

Cross Valley Link

Modelling and Economics Report

New Zealand Transport Agency

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Version History

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1 INTRODUCTION

1.1 Overview

Petone to Grenada (P2G) and Cross Valley Link (CVL) are identified in the Government Policy Statement on Land Transport (GPS) 2024-34 as a Road of National Significance (RoNS). They are identified jointly as a RoNS with a key purpose of “unlocking housing growth”, which directly contributes to the GPS priority of “economic growth and productivity”.

This report provides a high-level summary of the traffic modelling and economic assessments that have been undertaken for CVL. Modelling has been undertaken using the Wellington Transport Strategy Model (WTSM) and the Hutt Aimsun Model (HAM).

1.2 Cross Valley Link

The CVL recommended option adds a new link into the transport network with a new bridge over Te Awa Kairangi and upgrading of the existing Wakefield Street and Whites Line West.

The recommended option includes:

- A new 2 lane bridge over Te Awa Kairangi
- Upgrades to the Woburn Roundabout to connect CVL into this intersection
- Minor upgrades along Wakefield Street, including new signalised intersections.

A diagrammatic representation of the preferred option is shown as Figure 1.



Figure 1: CVL – Preferred Option

2 Traffic Modelling

2.1 Overview

Traffic modelling using the Wellington Transport Strategic Model (WTSM) has been undertaken to better understand the impacts of CVL. CVL would be a complimentary to the P2G project, and therefore the modelling captures the following scenarios for the 2033 and 2053 future years:

- CVL (Untolled) + P2G (Untolled)
- CVL (Untolled) + P2G (Tolled)

Attachment A provides a slide-deck of modelling outputs, produced by the Wellington Transport Analytics Unit (WTAU). This section of the report provides an overview of the key results.

2.2 Traffic volumes

CVL would result in a redistribution of traffic within Lower Hutt; predominantly from Ewan Bridge-Woburn Road and Waione Bridge-The Esplanade onto CVL. Changes to traffic volumes along other local streets are relatively small in comparison (around 100-200 vehicles per hour).

Figure 1 shows where the major changes in traffic volumes are expected to occur. The traffic volumes are reported in terms of daily two-way (combined) volumes for the 2033 future year.

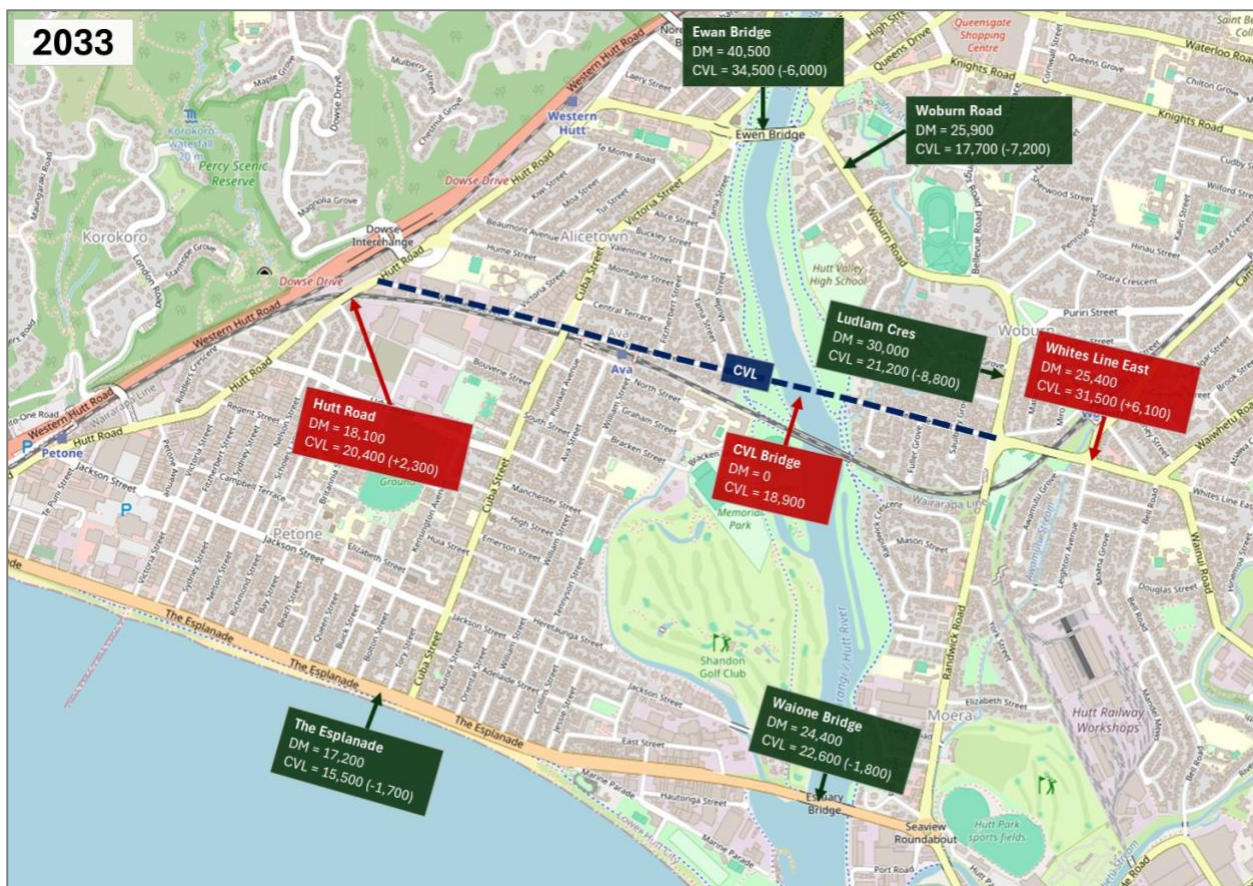


Figure 1: Traffic volumes (Do Minimum + Preferred Option)

The addition of CVL is not expected to notably change demand for P2G. The main impact of CVL is a redistribution of traffic within Lower Hutt, and an increase in cross-river capacity.

The total number of vehicles crossing the Hutt River¹ (at all locations) is only expected to increase by 2,000 vehicles (around 2%) with the addition of CVL. The predominant effect of CVL is to reduce pressure (and congestion) along alternative east-west routes:

- Ewen Bridge – 20% reduction in traffic for preferred option, 20% increase for P2G only options
- Waione Bridge - 10% reduction in traffic for preferred option, 15% increase for P2G only options

2.3 Traffic congestion

As shown in the modelling images below (2053 future year), CVL reduces congestion on Hutt Road and a number of roads into Petone. CVL will distribute traffic more evenly around the southern Hutt Valley ensuring more people can more efficiently get to their destinations on time.

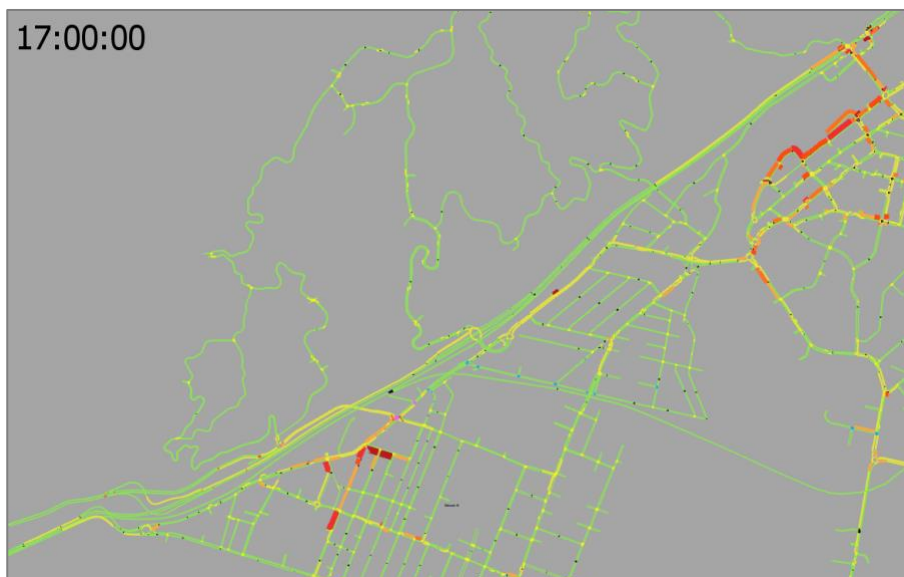


Figure 2: P2G Only – Untolled (2053, PM peak)

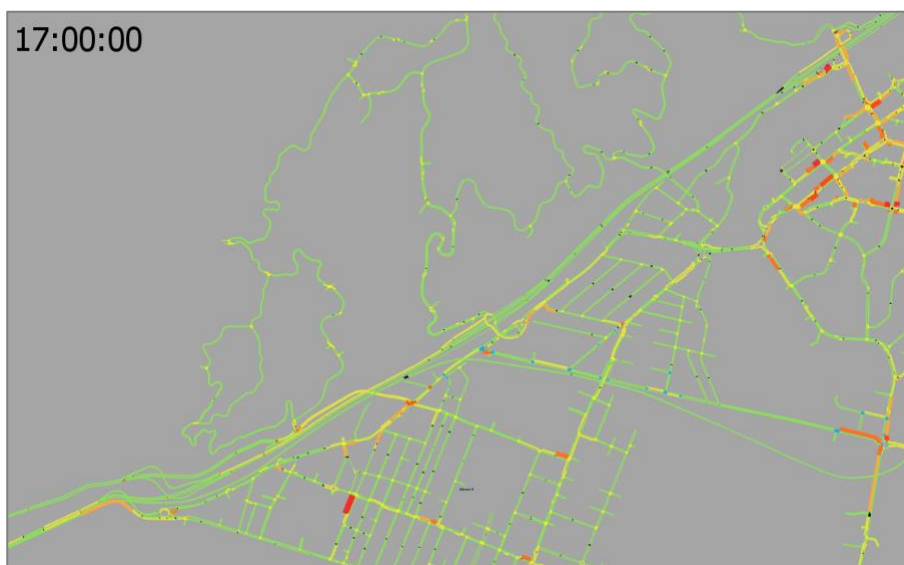


Figure 3: P2G (untolled) + CLV (2053, PM peak)

¹ Kennedy Good Bridge, Melling Link, Ewen Bridge, CVL Bridge and Waione Bridge

2.4 Travel times

Travel time improvements are broadly similar between the P2G / CVL and the P2G only options, the travel time savings for routes to / from Lower Hutt CBD and Wainuiomata are generally lower in the P2G only options because:

- Ewen Bridge traffic volumes are higher in the P2G only scenario, resulting in more congestion and slower travel times
- Without CVL, people travelling between Wainuiomata and Wellington / Tawa / Porirua have to use alternative (longer and more congested) routes via Ewen Bridge and Waione Bridge

3 Economic assessment

3.1 Overview

The economic evaluation of the SH1 Improvement Project has been undertaken in accordance with the Waka Kotahi Monetised Benefits and Costs Manual (MBCM), Version 1.7.3 (May 2025). In line with MBCM, the core assumptions are a 60-year evaluation period and a discount rate of 2% for the first 30 years and 1.5% beyond this.

The CVL investigation was undertaken as part of the P2G project, and therefore reporting is in terms of the **incremental** benefit (and cost) of CVL over and above the benefit (and cost) of P2G. An incremental benefit-to-cost ratio (BCR) has therefore been reported.

The benefits have been derived from the WTSM strategic model. Resilience benefits have not been calculated but would be another strong benefit of the project. The total reported expected benefits can therefore considered as being conservative in this regard (i.e. more likely to be understated).

3.2 Results

The results of the economic assessment are summarised in Table 1.

Table 1: Economic Assessment - CVL

		P2G + CVL (Untolled)
Benefits	Public Transport	\$1M
	Car	\$272M
	HCV	\$18M
	TT Reliability	\$91M
	Active Travel	\$0M
	VOC	-\$3M
	CO2	\$1M
	Emissions	\$2M
	Safety	\$0M
	Static WEBS	\$339M
	TOTAL	\$721M
	TOTAL (ex. WEBS)	\$382M
Costs	Total	\$7(2)(b)
BCR(n)		1.2 – 2.3

A key benefit of CVL is that it will help unlock economic activity in both central Lower Hutt and growth areas such as Woburn, Waterloo and Wainuiomata. The wider economic benefits (WEBS) generated by CVL relate to agglomeration and increases in employment

The results of the economic assessment established a BCR of 1.2 (without WEBS) to 2.3 (with WEBS). The majority of the benefits relate to improved travel times and more reliable journeys.

3.3 Sensitivity analysis

Sensitivity analysis (inc. WEBS) was used to understand the potential variability of the BCR in response to changes in cost (+/- 25%), discount rate (2% - 8%) and evaluation period (60-100 years).

The sensitivity analysis established a BCR range of 0.4 to 3.0.