

SH2 TE MARUA TO MASTERTON RECOMMENDED PROGRAMME

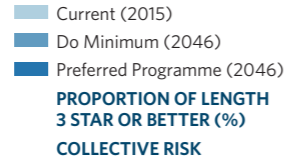


TE MARUA TO MASTERTON

KEY PROBLEMS

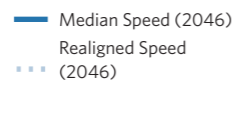
Sub-standard road environment leads to poor safety performance

Reduction in Deaths and Serious Injuries per 5 year period.



Infrastructure constraints limit economic potential and access to essential services

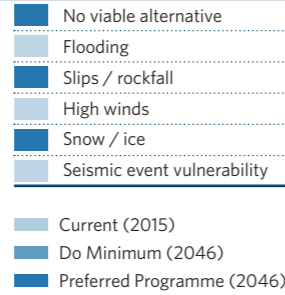
Maintain or improve median travel time for Masterton - Te Marua.



Transport connections that are vulnerable to unplanned natural events (no viable alternate route)

Reduced number of unplanned closures without a viable transport alternative per 5 year period.

Reduced unplanned closure duration without a viable transport alternative per 5 year period.



RECOMMENDED PROGRAMME

Outcomes

25-29 DSIs saved (10 yr period)

92% 3 star or better increased from 70%

9 less road closures (5 yr)

74 less hours closed (5 yr)

2046 median travel time of 45 minutes

and a travel time differential of 6.5 minutes

(current 49 minutes and 8.4 minutes, 2046 do minimum 48 minutes and 9.3 minutes)

Programme investment profile H/H/1.6-2.5

Programme cost range \$180-\$200m*
*(incl rail)

Activity

Staged curve easing, speed management, preventive resilience works, event reactivity, frequent resurfacing, hazard protection, and wide centrelines.
IBC/DBC for Rimutaka Hill including widening and curve easing

Improvements to roadside hazards, wide centrelines, and intersection upgrades.

IBC/DBC for Masterton - Carterton including safety improvements and freight access improvements.

Capital Cost (\$m)

65-95

7-9

10-14

Operations & Maintenance Cost (\$m)

145-175
(including approximately \$15M in reseat frequency OPEX)

16-20

20-25

BCR

1-3

3-5

1-3

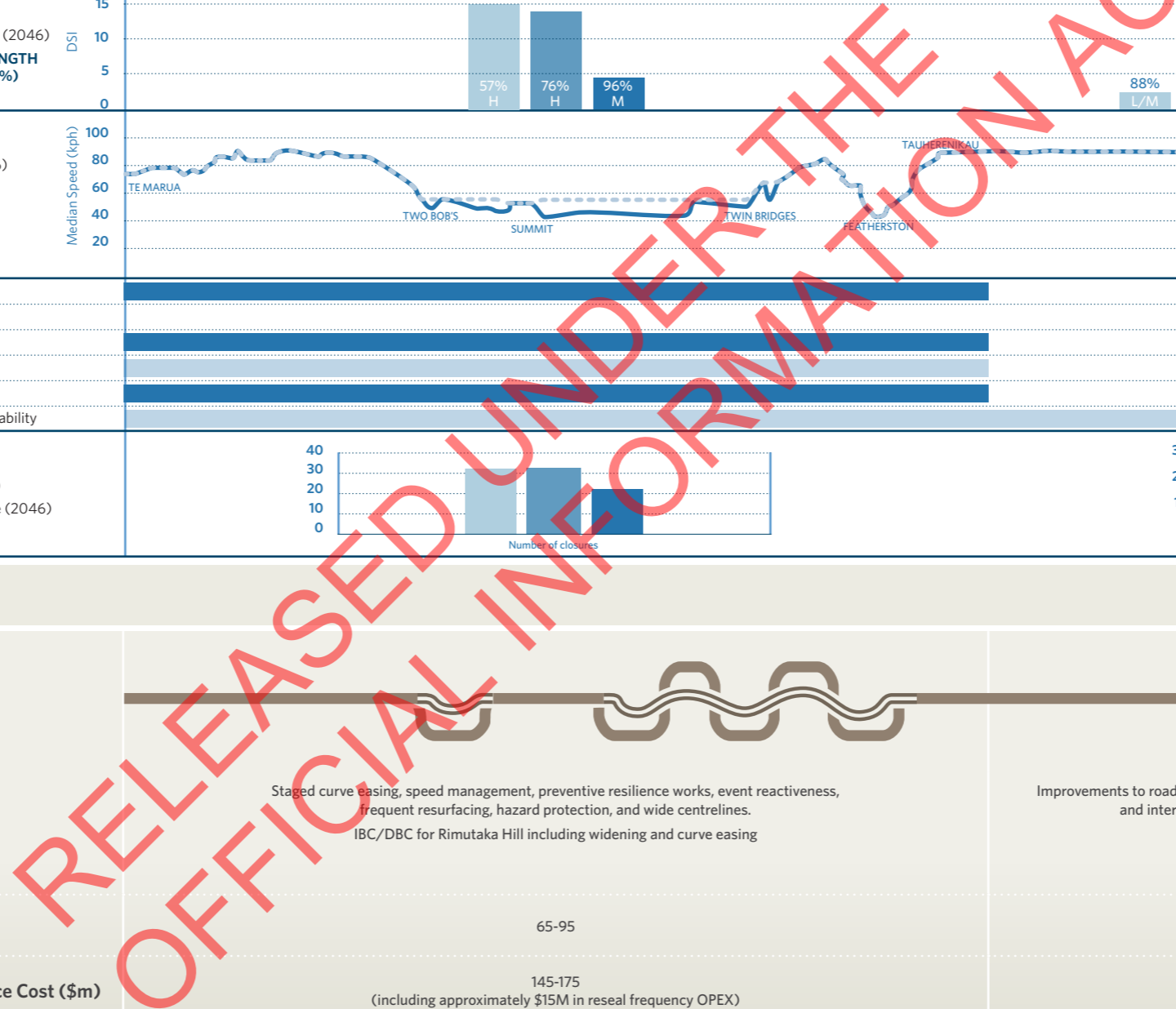
Corridor wide activities

Rail improvements in line with regional planning to complement downstream public transport improvements.

Real time passenger information systems, integrated ticketing, revised bus routes/frequencies, level crossing improvements, improved passenger amenity.

Traveller information improvements, targeted education campaigns, variable messaging signs, event management, and behaviour change initiatives.

Urban improvements to walking and cycling, traffic calming, threshold and speed limit change improvements.



SH2 TE MARUA TO MASTERTON

With the second largest economy in New Zealand, the Wellington region contributes 13.2% of New Zealand's GDP with 10.9% of New Zealand's population. The Wellington region has a population of 491,400, an employment rate of 67.7% with 5.7% unemployed. Throughout the Wairarapa region the primary industries are agriculture and forestry. The primary sector accounts for 20.6% of employment with manufacturing (food and wood processing) accounting for approximately 14.6% of GDP in the region. The Wairarapa region is also considered to be increasingly important for tourism.

State Highway 2 (SH2) between Te Marua and Masterton plays a critical transport accessibility role, connecting the Wairarapa and Wellington enabling access to hospitals, employment and other services. The Wairarapa to Wellington rail line provides public transport services between Wellington and the Wairarapa as well as facilitating the movement of freight goods to Wellington Port. SH2 provides the only direct road link between these areas and due largely to the topography of the Rimutaka Hill section, delays and closures due to snow, high winds and other events often occur.

As there is no viable alternative road route to this section of SH2, long-term resilience is of regional concern. Should this road be affected by a significant event, such as a significant earthquake, the road is expected to take over three months to reopen.

The crash history for SH2 between Te Marua and Masterton indicates significant safety risks for vulnerable road users, particularly motorcyclists. The reliable, timely and safe movement of freight to and through the region is critical to support the region's economic growth and productivity.

With no capacity constraints envisaged for the foreseeable future the Te Marua to Masterton programme business case is about providing a safer journey and a more reliable, efficient and resilient connection for those travelling between the Wairarapa and Wellington. Customer insights made it clear that the constraint to reliable travel for people living and conducting business in the Wairarapa relates to the Te Marua to Ngauranga length of their journey.



PROGRAMME MULTI-CRITERIA ASSESSMENT

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

	Programme 1 Business as usual	Programme 2 Low cost education/behaviour change	Programme 3 Low cost safety	Programme 4 Abandon rail access (road upgrades)	Programme 5 Low cost safety, resilience and reliability	Programme 6 Safe system transformation	Programme 7 Do median combination programme	Programme 7a Do median with public transport	Programme 8 Lead infrastructure enabling primary and tourism	Programme 9 Multi modal do maximum	Programme 9a Rail focused major investment	Programme 9b Road focused major investment	
INVESTMENT OBJECTIVES KPI/OUTCOMES	Improved road safety risk assessment rating (KiwiRAP) (Proportion of length 3 star or better)	80% - 85%	0	1	1	87% - 93%	2	92% - 98%	3	2	3	1	3
	Reduction in deaths and serious injuries (Proportion of reduction of DSI from current levels)	5% - 10%	1	1	1	30% - 40%	2	55% - 60%	2	2	3	1	2
	Maintain or improve travel time (median corridor travel time in minutes)	48 - 54	1	-1	-1	47 - 53	1	45 - 51	3	3	3	1	3
	Maintain or improve travel time reliability (minutes of variance between the median and 85th percentile corridor travel times)	9.3 - 11.3	1	-1	-2	8 - 10	1	6.5 - 8.5	2	2	3	2	2
	Reduced closures in a year (number of closure events per five year period)	29 - 35	1	0	0	23 - 29	1	20 - 26	1	2	3	1	3
	Reduced average closure periods (duration of road closure events per five year period in hours)	198 - 258	1	0	0	127 - 187	1	123 - 183	1	2	3	1	3
OTHER FACTORS	Risk	-	-	-	-	+	++	++	++	--	--	--	-
	Public & Stakeholders	--	-	-	---	+	++	++	++	--	--	--	--
	Inter/dependencies	++	++	++	---	++	+	-	--	---	---	---	--
	Feasibility	+++	+++	+++	---	+++	++	++	--	---	--	++	--
	Affordability	+++	+++	+++	--	++	++	++	-	--	---	--	---
	Costs - including operations and maintenance	\$18 - \$24m	\$25 - \$35m	\$30 - \$40m	\$250 - \$300m	\$120 - \$140m	\$140 - \$170m	\$180 - \$220m	\$250 - \$350m	\$400 - \$600m	\$1.3 - \$1.7b	\$400 - \$600m	\$1.1 - \$1.3b
Benefit Cost Ratio	2.0 - 2.5	1.5 - 3.0	2.5 - 3.5	0.3-0.6	1.5 - 2.5	1.0 - 2.0	1.6 - 2.5	1.0 - 2.0	0.6 - 1.0	0.2-0.5	0.2-0.6	0.3-0.6	

Recommended programme

Stakeholders have agreed and selected programme 7 as the recommended programme. It gives a good return on the investment objectives and provides an appropriate response to the size and scale of the problems identified. There is a good balance of solutions that will lead to improved safety, greater resilience and some improvements in reliability across the journey.

STAKEHOLDERS INVOLVED IN THE PBC

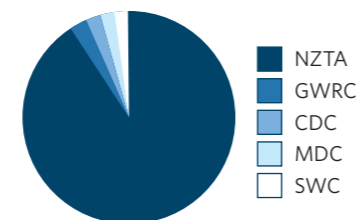
Stakeholders

- Road Transport Association
- Automobile Association
- Department of Conservation
- WREMO
- Civil Defence
- Kiwirail
- NZ Police
- Iwi

Investment partners

- Masterton District Council
- Carterton District Council
- South Wairarapa District Council
- Upper Hutt City Council
- Greater Wellington Regional Council

IMPLEMENTATION PARTNERS



TRIGGER POINTS, RISKS AND UNCERTAINTIES

Trigger and/or uncertainty	Time	Impact level	Impact on programme	Comments
Wairarapa Water Use Project: Potential to develop more than 30,000 hectares of productive irrigated land and more than double its productive output for the region.	2020 - 2040	High	Major improvements in the productive land in the Wairarapa as a result of the irrigation scheme would increase the number of jobs in the region and likely increase the long term population levels of the region. Other major impacts would be the increased transport demand during construction. These factors would accelerate the need for improvements on the corridor and in particular the road corridor over the Rimutakas.	Irrigating an additional 30,000 hectares would add \$157 million of GDP to the greater Wellington region per year and create over 1200 new jobs. A further \$90 million in GDP would be added and more than 1,100 jobs created for one year as a one-off result of farmers converting to irrigation. The project is under development with unknown implementation timeframes.
Wairarapa Population and Economic Projections: There are low population forecasts for the Wairarapa region due to modest population and employment growth over recent decades.	2016 - 2046	Moderate	The recommended programme is proactive, based on trend growth, due to the accelerated nature of some of the improvements to occur within the first ten years. Investment to improve the road over the Rimutaka's will provide transport improvement and return but could be undertaken when funding and resource are available over the coming decade.	Increases in tourism visits to Wellington and New Zealand have resulted in a recent increase in visits to the Wairarapa however these are lower than other regions in the country. Improved marketing and capture of tourism is likely to result in increases in employment opportunities and therefore population in the Wairarapa region.
Rail and Public Transport Upgrades: Improvements for rail services for public transport and freight to and from the Wairarapa are dependant on improvements to rail infrastructure in the Hutt Valley, Wellington Harbour, Wellington Port and Wellington city.	2016 - 2017	High	Improvements to rail and public transport infrastructure need to occur in other parts of the network and in particular the Hutt Valley prior to providing improvements in infrastructure to and within the Wairarapa region.	Once these improvements in capacity and operations these will be improved train travel times and travel time reliability. There will also be increased capacity to transport freight to and from Wellington Port and potentially reduce freight vehicle volumes on SH2 and alleviate congestion through the Hutt Valley section of SH2 and into Wellington city.

The Transport Agency is the primary funding partner for the delivery of the programme. Greater Wellington Regional Council are responsible for improvements to public transport with the costs for improvement mainly attributed to improvement in travel time reliability in the Hutt Valley. These benefits have not been attributed to this programme. Improvements for the access to Waingawa and safety improvements between Carterton and Masterton will likely involve funding and partnering with Carterton District Council and Masterton District Council. Improvements for safety within town sites will require involvement and co-funding with the various District Councils.