transport Policy Institute, Canada. *http://www.vtpi.org/distort.pdf*.

Mangakahia Maori Komiti v Northland *RC* A107/95 (PT). 1995. Partially reported at [1996] NZRMA 193, note [2002] *BRM Gazette 177*.

Marlborough District Council v NZ Rail (Date) W137/95.

McCallum-Clark, M. 2003. Designations in proposed district plans. *http://www.qualityplanning.org.nz/plan-development/requirements.php.*

Ministry for the Environment (MfE). 2003. Drafting issues, objectives, policies and methods in regional policy statements and district plans. *http://www.mfe.govt.nz/publications/rma/drafting-issues-jul03/index.html.*

MfE. 2004. Monitoring and data management protocol – environmental indicators for transport. *http://www.mfe.govt.nz/publications/ser/monitoring-data-protocol-transport-may04/html/page5.html.*

MfE. 2005. New Zealand urban design protocol. Wellington: Ministry for the Environment.

MfE. 2006. Managing land transport noise under the RMA. *http://www.qualityplanning.org.nz/plan-topics/land-transport-noise.php.*

MfE. 2008a. Sustainable transport. *www.mfe.govt.nz/issues/transport/sustainable/.*

MfE. 2008b. Quality planning: the RMA planning resource. *www.qualityplanning.org.nz.*

Ministry of Economic Development. 2007. *New Zealand Energy Strategy to 2050: Powering Our Future*. Wellington: New Zealand Government.

Ministry of Health (MoH). 2003. *Healthy Eating – Healthy Action*. Wellington: Ministry of Health.

Ministry of Transport (MoT). 2002. *New Zealand Transport Strategy*. Wellington: Ministry of Transport.

MoT. 2005a. Getting there – on foot, by cycle. Strategic implementation plan. *http://www.transport.govt.nz/assets/NewPDFs/GettingThereA4.pdf.*

MoT. 2005b. *Statement of Intent 05–06*. Wellington: Ministry of Transport.

MoT. 2007a. Statement of intent 2007–2010. *http://www.transport.govt.nz/assets/NewPDFs/MOT-SOI-2007-2010.pdf.*

MoT, 2007b._Discussion paper: sustainable transport. Update of the New Zealand transport strategy. *http://www.transport.govt.nz/update-of-the-new-zealand-transport-strategy-2/.*

New Zealand Government. 1974. *Local Government Act 1974*. Wellington: New Zealand Government.

New Zealand Government. 1989. *Transit New Zealand Act 1989*. Wellington: New Zealand Government.

New Zealand Government. 1991. *Resource Management Act 1991*. Wellington: New Zealand Government.

New Zealand Government. 1998. *Land Transport Act 1998*. Wellington: New Zealand Government.

New Zealand Government. 2000. Energy Efficiency and Conservation Act 2000. *http://www.legislation.govt.nz/act/public/2000/0014/latest/DLM54948.html?search=ts_act_Energy+Efficiency+and+Conservation+Act+2000&sr=1*.

New Zealand Government. 2003a. *Land Transport Management Act 2003*. Wellington: New Zealand Government.

New Zealand Government. 2003b. *Sustainable Development for New Zealand: Programme of Action*. Wellington: Department of the Prime Minister and Cabinet.

New Zealand Government. 2004. *Resource Management Amendment Act 2004*. Wellington: New Zealand Government: Wellington, New Zealand.

New Zealand Government. 2005. *Resource Management Amendment Act 2005*. Wellington: New Zealand Government.

New Zealand Government 2008. *Land Transport Management Amendment Act 2008*. Wellington: New Zealand Government.

Ngati Rangi Trust v Manawatu-Wanganui RC EnvC 67/2004. 2004. *BRM Gazette 77.*

Organisation for Economic Co-operation and Development. (OECD). 2002. OECD guideline towards environmentally sustainable transport. *http://www.oecdbookshop.org/oecd/display.asp?CID=&LANG=EN&SF1=DI&ST1=5LMQCR2K626J.*

Parliamentary Commissioner for the Environment. 2002. *Creating Our Future: Sustainable Development for New Zealand*. Wellington: Parliamentary Commission for the Environment.

Parliamentary Commissioner for the Environment (PCE). 2007. *Statement of Intent 2007–2010.* Wellington, New Zealand: Parliamentary Commission for the Environment.

PT Marlborough DC v Southern Ocean Seafoods Ltd. 1995. NZRMA 220 & 336.

RFBPS v Manawatu Wanganui RC A86/95 (PT). 1996. Partially reported at [1996] NZRMA 241, noted [1995] *BRM Gazette 145*.

Standards New Zealand, 1999. Model general bylaws – introduction. *NZS 9201.1: 1999.* Wellington: Standards New Zealand.

Standards New Zealand. 2004. Land development and subdivision engineering. *NZS 4404:2004.* Wellington: Standards New Zealand.

State Service Commission. 2007. *Next Steps in the Land Transport Sector Review.* Wellington: State Service Commission.

Suburban Estates Ltd v Christchurch City Council. Decision C217/2001.

Takamore Trustees v Kapiti Coast District Council 2003. NZRMA 433 (HC).

Te Runanga o Ati Awa ki Whakarongotai Inc v Kapiti DC EnvC W23/2002.

Traffic Design Group. 2005. Nelson CBD Car Parking Study and Traffic Model. Auckland: Traffic Design Group.

Tonkin & Taylor Ltd. 2004. Guidelines for on-site stormwater soakage. Report No. 60472 prepared for Waipa District Council. *http://www.waipadc.govt.nz/nr/rdonlyres/b5fa7824-39cc-4ab7-9cca-308eb2440dc1/0/030120dabsoakageguidelines.pdf.*

United Nations. 1997. *Kyoto Protocol to the United Nations Framework Convention on Climate Change*. New York: United Nations.

Waiheke Island Airfields v Auckland City Council. Decision A92/93.

Walker v Manukau CC EnvC C213/99.

World Business Council for Sustainable Development. 2004. *Mobility 2030: Meeting the Challenges to Sustainability*. Hertfordshire, England: World Business Council for Sustainable Development.

Appendix A Useful plan drafting resources

Resource	Description
www.qualityplanning.org.nz (MfE 2008b)	Comprehensive information and practical guidance on the policy process and plan drafting
Drafting issues, objectives, policies and methods in regional policy statements and district plans *(*MfE 2003)	A best practice guide for drafting policy statements and plans under the RMA