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IMPLEMENTATION PLAN FOR TRAVEL DEMAND MANAGEMENT

4.1 Introduction

Current Transit TDM commitments

The following is Transit's first implementation plan for managing the demand for travel across its business. The plan sets out a number of key commitments for Transit in taking forward travel demand management in the short to medium term.

It includes both a number of key travel demand management projects being implemented on the state highway network as well as action that will be undertaken by Transit to further develop our knowledge and expertise in planning, designing and implementing appropriate measures to manage travel demand. These projects have been selected to give an indication of the types of travel demand management activities Transit is currently undertaking. The list represents only a small part of Transit's overall activities for this area and it should be stressed that the overall objective of this manual is to ensure that demand management is considered across all Transit's activities.

The state highway related projects listed below are all included in Transit's current State Highway Forecast. They are however, subject to meeting funding, and other, criteria to ensure implementation. Similarly, a number of the actions to further develop the effectiveness of demand management are subject to securing the necessary funding.

Scheme/Action	TDM aspect	Who	When	Contribution to NZTS Objective
State Highway TDM Projects				
SH 1 Waitiki Landing to Cape Reinga Seal Extension – Stage 2	Walking and Cycling	Northland regional office	07-09	Access and mobility Public health Environmental sustainability Safety, Economic development
Advanced Traffic Management Systems – Stage IV	Traffic Management Systems (TMS)	Auckland regional office	07/08	Access and mobility Environmental sustainability Safety, Public health
SH 1 and SH 16 Ramp Signalling	Traffic Management Systems (TMS)	Auckland regional office	07-09	Access and mobility Environmental sustainability
SH 1 Northern Busway PT– Stages 1 & 2	Public Transport, P & R and Interchanges	Auckland regional office	07-09	Access and mobility Public health Environmental sustainability
Tauranga Central Corridor TDM	Public Transport, Traffic Management Systems (TMS)	Tauranga office	07-11	Access and mobility Environmental sustainability Safety, Public health

Scheme/Action	TDM aspect	Who	When	Contribution to NZTS Objective
State Highway TDM Projects				
Christchurch TDM Implementation	Public Transport	Christchurch regional office	07/08	Access and mobility Environmental sustainability Safety, Public health
SH 25 Coromandel Road Information System	Traveller Information Services (TIS)	Waikato		Safety Access and mobility Economic development
Various walking and cycling projects	Walking and Cycling	All	07–	Access and mobility Environmental sustainability Safety, Public health
Implementation of Transit's travel plan.	Travel Planning	TDM team/HR/Transit Offices	07/08	Access and mobility Public health Environmental sustainability
Actions to Develop Transit's TDM Expertise and Effectiveness				
TDM projects will be developed for each region as part of regional state highway strategies.	Regional TDM	Regional offices + TDM Team in liaison with local authorities	07/08	All objectives
Develop detailed criteria for the appropriate circumstances to implement bus priority measures and priority lanes on state highways. Use case studies where possible.	Priority Lanes	TDM team	07/08	Access and mobility
Freight Highways – freight management position for state highways.	Freight Movement Management	Cross divisional working group	End 07/08	Economic development Access & mobility Environmental sustainability Safety
Develop guidance on parking management options in relation to settlement size category.	Parking	TDM team in liaison with local authorities	End 07/08	Economic development Access and mobility Environmental sustainability
Influence Land Transport New Zealand's research programme to include research on adapting areas of TDM to the New Zealand context	Various, e.g. HOV lane criteria, parking management, CO ₂ , Measuring & monitoring	TDM team	On-going	Potentially all objectives
Develop evaluation framework for TDM measures/schemes	Performance Indicators / Evaluation	TDM team	End 07/08	All objectives
Develop framework for measuring & monitoring CO ₂ impact of Transit projects	Monitoring	Transport planning national office	End 07/08	Environmental sustainability

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MONITORING, REVIEW AND EVALUATION

5.1 Introduction

An essential component of any policy is the monitoring, review and evaluation process. Without monitoring and review, the effectiveness of the policy cannot be evaluated, nor can any remedial action or improvements be implemented to ensure policy objectives are met.

5.2 Monitoring Programme

A monitoring programme for travel demand management around a number of performance indicators has been developed. This will enable work to be carried out in the short and medium terms to establish the effectiveness of various individual components of the travel demand management toolkit as set out in this manual. This in turn will enable evaluation of progress in implementing Transit's TDM policy. The focus on value for money means monitoring performance is essential. This should be carried out in a manner that is:

- Relevant to the strategies goals and objectives;
- Measurable/quantifiable;
- Available now or in the near future;
- Valid and reliable;
- Sensitive to change over time;
- Understandable to policy makers, the media, and the general public; and
- Value for money.

Performance indicators

Table 5 below sets out initial performance indicators identified for travel demand management for Transit. Where baseline data is already available processes will be put in to place to enable annual monitoring and updating. Where there is currently no baseline data available, this information will be collected. The performance indicators listed in the table below have been chosen to reflect a wide range of information.

The over-arching objective of monitoring is to begin the process of assessing the impact of specific travel demand management measures in modal shift and ultimately on overall travel behaviour.

Output and outcome targets

The indicators chosen also represent output and outcome targets. Most of the work that Transit carries out in terms of demand management is based around outputs, for instance implementing a cycle lane or bus way. In terms of managing the demand for travel however, progress can only really be determined by assessing if desired outcomes, such as more cycling or public transport use, have been achieved.

5.3 Review and Evaluation

Once the monitoring process has been established and the baseline data collected, targets will be identified where appropriate. The next steps will be to review the information collected on each performance indicator in order to establish trends. This information will be assessed against an evaluation framework designed for typical types of travel demand management measure and initiative.

Table 5 Travel demand management performance indicators					
Performance Indicator	What are we Measuring	Source of Data	Action	Baseline	Progress
Outcome Performance Indicators					
Journey to work by private vehicle	The number of New Zealanders that travelled to work (on the day of the National Census) by private car, truck or van.	Census (every 5 years).	Develop PI further in 07/08	2006 951,477	
Mode split on key state highways	Travel behaviour patterns on state highways	Transit traffic monitoring (annual)	Determine which of the monitoring sites to report on.	Base line to be determined 07/08	
Journey to work mode split for Transit staff	Transit staff travel behaviour	Transit Travel Plan Survey	Add table from survey data base	Bus 24% Train 13% Drive private car/truck/van 29% Drive company car/truck/van 2% Private car/truck/van passenger 8% Motorcycle/scooter 2% Bicycle 8% Walked/jogged 14%	
Congestion/ journey time delay on key state highways	Level of congestion on state highways	Transit journey time survey (annual)	Continue to monitor results	Available on www.transit.govt.nz/road/travel-time.jsp	
Air quality emissions on congested state highways	Air quality in relation to congestion	Transit Air quality monitoring	Identify sites to be monitored	Base line to be determined 07/08	
Output Performance Indicators					
Km of priority lane on state highway network	Level of support for high occupancy travel modes	Transit highway Information Sheets	Compile Data	Base line to be determined 07/08	
Km of cycle lane on state highway network	Level of support for cycling	Transit highway Information Sheets	Compile Data	Base line to be determined 07/08	
The number of Transit projects that include new or improvements to pedestrian facilities	Level of support for walking	Proman	Compile Data	Base line to be determined 07/08	

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APPENDIX 1

Travel Demand Management Glossary

Accessibility	The ability of an individual to access facilities, such as employment, shops, schools, hospitals, transport etc.
ARTA	Auckland Regional Transport Authority
Bus/Omnibus	A passenger service vehicle that has more than 9 seating positions (including the driver's seating position)
Bus boarder	Raised footway and kerb area at bus stop to improve physical access to bus by reducing height differential between street and vehicle.
Bus boxes	Carriageway markings and traffic restrictions that operate to ensure the bus stop remains free of parking.
Bus build-outs	Areas of footway built out into the carriageway enabling the bus to avoid pulling off the main carriageway.
Bus clearways	Carriageway markings and traffic restrictions that operate to ensure the bus stop remains free of parking.
Bus priority lanes	A lane reserved by a marking or sign installed at the start of the lane and at each point at which the lane resumes after an intersection for the use of buses and cycles, mopeds and motorcycles (unless either or all of the last three modes are specifically excluded by the sign).
Busway	A segregated section of carriageway from general traffic for bus use only.
Contra flow	A lane that is borrowed from the off-peak direction mixed-flow lanes and converted to serve buses that travel in the direction of the peak flow traffic.
Expressways	Expressways are generally high-speed (80-100km/h) national routes with four lanes and well-spaced at-grade intersections.
Guided busways	A segregated section of carriageway from general traffic for bus use only which includes guide-rails to steer the bus.
Hard measure	The implementation of physical infrastructure.
HCV	Heavy commercial vehicle.
Hook turns	Allow cyclists to better position themselves at the left hand side of the carriageway in order to make a right turn rather than doing so from a cycle lane travelling along the carriageway.

HOT	High occupancy toll (lanes).
HOV	High occupant vehicles.
ITA	Integrated Transport Assessment.
Jug handles	Allow cyclists to better position themselves at the left hand side of the carriageway in order to make a right turn rather than doing so from a cycle lane travelling along the carriageway.
Kiss and Ride	Facility to enable a private motor vehicle driver to drop off a passenger(s) to take public transport to destination. Usually bus or rail based.
Local authority	Regional council, unitary authority or territorial authority under Local Government Act 2002 definition.
LTNZ	Land Transport New Zealand.
LTMA	Land Transport Management Act 2003.
LTP	Land Transport Programme (formerly known as the State Highway Forecast).
Mixed use lanes	All types of vehicles can use this lane.
Motorways	Means a motorway declared as such by the Governor-General in Council under section 138 of the Public Works Act 1981 or under section 71 Transit New Zealand Act.
Multi-modal	Refers to more than one form of transport, for instance a multi-modal transport system is one that caters for numerous modes of transport.
NSHS	National State Highway Strategy.
NZTS	New Zealand Transport Strategy.
Park and ride	Facility to enable people to drive to location, park vehicle and take public transport to destination. Most usually bus or rail based.
Plan change	The process that councils use to prepare changes to an operative district plan. http://www.mfe.govt.nz/rma/public/rma-terms.html
PPM	Planning Policy Manual.
Queue bypasses	Usually one or more short distance lanes where the priority lane enters a highway or intersection directly while other vehicles have to wait.
Queue management systems	Allows buses to overtake queues and travel unhindered down the previously congested section of road or junction, usually through the provision of a priority lane or bypass lane.

RCA	Road controlling authority.
RLTS	Regional Land Transport Strategy.
Resource consent	Resource consent is defined in section 87 of the RMA and includes all conditions to which the consent is subject.
RMA	Resource Management Act 1991.
Road pricing	A charge made on motorists for driving on an existing roadway, or in a particular area.
RPTP	Regional Passenger Transport Plan,
Selective vehicle detection	A facility included in the traffic signal system that gives priority to specified vehicles types such as buses.
Shared use lanes	All types of vehicles can use this lane.
Social exclusion	This is a term to describe marginalisation from employment, income, social networks such as family, neighbourhood and community, decision making and from an adequate quality of life.
Soft measure	Initiatives aimed at achieving a particular outcome or behaviour by means other than providing physical infrastructure. Involves providing information and opportunities that affect the free choices made by individuals. They include initiatives such as school and workplace travel plans, personalised journey planning, car clubs, public transport information and marketing and teleworking.
SOI	Statement of Intent.
SOV	Single occupant vehicles.
State highway	State highway means a State highway declared as such under section 11 of the National Roads Act 1953 or by Authority under the Transit Act; and, for the purposes of any payments from the Account, also includes any proposed state highway.
Sustainability	An aim that present levels of an activity do not unduly damage the prospects of future generations by depleting resources, and damaging the environment. In transport terms, this can include, reducing environmental pollution by all modes and reducing the rate at which finite resources are consumed without replacement.
Sustainable modes	Primarily the use of public transport, cycling and walking modes, or fundamentally non-car (and particularly single occupant car) modes. It is generally accepted that these more sustainable modes have fewer negative impacts than travel by single occupant car when considered by their people moving capacity.

TA	Territorial authority.
TDM	Travel Demand Management – Any initiative that modifies travel decisions so as to reduce the negative impacts of road transport.
Territorial authority	City council or district council under Local Government Act 2002 definition.
Tidal flow	One or more barrier separated lane(s) usually operating in one direction in the morning and the opposite direction in the evening in line with the peak flow direction.
TIS	Traveller Information Services.
TMS	Traffic Management Systems.
Tolling	A fee-for-service for the use of a new asset, such as a bridge, tunnel, or road and is generally focussed on raising revenue. The revenues generated from tolls are used to repay the costs of developing and maintaining the asset in question.
Transit	Transit New Zealand as established by the Transit New Zealand Act 1989.
Transit Act	Transit New Zealand Act 1989.
VMS	Variable Message Signs.

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APPENDIX 2

The drivers for travel demand management

Current transport trends

Car ownership and usage has been steadily increasing in New Zealand for decades. Vehicle kilometres travelled on state highways has been increasing linearly by more than 3% per year over the last 8 years. In 2006 New Zealand had 2.7 million registered passenger cars/vans¹³ giving a car ownership rate of 652 cars per 1,000 inhabitants. Additionally, heavy vehicle freight movements are forecast to increase by 85% between 2005 and 2020¹⁴. While the growth in mobility brings with it many positive aspects in terms of ability to access employment, services and a whole range of experiences and opportunities, it also has significant adverse impacts on the economy, environment and community.

Economic impacts

Traffic congestion makes deliveries of goods and services slower and less reliable. This in turn adds to the cost of goods and reduces their competitiveness in domestic and international markets.

Environmental impacts

Road traffic has a number of adverse impacts on the environment including air and noise pollution, stormwater run off, land take and visual intrusion. The scale of the impact can vary. For example noise pollution tends to have local consequences whereas emissions from traffic can have a more global impact, in terms of air pollution and climate change.

Social impacts

Increasing road traffic can have a negative impact on health, both physical and mental. Increased car use leads to less physical activity resulting in more sedentary lifestyles. The noise and vibration from traffic through residential communities can impact on the mental health of those living nearby. A busy road can create community severance by acting as a major barrier to those who need to cross it to access the services and communities on either side of that road.

Social exclusion can occur where those without access to a car cannot easily get to the places they need to because of limited or no alternative travel options.

Reducing these impacts

Many countries, including New Zealand, have recognised that solely providing new highway infrastructure to cater for future peak travel demand is no longer an economically, socially, or environmentally sustainable way to address growth in traffic. Therefore, in order to reduce the adverse impacts road transport can have, alternative approaches need to be developed. Managing the demand for travel is such an approach.

13 Land Transport New Zealand

14 Transport Engineering Research New Zealand (TERNZ)

New Zealand Transport Strategy

The New Zealand Transport Strategy (2002) sets out a vision of an affordable, integrated, safe, responsive and sustainable transport system. This vision is underpinned by five objectives that travel demand management contributes to as follows:

NZTS objectives

- *Assisting economic development:* by reducing or removing congestion to improve travel times for commercial vehicles.
- *Assisting safety and personal security:* by reducing the vehicle kilometres being travelled, facilitating safer modes of travel and informing users of conditions on the state highway network before or during travel.
- *Improving access and mobility:* by providing users with more sustainable travel options resulting in improved social equity as well as reduced congestion.
- *Protecting and promoting public health:* reducing pollution through encouraging higher vehicle occupancy on the network creating more free flowing travel conditions and less overall vehicles, and by encouraging people to use more active modes such as walking and cycling.
- *Ensuring environmental sustainability:* by reducing air pollution and the impact on climate change through improving the efficiency of existing networks and promoting greater travel choice resulting in reduced traffic growth.

Land Transport Management Act

Transit's statutory objective as set out in the Land Transport Management Act 2003 is:

to operate the State highway system in a way that contributes to an integrated, safe, responsive, and sustainable land transport system.

in meeting its objective, Transit must exhibit a sense of social and environmental responsibility, which includes

- a. avoiding, to the extent reasonable in the circumstances, adverse effects on the environment; and
- b. taking into account the views of affected communities; and
- c. giving early and full consideration to land transport options and alternatives in a manner that contributes to paragraphs a) and b) above; and
- d. *providing early and full opportunities for the person and organisations listed in section 15(1)¹⁵ to contribute to the development of its land transport programmes.*

These legislative requirements have enabled Transit to widen the approach taken to providing and operating the state highway network and subsequently, to incorporate travel demand management across its business.

¹⁵ Land Transport New Zealand, every affected local authority, every public organisation approved under section 23 LTMA for any land transport purposes that is affected, the Accident Compensation Corporation, the Commissioner of Police, the Ministry of Health, the New Zealand Historic Places Trust, land transport users and providers, affected communities, Maori and the public.

Transit's vision Transit's vision for the state highway network is:

A transport system that builds a better New Zealand

Transit's goals Transit's goals for the state highway network are:

- Ensure state highway corridors make the optimum contribution to an integrated multi-modal land transport system.
- Provide safe state highway corridors for all users and affected communities.
- State highways will enable improved and more reliable access and mobility for people and freight.
- Improve the contribution of state highways to economic development.
- Improve the contribution of state highways to the environmental and social well-being of New Zealand, including energy efficiency and public health.

Managing the demand for travel has the potential to contribute to each of Transit's goals.

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APPENDIX 3

Priority Lanes Legal Position

Legal Position

Under the Land Transport Rule: Traffic Control Devices 2004, Transit may establish any **“lane”**, including a **“special vehicle lane”**, by marking the road in accordance with the requirements of this Rule. Because the Rule does not require a formal resolution of Transit’s Board, the ability to establish a “special vehicle lane” may be delegated to Transit staff by using the appropriate procedures.

What is a **“special vehicle lane”**?

A “special vehicle lane” is defined in both the Land Transport (Road User) Rule 2004 (Road User Rule) and the Land Transport Rule: Traffic Control Devices 2004 (TCD Rule) as:

...a lane defined by signs or markings as restricted to a specific class or classes of vehicle; and includes a bus lane, a transit lane, a cycle lane, and a light rail vehicle lane.

“Bus lane” is defined as:

A lane reserved by a marking or sign installed at the start of the lane and at each point at which the lane resumes after an intersection for the use of-

- a. buses; and
- b. cycles, mopeds and motorcycles (unless either or all are specifically excluded by the sign)

“Transit lane” is defined in the same two Rules as:

...a lane reserved for the use of the following (unless specifically excluded by a sign installed at the start of the lane):

- a. passenger service vehicles;
- b. motor vehicles carrying not less than the number of persons (including the driver) specified on the sign;
- c. cycles;
- d. motorcycles;
- e. mopeds.

Both Rules also state that a “lane”:

- a. *means a longitudinal strip of the roadway intended for the passage of vehicles or a specific class of vehicles that is separated from other parts of the roadway by a longitudinal line or lines of paint or raised studs; and*
- b. includes:
 - i) a cycle lane; and
 - ii) a lane for the use of vehicular traffic that is at least 2.5km wide;
and
 - iii) a lane of a two-way road divided by a centre line.

Transit can establish **high occupancy toll** lanes, but only as part of a road tolling scheme established under either Part 2 of the Land Transport Management Act 2003 (LTMA), or under another Act that provides for tolls to be levied or collected in respect of any road; see section 46(6) of the LTMA. A HOT lane does not come within the definition of a “transit lane”.



APPENDIX 4

HOV Priority Lane Evaluation Framework

Objective	Measure of Effectiveness	Target Performance	
		Qualitative	Quantitative
Effectiveness			
Person Moving Efficiency	Average Vehicle Occupancy (AVO)	Increase In AVO	>2.5% increase
	HOV market share	Increase in HOV market share	>2.5% increase
Travel Time Savings	Time travel difference	HOV travel time must be less than mixed use lane travel time Travel time difference must not be too small to generate "empty lane syndrome"	At least a 10% travel time saving and no greater than a 20% travel time saving
Travel Time Reliability	Travel speed standard deviation	HOV travel speed should be more reliable than mixed use lane speed	75%, or greater, reduction in travel speed deviation between HOV and mixed use lane
Public Transport Efficiency	Vehicle productivity	Improvement in operating cost per passenger	
	Bus reliability	Improvement in bus schedule adherence	
Overall corridor efficiency	Per-lane efficiency of total corridor	Increase the efficiency of all lanes	>20% for add-a-lane
Impact on mixed use lanes	Level of service on mixed use lanes	No decline in mixed use level of service	
	Mixed use travel speed	No decrease in mixed use travel speed	
Public opinion	Percentage support for HOV lane	Support for the facility among users, non-users, general public and policy makers	Majority support the HOV facility (>50%)
Enforcement	Violation rate (% of ineligible vehicles using HOV lane)	Low violation rates so as to maintain the integrity of the HOV facility	<15% violation rate
	Vehicle emissions	Reduction once HOV implemented	
	Vehicle distance travelled	Reduction once HOV implemented	
	Vehicle hours of travel	Reduction once HOV implemented	
Environmental	Total fuel consumption	Reduction once HOV implemented	
Safety	Accident rate	No increase in accident rate or severity	

High Occupancy Vehicle Lanes – An overall evaluation including Brisbane case studies. Bauer et al, 2005

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APPENDIX 5

Walking and cycling treatments that could potentially be applied according to state highway categorisation

	URBAN (generally 50–70kph in built up urban areas, and including motorways and expressways at higher speeds)	PERI-URBAN (generally 70–100kph areas on the outskirts of urban areas)	RURAL (generally 100 kph)
<p>National State Highways</p> <p><i>(Connect places of national significance such as cities of over 30,000 population. Facilitate long distance inter-regional movement. Carry at least 400 HCV or 10,000 vehicles per day for more than two-thirds their length, or are motorways).</i></p> <p>General provisions for all National State Highways</p> <p><i>(note also specific provisions below for: motorways, four lane state highways and expressways and three lane state highways)</i></p>	<ul style="list-style-type: none"> Recognise the importance of cycling and walking in urban areas and provide appropriate infrastructure based on funding priorities in new capital projects and through maintenance activities, especially where the state highway is part of the most appropriate route, or safety or 'pinch point' concerns exist. Ensure safe and accessible crossing points are provided for pedestrians and cyclists in conjunction with the relevant local authority. Ensure all cycling and walking facilities are maintained to a high standard Work closely with local authorities to achieve integration with local cycling and walking networks. Work with local authorities to plan safer alternative non-state highway routes or facilities for cyclists and pedestrians where appropriate. 	<ul style="list-style-type: none"> Recognise the role of cycling and walking in peri-urban areas and provide wider sealed shoulders in new construction and in maintenance activities. Remedy black spots and pinch points with appropriate infrastructure improvements, such as bridge clip-ons or traffic/safety management devices, such as signage. Review cycling and walking facilities on bridges and mitigate safety issues where appropriate with infrastructure or traffic/safety management devices. Review pedestrian and cyclist crossing points and mitigate safety issues. 	<ul style="list-style-type: none"> Provide wider sealed shoulders in new construction and in maintenance activities where demand requires. Remedy black spots and pinch points with appropriate infrastructure improvements or traffic/safety management devices. Review cycling and walking facilities on bridges and where appropriate mitigate safety issues.
<p>(i) Motorways</p>	<ul style="list-style-type: none"> For existing and planned motorways where designations exist, continue exclusion of cyclists and pedestrians as per Transit New Zealand Act except where cycling infrastructure has been included in planning. For proposed motorways seek designations that allow for cyclist and pedestrian facilities to be included in the motorway corridor and, where appropriate and cost effective, provide separate facilities for cyclists and pedestrians in the corridor but noting that the Transit Act prohibits pedestrians on motorways. See also the General Provisions for National State Highways above 	<ul style="list-style-type: none"> For existing and planned motorways where designations exist, continue exclusion of cyclists and pedestrians as per Transit New Zealand Act except where cycling infrastructure has been included in planning. For proposed motorways seek designations that allow for cyclist and pedestrian facilities to be included in the motorway corridor and, where appropriate and cost effective, provide separate facilities for cyclists and pedestrians in the corridor but noting that the Transit Act prohibits pedestrians on motorways. See also the General Provisions for National State Highways above 	

	URBAN (generally 50–70kph in built up urban areas, and including motorways and expressways at higher speeds)	PERI-URBAN (generally 70–100kph areas on the outskirts of urban areas)	RURAL (generally 100 kph)
(ii) Four lane state highways including expressways	<ul style="list-style-type: none"> For existing and planned four lane state highways and expressways where designations exist, provide appropriate infrastructure in any new improvements and through maintenance activities taking into account funding priorities e.g. wide sealed shoulders or separate facilities, especially where the state highway is the most appropriate route or safety or 'pinch point' concerns exist. For proposed four lane state highways and expressways, seek designations that allow for cyclist and pedestrian facilities to be incorporated if appropriate and taking into account funding priorities e.g. via wide sealed shoulders or separate facilities in the state highway corridor. See also the General Provisions for National State Highways above 	<ul style="list-style-type: none"> For existing and planned four lane state highways and expressways where designations exist, provide appropriate infrastructure in any new improvements and through maintenance activities taking into account funding priorities e.g. wide sealed shoulders or separate facilities, especially where the state highway is the most appropriate route or safety or 'pinch point' concerns exist. For proposed four lane state highways and expressways, seek designations that allow for cyclist and pedestrian facilities to be incorporated if appropriate and taking into account funding priorities e.g. via wide sealed shoulders or separate facilities in the state highway corridor. See also the General Provisions for National State Highways above 	<ul style="list-style-type: none"> Refer to the General Provisions for National State Highways above
(iii) Three lane (2 + 1) state highways	<ul style="list-style-type: none"> For existing and planned three lane state highways where designations exist, provide appropriate, cost effective infrastructure in any new improvements and through maintenance activities e.g. wide sealed shoulders or separate facilities. For proposed three-lane state highways seek designations that allow for cyclist and pedestrian facilities to be incorporated if appropriate e.g. via wide sealed shoulders or separate facilities in the state highway reserve. See also the General Provisions for National State Highways above 	<ul style="list-style-type: none"> For existing and planned three lane state highways where designations exist, provide appropriate, cost effective infrastructure in any new improvements and through maintenance activities e.g. wide sealed shoulders or separate facilities. For proposed three-lane state highways seek designations that allow for cyclist and pedestrian facilities to be incorporated if appropriate e.g. via wide sealed shoulders or separate facilities in the state highway reserve. See also the General Provisions for National State Highways above 	<ul style="list-style-type: none"> Refer to the General Provisions for National State Highways above

	URBAN (generally 50–70kph in built up urban areas, and including motorways and expressways at higher speeds)	PERI-URBAN (generally 70–100kph areas on the outskirts of urban areas)	RURAL (generally 100 kph)
(iv) Two lane state highways	<ul style="list-style-type: none"> See General Provisions for National State Highways above 	<ul style="list-style-type: none"> See General Provisions for National State Highways above 	<ul style="list-style-type: none"> See General Provisions for National State Highways above
<p>Regional State Highways</p> <p><i>(Connect territorial regions and places of regional significance such as tourist destinations. Carry 100-400 HCV or 1000-10,000 vehicles per day, or SHs with particular strategic regional function).</i></p> <p>General Provisions for all Regional State Highways</p> <p><i>(note also specific provisions below for three lane regional state highways)</i></p>	<ul style="list-style-type: none"> Recognise the role of walking and cycling in urban areas and taking into account funding priorities, provide appropriate infrastructure for pedestrians and cyclists in new projects and through maintenance activities, especially where the state highway is part of the most appropriate route and/or specific safety or ‘pinch point’ concerns exist. Ensure safe and accessible crossing points are provided for pedestrians and cyclists in conjunction with the relevant local authority. Ensure all cycling and walking facilities are maintained to a high standard. Work closely with local authorities to ensure integration with local cycling and walking networks. Work with local authorities to plan safer alternative non-state highway routes or facilities for cyclists and pedestrians where appropriate. 	<ul style="list-style-type: none"> Provide wider sealed shoulders in new construction and in maintenance activities. Remedy black spots and pinch points with appropriate improvement works, such as bridge clip-ons or signage. Review cycling and walking facilities on bridges and mitigate safety issues. Review pedestrian and cyclist crossing points and mitigate safety issues with infrastructure or traffic/safety management devices. 	<ul style="list-style-type: none"> Provide wider sealed shoulders in new construction and in maintenance activities where demand requires. Remedy black spots and pinch points with appropriate improvements such as infrastructure works or traffic/safety management devices. Review cycling and walking facilities on bridges and mitigate safety issues.

	URBAN (generally 50–70kph in built up urban areas, and including motorways and expressways at higher speeds)	PERI-URBAN (generally 70–100kph areas on the outskirts of urban areas)	RURAL (generally 100 kph)
i) Three lane (2 + 1) state highways	<ul style="list-style-type: none"> For existing and planned three-lane state highways where designations exist, provide appropriate infrastructure in any new improvements and through maintenance activities taking into account funding priorities e.g. wide sealed shoulders or separate facilities. For proposed three-lane state highways seek designations that allow for cyclist and pedestrian facilities to be incorporated if appropriate e.g. via wide sealed shoulders or separate facilities in the state highway corridor. See also the General Provisions for National State Highways above 	<ul style="list-style-type: none"> For existing and planned three-lane state highways where designations exist, provide appropriate infrastructure in any new improvements and through maintenance activities taking into account funding priorities. For proposed three-lane state highways seek designations that allow for cyclist and pedestrian facilities to be incorporated if appropriate. See also the General Provisions for National State Highways above 	<ul style="list-style-type: none"> Refer to the General Provisions for National State Highways above
Sub-Regional State Highways <i>(Connect territorial districts and places of district significance and serve as feeder routes to the wider state highway network.)</i>	<ul style="list-style-type: none"> Generally all road users share the road, however consider providing and maintaining wider sealed shoulders to accommodate walking and cycling needs where this is consistent with local authority objectives. Maintain facilities to a high standard where provided. Remedy cycling or walking black spots or pinch points with improvement works. Review pedestrian and cyclist crossing points and mitigate safety issues. 	<ul style="list-style-type: none"> Generally all road users share the road, however consider providing and maintaining wider sealed shoulders where this is consistent with local authority objectives. Liaise with local authorities to encourage consistent outcomes across the network. Remedy black spots and pinch points with improvement works or traffic/safety management devices, such as signage. 	<ul style="list-style-type: none"> All road users share the road. Remedy black spots and pinch points with appropriate, cost effective treatments



APPENDIX 6

Travel Planning Benefits

	Benefit derived for			
	Developer	Site Occupier	Transit	Community
Reduced cost and land requirements related to need to provide parking and associated maintenance	•	•	•	
Positive factor contributing to likelihood of granting of resource consent application as seeking to minimise impact of development	•			
Improved staff recruitment and retention as more travel options exist to site		•		
Improved health from more active travel leading to reduced absenteeism		•		
Savings arising from reduced expenses and less delays to people and goods accessing site		•		
Reduced "dead time" due to staff travelling to meetings		•		
Reduced congestion around site particularly at peak times	•	•	•	•
Improved safety for vulnerable road users around site especially for schools	•	•	•	•
Environmental benefits from less noise and air pollution	•	•	•	•
Positive image factor	•	•		•
Positive travel habits started at an early age and therefore more likely to be carried through to adulthood (school travel plans)		•		•
Reduced impact on state highway network around development			•	
Opportunity to work with developers to ensure co-ordination and connections between existing network and new facilities associated with development thus strengthening partnership working			•	
Opportunity to support TA's and developers in managing the trip generation of new developments through promotion of more sustainable transport options thus strengthening partnership working			•	

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APPENDIX 7

Travel plan checklist

As part of a structure plan, plan change or resource consent, a travel plan may be required to mitigate some of the impact a development will have on the local and state highway network. Where this is the case, and the site occupier is required or volunteers to produce a travel plan, Transit should direct the party to local/regional travel planning guidance or the websites listed in Appendix 9 in the first instance. If required, Transit will support and offer guidance. In this instance, the following may be of assistance. Where a travel plan is required through the resource management process, responsibility for the approval of the content of the plan lies with the consenting authority.

This section covers:

1. How to develop a travel plan;
2. Transit's recommended good practice for inclusion in travel plans; and,
3. How a travel plan can be implemented.

More detail of the types of measure that can be included in a travel plan is contained in Appendix 8. Practical examples of travel plans in New Zealand and overseas, as well as links to further information on good practice is provided in Appendix 9.

When site is occupied

Much of the guidance available on how to produce a travel plan in New Zealand refers to existing developments. This means that existing travel patterns can be surveyed and assessment can be made of the most effective measures to be implemented from that site-specific information. For more information on producing a travel plan for an existing development, reference should be made to Land Transport New Zealand or Auckland Regional Transport Authority's guidance on this subject.

HOW TO DEVELOP A TRAVEL PLAN**Developing a travel plan**

The travel plan should provide a strategy setting out how sustainable travel to the site will be encouraged and supported. It should also include a timeline for achieving this. While many elements of the travel plan can be fixed at an early stage, a travel plan is a continually evolving process that requires monitoring, evaluation and ongoing development to achieve maximum benefit.

How to develop a travel plan

The following steps can be useful in developing a travel plan:

1. **Agree scope** of travel plan with relevant agency (usually consenting authority) based on:
 - The size/type of development,
 - Existing transport infrastructure and services to the site,
 - Amount and nature of demand for movement to and from site,
 - Site accessibility,
 - Likely trip generation and mode split etc .
2. Analysis of data will enable **identification of measures** to support, promote and provide more sustainable travel options to the site (see Appendix 8 for potential measures).
3. **Produce travel plan** detailing:
 - Measures to be implemented (could be linked with development phases);
 - Targets for mode split to site (% travelling by each transport mode); and,
 - Monitoring and reporting programme.
4. **Agree travel plan** with relevant agency (usually consenting authority).

TRANSIT'S RECOMMENDED GOOD PRACTICE FOR A TRAVEL PLAN

Measures appropriate to circumstances

In producing a travel plan Transit considers the inclusion of certain measures to represent good practice and therefore more likely to achieve greater success. It is fully acknowledged however that developments may have specific circumstances that mean certain measures are not appropriate. Similarly, some measures may not be consistent with the approach adopted by the regional and local authorities. In such a case consistency with the local situation should be prioritised.

Balance of measures

The measures chosen should be designed to increase the choice of travel mode to the site as well as generally reducing the need to travel, particularly by single occupant vehicle. For a travel plan to be most effective a mixture of measures to encourage use of car sharing, public transport, cycling and walking as well as measures to discourage single occupancy car use should be used. Broad categories of types of measures that could be included are:

- Public transport information and marketing;
- Cycling and walking facilities;
- Car sharing programmes;
- Working practices e.g. teleworking, compressed hours;
- Individualised marketing and journey plans;
- Travel support initiatives;
- Parking management; and,
- Freight/delivery management.

**Transit's
recommended
good practice for
all developments**

Transit encourages where possible, the following as good practice for inclusion in a workplace travel plan regardless of the size of the development. It is fully recognised however that the precise mix of measures used will be determined by the individual circumstances. In addition to this, any of the measures described in Appendix 8 could be included as appropriate.

- Pedestrian connections to the surrounding footpath network
- Cycle connections to the surrounding road/cycle network
- Cycle parking facilities at a rate of 1 space per 350m² GFA with a minimum of 2 spaces per site
- Showers and lockers for staff walking/cycling to work
- Hard copies of timetable information on public transport services serving the site
- Setting of modal share targets for travel to the site
- A member of staff allocated the responsibility of Travel Plan Co-ordinator who has the full support of management and is responsible for implementing the travel plan.

**Transit's
recommended
good practice
related to
development size**

In addition to the above, Transit would encourage inclusion of the following measures and initiatives in travel plans for organisations meeting the indicated thresholds. Again the final mix will be determined by individual circumstances.

1. Car sharing scheme. This could be web/intranet based or a more informal system via email, memo or meetings with staff to explain scheme and invite participation. To complement this priority parking could be provided for car sharers.
2. A minimum of one incentive scheme offered as part of the travel plan package for all sites over 25 employees. Examples of such an initiative are given below. It should be noted that this list is not exhaustive.
 - Interest free loans for public transport season ticket
 - Interest free loans for cycle purchase
 - Parking cash-out – where employee receives financial incentive for not using a car
 - Holiday time benefit – where employee can accrue leave time for each day car not used
 - Reward for registering with car share scheme
 - Site specific incentive for staff to car share or travel by non-car mode.

Minimum requirements for Transit contractors

As part of any tender for works within an urban or peri-urban area, Transit's contractors are required to submit a travel plan for the work site. Recommended minimum requirements for such a travel plan are:

- Temporary pedestrian and cycle connections to the surrounding road network
- Cycle parking on site, minimum of 2 spaces
- Car sharing scheme should be included where there will be more than 50 employees on site. This could be web/intranet based or a more informal via paper based system or meetings with staff to explain scheme and invite participation. To complement this priority parking should be provided for car sharers
- Reward for registering with car share scheme
- Hard copies of timetable information on public transport services within a 10 minute walking distance of the site provided
- Setting of modal share targets for travel to the site
- A member of staff allocated the responsibility of Travel Plan Co-ordinator who has the full support of management and is responsible for implementing the travel plan.

Setting mode share targets

An important part of a travel plan is the inclusion of mode share targets. These enable an assessment to be made of how effective the measures being implemented are over time. Targets should be challenging but realistic as there is little point in setting goals that are unlikely to be achieved.

Key considerations

In setting such targets, careful consideration should be given to how the data will be collected and the level of resource that will be needed to carry this out. Consideration also needs to be given to any local, regional or national travel plan monitoring processes to ensure targets set and the monitoring required can feed into those processes (see sections on monitoring below). It is recommended that targets are set that are relatively easy to measure. It is also recommended that the mix of targets should reflect any site-specific travel plan objectives, for example to reduce the requirement for car park space. The targets should be agreed with the relevant authority.

Methods to establish targets

There are a number of ways in which targets can be determined. In general it is preferable to use local information to ensure regional, national or international variations do not skew information. Where this is not possible the following suggestions may be useful:

1. Survey development(s) of similar type and scale, in similar type of location (e.g. city centre, edge of town) and with similar accessibility characteristics (public transport level of service etc.) to establish their current mode share and use these figures to set targets.
2. Refer to national/international trip generation databases to establish mode split figures for similar types of development and use these to set targets.
3. Refer to national household travel survey on data held for modal share by journey purpose.

Complementary targets

A number of other targets can be set to complement the mode share targets. Examples include:

- Number of vehicles entering a site
- Parking usage
- Maximum number of proportion of single occupancy vehicles entering the site
- Level of car sharing
- Provision of travel information to staff and customers.

The need for monitoring

The main purpose of establishing a monitoring programme is twofold:

1. To allow the site occupier to revise the mix of travel plan initiatives to better meet the objectives of the travel plan; and,
2. To provide evidence of the effectiveness of specific measures or package of measures in mitigating any potential negative transport related impacts of new developments.

Type of monitoring

Transit considers it important for the monitoring and reporting programme to be agreed with the relevant agency as part of the ITA and travel plan process. Where local or regional monitoring is taking place, for example by ARTA or the regional council, the monitoring proposals for the travel plan should be designed to contribute to the wider process. Similarly, when a national monitoring process is established, this should be fully considered when devising the monitoring for the individual travel plan to ensure it can contribute to the national programme. In the absence of established local, regional or national monitoring programmes, the following should be considered:

- What the monitoring will comprise (traffic counts, staff surveys, car park usage, queue length information, video surveys etc)
- Frequency of survey to be carried out (monthly, quarterly, annually)
- Who is responsible for resourcing the survey (site occupier, consultant etc)
- The format and frequency of reporting.

Reporting

The results of the monitoring exercise should be assessed and conclusions drawn on the current impact the travel plan measures are having on progress towards the set targets. This should be reported to the consenting authority as agreed.

IMPLEMENTING A TRAVEL PLAN

Putting the travel plan in place

For the majority of developments, the onus for implementing a travel plan will lie with the site occupier. For maximum impact, it is recommended that the basic elements of the travel plan should be in place for day one of opening. This means there is more likelihood of positively influencing and affecting travel behaviour before it is established and becomes fixed. One possible process for implementing a travel plan is set out below.

Managing the travel plan

Perhaps the most important factor in determining the success of a travel plan is its overall management. Depending on the size of the organisation, different approaches can be taken.

- Travel Plan Co-ordinator – it is recommended that at minimum a travel plan co-ordinator is appointed. For small organisations this may be an additional duty placed on an existing staff member, or it could be a part-time or full-time position in its own right. The role of the co-ordinator is to be the main contact point for staff, the main driver of the travel plan and organiser of events, responsible for information provision and promotion as well as monitoring and reporting commitments.
- Travel Management Association (TMA) – This is a more formal arrangement that co-ordinates travel initiatives on behalf of a number of organisations. It is appropriate for larger organisations and where a number of organisations are located together.

Management support

A vital element in the success of any travel plan is the commitment of management. Research has shown that if management participate in and actively promote the travel plan, it is likely to achieve greater uptake by staff.

Marketing and promotional activities

In addition to the range of measures being implemented under the travel plan, continual marketing and promotion to raise awareness of the benefits of participating in the travel plan is central to success. This could take the form of one off events like Car Free Day or ongoing activities such as weekly intranet updates or branding. An example of the latter would be “one-in-five’ encouraging staff to travel by non-car mode one day a week. Identifying a high profile “Champion” for the travel plan has also been found to be particularly effective in encouraging participation.

Monitoring and reporting

The monitoring requirements should be considered at the outset of the travel planning process to enable surveys to be carried out at the appropriate time. For instance, it will be useful to have data for the very early days of the operation of the development. This data will enable assessment of the effectiveness of the travel plan after 6 months, a year and so on. Monitoring should be carried out at regular intervals and reported on annually at minimum. This information will then feed into the review process.

Review process

A travel plan should be an evolving document taking into account changing travel patterns, staff preferences and working practices. This means continual review of the mix of measures it includes to best meet sustainable transport objectives. One possible process for doing this is given below.

Survey staff

Carry out an update survey on current travel patterns to find out if these have altered since the last survey. It should also examine the factors preventing the use of the more sustainable travel options and any facilities or initiatives that would assist them use modes other than the single occupant car.

Analysis

Comparison with the results of the original survey will give a picture of where the travel plan is being effective and where future attention is needed.

Review and refine travel plan measures

Use the results of the analysis to modify or extend the travel plan. It will be important to market any modifications or new initiatives so those identifying areas that would assist in widening their travel choice are aware action is being taken.

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APPENDIX 8

Travel Plan Measures

MEASURES FOR POSSIBLE INCLUSION IN WORKPLACE TRAVEL PLANS

Car sharing scheme

A car-sharing scheme is often the cornerstone of a travel plan, particularly for a workplace or residential travel plan, and to a lesser extent for a school travel plan. This normally operates on a web-based or intranet system. Car sharing software is relatively common now and can be easily purchased and operated. It broadly works in the following way.

If an individual is interested in car sharing, they log onto the system to register their details. This will include the origin and destination of their trip, the approximate times of travel, how many days a week they would like to car share and any other specific requirements. The database will then match them with other suitable car sharers and provide information to enable contact to be made and the finer details to be agreed on. The system will give advice on good practice in car sharing, basically “dos and don’ts”. All schemes should operate a guaranteed ride home facility. This is where, due to an unforeseen circumstance or emergency, a car sharer needs to go home early. An alternative form of transport is provided to enable this, usually a taxi, the cost for which is met by the organisation. Research has shown that uptake of the guaranteed ride home is relatively low; however the comfort the availability of this facility offers can be a significant factor in the decision to participate in car sharing.

Promoting the financial savings that people can make by sharing their car is an important part of marketing a car-sharing scheme. The savings can be considerable, particularly where distances are long and several colleagues share one car.

Public transport support

The provision of public transport services will be out of the scope of any travel plan. However, the organisation can have a role in working with public transport operators and the local authorities to secure benefits for those travelling to and from the site and so encourage use of public transport.

If the organisation is large enough, it can discuss with the local public transport operator the possibility of offering a site-specific travel pass providing discounted travel. Information on the public transport options serving the site can be provided in hard copy as well as by a web based/intranet facility. Interest free loans can be offered for public transport season ticket purchase with payments being deducted from salary.

Depending on the location of the organisation, it may be appropriate for the employer to provide a shuttle bus to link between a central location and the site. For example, if located on the outskirts of an urban area, a shuttle bus operating between the central area and the site could assist in reducing the need to drive to work.

Cycle facilities

Providing facilities for cyclists is an important factor in minimising the need for short local trips to be made by car. Facilities could include direct and convenient cycle route connections into the site from the surrounding road network.

Cycle parking provision should be made. If outside, it should be located in a prominent and visible area close to the main entrance (within 50m) so assisting with security and promoting cycling. It should have lighting and be well lit during the hours of darkness. It should not interfere with pedestrian movements and should have clear signing. The parking facility itself should be capable of having both wheels and the frame locked to it and where practical the facility should be covered.

These requirements may mean that for larger sites, the cycle parking is located in a number of locations rather than one large block. If located within the building the cycle parking should be convenient to access with a bicycle with minimal disruption to the functioning of the organisation.

Showers are an essential provision to encourage cycling. These should include an adequate changing area and lockers for cyclists to store cycle/work clothing and helmet helping to minimise the need to carry work clothing back and forth on a daily basis. An area for drying wet clothing can also be beneficial.

To support and encourage cyclists a number of other initiatives can be introduced:

- Cycle buddy scheme, which matches an experienced cyclist with a novice to 'buddy up' on the cycle into work until the novice gains confidence.
- Cycle training scheme designed to reintroduce people who would like to cycle but perhaps have not cycled on roads for a long time and lack both confidence and current road experience from a cyclists' perspective.
- A Bicycle Users Group (BUG) is a forum that, in collaboration with management, can organise training and buddy schemes and generally represent cyclists' interests within the organisation by lobbying for new facilities where appropriate, support existing and encourage new cyclists. It can also give advice on, or organise bicycle servicing sessions, as well as providing route information to the site.
- Interest free loans could be offered by the employer for the purchase of a bicycle again with payment being made directly from salary.
- Provision of pool bikes for business travel, particularly useful where an organisation has offices located a short distance (up to 5km) apart and staff often move between both.
- Provision of local cycle route map.

Motorcycle facilities

The main considerations for motorcyclists involve the provision of high quality secure parking facilities and lockers/ storage for motorcycle clothes and helmet.

Pedestrian facilities

The provision of adequate pedestrian facilities is also an important factor in encouraging those trips within a 2-3 km radius of the site to be made on foot. The main provision will be providing connections from the surrounding road network into and across the site. It is essential that pedestrian (and cycle) routes take the most direct path, as any detour will have a disproportionate impact on the attractiveness of that option.

Footpath surfacing should be of a high quality, pedestrian desire lines should be catered for and lighting needs to be adequate to avoid any negative safety perceptions. Signing can be provided if the route is a reasonable length to ensure visitors are catered for. Similarly signing can be provided from the surrounding network where a pedestrian route exists that does not follow the main vehicle route.

Provision of equipment such as the loan of umbrellas is a small, inexpensive initiative that can have a large impact on whether someone chooses to walk.

Business travel

One reason that many people give for needing to drive to work is that they are required to travel in the course of the working day for their business. There are a number of ways in which this potential barrier to more sustainable commuting to work can be removed. These include:

- Provision of fleet/pool cars for staff use while at work, preferably using vehicles selected for fuel efficiency/ environmental performance
- Provision of pre-paid public transport tickets if the trips are regularly between set locations or of a specific length
- Use of video-conferencing especially for regular long distance meetings
- Payment of cycle allowance for work trips
- Encourage staff to share cars and co-ordinate travel when attending meetings away from office
- Provision of wet weather equipment/ clothing e.g. umbrellas.

Employer working practices and policies

An employer can operate a number of working practices and policies that will help to reduce the need to travel. These could include the operation of the following:

- Flexi-time allowing staff to work longer days and take the accrued time off
- Compressed working week (e.g. 9 day fortnight)
- Teleworking enabling staff to work from home or another office for all or part of the day
- Part-time working options.

An employer can also adopt specific recruiting or operational policies that will support the objectives of their travel plan. Examples are:

- Recruiting staff locally, or for instance along specific bus routes, and offering training to local people
- Consider home locations when organising work teams. This can help facilitate car sharing, particularly where shift systems operate
- Provide attractive relocation packages to encourage employees to live close to the workplace.

Parking management

While not always popular, the introduction of some form of parking management is an important part of a successful travel plan. The availability of free parking on site will be one of the most important factors influencing whether or not staff drive to work.

There are a number of options for parking management:

- Limit parking provision on site
- Introduce parking charges. These could apply daily therefore giving incentive to use alternative modes even if this is only for one day per week.
- Any charges could be linked to level of income
- Priority spaces can be allocated to car sharers, for example a certain number can be allocated and these should be situated close to the building entrance. Free parking can be offered to car sharers when all other parking is charged.
- Parking numbers can be reduced over time allowing that space to be used for other purposes.
- Permits to allow parking on site can be allocated on a limited or rotational basis.
- Those people living within 2km of the site not permitted a parking space/ permit.
- Parking "cash-out": This operates by the employee receiving a small payment or alternatively, a time credit for each day they do not bring their car to work. Where a time credit is given, e.g. 10 minutes per day car not brought to site, this can be taken off as holiday when sufficient time is accumulated. This type of arrangement is often seen as a positive parking management measure.

Travel promotion and marketing

Continual promotion and marketing of a travel plan will be vital to its success. The need to encourage and support staff in trying alternative travel modes, as well as reassuring it is not about banning the use of cars, will necessitate a strong promotional and marketing element in any travel plan.

This work can take many forms:

- Information via posters, leaflets, intranet
- Specific promotional events e.g. Bike to Work Breakfast, Car Free Day
- Specific promotional campaigns e.g. 'One in Five' to encourage employees to leave their car at home one day a week, travel plan marketing slogan competition
- Promotional offers, e.g. \$20 gift voucher for signing up to car share scheme
- Employee Travel Forum specifically to promote travel plan, keep employees informed on progress and market successes
- Travel plan "champion" to promote message, activities and change.

Deliveries and fleet management

The deliveries associated with a business can often significantly contribute to that organisations environmental footprint. A number of factors can be considered to minimise this impact:

- Rationalise deliveries where possible – could fewer trips be made by better co-ordination of deliveries?
- Encourage use of local suppliers where feasible
- Include environmental criteria in contracts e.g. require supplier to demonstrate how they will reduce the transport they use.

It is often easier for fleets to reduce their fuel consumption than their overall mileage. A number of actions can be taken to ensure good practice in this area:

- In purchasing fleet vehicles the fuel efficiency and whole of life costing should be taken into account.
- New cleaner technologies should be considered such as bio-fuel vehicles. Some suppliers are happy to supply a vehicle on loan for a trial period for no cost
- Fleet operations should be continually monitored to ensure the number and type of vehicles best meet needs e.g. is it necessary to carry equipment
- Use of route planning systems can cut down on unnecessary mileage
- Training in environmentally friendly driving techniques can lead to better performance
- Regular maintenance of fleet vehicles is essential to ensure they are operating at their optimum efficiency.

MEASURES FOR POSSIBLE INCLUSION IN SCHOOL TRAVEL PLANS

Some of the measures above will be applicable to a school travel plan. There are a number of other factors however that could also be considered for inclusion in a school travel plan. These include:

- Walking school buses – designated adults collect a number of children along a route each day and are responsible for walking them to and from school.
- Cycle parking and locker facilities
- Off road cycle paths connecting residential area to school
- Traffic calming and road safety improvements around school
- Rationalisation of on-street parking around school
- Information on travel plan included in induction pack for parents
- Promotional/educational work with children e.g. maths lessons calculating distance travelled by those walking/cycling to school, Walk to School Week etc.
- Promotional work with parents encouraging them to walk or cycle with their child to school rather than drive, or if they drive encourage them to park away from school and walk the last 5-10 minutes of journey.

MEASURES FOR POSSIBLE INCLUSION IN RESIDENTIAL TRAVEL PLANS

Key areas for consideration in residential travel plans are:

- Provision of information on public transport services and walking and cycling facilities available
- Where the residential development is high density it should provide covered, lockable enclosures for cycle parking. For lower density housing this can be accommodated within garages or sheds.
- Build on community passions/interests e.g. if particular interest in cycling
- Establish community “champion” to promote travel plan and encourage others
- Personal journey planning that works with individual households to suggest alternative travel options for at least some of their journeys
- Offer introductory promotions e.g. free bus pass for a week or for specific journeys
- Travel information pack to all new householders.

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APPENDIX 9

Examples of Successful Travel Plans

Current Initiatives

In the New Zealand context, Land Transport New Zealand and Auckland Regional Transport Authority (ARTA) provide guidance and assistance in taking travel planning forward. As travel planning is relatively new to New Zealand however, it may also be useful to consult overseas guidance. Some useful websites are provided below.

Best Practise Websites

www.travelwise.org.nz

www.landtransport.govt.nz/sustainable-travel

www.dft.gov.uk/pgr/sustainable/travelplans

www.dft.gov.uk/pgr/sustainable/travelplans/work/resourcepackemployers

Set out below are a number of practical examples of travel implemented in New Zealand and overseas to give an idea of the types of measures and initiatives that can be included in a travel plan, and the different approaches that can be employed in implementing a travel plan.

NEW ZEALAND WORKPLACE TRAVEL PLANNING EXAMPLES

Vodafone

ARTA worked with Vodafone NZ on the development of one of the first TravelWise workplace travel plans in New Zealand, in early 2004.

At the time the company needed to relocate their 1,100 Auckland staff to a new building. Car parking at the new site was an issue, so a travel plan was derived to encourage staff to look at other transport options. The resulting “*i-commute*” programme became a catalyst for staff to reconsider how they travelled to and from work.

Since its implementation, travel planning has become part of Vodafone’s culture and fits in strategically with the company’s corporate responsibility programme. The company provides information and incentives to staff who catch the bus, train or ferry, walk, run, cycle, carpool or even kayak to work. Each year Vodafone develops a calendar of events to promote and incentivise different ways of travelling to work.

Waitakere City Council

In 2002 the Council resolved to develop a new Civic Centre. This resulted in the opportunity to combine over 600 Waitakere City Council staff from seven different sites into one building adjacent to Henderson Railway Station. The development of Waitakere Central was part of a wider major transit oriented development that included redevelopment of the bus, rail and taxi interchange, the new Unitec campus, Waitakere Central Library and the main street environment in Henderson.

Locating the Council in the heart of Henderson meant that staff and visitors could easily travel to the Council by bus or train. The move to Waitakere Central in mid-2006 also coincided with double tracking of the western line and major train station upgrades. The Council also provided less parking than was required by the district plan. A travel plan was implemented, in part, to help manage this reduction in parking.

This workplace travel plan following the ARTA TravelWise process was preliminary scoped during 2005 and developed and delivered between March and September 2006.

Travel plan measures included:

Pre-move:

- Facilities review and bus, rail and bike routes mapping
- Staff address mapping, showing that 48.4% of staff lived within a reasonable distance of passenger transport or could potentially walk or cycle to work
- Baseline survey of travel modes
- Staff focus groups and feedback mechanisms
- Establishment of car pool groups

Post-move

- Management system for staff car parks with priority given to mobility card holders and car poolers
- Secure bike facilities with lockers and showers nearby
- 50% staff subsidy for bus and train commuting
- Pre-paid train tickets for staff travelling to business meetings
- Ongoing communications with staff through the EcoNet (intranet), global emails, brochure desk drops and staff inductions for the new building
- Events including sustainable transport days
- Staff workshops and consultation
- Local bike shop deals
- Corporate bikes for work purposes or trialling commuting by bike
- Introduction of car pooling software (Rideshare)
- Regular surveys of staff travel behaviour to inform travel plan activities.

A mid 2007 snapshot survey of Waitakere Central staff travel plan showed an overall mode shift to more sustainable forms of transport of more than 18%.

- Nearly 8% of staff regularly car pooled to work each week,
- 12% of staff regularly travelled by bus or train, even though train travel was disrupted during double tracking works,
- Nearly 4% of staff regularly rode their bikes to work, this is seasonally affected.
- Between 3-6% of staff walked to work, this is seasonally affected.
- Individual car driving to work was 69%. This compares to a pre-move rate of 94.5%.

**University of
Auckland & AUT
University**

The University of Auckland and AUT (Auckland University of Technology) identified there were potentially problems with the way students and staff travelled to the universities and that this was contributing to the city's transport problems. The two universities, in partnership with ARTA, the Auckland City Council and Transit New Zealand, put together a comprehensive Universities' Travel Plan.

ARTA commissioned a survey to help the planning process for transport to, from and around the universities in Auckland's CBD. Survey responses from more than 6000 staff and students were used to develop a travel plan for the area designated by Auckland City Council as the Learning Quarter.

The draft plan sets out ways of more effectively managing the transport modes and choices of the 45,000 students and staff who travel to the CBD campuses of both universities. Its wide-ranging recommendations include:

- Improvements in pedestrian crossings, priorities and footpaths and changes to streetscape design;
- A full cycling review of the Learning Quarter;
- The introduction of a ride share matching service;
- A review of student ticketing arrangements;
- A revision of sustainable transport information for staff and students; and
- Measures to help reduce the need to travel.

Consultation is being undertaken prior to finalising the travel plan. For further information refer to www.travelwise.org.nz/utp.

Auckland Airport

In late 2004, Auckland International Airport Limited (AIAL) began a comprehensive study into the issue of surface access routes to the airport. From the findings of the study, a number of initiatives were identified, including developing a staff travel plan for the airport.

The travel plan called *lift*, includes staff from AIAL, Air New Zealand, Customs, the Ministry of Agriculture and Forestry (MAF) and the Aviation Security Service (AvSec).

Each day, over 80,000 vehicles travel to and from Auckland Airport. With the growth in passengers and staff at Auckland Airport, it is expected that this demand will increase by around 90% by the year 2015, placing pressure on the roads to and within the airport precinct and causing frustration for airport staff and passengers.

With over 10,000 people working at Auckland Airport, *lift's* aim is to firstly encourage staff to think about getting to work differently, and provide practical travel solutions. These initiatives are being developed by staff who work at the airport. The *lift* initiatives are:

- Carpooling – to enable two or more people to share a car journey to/from work. Carpoolers can be matched informally by word of mouth, text messaging, or through a database; and
- Improved Airbus service – potentially better suited to airport staff.

Other initiatives being considered are:

- Rail link transport – a fast direct link from the airport to local railway stations;
- Personalised journey planner – a public transport door-to-door plan focusing on individual travel needs and providing information on ways to travel. These will be available when public transport links to the airport are improved; and
- Airport precinct transport ideas – ways of getting around the airport for meetings and lunch time trips.

For more information see www.liftataucklandairport.co.nz.

OVERSEAS WORKPLACE TRAVEL PLANNING EXAMPLES

Stockley Business Park, UK

Stockley Business Park is situated in Uxbridge, approximately 15 miles west of central London. It is a large, multipurpose business park, which has over 30 companies and employs over 7,000 people. The tenant organisations are leading blue chip companies, and include GlaxoSmithKline, BT and Marks and Spencer. Each company has parking spaces totalling 6,000 for the whole site.

The travel plan for the business park was established in 1997. It came about out of concern that congestion would put off future tenants from locating in the park, and erode the quality of business for existing tenants.

The Chief Executive of the site along with senior managers from existing tenants set up a site wide travel plan and established a travel solutions commuter centre. A dedicated sustainable transport co-ordinator was appointed in September of 1997, and a travel survey was conducted in December 1997. A working group was established that comprised tenants, bus and train operators, and associated local authorities.

The main initiatives included in the travel plan were:

- Regular newsletter;
- Car share scheme;
- Subsidised and branded buses;
- Free, twice weekly shopper bus;
- Good bus shelters with real time information;
- Cycle facilities at each company;
- Borrow-a-bike scheme;
- Annual 'bike to work' days;
- Interest free loans to buy bikes;
- Cycle training and repair services;
- 20% discount at local cycle dealer;
- Internet lunchtime shopping with Tesco (supermarket) delivering to home in the evening; and
- 'Getting to Stockley Park' leaflet for new staff and visitors.

As a result of these initiatives, there has been:

- A 20% drop in car use to the business park between 1998 and 2003;
- 14% decrease in proportion of employees driving alone;
- 1% increase in Underground use;
- 1.2% increase in rail use; and
- 3.4% increase in bus use.

The travel plan has helped alleviate the pressure on individual unit car parking, and raise the profile of the park as a positive workplace for employment.

www.dft.gov.uk/pgpr/sustainable/travelplans/work/publications/

Addenbrooke's Hospital, UK

With over 18,000 traffic movements each day Addenbrooke's Hospital (part of the Cambridge University Hospitals NHS Foundation Trust), is reported to be the largest single generator of traffic in Cambridgeshire. In order to cope with this huge volume of traffic, an "Access to Addenbrooke's" strategy has been developed to help reduce car parking demand and traffic congestion.

To encourage staff to use more sustainable and healthy methods of transport:

- More than 60 buses stop at Addenbrooke's per hour at peak times; and,
- Bicycle parking has increased to 1,300 spaces and is complemented by a weekly visiting cycle repair service.

As part of their travel plan the Trust offers:

- Interest-free loans for pedal cycle or motorcycle/scooter purchase;
- 16 pool cars;
- A car-share scheme; and,
- Discounted weekly bus tickets.

In conjunction with the travel plan, a "Space Programme" advertising campaign was launched to inform people travelling to the site of the transport options available.

In July 2004, Addenbrooke's Hospital launched the first public bus service in the country to be commissioned and managed by the National Health Service. Two new H1 'Addenbrooke's Shuttle' buses provide a regular service between Addenbrooke's Hospital and Trumpington Park and Ride in a move designed to reduce car traffic in the hospital's vicinity and thus help improve Cambridge traffic congestion in general. This service operates like any other public bus service and is fully accessible to disabled users.

As a result of the travel plan initiative there has been a major shift from car commuting to healthier and more sustainable modes of transport. Bus use is now at 23% (from 12% in 1999) and cycling is up to 25% (from 21% in 1999). For more information see:

www.sd-commission.org.uk/publications/downloads/Addenbrookes-Travel-Plan.pdf
www.sd-commission.org.uk/communitiessummit/show_case_study.php/00063.html

OVERSEAS RESIDENTIAL TRAVEL PLANNING EXAMPLES FOR NEW DEVELOPMENT

Poole Quarter, Poole, Dorset, UK

Poole Quarter is a centrally located residential development to the east of Poole town centre, consisting of 512 homes, including flats, houses and sheltered housing. It has 35% affordable housing. Construction began in Autumn 2004 with first occupation in Summer 2005. An extensive residential travel plan was required as part of the development approval.

www.dft.gov.uk/pgr/sustainable/travelplans/rpt/makingresidentialtravelplans5775

Reasons for the travel plan

Council members were concerned about the overspill parking and traffic likely to result from this large, high density scheme and the travel plan helped to address these concerns. The need for the travel plan was considered from an early stage, as part of initial planning discussions, and the developer, working with a consultant, was proactive in integrating the travel plan into the design of the scheme from the outset. An Environmental Impact Assessment, including a Transport Assessment (ITA), was submitted as part of the planning application, and the detailed residential travel plan was subsequently developed through discussions between the council, the developer and the developer's consultant.

Main elements of travel plan

Parking – parking provided at 1 space per unit plus visitor spaces giving a ratio of approximately 1.1. Visitor parking is managed and charged for.

Site design and facilities – Included:

- A pedestrian and cycle route across the site linking to town centre route;
- The design includes a central focal space with a children's play area;
- A toucan signalised crossing (for cyclists and pedestrians) on main road;
- Secured covered cycle parking for residents and visitors throughout the development; and
- New bus stops and shelters.

Off-site infrastructure. The developer contributed:

- £10,000 (\$30,000) to a Safe Routes to School scheme;
- £15,000 (\$45,000) for a cycle link between the development and a nearby recreation space;
- £25,000 (\$75,000) for a one-way system to prevent rat-running in an adjacent area; and
- Improvements also made to a nearby roundabout.

Public transport – the developer to provide:

- A five year subsidy towards an enhanced bus service (to be operational on occupation of the 50th unit).
- This will be reviewed on payment of the third instalment, with an option to move funding across to other measures if the bus service is not performing in terms of passenger use.

Car club – a car club established on the site, with additional vehicles to be added according to demand.

Promotional measures – the developer also funds an extensive promotional package to encourage new residents to use travel alternatives that includes:

- Sales and marketing literature emphasising the sustainable nature of the development in terms of location and transport choices, and promoting the travel plan. A travel plan notice board outside the sales office that is regularly updated.
- New residents offered a flexible voucher for discounts on public transport or cycle purchase, worth up to £100 (\$300) per household. Alternatively, they can claim one free car club membership for a year. The voucher will be awarded to up to three successive occupiers of the property.
- A residents' travel plan pack including easy-to-read rail and bus timetables; details of regular travel offers; car club literature; cycling and walking route maps; information about joining the local walking bus scheme for travel to school; details of discounts on cycle purchase and cycle accessories; application forms for the flexible voucher offer; and details of a personalised journey planning service.
- The development's sales and marketing staff provide personalised journey planning for new occupiers as part of the normal induction process to promote sustainable travel to work, school and leisure activities.
- A travel plan web site set up and maintained for the development, including a confidential car share database.

Targets and outcomes

A target was set for the travel plan of, on average, a maximum of three car trips per day per unit. The target was triggered once 50 units were occupied.

Monitoring and enforcement

The developer was required through the planning process to submit and have agreed by the council the residential travel plan before work could start on site. This included details of the monitoring to be carried out as below.

- A snapshot travel survey of residents, including trip diary information, after 50 units are occupied and again 12 months later;
- Annual surveys to monitor the take up of travel incentive measures;
- A trip diary of households one year after initial occupation of the first phase and then in years three, four, five and the year after 486 units are completed;
- Data analysis from automated traffic counters installed at site entrances;
- Data from the personalised travel plan visits to each household carried out by sales staff; and,
- Monitoring falls initially to the developer although the planning agreement included a contribution by the developer to cover the council's involvement in the monitoring process.

Management of the plan

The developer is responsible for implementing the plan and to undertake the role of travel co-ordinator. This includes the setting up and running a travel plan steering group for three years after occupation of 486 units. Once construction is completed, custody of the travel plan falls to the residents' management company.

From: Department for Transport – Making residential travel plans work: guidelines for new development.

<http://www.dft.gov.uk/pgr/sustainable/travelplans/rpt/makingresidentialtravelplans5775?page=27#1042>

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APPENDIX 10

Potential Tolling Strategies for New Roads

Open An open strategy involves toll collection at midpoints along the toll road and therefore can be either manual or Electronic Toll Collection – i.e. gantries are located along the route and a vehicle is charged when passing a toll collection point. Each toll collection location (gantry or toll booth) can also be priced individually. Open systems are based on single point toll tariffs that can be linked to replicate a simplified approach to charging for length of travel, with charges capable of being capped for use of multiple sections.

Closed A closed strategy is the pure approach to charging for distance travelled. It notes where vehicles get on and off the toll road and charges accordingly and in a manner similar to cordon schemes. A vehicle is identified upon entry and exit and charged for the length of the journey. This strategy can be very complex for collection purposes, but is better in terms of overall scheme equity.

Single Point This method of charging involves one strategically located charging point that captures vehicles travelling across the corridor. This is the simplest form of tolling. For example, ALPURT B2 has one centrally located gantry in between the two intersections defining the toll road.

Consecutive Similar to the single point above, but uses multiple charging points along sections of highway as a simple means of replicating a pay-for-distance scheme, which usually has a cap (maximum charge) applied to it. This is a hybrid solution that provides a way to get a simple open toll collection system to function in a similar manner to a closed system, however it is difficult to truly charge for actual distance through this approach

TOLL COLLECTION METHODS

Transit is researching toll collection through its Toll Systems Project (TSP), which has three broad systems under consideration.

Manual This is the traditional method of collecting tolls and involves vehicles stopping to pay at manned booths or unmanned collection machines in toll plazas.

Electronic Toll Collection ETC consists of free flow electronic tolling across the designated toll lanes of a highway. Vehicles are detected by use of either a radio transponder on the vehicle windscreen, or by a camera capturing the number plate image. Toll collection is processed through a back office, which handles all administration and customer accounts. The video capture approach allows casual users who have not previously set up a payment account to make one-off payments for use.

Mixed Provides for a combination of electronic and manual systems as discussed above, with the free-flow ETC lanes physically separated from the manual toll lanes to allow traffic to safely decelerate and de-merge from general flow in order to stop and pay and then accelerate and re-merge after.

International governments and operators are considering the likes of GPS based systems for distance based charging, particularly in a wider network context.

Pre-payment options as a consequence of modern tolling methods also impact on the collection of tolls in terms of the time when the cash is received relative to when the service is delivered. Technology has progressed to the point where smart cards in the transponders allow for accounts to be pre-paid and topped up when necessary. Advances in telecommunications mean that registered vehicles can have accounts set up that also allow pre-payment and payment via cell phones.