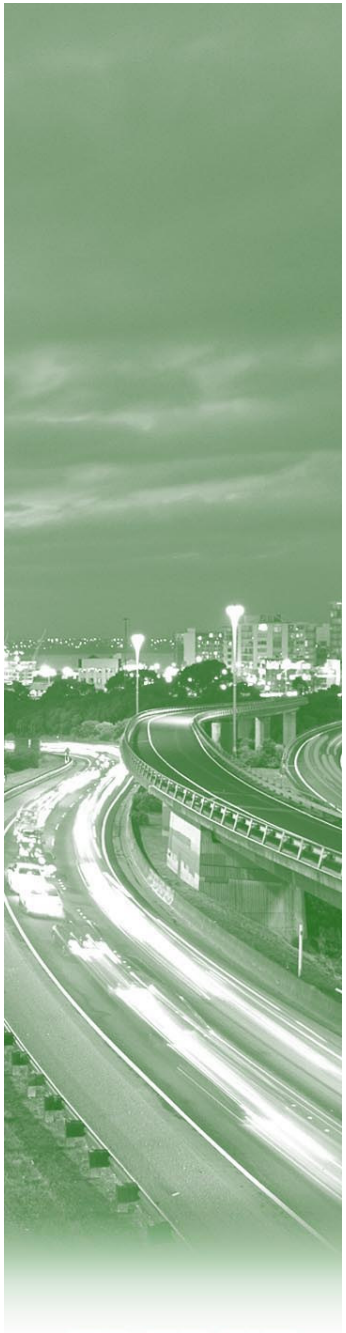

PASSING & OVERTAKING STRATEGY FOR STATE HIGHWAYS

RCA Forum

Larry Cameron

Principal Transportation Planner
Transit New Zealand

1 December 2006

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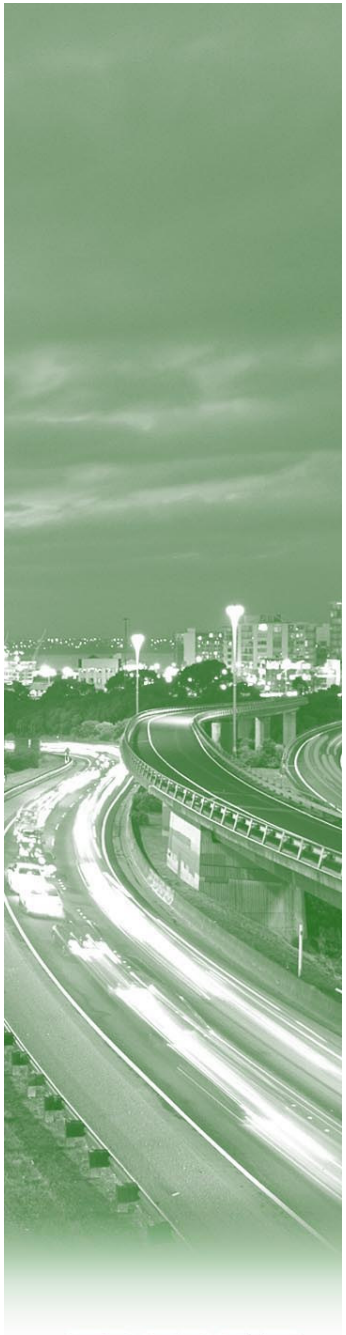

Passing & Overtaking Strategy For State Highways

OUTLINE

- Key terms and projected flows.
- Outline of strategy.
- Interaction with other organisations.
- Conclusions.

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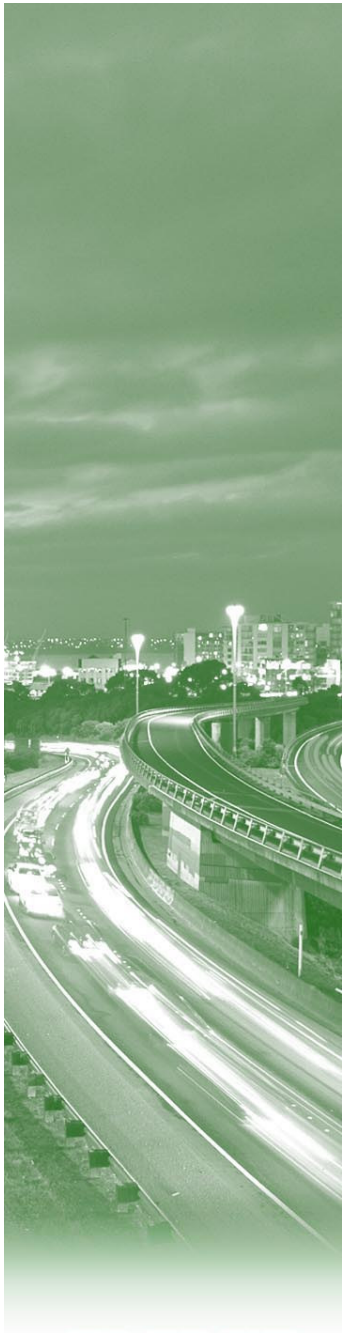

Passing & Overtaking Strategy For State Highways

KEY TERMS

- **PASSING: vehicles use passing facilities to pass slower vehicles.**
- **OVERTAKING: vehicles cross into the opposing traffic lane to pass slower vehicles.**
- **TREATMENTS: are applied directly to the roading infrastructure.**
- **MEASURES: act on driver behaviour.**
- **2+1 LANES: continuous alternating passing lanes.**

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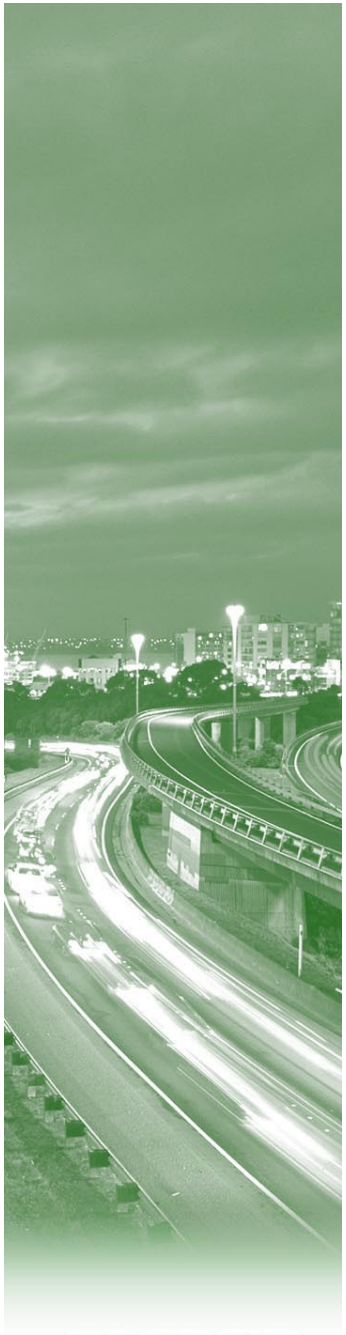

Passing & Overtaking Strategy For State Highways

ESTIMATED DISTRIBUTION OF TRAFFIC FLOWS		
AADT (vpd)	Current * (km)	Next 25 - 30 years (km)
12,000 - 25,000	100	1,000
5,000 - 12,000	1,800	2,900
< 5,000	8,000	6,000
TOTALS	9,900	9,900

* Does not include SH sections in urban areas or SH sections identified for four-laning.

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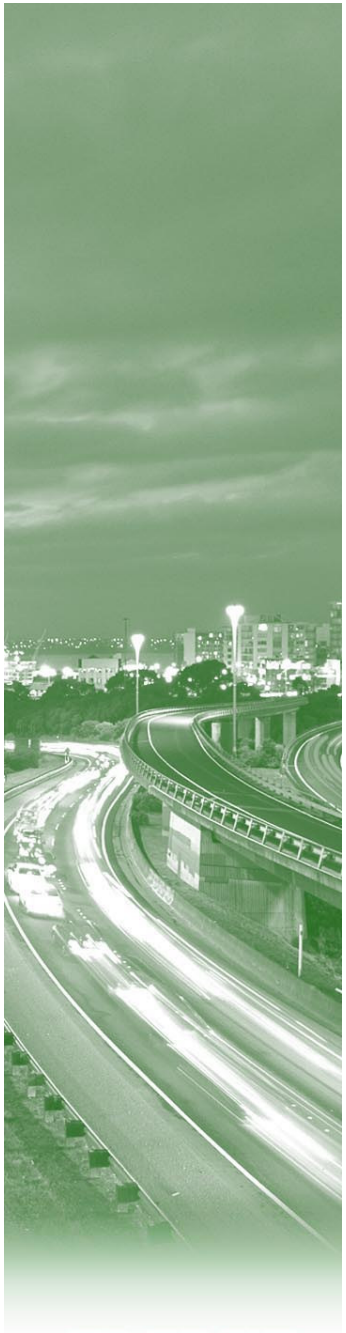

KEY FEATURES OF STRATEGY

- At lower flows, retain and enhance overtaking opportunities.
- Improved configuration and design of passing facilities.
- Where appropriate, intermediate step between two and four-lanes.
- Interim and long-term strategy for SH sections.
- Supporting treatments and measures.

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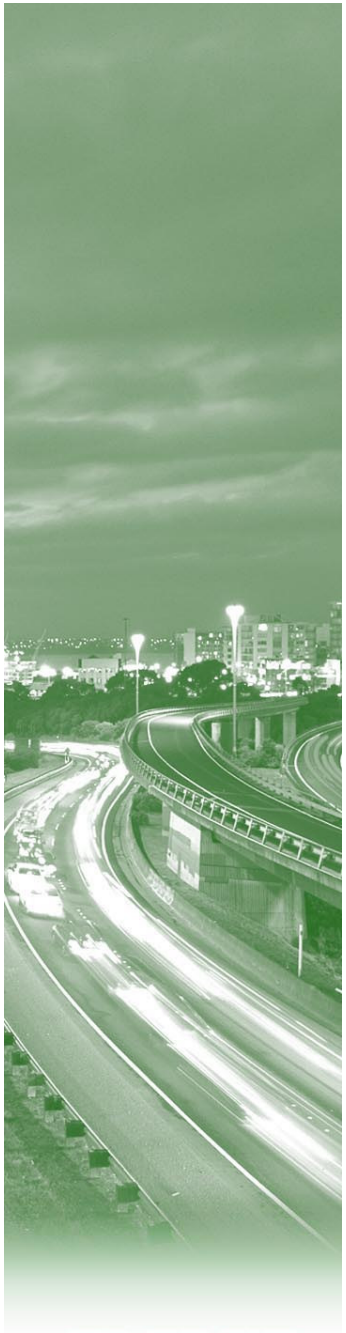

Passing & Overtaking Strategy For State Highways

STRATEGY STAGES	
STAGE	PROJECTED AADT (vpd)
Overtaking	Generally < 2,000
Mainly Overtaking	2,000 - 5,000
Passing and Overtaking	4,000 - 12,000
Passing Only	10,000 - 25,000

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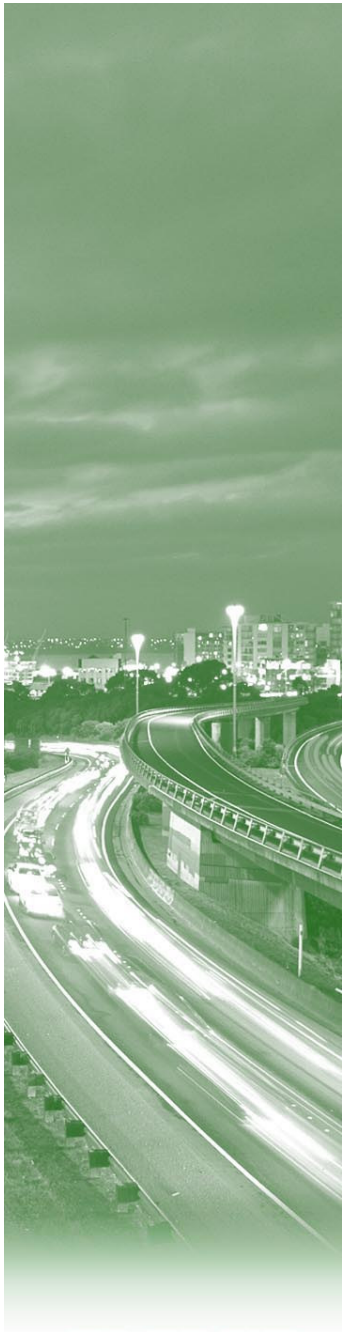

Passing & Overtaking Strategy For State Highways

INDICATIVE LONG-TERM STRATEGY FOR PASSING & OVERTAKING TREATMENTS			
Proj AADT (vpd)	Terrain[1]		
	Flat	Rolling	Mountainous
0 - 2,000	Overtaking (OT) (OT SD improvements, OT enhancements, possible isolated short PLs / SVBs / shoulder widening).		
2,000 - 4,000	OT (As above)	Mainly OT. Possibly some short PLs / SVBs[2] @ 10 km.	
4,000 - 5,000 (Transition)	Mainly OT. Possibly some short PLs / SVBs[2] @ 10 km.	PLs @ 5 – 10 km, 1.2 km & OT enhancements.	PLs @ 5 km, 1 km. If possible OT enhancements.
5,000 - 7,000	PLs @ 5 – 10 km, 1.2 km & OT enhancements.		
7,000 - 10,000	PLs @ 5 – 10 km, 1.5 km & OT enhancements.		PLs @ 5 km, 1.2 km. If possible OT enhancements.
10,000 - 12,000 (Transition)	PLs @ 5 km, 1.5 km. Poss OT enhancemt.	Mainly 2+1 lanes (Poss four-lanes).	PLs @ 5 km, 1.2-1.5 km.
12,000 - 20,000	Mainly 2+1 lanes (Possible four-lanes).		
20,000 - 25,000 (Transition)	Mixed 2+1 lanes & four-lanes.		

Key	O'taking	Mainly O'taking	Passing & O'taking	Passing

Notes: PL lengths excl tapers. 1= As well AADT and terrain, other factors will affect actual layout. 2 = SVBs able to be easily lengthened, if required.

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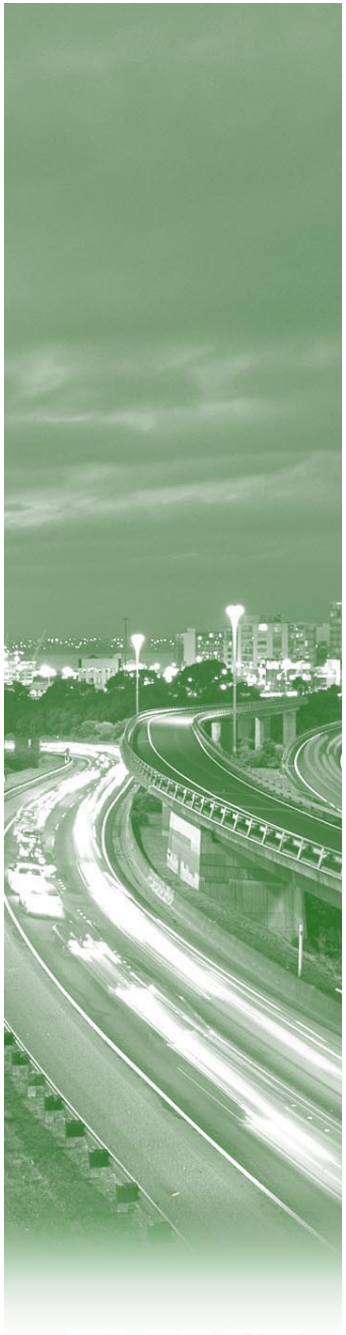

Passing & Overtaking Strategy For State Highways

INTEGRATION OF TREATMENTS & MEASURES

STRATEGY	O'taking	Mainly O'taking	Passing & O'taking	Passing
Projected Traffic Flows (vpd)	< 4,000	2,000 -5,000	4,000 - 12,000	10,000 - 25,000
OVERTAKING				
O'taking Sight Dist Impvts	C	C	C	-
O'taking Enhancements	A	A	A	
PASSING				
Low Volume Treatments	A*	A*	-	-
Mod-Volume Treatments	-	-	A	A
SUPPORTING				
Centreline Roadside & Edgeline	A	A	A	A
Intersections Resource Planning	C	C	A	A
Education Enforcement	C	C	C	A
Travel Demand Management	C	C	C	A
Intelligent Transport Systems				C

NOTE: A = apply. C = consider if problem. * = apply if overtaking not viable.

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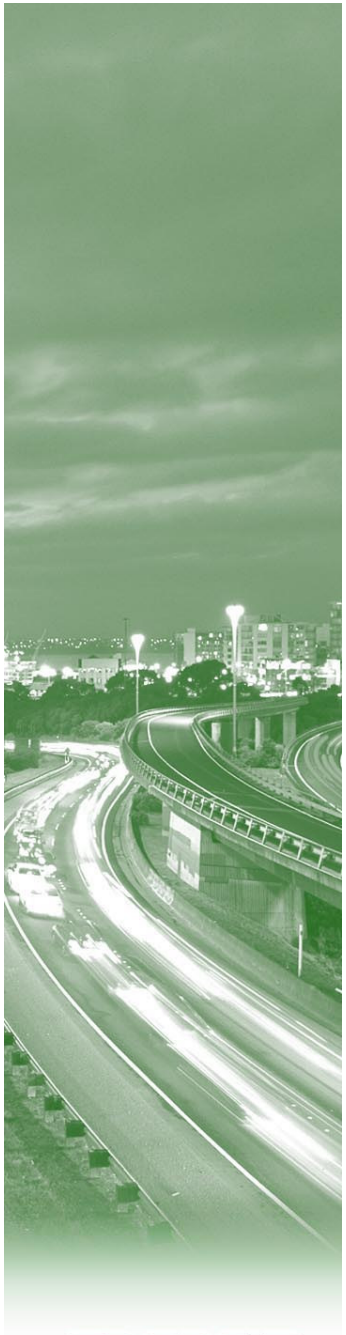

OVERTAKING TREATMENTS

Overtaking Sight Distance Improvements

- Vegetation clearance.
- Corner/batter relocation.
- Shape corrections.
- Realignments.

Overtaking Enhancements

- Seal widening.
- Configuration of passing lanes.
- If available sight distance, overtaking at passing lanes in untreated direction at lower flows.

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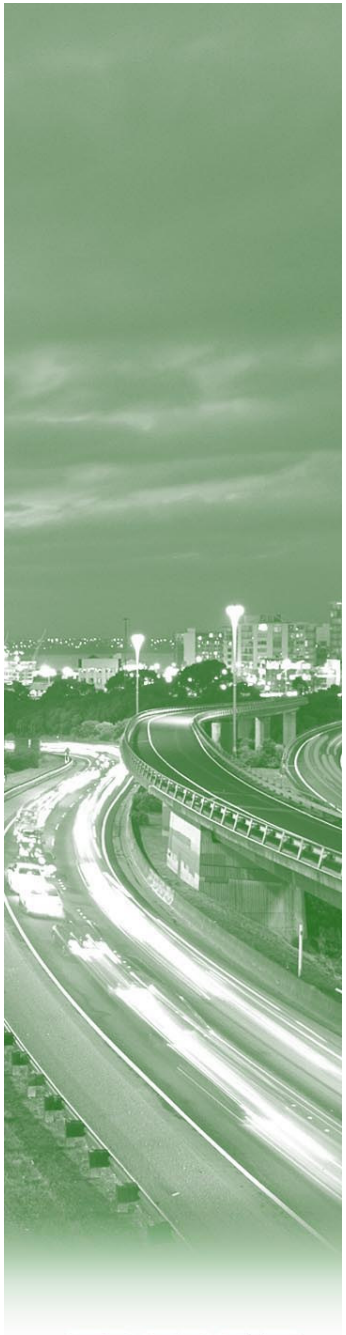

Passing & Overtaking Strategy For State Highways

2+1 LANES WITH GAP SEPARATION, GERMANY

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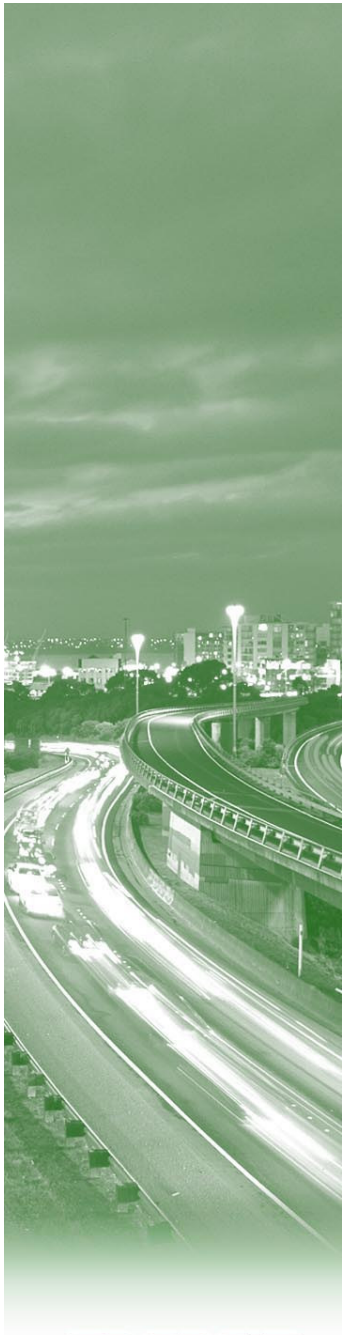

Passing & Overtaking Strategy For State Highways

2+1 LANES WITH MEDIAN BARRIER, SWEDEN

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INTERACTION WITH OTHER ORGANISATIONS

Intersections with State Highways (TLAs)

- Progressive rationalisation of intersections.

Resource Planning (TLAs)

- Review of Transit's Planning Policy Manual.
- "Expressway" access classification.
- Additional crossing conditions.
- Encourage alternative District roading networks.
- Protection of proposed alternative alignments.
- Submissions on District Plans, RLTS and resource consent applications.

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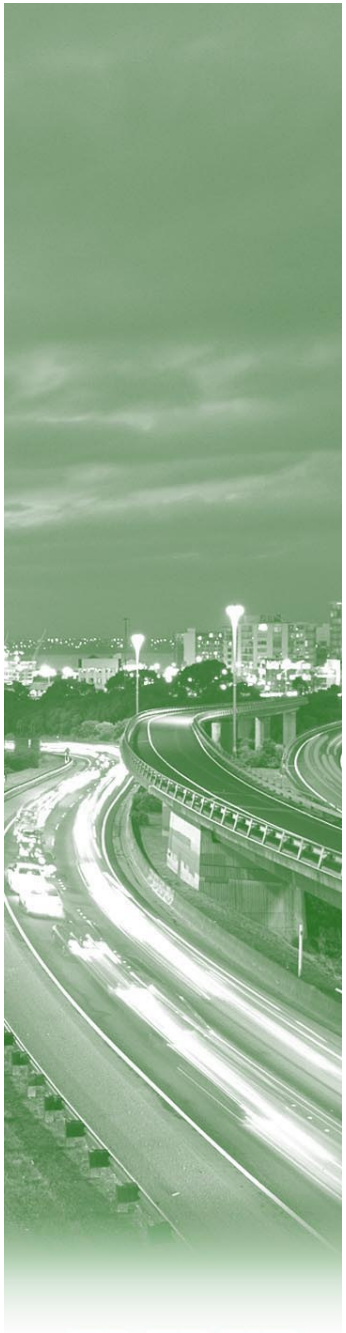

INTERACTION WITH OTHER ORGANISATIONS cont'd

Education (Land Transport NZ, Heavy Freight Industry)

- Part of resource consent conditions.
- Targeted & general programmes.

Enforcement (NZ Police, Ministry of Transport)

- Selected locations.

Travel Demand Management (RLTC, HCV generators)

- Part of RLTS and resource consent conditions.
- Alternative modes, hours and routes.

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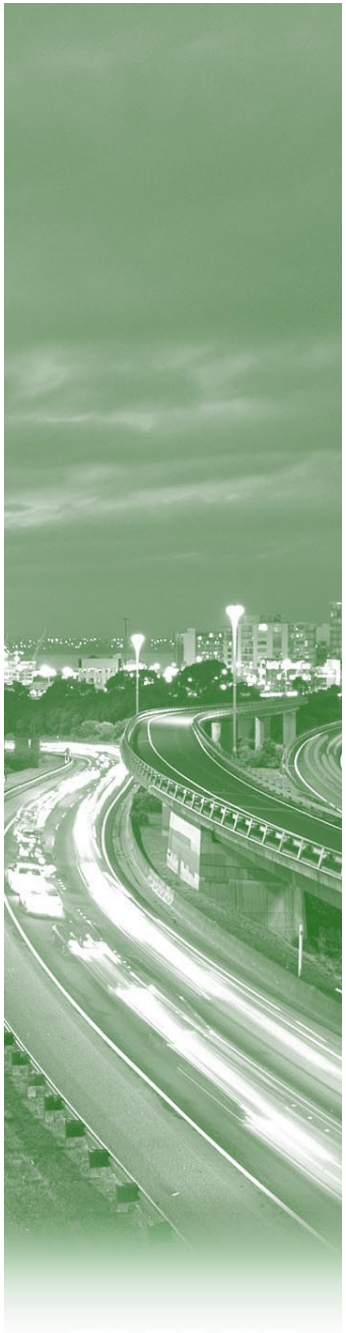

INTERACTION WITH OTHER ORGANISATIONS cont'd

Funding (Land Transport NZ, RLTCs)

- Weighted Average BCR packages.
- Regional funding.

Research (Land Transport NZ)

- Passing facility length and spacing.
- Revisions to EEM procedures.
- Merge behaviour and capacity.

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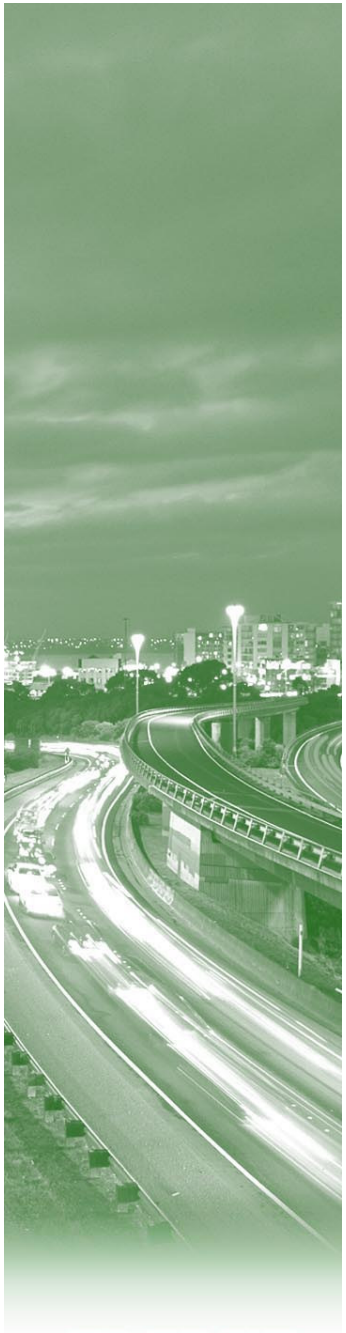

CONCLUSIONS

- More efficient use of two-lane state highways in rural and semi-rural (peri-urban) areas.
- Wide range of treatments and measures (not just infrastructure solutions).
- More interaction with other organisations.
- Contact larry.cameron@transit.govt.nz

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