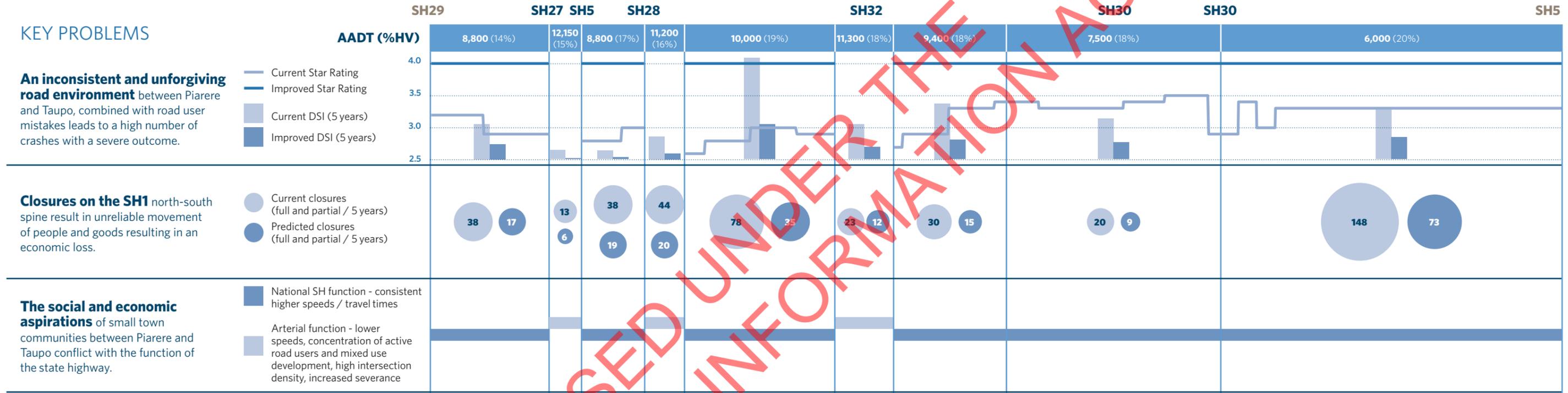


# SH1 PIARERE TO TAUPO RECOMMENDED PROGRAMME

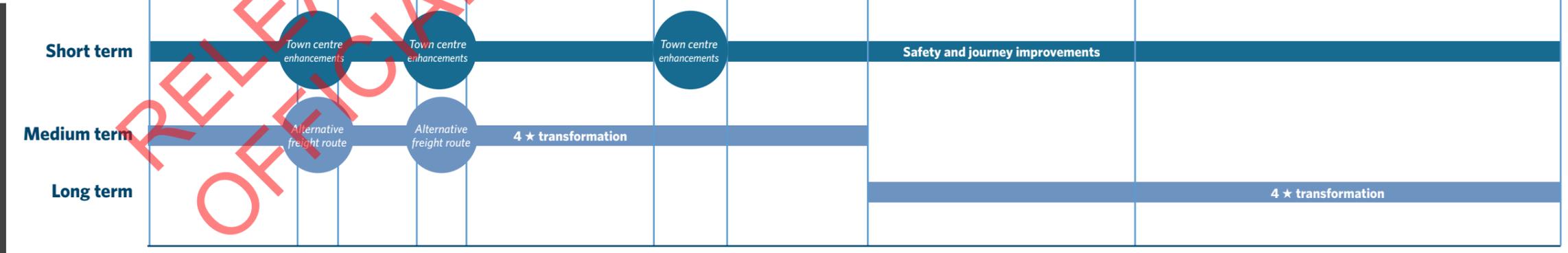


**RECOMMENDED PROGRAMME** The recommended programme includes improved emergency management, improved maintenance regimes, improved traveller information and improved township amenities. The 4 star transformation would include median division and passing lanes or possibly 2+1 to improve efficiency and future proof the corridor.

**Outcomes**

- 70 Fewer deaths and serious injuries over 10 years
- 4 star KiwiRAP rating compared to current rating of 2 to 3
- 50% fewer closures
- Improved amenity in townships

Programme investment profile  
**H/H/0.5-1.5**  
Programme cost range  
**\$730m-\$1,050m**



BCR	0.5-1.5	0.5-1.3
Corridor cost	\$363-537m	\$330-450m
SWDC costs	\$37-63m	-

# SH1 PIARERE TO TAUPO

State Highway 1 (SH1) is New Zealand's premier north-south highway. In the Waikato, it carries a large volume of freight, tourists and commuters between the centres of Hamilton, Taupo and, for part of its length, Rotorua. As such, SH1 is part of New Zealand's economic lifeline as well as providing the first journey experienced by more than 6 million tourists every year.

The level of service along SH1 between Piarere and Taupo varies significantly and overall is out of keeping with its classification as a national (high volume) highway. Most significantly, 45% of the section has a KiwiRAP star rating of 3 Star. The inconsistent nature and unforgiving roadside environment of this section of highway contributes to a high number of fatal and serious injuries. By 2020 the Waikato Expressway will be complete. Improvement options to the section from Cambridge to the Piarere junction are currently being considered and, when implemented, will emphasise the inconsistent journey experience in this section of SH1 further.

The high number of crashes directly contributes to this section of SH1 experiencing regular closures or reduced single lane running with, on average, every return journey along the entire corridor experiencing at least one delay, significantly affecting travel time reliability. Alternate routes can add up to 50 minutes to the journey.

The social and economic aspirations of the townships of Tirau, Putaruru and Tokoroa are increasingly in conflict with the strategic function of State Highway 1. Linking customers using State Highway 1 with services and facilities in townships along its route provides a valuable contribution to the local economy. In the long term we will need to consider the role of bypasses on our nationally strategic route.

The strategy for this section of SH1 is a mixture of operational and capital improvements prioritising the through movements associated with the end to end SH1 journey and targeting safety and customer service. It is achieving this by:

- Improving emergency management
- Improving maintenance regimes
- Improving traveller information and communications
- Improving township amenity for travellers and communities
- Staged road upgrades for safety

There is no evidence to suggest a major shift in goods transported by the Main Trunk rail line between Hamilton and Palmerston North to road which would significantly affect the programme or its outcomes. We have, however considered the viability of encouraging a greater uptake of freight on the alternative route (SH32) around Lake Taupo to Turangi. This option has been discounted due to the cost to upgrade the route to an appropriate level of service and the ongoing requirement to provide a strategic connection to Napier (SH5) and Taupo which remains on the existing alignment.

## PROGRAMME MULTI-CRITERIA ASSESSMENT

The programmes are different combinations of activities. Alternative programmes were developed and assessed against the investment objectives and other criteria.

		2016 baseline	Programme 1 Business as usual	Programme 2 Maintenance and operation	Programme 3 Targeted safety	Programme 4 Corridor wide safety transformation (3.5*)	Programme 5 Broad response (4* target)	Programme 5a Broad response plus journey experience	Programme 6 Infrastructure focussed	Programme 6a Infrastructure focussed plus journey experience
<b>Investment objectives</b>	Reduce DSI	10 DSI	10	9	8.5	7	3.5	3.5	<3	<3
	Improve quality of infrastructure (Kiwi RAP)	55% 3★	55% 3★	55% 3★	80% 3★	All 3.5★	All 4★	All 4★	All 4★	All 4★
	Increase availability	5 closures	5	5	5	4	2.5	2.5	1	1
	Improve amenity values in towns	3 min delay#	3.0	2.5	3.0	2.5	1.5	0.3	0.6	0.0
<b>MCA</b>	Safety		4	3	2	1	1	1	1	1
	Economy		4	3	3	3	1	1	1	1
	Social and environmental		3	4	4	2	4	2	6	4
<b>Implementability</b>			N/A	M	H	M	M	M	L	L
<b>IAF</b>	Strategic fit		H	H	H	H	H	H	H	H
	Effectiveness		L	M	M	M	H	H	H	H
	BCA		L	L	L	L	L	L	L	L
<b>Cost range (\$m)</b>	High		110	230	200	650	980	1,050	1,600	1,650
	Low		70	130	90	400	710	730	1,210	1,230
<b>BCR</b>	High		1.0	1.1	1.6	1.5	1.3	1.3	1.3	1.3
	Low		0.6	0.6	0.4	0.8	0.5	0.5	0.5	0.5
<b>Timeframe (years) to attain full benefits</b>			Ongoing	0-20	5-20	5-30	5-40	5-40	5-20	5-20

# This is an estimated proxy value for severance based on pedestrian delay in crossing the road in Tirau, derived from SWDC observations

**Recommended programme**

Stakeholders selected programme 5a 'broad response plus journey experience' as the recommended programme on the basis that it:

- includes a range of infrastructure and non-infrastructure measures to address the problems;

- deals with immediate safety problems;
- provides a staged approach to long term investment to meet demand; and
- contributes to the overall improvement of social and economic wellbeing within the townships.

## STAKEHOLDERS AND INVESTORS

### Investment partners

- NZ Transport Agency
- South Waikato District Council
- NZ Police

### Stakeholders

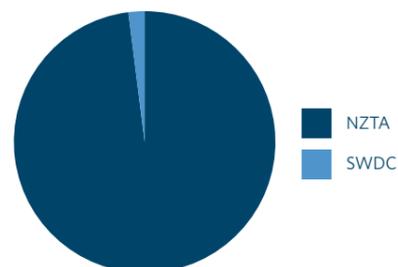
- KiwiRail
- Waikato Regional Council
- Automobile Association
- Road Transport Association
- Freight Logistics Action Group
- Taupo District Council

## IMPLEMENTATION PARTNERS

The following organisations will assist in delivering the recommended programme:

- NZ Transport Agency
- South Waikato District Council

### Funding partner proportional split



## RISKS AND UNCERTAINTIES

Trigger	Time	Uncertainty	Impact	Comments
Population increase	10-30 years	Unlikely	Medium	Population or industrial increase in South Waikato is modest based on historic growth rates, and industrial land uptake. If this was to significantly increase, some of the interventions may need to be brought forward.
Expansion of operations at Kinleith	10-30 years	Unlikely	Medium	Expansion of operations at Oji and Carter Holt Harvey is unlikely in the short term; in the medium to long term, growth will be governed by international markets and are hard to predict. It is unlikely that there will be a large increase in on-road logging trucks within the near future, but this should continue to be monitored.
Reduction in railfreight	3 years	Unlikely	Medium	A reduction in rail operations on the Kinleith Branch Line would significantly increase road freight on the corridor, almost 90% of export goods are shipped to the port by rail (approx. 7 per day). The removal of a single train could increase road freight by up to 10% (approx. 75 trucks) between Kinleith and Putaruru. KiwiRail is currently looking to increase train frequency and improve rail accessibility, so this risk is low.