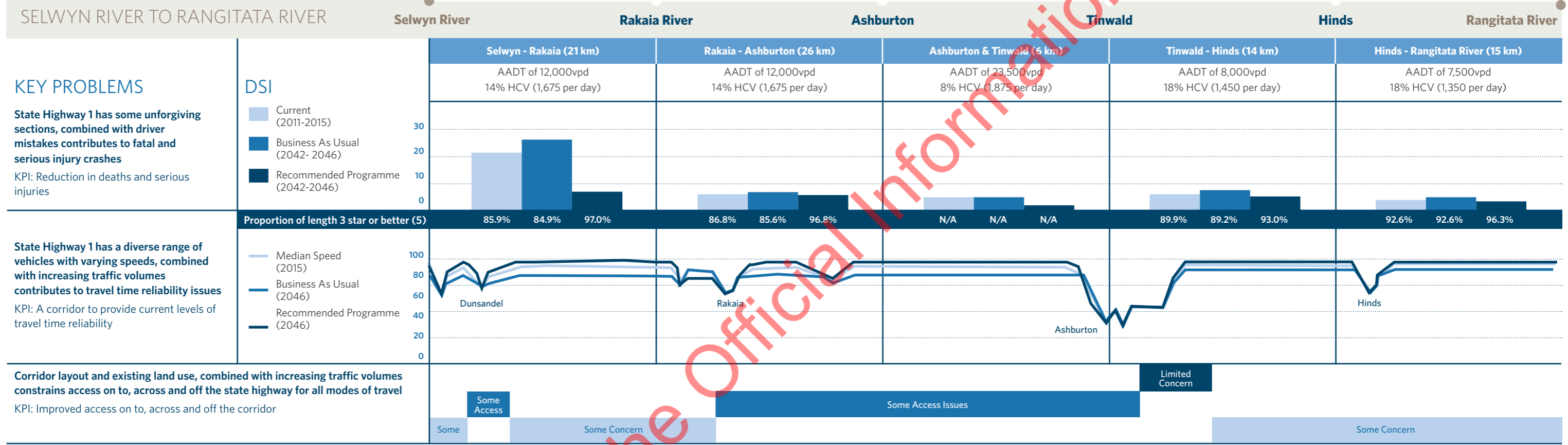


# CHRISTCHURCH TO DUNEDIN: MID CANTERBURY RECOMMENDED PROGRAMME



RECOMMENDED PROGRAMME

	2+1	2+1	3+1	3+1	3+1
ACTIVITY	Selwyn River to Rakaia	Rakaia to Ashburton	Ashburton	Ashburton to Hinds	Hinds to Rangitata River
<b>Short term 2017-2026</b>	Safe Roads Alliance improvements	Safe Roads Alliance improvements (BAU funded)	South St traffic signals (BAU funded), Walnut Avenue traffic signals and Moore/Kermode/Park St improvements and four-lane to Havelock signals at Laghmor/Agnes, Tinwald corridor improvements	Speed activated warning signs and thresholds at Hinds	Safety 'hotspot' improvements
<b>Medium term 2027-2036</b>	Implementation of alternating 2+1 configuration; Local road connections	Implementation of alternating 2+1 configuration (while keeping existing 2+2s)	Second river bridge across Ashburton River	Passing lane and intersection improvements	Intersection improvements
<b>Long term 2037-2046</b>		Rural intersection improvements			
<b>Capital Cost (\$M)</b>	\$80-90M	\$130-150M	\$45-55M	\$20M	\$10M
<b>Additional Operations and Maintenance Cost (\$k)</b>	\$800k	\$1,200k	\$400k	\$200k	\$200k
<b>BCR</b>	1 - 3	<1	1 - 3	1 - 3	3 - 5
<b>Corridor Wide Activities</b>	Short to medium term - Education and behaviour change improvements, speed management, driver information incident response plans and detour route planning, and high impact low probability response plans.				

**PBC Outcomes**

**48-58**  
DSIs saved (10 yr period) **96%**  
three star KiwiRAP rating or better

**57-60**  
min journey time (2015)

**55-58**  
min journey time (Recommended 2046)

Programme investment profile  
**H/H/1-1.5**

# SH1 CHRISTCHURCH - DUNEDIN MID CANTERBURY (SELWYN - RANGITATA)

State Highway 1 (SH1) is of national significance for moving people and goods critical to the country, region and local communities. It is the primary road-based transport route in the South Island and is a national route in the one network road classification (ONRC). The role of this journey connects the South Island's two largest population centres Christchurch and Dunedin for the purposes of freight, tourism, inter-regional and local travel.

The predominant land use in Mid Canterbury is rural farm land, with agriculture production the economic productivity driver for the Mid Canterbury region, facilitated by irrigation schemes forecasted to continue in the future. Ashburton is the main urban settlement, with smaller service towns generally evenly distributed along the corridor.

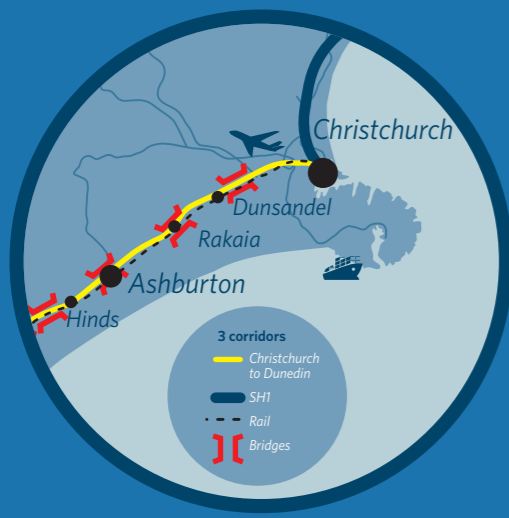
The Mid Canterbury segment between the Selwyn River and the Rangitata River is generally flat and straight. The state highway crosses several braided rivers along the corridor, and these bridges are important infrastructure assets due to the limited viable detours available in the event of an outage. From a customer perspective these bridges can feel narrow to some

as they were built some years ago. The corridor runs near the main south rail line for this segment of the corridor and includes three level rail crossings.

The key issues for the Mid Canterbury segment are road user safety, travel time reliability due to the diverse range of vehicles travelling at varying speeds and access on to, across and off the state highway for all modes of travel in Ashburton and some rural intersections.

There is a major concern of possible failure of the state highway corridor and other transport links across the Selwyn, Rakaia, Ashburton and Rangitata Rivers in the event of a high impact low probability (HILP) event. Inter-organisation response plans need to be robust, scenario tested and up-to-date.

The recommended programme for the Mid Canterbury segment aims to address road user safety, provide a reliable and consistent corridor commensurate with the route classification, and ease of access to the state highway in urban areas and at key rural intersections.



## PROGRAMME MULTI-CRITERIA ASSESSMENT AT 2046

		Programme 1 Business as Usual	Programme 2 Target Safety and some Access Improvements	Programme 3 Corridor Safety (3 1/2 - 4 star safety)	Programme 4 Balanced Mid-Level Investment (Safety, Travel Time Reliability, Access)	Programme 5a Balanced High-Level Investment (Safety, Travel Time Reliability, Access)	Programme 5b Balanced High Level Investment with Second Ashburton River Bridge	Programme 6 Maximum Travel Time Reliability and 4 Star Safety (Do Max)
<b>Investment Objectives</b>	Reduction in deaths and serious injuries Expected deaths and serious injuries in 2042-2046	20% increase on 2011-2015 45-55 DSI	35-40 DSI +	25-35 DSI ++	45%-55% decrease on BAU 20-25 DSI ++	20-25 DSI ++	55%-65% decrease on BAU 15-20 DSI ++	10-15 DSI +++
<b>KPI Outcomes</b>	Improved road safety risk assessment rating (KiwiRAP) (Proportion of length 3 star or better)	86% - 89%	88%-92% 0	95% - 98% ++	95% - 98% ++	95% - 98% ++	97+% ++	98%+ ++
	Median travel time	60-63 mins --	60-63 mins --	65-70 mins ---	55-58 mins ++	55-57 mins ++	55-57 mins ++	53-55 mins ++
	Open road median speed North of Ashburton   South of Ashburton	80   90 -	80   90 -	75   85 --	93   92 ++	93   95 +++	93   95 +++	95   95 +++
	Maintain travel time reliability (Difference between programme 85th percentile and 2015 median travel times)	7 min --	7 min --	8 1/2 min --	4 1/2 min +	4 1/2 min +	4 1/2 min ++	3 1/2 min +++
	Intersection level of service	--	0	-	0	+	++	+++
	Pedestrian and cyclist access	--	+	0	+	++	+++	+++
<b>Other factors</b>	Effectiveness	--	-	-	++	++	+	+++
	Risk	-	-	0	0	0	0	0
	Public & Stakeholders	-	-	-	0	0	-	--
	Inter/ dependencies	++	0	0	-	-	--	--
	Feasibility	+++	+	0	-	--	--	--
	Affordability	+++	+	0	-	--	-	--
	Costs	\$5 - \$15 M	\$20- \$50 M	\$75 - \$120 M	\$200 - \$350 M	\$300 - \$500 M	\$350 - \$550 M	\$450 - \$750 M
	Benefit Cost Ratio	High	Medium	Medium	Medium	Low / Medium	Low / Medium	Low
	Programme Consideration	Short Listed	Not Short Listed	Not Short Listed	<b>Recommended programme</b>	Not Short Listed	Short Listed	Not Short Listed

The Recommended Programme is Programme Option 4 - Balanced Mid-Level Investment (Safety, Travel Time Reliability, Access) with the addition of the Second Ashburton River Bridge. The programme includes short term corridor safety works north of Ashburton. Improvements in Ashburton include Walnut Ave intersection, Moore/Kermode/Park Street improvements and four lane to Havelock. Traffic signals are proposed at Laghmor/Agnes intersection with Tinwald corridor improvements. The second river bridge in Ashburton is programmed in the medium term.

### TRIGGER POINTS

Trigger, Risk and/or Uncertainty	Time	Impact level	Impact on programme	Comments
<b>Land acquisition risk:</b> Structures inside the property boundary will need relocation leading to a significant cost i.e. pivot irrigators and wells	2020-2035	High	Cost escalation due to having to move structures inside the property boundary to allow for the widening	Removal costs for pivot irrigators and drilling of new wells is likely
<b>Local road funding:</b> Ashburton District Council will be unable to fund their share of the Ashburton Second River Bridge capital cost	2025-2030	High	Significant traffic volumes will occur on State Highway 1 through Tinwald and will lead to significant access problems	The second bridge construction will have to be pushed out if ADC can not fund their share in the second river bridge
<b>Full or partial Failure of SH1:</b> There is a low risk that failure of critical assets (i.e. bridges) and sever the link between Christchurch and Dunedin	Ongoing	High	This would result in full or partial closure of the highway and major impact on the local communities through severance	Ongoing structural observations need to continue

### STAKEHOLDERS INVOLVED IN THE PBC

- NZ Transport Agency
- Environment Canterbury
- Selwyn District Council
- Ashburton District Council
- Road Trucking Association
- KiwiRail
- NZ Police

### IMPLEMENTATION PARTNERS

This section is to be completed / confirmed.  
Funding is expected to be primarily NZTA.  
ADC funding plan needed for Ashburton 2nd bridge.

### FUNDING SPLIT

