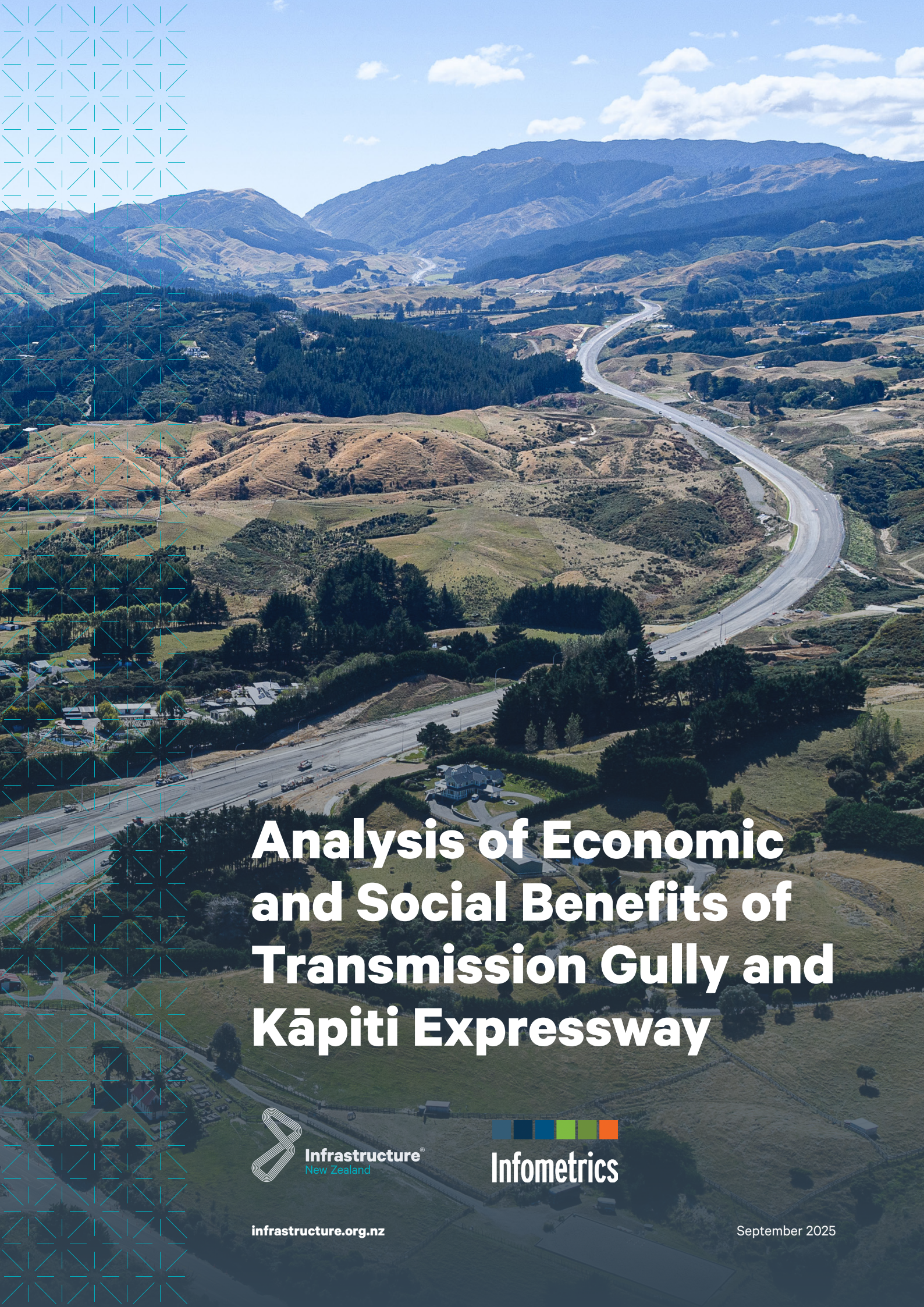




Analysis of Economic and Social Benefits of Transmission Gully and Kāpiti Expressway



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New Zealand



Infometrics

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Authorship

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Contents

1. Executive Summary	2
Transmission Gully saves 9 minutes travel time on average	2
Lower death and injury rates on Transmission Gully	2
Combined benefit of \$79m from Transmission Gully	2
Mackays to Peka Peka saves 8 minutes travel time on average	2
Lower death and injury rates on Mackays to Peka Peka	2
Combined benefit of \$63m from Mackays to Peka Peka	3
Peka Peka to Ōtaki saves 5 minutes travel time on average	3
Lower death and injury rates on Peka Peka to Ōtaki	3
Combined benefit of \$31m from Peka Peka to Ōtaki	3
Combined benefit of \$173m from new roads	3
15% more population within 60 minutes of Porirua	3
Faster population growth around new roads	3
New roads bypass significant investments	3
2. Introduction	4
3. More Journeys Enabled	5
Higher traffic volumes altogether	5
Lower traffic volumes on old routes	6
4. Shorter Travel Times	7
Travel times measured by TomTom	7
Rule of a half	7
Transmission Gully (TG)	7
TG flattens afternoon peak	7
TG saves 37 minutes northbound in most congested periods	9
TG supports more reliable southbound travel	9
TG saves 13 minutes southbound in most congested periods	11
Pooled regression approach	11
TG saves 5–31 minutes	12
Other changes between 2019 and 2024	12
Comparison with SH2 shows TG saves 8–31 minutes	12
TG saves 9 minutes travel time on average	13
TG saves 1.9m hours	13
Mackays to Peka Peka (M2PP)	13
M2PP flattens afternoon peak	13
M2PP saves 26 minutes northbound in most congested periods	15
M2PP supports more reliable southbound travel	15
M2PP saves 12 minutes southbound in most congested periods	17
M2PP saves 5–21 minutes	17
M2PP saves 8 minutes travel time on average	17
M2PP saved 1.2m hours of time to road users in 2024	17

Peka Peka to Ōtaki (PP2O)	19
PP2O saves 5 minutes travel time on average	19
PP2O saved 0.7m hours of time to road users in 2024	19
New roads saved 3.8m hours in 2024	19

5. Reductions in Deaths and Serious Injuries 20

No deaths on new roads	20
Serious injury numbers down significantly	21
Death rates down significantly	21
Serious injury rates down too	23

6. Monetised Benefits 24

Putting a value on social benefits	24
Deaths and serious injuries cost \$30m per year	24
Reduction in deaths and serious injuries worth \$15.8m	25
Accounting for the net benefit of reduced travel times	25
Higher vehicle operating costs	26
Travel time and reliability savings worth \$187m	26
Combined benefit of \$173m from new roads	27
Emissions	27

7. Improved Accessibility 28

The effect of COVID-19 and working from home	28
Waitangirua and Whitby link roads	28
15% more population within 60 minutes of Porirua	29
Effects of improved accessibility	30
Faster population growth around new roads	30
Faster dwelling growth around new roads	31
Similar house price growth	31
House price gaps close	33
House price gap closes by \$63k	33
More working from home, throughout region	35
Slight increase in commuting across the region	35
Mixed change from Whitby and Waitangirua	35
Commuting changes may take time	35

8. Bypassed Investments 37

A long gestation	37
Significant investments bypassed	37

Economic and Social Benefits of Wellingtons New Roads

Mackays to Peka Peka

Opened 2017

Transmission Gully

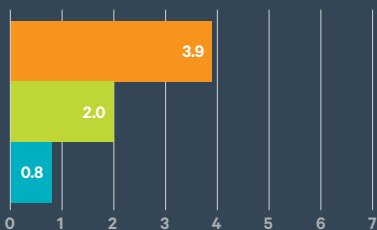
Opened 2022

Peka Peka to Ōtaki

Opened 2022

Safer roads with fewer serious injuries and no deaths

Serious injuries per year

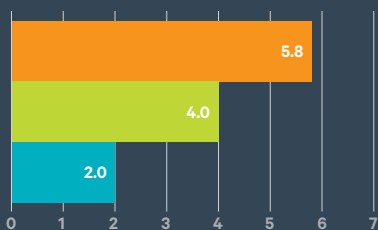


- Old route before
- Old route after
- New route after

79% fewer serious injuries

- No deaths recorded on new road

Serious injuries per year

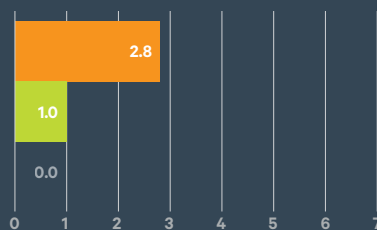


- Old route before
- Old route after
- New route after

66% fewer serious injuries

- No deaths recorded on new road

Serious injuries per year



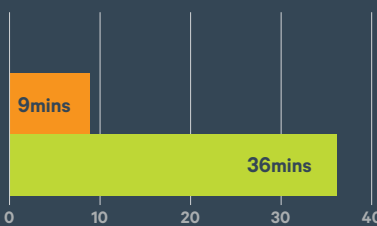
- Old route before
- Old route after
- New route after

No deaths or serious injuries

- No deaths recorded on new road

Faster, more reliable journeys

Travel time savings

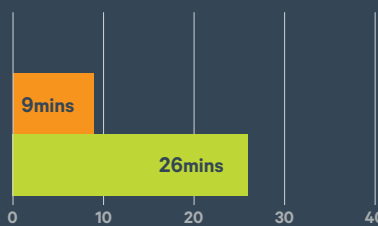


- Average
- 90th percentile northbound



1.9m Hours Saved

Travel time savings



- Average
- 90th percentile northbound



1.2m Hours Saved

Travel time savings



- Average
- 90th percentile northbound



0.7m Hours Saved

Monetary savings to society

\$79m

\$63m

\$31m

The three new roads saved society \$173m in 2024 through faster, safer and more reliable journeys.

Improved accessibility across Wellington and Lower North Island



74,400

people within 60 minutes of Porirua CBD

15% more ↗

17,200

more people within 60 minutes of Wellington CBD

4% more ↗

20,200

people within 60 minutes of Lower Hutt CBD

4% more ↗



House price difference between Kāpiti/
Horowhenua and Wellington City closed by

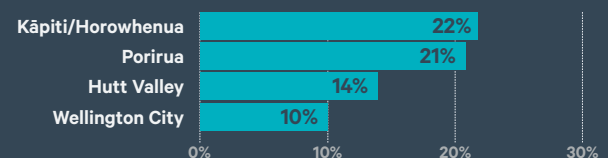
\$63,000

after Transmission Gully opened



Faster population growth around new roads

Population growth 2010-2024



Wellington-Foxton Motorway first mooted in 1950s

\$75m

spent between 1999 and 2014
upgrading roads which were
ultimately bypassed



More timely investment means
benefits are realised earlier,
sunk costs are avoided



‘The new roads deliver improved travel times, safer journeys, and better accessibility for the Wellington Region.’

1

Executive Summary

Infrastructure New Zealand, with the support of Porirua City Council, Kāpiti Coast District Council and Wellington City Council, commissioned Infometrics to undertake independent analysis of the benefits of Transmission Gully and the Kāpiti Expressways (Mackays to Peka Peka and Peka Peka to Ōtaki). Our report outlines the shifts in traffic volumes, improvements in travel times, reductions in deaths and serious injuries, and the benefits of improved accessibility for the Wellington Region.

Transmission Gully saves 9 minutes travel time on average

Our analysis of TomTom travel time data shows that Transmission Gully saves road users 9 minutes on average for northbound travel in 2024, compared to 2019 before the road opened. Travel times are shorter and more reliable throughout the day, for both the new road and the old route. Travel time savings range from a median 5 minutes across the day, up to 31 minutes in peak times on the most congested days (90th percentile).

Altogether, Transmission Gully saved road users 1.9m hours in 2024 due to shorter travel times and greater travel time reliability.

Lower death and injury rates on Transmission Gully

Transmission Gully has recorded a lower rate of deaths and serious injuries than the old route. No road deaths were recorded on Transmission Gully between 2022 and 2024. The rate of serious injuries per 1m vehicles fell from 0.6 on the old route before, to 0.2 on the new route. Across the old and new routes combined, serious injury rates eased slightly to 0.5.

Combined benefit of \$79m from Transmission Gully

Transmission Gully provided a combined benefit of \$79m in 2024, made up of travel time savings of \$94m, partially offset by higher vehicle operating costs of \$15m. Vehicle operating costs on Transmission Gully are higher due to faster travel speeds and a hillier route, but that is offset by faster travel times. Although Transmission Gully is much safer than the old route, deaths and serious injuries have continued on the old route, meaning that the cost of deaths and serious injuries has not changed.

Mackays to Peka Peka saves 8 minutes travel time on average

Mackays to Peka Peka saves road users 8 minutes on average for northbound travel in 2024, compared to 2016 before the road opened. Travel times are shorter and more reliable throughout the day, for both the new road and the old route. Travel time savings range from a median 5 minutes across the day, up to 10 minutes in peak times on the most congested days (90th percentile).

Altogether, Mackays to Peka Peka saved road users 1.2m hours in 2024 due to shorter travel times and greater travel time reliability.

Lower death and injury rates on Mackays to Peka Peka

Mackays to Peka Peka has recorded a lower rate of deaths and serious injuries than the old route. No road deaths have been recorded on the new route from opening in 2017 to 2024. The rate of serious injuries per 1m vehicles fell from 0.5 on the old route before, to 0.1 on the new route after.

Combined benefit of \$63m from Mackays to Peka Peka

Mackays to Peka Peka provided a combined benefit of \$63m in 2024, made up of travel time savings of \$61m, reduced death and serious injury costs of \$11m, and partially offset by higher vehicle operating costs of \$9.8m. Vehicle operating costs on Mackays to Peka Peka are higher due to higher average speeds.

Peka Peka to Ōtaki saves 5 minutes travel time on average

Peka Peka to Ōtaki saved road users 5 minutes on average for northbound travel in 2024, compared to 2016 before the road opened. Peka Peka to Ōtaki saved road users 700,000 hours in 2024 due to shorter travel times and greater travel time reliability.

Lower death and injury rates on Peka Peka to Ōtaki

The new Peka Peka to Ōtaki route has recorded a lower rate of deaths and serious injuries than the old route. No road deaths or serious injuries have been recorded on the new route from opening in 2022 to 2024.

Combined benefit of \$31m from Peka Peka to Ōtaki

Peka Peka to Ōtaki provided a combined benefit of \$31m in 2024, made up of travel time savings of \$31m, reduced death and serious injury costs of \$4.3m, partially offset by higher vehicle operating costs of \$4.2m. Vehicle operating costs on Peka Peka to Ōtaki are higher due to higher average speeds.

Combined benefit of \$173m from new roads

Altogether, the three new roads provided a combined benefit of \$173m in 2024. This benefit is made up of faster and more reliable travel times; and fewer deaths and serious injuries, even after accounting for the higher vehicle operating costs from travelling at faster speeds.

15% more population within 60 minutes of Porirua

The new roads have improved accessibility within the Wellington Region, growing the population catchment of the Wellington, Lower Hutt and Porirua central business districts (CBD). The most pronounced effect has been for Porirua CBD, which has an additional 74,000 people living within a 60 minute drive, a 15% increase in the CBD catchment.

Faster population growth around new roads

Areas which are directly and indirectly affected by the new roads recorded significantly faster population growth than the rest of the Wellington Region. Between 2010 and 2024, the population of the directly affected area (Horowhenua, Kāpiti and parts of Porirua) rose 22% and the indirectly affected area (remainder of Porirua) by 21%, compared to 14% growth for the Hutt Valley and 10% for Wellington City. Population growth in the directly affected area accelerated from 2013 onwards, when construction of Mackays to Peka Peka started.

House price gap closes by \$63k

The new roads have improved accessibility for the directly affected areas in particular, making for faster, more reliable and safer journeys. These improvements have closed the gap between house prices in Wellington City and the rest of the region. After Transmission Gully opened in 2022, the house price gap between the directly affected area and Wellington City reduced by \$63,400, a statistically significant change.

New roads bypass significant investments

The new roads were proposed and discussed for several decades before completion, resulting in significant investment in the old routes which were eventually bypassed. Through the 2000s and 2010s, a total of \$75m in 2025 dollars was spent across seven projects on the old SH1. This investment may not have been needed if the new roads were committed to earlier, and the \$75m could have been put towards earlier delivery of the new roads.

2

Introduction

Infrastructure New Zealand, with the support of Porirua City Council, Kāpiti Coast District Council and Wellington City Council, commissioned Infometrics to undertake independent analysis of the benefits of Transmission Gully and the Kāpiti Expressways (the “new roads”) to convey the wider benefits of infrastructure investment and inform discussions around investment in similar assets in future. In this report, we explore the wider economic and social benefits of building the new roads. Our report outlines the shifts in traffic volumes, improvements in travel times, reductions in deaths and serious injuries, and the benefits of improved accessibility for the Wellington Region.

The **new roads** are illustrated in Figure 1 in the context of the broader Wellington State Highway network. The sections of road include:

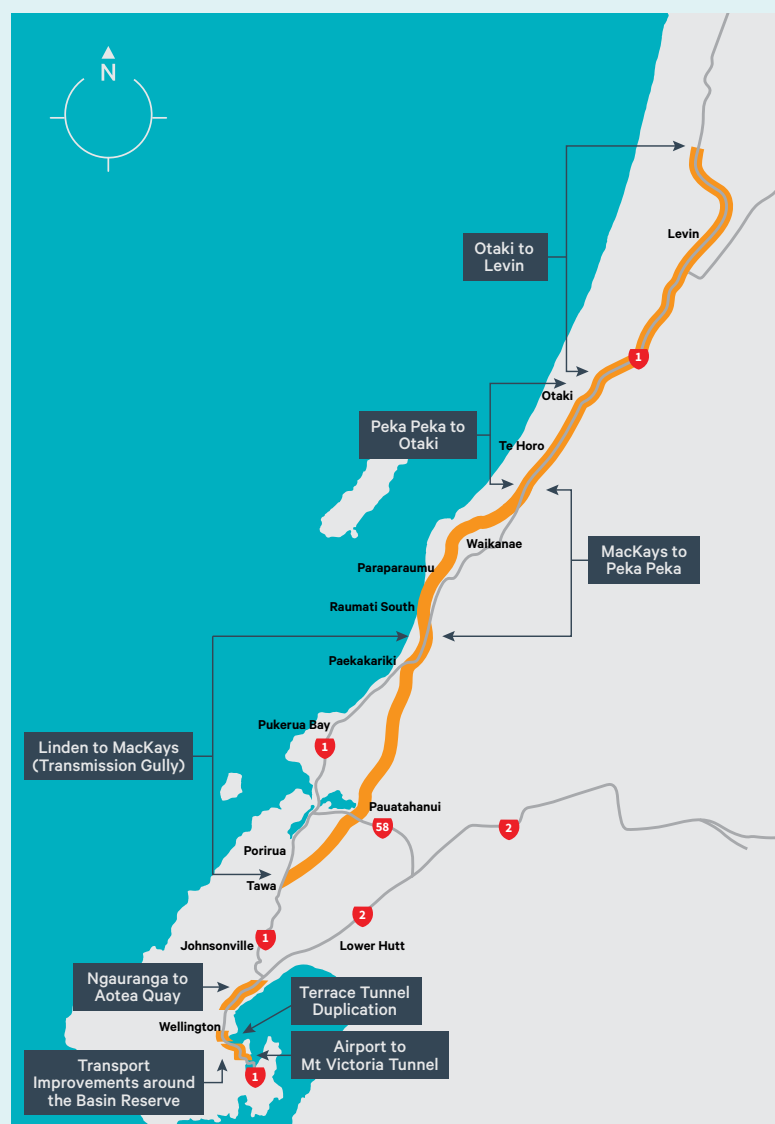
- Transmission Gully (TG) motorway from Linden to Mackays Crossing, opened 31st March 2022.
- Transmission Gully Waitangirua Link Road and Te Ara Kapehu (Whitby link road), opened 31st March 2022.
- Kāpiti Expressway from Mackays Crossing to Peka Peka (M2PP), opened 24th February 2017.
- Kāpiti Expressway from Peka Peka to Ōtaki (PP2O), opened 23rd December 2022.

In addition to the new road, our analysis examines the way the **old roads** function since the new roads have opened, including:

- SH59 from Linden to Mackays Crossing.
- Old SH1 from Raumati South to Peka Peka.
- Old SH1 from Peka Peka to Ōtaki.

Figure 1

Wellington State Highway Network



Source: NZTA

3

More Journeys Enabled

Higher traffic volumes altogether

Considering the new and old routes together, traffic flows are higher altogether. Combined traffic volumes on SH1 (Transmission Gully) and SH59 between Linden and Mackays have risen from 24,300 in 2015 to 33,200 in 2024, a 37% increase.

Chart 1 shows that traffic flows on the new SH1 Transmission Gully in 2024 (23,900) are slightly lower than volumes on the old route in 2015 (24,300), with around 9,300 vehicle movements remaining on the old route.

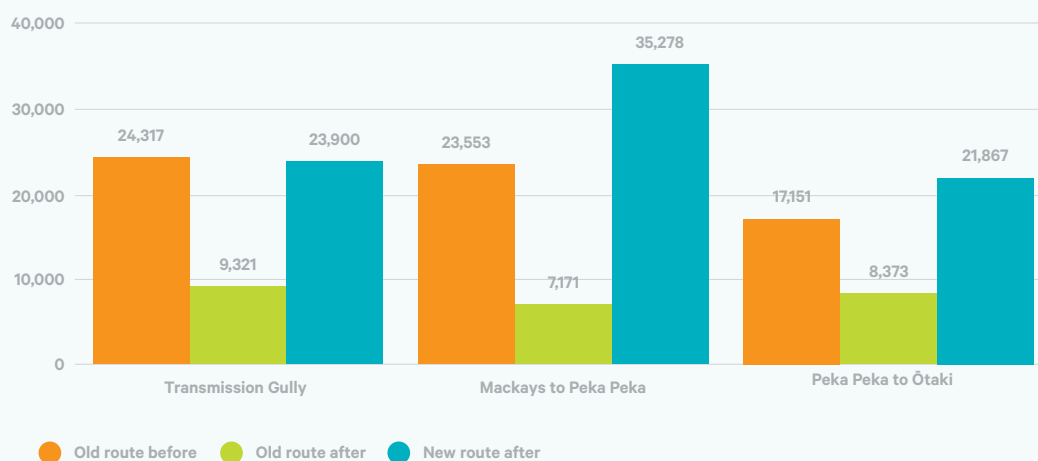
For Peka Peka to Ōtaki, combined traffic flows (SH1 and old SH1) have risen from 17,200 in 2015 to 30,200 in 2024, a 76% increase. Traffic flows on the new route (21,900) are higher than on the old route (17,200).

For Mackays to Peka Peka, combined traffic flows (SH1 and old SH1) have shown the greatest increase, up 80%, from 23,600 in 2015 to 42,400 in 2024. Traffic flows on the new route (35,300) are substantially higher than that of the old route (23,600).

Chart 1

Annual average daily traffic flows

Daily traffic flow, annual averages, 2015 (before) vs 2024 (after)



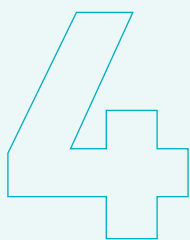
Source: NZTA, Ventia

Lower traffic volumes on old routes

Traffic volumes on all three of the old routes have decreased. For Transmission Gully, the old route (formerly SH1, now SH59) recorded a drop in daily traffic volumes from 24,300 in 2015 to 9,300 in 2024. For Mackays to Peka Peka, traffic volumes on the old route dropped from 23,600 to 7,200 in 2024. For Peka Peka to Ōtaki, traffic volumes on the old route dropped from 17,200 to 8,300.

All three of the old routes have sections through residential areas, so the reduction in traffic volumes makes for improved amenity in these communities.





Shorter Travel Times

The new roads have reduced travel times, both for users of the new roads, and those using the old routes. In this section we analyse the travel time savings at various times of the day, then outline the aggregate time savings.

Travel times measured by TomTom

We used TomTom Traffic Analytics data to measure travel times on the old and new roads, in order to estimate travel time savings. TomTom collects travel time information from GPS-monitored fleet vehicles, enabling insights for each segment of road, hour, day and year. We purchased this aggregated data and analysed it further to estimate travel time savings. TomTom data is not publicly available, but is commonly used in transport planning in New Zealand, including in NZTA-commissioned analysis of the benefits of Transmission Gully.¹

Our travel time analysis compared December year travel times before and after each road opened. For Mackays to Peka Peka, we compared 2016 with 2024. For Transmission Gully and Peka Peka to Ōtaki, we compared 2019 with 2024.

Rule of a half

Shorter travel times benefit road users who were using the roads beforehand, as well as new users who start using the roads after the new roads open. Our analysis applies a simplifying assumption known as the rule of a half to fairly count the benefits for new users who change their travel behaviour in response to the new roads. The rule of a half is outlined in NZTA's Monetised benefits and costs manual.

New users can be thought of as being in one of three groups:

1. Those who before TG were on the margin between using the old route or not using it, such that even a small reduction in travel costs encourages them to use the new route. This group obtains almost the full benefit of the new route.
2. Those who before TG did not use the old route, and are on the margin between using the new route and not using it. This group obtains only a very small benefit from using the new route.
3. The final group is everyone in between these extremes.

The average benefit for the three groups will be roughly half of what existing users obtain. Therefore, we only apply **half** of the benefit in travel time savings to new users.

Transmission Gully (TG)

TG flattens afternoon peak

Chart 2 shows that median travel times on SH1 (the old route) before Transmission Gully showed an appreciable spike for northbound traffic in the evening between 5pm and 7pm, associated with commuter traffic leaving Wellington City. These delays manifested as congestion south of the Paremata roundabout, and south of Pukerua Bay.

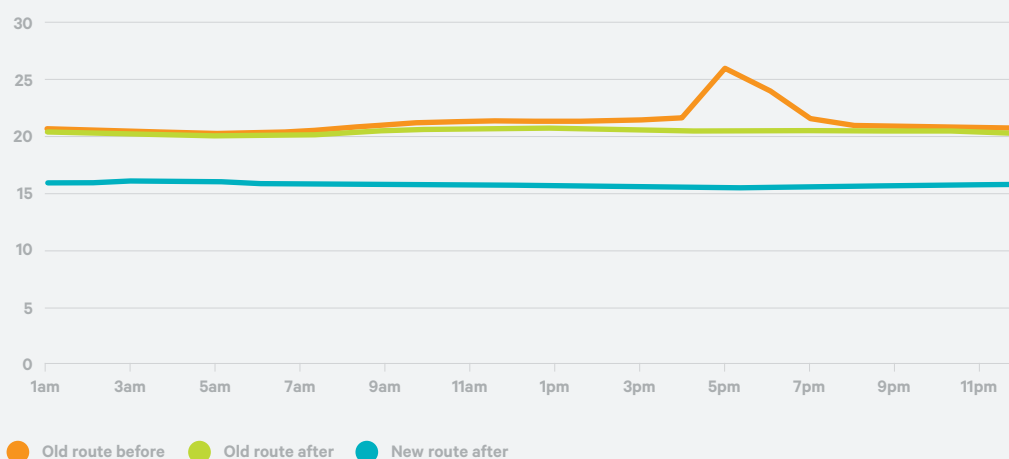
¹ <https://nzta.govt.nz/projects/wellington-northern-corridor/transmission-gully-motorway/about-the-project/project-news/transmission-gully-monitoring-and-benefit-realisation-report-september-2024>

‘Transmission Gully cuts northbound travel times by up to 10 minutes.’

Chart 2

Transmission Gully northbound travel times

Median travel time (minutes) by hour of the day, Linden to Mackays



Source: Infometrics, TomTom

Northbound travel times on Transmission Gully (the new route) are five minutes shorter in off-peak periods and 10 minutes shorter during the evening peak. Northbound travel times on both Transmission Gully and the old route show minimal variation throughout the day, making journeys both faster and more reliable. Reduced traffic volumes since Transmission Gully opened mean that travel times on the old route have flattened out, with essentially the same travel time regardless of time of day.

TG saves 37 minutes northbound in most congested periods

Looking at 90th percentile travel times, which reflect the **slowest 10 percent of journeys**, shows the benefit of the new roads on the most congested days. These could include periods of higher demand such as before long weekends or during holidays, and on days when weather or accidents cause disruption. Chart 3 shows a pronounced peak in northbound travel times, stretching from 4pm to 8pm, on the old route before Transmission Gully. Even 90th percentile travel times are essentially flat throughout the day since Transmission Gully opened, both on the new route and old route.

Northbound travel times in the 90th percentile on Transmission Gully at 6pm are 37 minutes shorter than on the old route before Transmission Gully. This reduction in travel times represents a substantial saving for road users, and a substantial increase in travel time reliability.

TG supports more reliable southbound travel

Chart 4 shows that median travel times on SH1 (the old route) before Transmission Gully show modest spikes of one minute in both the morning at 7am and evening at 5pm for southbound traffic. The morning peaks manifest as queues around Mackays Crossing, and the evening peaks manifest as congestion from Plimmerton to Paremata.

Under this measure, the morning peak is substantially less than the evening northbound peak (Chart 2) because we have measured travel times from Mackays Crossing south, whereas some of the morning congestion occurred north of Mackays Crossing. The exact location of this congestion moved considerably in the past decade due to various roadworks, making it difficult to accurately measure the congestion. This difficulty measuring a fixed point of congestion means we have underestimated the benefits of Transmission Gully in reducing morning travel times.

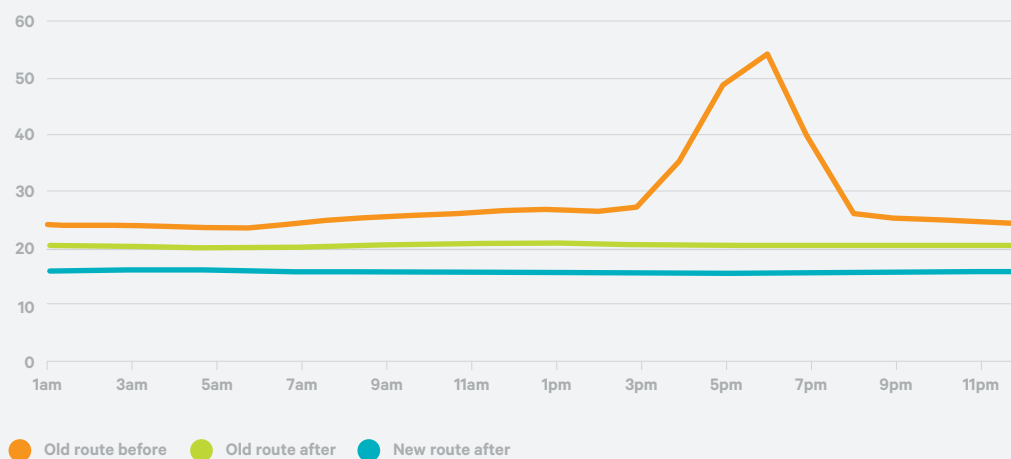
Southbound travel times on Transmission Gully (the new route) are four minutes shorter in off-peak periods and six minutes shorter during the morning peak. Southbound travel times on both Transmission Gully and the old route show minimal variation throughout the day, making journeys both faster and more reliable.



Chart 3

Transmission Gully northbound travel times

90th percentile travel time (minutes) by hour of the day, Linden to Mackays

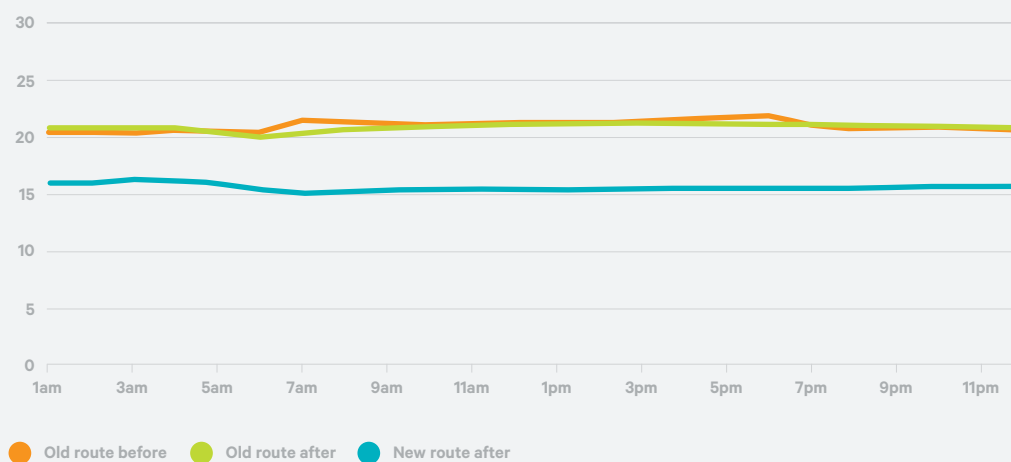


Source: Infometrics, TomTom

Chart 4

Transmission Gully southbound travel times

Median travel time (minutes) by hour of the day, Mackays to Linden

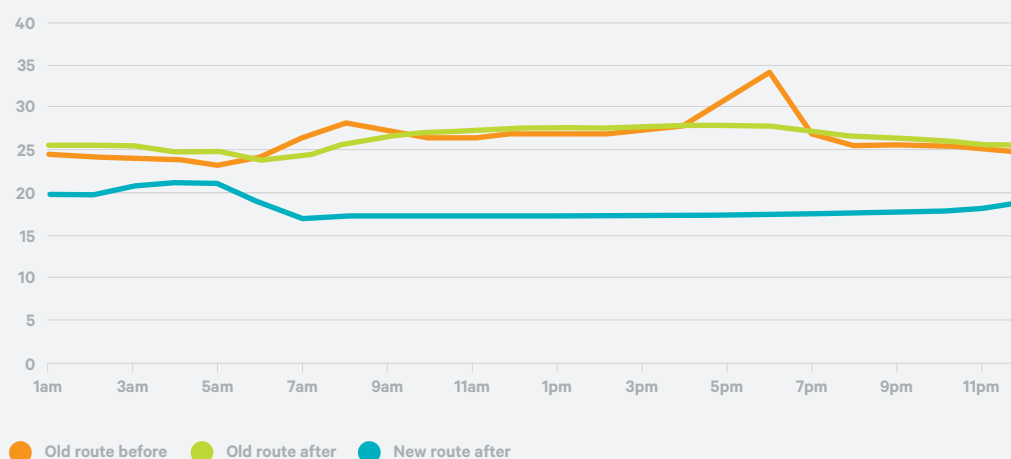


Source: Infometrics, TomTom

Chart 5

Transmission Gully southbound travel times

90th percentile travel time (minutes) by hour of the day, Mackays to Linden



Source: Infometrics, TomTom

TG saves 13 minutes southbound in most congested periods

Chart 5 shows more pronounced peaks in southbound travel times in the 90th percentile on the old route before Transmission Gully, stretching from 7am to 9am and 5pm to 7pm. Even 90th percentile travel times are essentially flat throughout the day since Transmission Gully opened, both on the new route and old route. 90th percentile travel times are highest overnight on Transmission Gully, which could reflect different composition of vehicles on the road, such as a higher proportion of trucks.

Southbound travel times in the 90th percentile on Transmission Gully at 7am are 10 minutes shorter than on the old route before Transmission Gully, and 13 minutes shorter at 5pm. This reduction in travel times represents a substantial saving for road users, and a substantial increase in travel time reliability. Again, these estimates don't capture delays from congestion between Mackays Crossing and Raumati South, and therefore understate the travel time savings.

Pooled regression approach

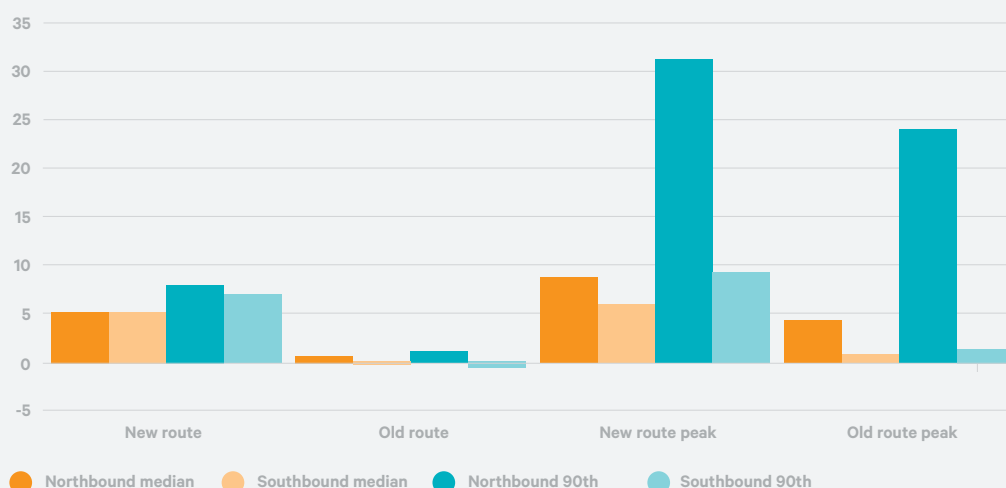
The previous sections estimated travel time savings at specific times of the day. In this section, we have used a pooled regression approach, combining TomTom travel time estimates with NZTA traffic counts, to estimate **overall** average travel time savings. Our pooled regression approach accounts for autocorrelation and spatial correlation:

- **Autocorrelation** accounts for the fact that travel times in each hourly slot are correlated – for example, if traffic volumes increase at 4pm, there would likely also be an increase either side at 3pm and 5pm.
- **Spatial correlation** accounts for the fact that travel times on each route are correlated – for example, if Transmission Gully were to become congested, more cars would switch to the old route, bringing up travel times on the old route.

Chart 6

Transmission Gully travel time savings

Minutes of travel time saved, 2024 vs 2019



Source: Infometrics, TomTom

TG saves 5-31 minutes

Chart 6 shows that travel time savings on the Transmission Gully new route range from a median 5 minutes across the day, to a 90th percentile saving of 31 minutes in peak times. For the old route, median travel times range from a marginal change across the day, up to a 90th percentile saving of 24 minutes.

Other changes between 2019 and 2024

Our comparison between 2019 and 2024 is complicated by the fact that other changes have taken place in that period. The population and economy has grown, resulting in more vehicles using these routes. The COVID-19 pandemic also resulted in permanent changes to commuting from an increase in working from home practices, which have a material impact on traffic volumes from commuter areas such as Kāpiti.

Comparison with SH2 shows TG saves 8-31 minutes

To account for these other changes between 2019 and 2024, we also conducted a pooled regression with travel times on SH2 from Upper Hutt to Wellington. The idea being that Upper Hutt would have also been affected by economic growth and working from home in a similar way to Kāpiti, but was not significantly affected by the new roads. This analysis showed median travel time savings on Transmission Gully of eight minutes relative to SH2, and up to 14 minutes in peak times. Travel times savings in the 90th percentile range from a median eight minutes up to 31 minutes in peak times, all relative to SH2. The fact that savings are greater when compared with SH2, than the old route in 2019, shows that travel times on SH1 could have deteriorated further by 2024 in the absence of Transmission Gully.

TG saves 9 minutes travel time on average

Chart 7 shows that Transmission Gully saves northbound drivers a combined 9 minutes on average, and southbound drivers 7 minutes on average. This analysis combines travel time savings as well as reliability savings. We analysed reliability time savings follow NZTA's Monetised benefits and costs manual, which reflects the benefit to road users from more reliable travel times. For example, if a journey can take 20-40 minutes, then road users have to allow for 40 minutes, such as by leaving home earlier for their morning commute. Increased reliability therefore saves road users time, separate to changes in average journey times. Combined time savings on the old route range from 0.3 minutes southbound to 2.9 minutes northbound.

TG saves 1.9m hours

In total, road users saved 1.9m hours in 2024, across the new route (SH1 Transmission Gully) and old route (SH59). This total was made up of 2.5m hours in total savings, partially offset by the rule of a half for new road users.

Mackays to Peka Peka (M2PP)

M2PP flattens afternoon peak

Chart 8 shows that median travel times on SH1 (the old route) before Mackays to Peka Peka opened showed a spike for northbound traffic in the evening between 5pm and 7pm, associated with commuter traffic leaving Wellington City. These delays manifested as congestion through Paraparaumu, Otaihangā, and Waikanae.

Northbound travel times on Mackays to Peka Peka (the new route) are seven minutes shorter in off-peak periods and nine minutes shorter during the evening peak. Northbound travel times on Mackays to Peka Peka show minimal variation throughout the day, making journeys both faster and more reliable.

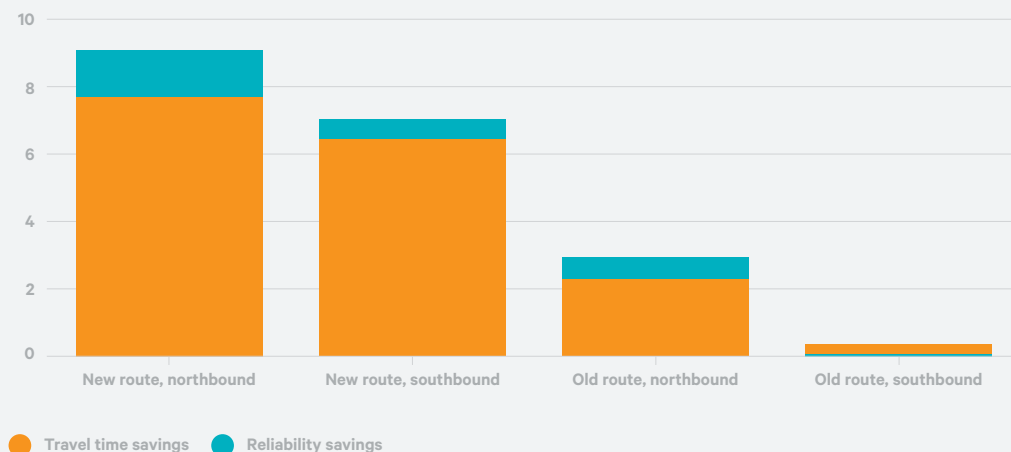
There is still some variation in travel times throughout the day on the old route, reflecting that after M2PP opened, the old route was reconfigured to better suit its new purpose as a local road. Passing lanes have been removed and intersections changed with traffic lights and roundabouts. Reconfiguration of the old route places greater emphasis on connectivity within local communities, and less emphasis on efficiency for through-traffic.



Chart 7

Transmission Gully travel savings

Minutes, 2024 vs 2019

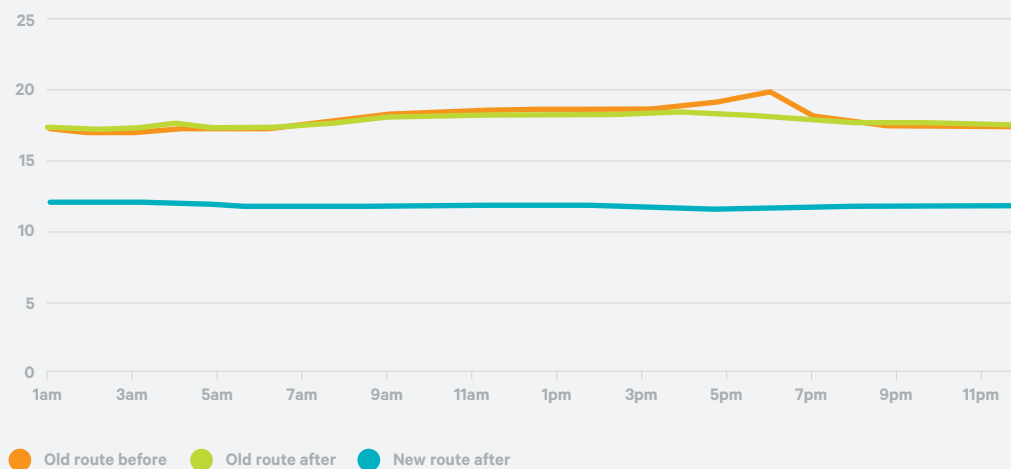


Source: Infometrics, TomTom

Chart 8

Mackays to Peka Peka northbound travel times

Median travel time (minutes) by hour of the day, Mackays to Peka Peka



Source: Infometrics, TomTom

M2PP saves 26 minutes northbound in most congested periods

Chart 9 shows a pronounced peak in northbound travel times in the 90th percentile, stretching from 4pm to 8pm, on the old route before Mackays to Peka Peka. Since M2PP opened even 90th percentile travel times on the new route are essentially flat throughout the day.

Northbound travel times in the 90th percentile on Mackays to Peka Peka at 6pm are 26 minutes shorter than on the old route before Mackays to Peka Peka opened. This reduction in travel times represents a substantial saving for road users, and a substantial increase in travel time reliability.

The old route still shows a degree of variation throughout the day in 90th percentile travel times, reflecting reconfiguration of the road, as well as growth in the eight years since Mackays to Peka Peka opened.

M2PP supports more reliable southbound travel

Chart 10 shows that median travel times on SH1 (the old route) before Mackays to Peka Peka extended by one minute between 7am and 7pm. This increase reflects a combination of morning commuter traffic as well as traffic throughout the day, especially between Paraparaumu and Waikanae.

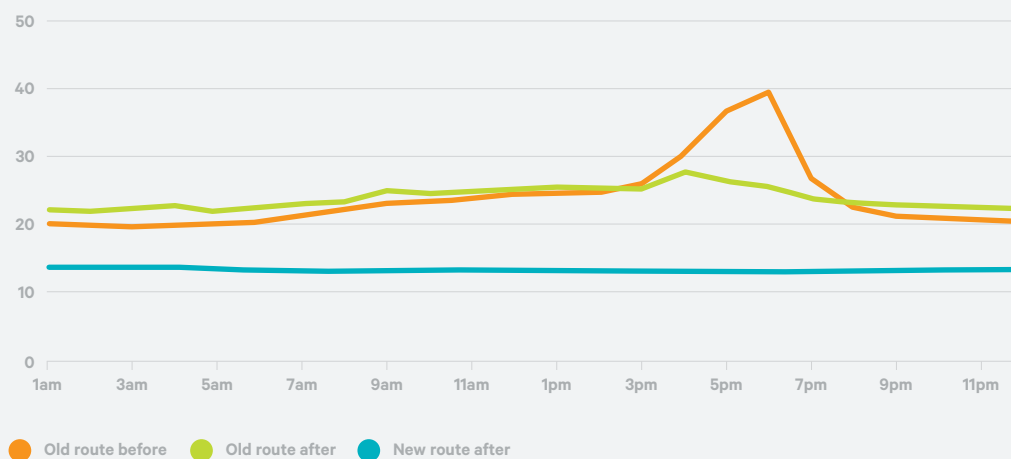
Southbound travel times on Mackays to Peka Peka (the new route) are four minutes shorter in off-peak periods and six minutes shorter at 9am. Southbound travel times on Mackays to Peka Peka show minimal variation throughout the day, making journeys both faster and more reliable. Southbound travel times on the old route are slightly shorter in the morning peak, but remain elevated during the day.



Chart 9

Mackays to Peka Peka northbound travel times

90th percentile travel time (minutes) by hour of the day, Mackays to Peka Peka

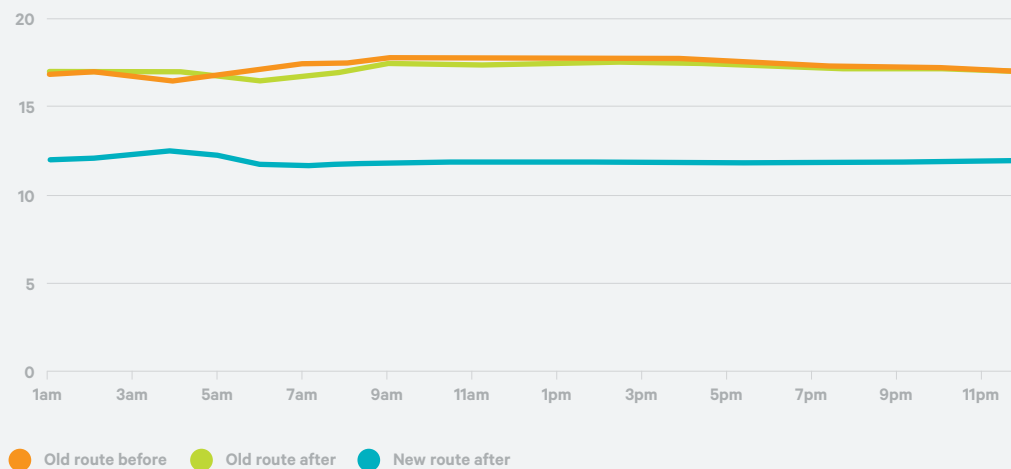


Source: Infometrics, TomTom

Chart 10

Mackays to Peka Peka southbound travel times

Median travel time (minutes) by hour of the day, Peka Peka to Mackays



Source: Infometrics, TomTom

M2PP saves 12 minutes southbound in most congested periods

Chart 11 shows a more pronounced peak in southbound travel times in the 90th percentile on the old route before Mackays to Peka Peka, stretching from 7am to 9am. Even 90th percentile travel times are essentially flat throughout the day on the new route since Mackays to Peka Peka opened. 90th percentile travel times on the old route are higher than they were before Mackays to Peka Peka opened, which could reflect configuration of the old route.

Southbound travel times in the 90th percentile on Mackays to Peka Peka at 7am are 12 minutes shorter than on the old route before Mackays to Peka Peka, and 10 minutes shorter at 5pm.

M2PP saves 5-21 minutes

Chart 12 shows that travel time savings on the Mackays to Peka Peka new route range from a median 5 minutes across the day, to a 90th percentile saving of 21 minutes in peak times.

For the old route, median travel times across the day show a marginal change. Travel times on the old road have worsened by 1-3 minutes in the 90th percentile

across the day. Travel times on the old route are 10 minutes shorter in peak periods in the 90th percentile. This difference in outcomes reflects two distinct changes. Firstly, reconfiguration of the old route since M2PP opened have slightly increased travel times day-to-day. However, opening Mackays to Peka Peka now means that the old route doesn't face regular extreme travel time delays, such as around holidays.

M2PP saves 8 minutes travel time on average

Chart 13 shows that M2PP saves northbound drivers a combined 8 minutes on average, and southbound drivers 7 minutes on average. This analysis combines travel time savings as well as reliability savings. Combined time savings on the old route range from 0.5 minutes northbound to a 0.2-minute increase (dis-savings) in travel times southbound.

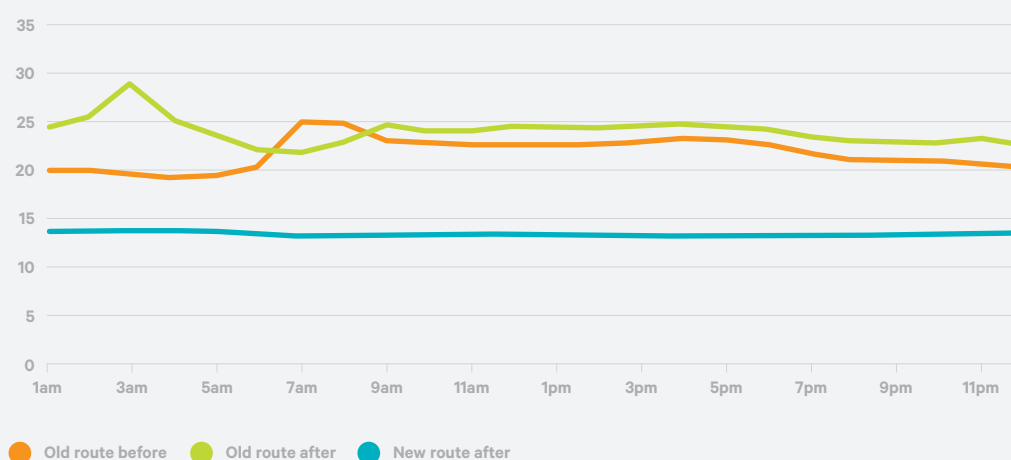
M2PP saved 1.2m hours of time to road users in 2024

In total, road users saved 1.2 million hours in 2024, across the new route (SH1 M2PP) and old route (Old SH1). This total was made up of 1.6m hours in total savings, partially offset by the rule of a half, to account for the benefit to new road users.

Chart 11

Mackays to Peka Peka southbound travel times

90th percentile travel time (minutes) by hour of the day, Peka Peka to Mackays

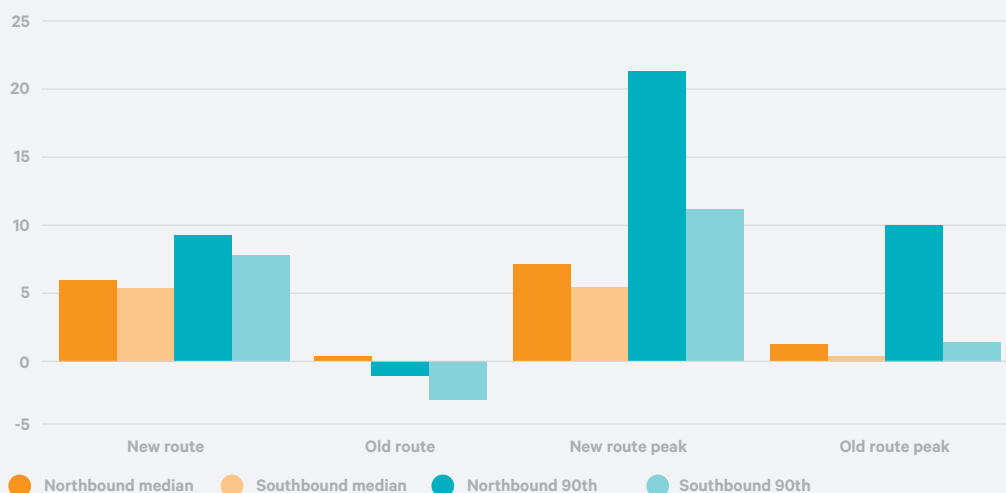


Source: Infometrics, TomTom

Chart 12

Mackays to Peka Peka travel time savings

Minutes of travel time saved, 2024 vs 2016

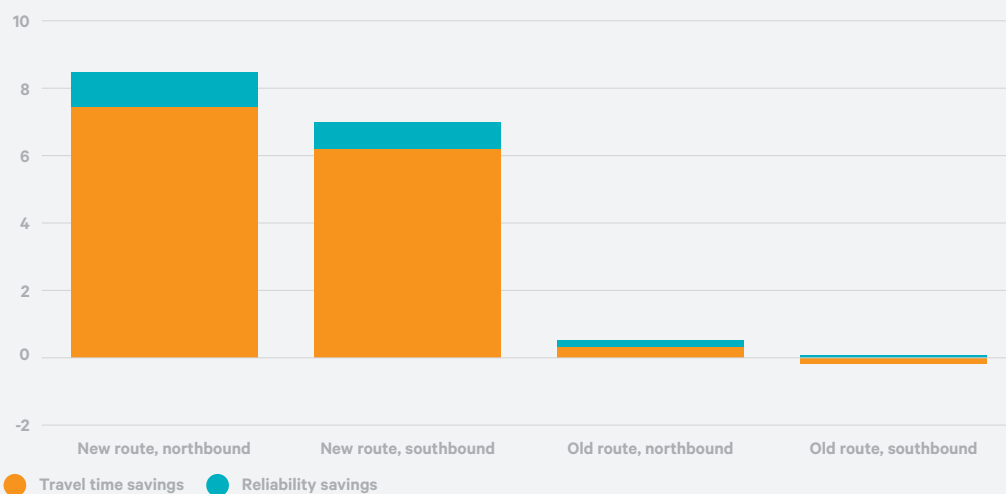


Source: Infometrics, TomTom

Chart 13

Mackays to Peka Peka travel time savings

Minutes, 2024 vs 2019



Source: Infometrics, TomTom

Peka Peka to Ōtaki (PP2O)

PP2O saves 5 minutes travel time on average

PP2O saves northbound drivers a combined 5 minutes on average, and southbound drivers 5 minutes also. This analysis combines travel time savings as well as reliability savings.

PP2O saved 0.7m hours of time to road users in 2024

In total, road users saved 0.7 million hours in 2024, across the new route (SH1 PP2O), including an offset for new users by applying the rule of a half. We didn't obtain detailed travel time data for Peka Peka to Ōtaki, so have only been able to consider travel time savings on the new route. This means we have underestimated travel time savings associated with Peka Peka to Ōtaki.

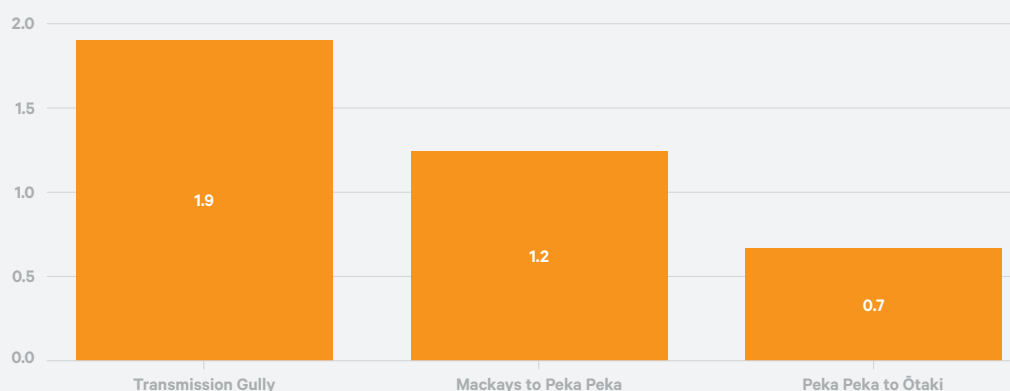
New roads saved 3.8m hours in 2024

Altogether, the new roads are estimated to have saved road users 3.8m hours in 2024, due to shorter travel times, and improvement in travel time reliability. Chart 14 shows that this saving is made up of a 1.9m hours from Transmission Gully, 1.2m hours from Mackays to Peka Peka, and 0.7m hours from Peka Peka to Ōtaki.

Chart 14

Combined travel time savings from new roads in 2024

Millions of hours



Source: Infometrics, NZTA, TomTom

Note that savings for Transmission Gully and Mackays to Peka Peka include both the old and new route, whereas savings for Peka Peka to Ōtaki only include savings on the new route.

5

Reductions in Deaths and Serious Injuries

The new roads have been designed and constructed to significantly higher safety standards than the old routes, resulting in a significant reduction in deaths and serious injuries. Along the new roads, safety features such as grade-separated interchanges and continuous side and median barriers, support better safety outcomes. With the majority of traffic volumes switching to the new routes, the old routes have become safer due to lower traffic volumes.

Our analysis is based on NZTA's Crash Analysis System data, which records crashes reported by the NZ Police.

No deaths on new roads

Chart 1 shows that for each of the three new roads no deaths have been recorded since opening. The rate of deaths on the old routes ranged from 0.9 per year for

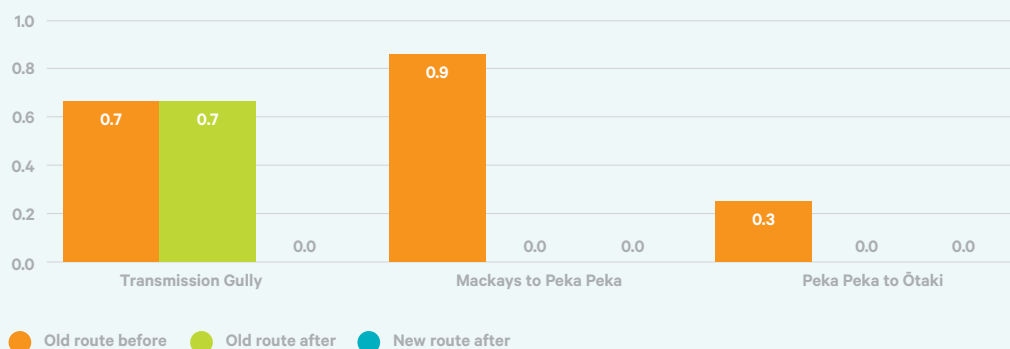
Mackays to Peka Peka, to 0.7 for Transmission Gully, and 0.3 for Peka Peka to Ōtaki. For Mackays to Peka Peka and Peka Peka to Ōtaki, no deaths have been recorded on the old route after the new road opened, reflecting that reduced traffic volumes have greatly reduced the likelihood of crashes.

However, since Transmission Gully opened, several fatal crashes have occurred on the old route (SH59), despite a significant reduction in traffic volumes. Fatal crashes are an infrequent occurrence, and a degree of statistical variation can be expected. As time goes on, one might expect the annual number of fatalities on SH59 to reduce, and there may be deaths on the new roads. Mackays to Peka Peka has a much longer operating record (seven years) than Transmission Gully and Peka Peka to Ōtaki (three years), so as time goes on the trends should become clearer and long-term averages less disrupted by variation.

Chart 15

Annual road deaths

Annual average 2010-opening (before), and opening to 2024 (after)



Source: Infometrics, NZTA

Serious injury numbers down significantly

Chart 2 shows a consistent reduction in serious injuries from before the new route compared to after. For Transmission Gully, there were an average of 5.8 serious injuries per year on the old route before, which reduced to 2.0 on the new route, and 4.0 on the older route after. The difference is greater for Mackays to Peka Peka, with a reduction from 3.9 serious injuries per year to 0.8 on the new route and 2.0 on the old route after. For Peka Peka to Ōtaki, no serious injuries have been recorded on the new route to date, contributing to a reduction from 2.8 before to 0 on the new route after, and 1.0 on the old route after.

From road opening to 2024, the annual number of serious injuries on the Mackays to Peka Peka and Peka Peka to Ōtaki sections has been less than recorded beforehand on the old route, including injuries occurring on the old route

afterwards. For Transmission Gully, total serious injuries are slightly higher than before, due to the high number of serious injuries on the old route. Given overall traffic volumes, serious injuries per journey travelled remains lower than before Transmission Gully was constructed – as is outlined later in this section.

Death rates down significantly

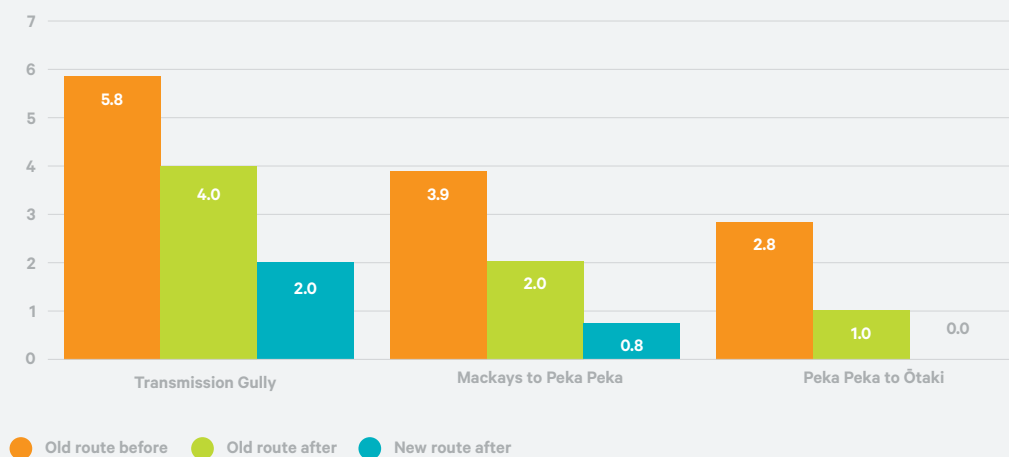
Death rates, the number of deaths per 1 million vehicles travelling, are down significantly on all of the new roads. Chart 3 shows that death rates are nil across the new routes, as no deaths have been recorded to date. The death rate has risen for SH59, the old route prior to Transmission Gully, which reflects a spate of fatal crashes on top of lowered traffic volumes.



Chart 16

Annual road serious injuries

Annual average 2010-opening (before), and opening to 2024 (after)

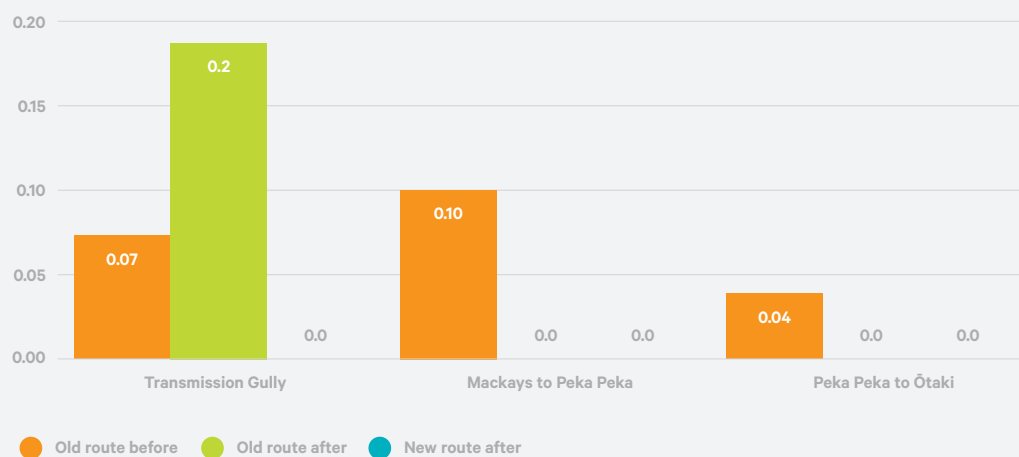


Source: Infometrics, NZTA

Chart 17

Death rate per 1m vehicles

Annual average 2010-opening (before), and opening to 2024 (after)



Source: Infometrics, NZTA

Serious injury rates down too

Serious injury rates, the number of serious injuries per 1m vehicles travelling, are down significantly on all new roads. Chart 4 shows that for Transmission Gully, serious injury rates are down from 0.6 before to 0.2 after on the new route. Serious injury rates on the old route, SH59, are elevated due to a series of serious crashes from low traffic volumes.

Since Transmission Gully opened, the combined serious injury rate for SH1 Transmission Gully and SH59 has averaged 0.5 serious injuries per 1m vehicles, a decrease from 0.6 on the old SH1 route.

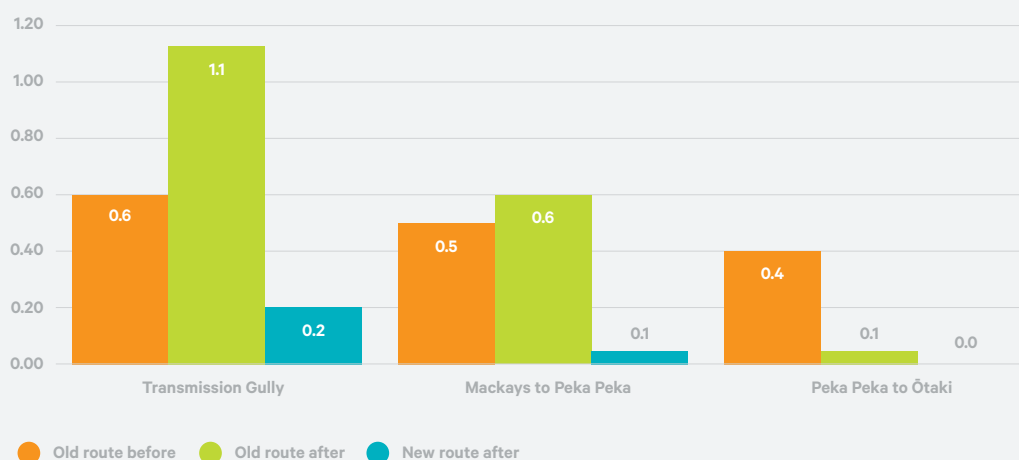
For Mackays to Peka Peka, serious injury rates fell from 0.5 on the old route before to 0.1 on the new route. The rate of serious injuries rose on the old route after, as traffic volumes are much lower. For Peka Peka to Ōtaki, serious injury rates fell from 0.4 on the old route before to zero on the new route, with a rate of just 0.1 on the old route after.



Chart 18

Serious injury rate per 1m vehicles

Annual average 2010-opening (before), and opening to 2024 (after)



Source: Infometrics, NZTA

6

Monetised Benefits

The new roads provide a range of benefits which can not easily be collated together, such as reductions in deaths and travel times. Converting these various benefits into monetised benefits means that these benefits can be considered together in dollar terms.

Putting a value on social benefits

Monetising social benefits is common practice in transport and government, undertaken by NZTA in assessing the benefits of proposed roads. We have followed NZTA's Monetised benefits and costs manual (version 1.7.2, November 2024)² to estimate the monetised benefits of the new roads. Under these guidelines, avoiding a death is valued at \$12.5m, and avoiding a serious injury is valued at \$660,100.

Travel time savings are valued at \$49.43 per hour, the composite value of time from rural strategic roads across all periods of the day. This is an overall average, reflecting the value of different purposes of travel (work, commuting, or other), whether the travel is congested, the number of occupants, and the time of day.

Deaths and serious injuries cost \$30m per year

Before the new roads, deaths and serious injuries cost society a total of \$30m per year. Chart 19 shows that deaths and serious injuries cost:

- \$12.1m on average per year on the pre-Transmission Gully route
- \$13.3m on the pre-Mackays to Peka Peka route
- \$5.0m on the pre-Peka Peka to Ōtaki route.

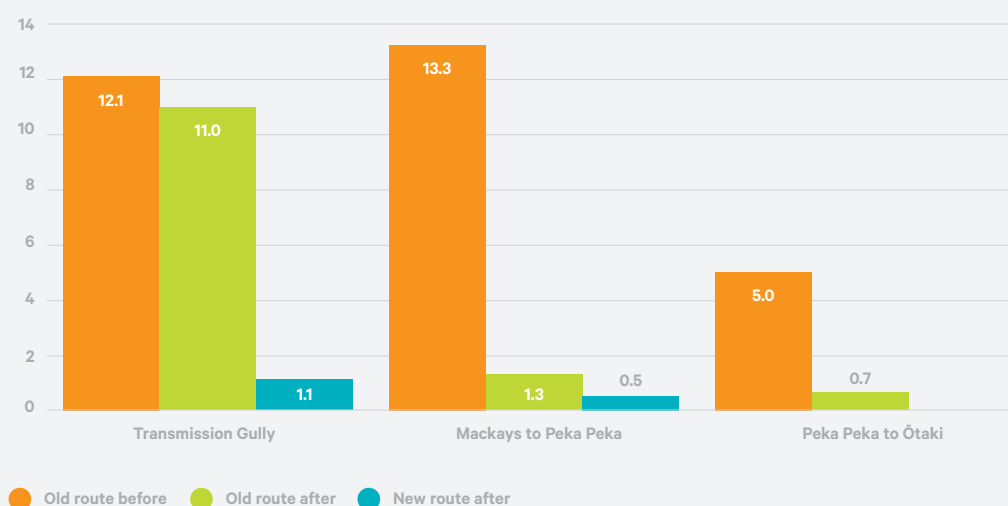
The annual cost of deaths and serious injuries on the new roads is substantially lower at \$1.1m for Transmission Gully, \$0.5m for Mackays to Peka Peka, and \$0 for Peka Peka to Ōtaki. The lower social costs for the new routes reflect fewer serious injuries and no deaths.

² <https://nzta.govt.nz/assets/resources/monetised-benefits-and-costs-manual/Monetised-benefits-and-costs-manual-v1.7.2.pdf>

Chart 19

Annual social cost of crashes

\$m, annual average 2010-opening (before, and opening to 2024 (after)



Source: Infometrics

For Mackays to Peka Peka and Peka Peka to Ōtaki, a substantial reduction in deaths and serious injuries on the old route contributes to a reduced social cost on the old route too, down to \$1.3m and \$0.7m respectively.

For Transmission Gully, although the new route is substantially safer, deaths and serious injuries have continued on the old route (now SH59). Between 2022 and 2024, the social cost of deaths and serious injuries on SH59 averaged \$11.0m, and \$1.1m on SH1 Transmission Gully. Although Transmission Gully is substantially safer than the old route, the social cost of deaths and serious injuries across the two routes is unchanged, at \$12.1m.

Reduction in deaths and serious injuries worth \$15.8m

Altogether, the reduction in deaths and serious injuries associated with the new roads has resulted in an annual average saving to society of \$15.8m, with the annual cost reduced from \$30m to \$14.5m.

Accounting for the net benefit of reduced travel times

The new roads provide a monetary benefit of reduced travel times and greater travel time reliability. NZTA's Monetised benefits and costs manual specifies how these benefits can be monetised, including how increased vehicle operation costs should be included. Vehicle operation costs are affected by distance, gradient, travel time and average speed, with operating costs increasing above speeds of 50km/hr.

For users who switched from the old to new routes, their benefit depends on when they travel. Users travelling at peak hours benefit from less congestion, higher speeds and lower operating costs. Users travelling the new roads in off-peak periods face no congestion benefit, but much higher speeds and higher operating costs.

For new road users, we don't know the counterfactual of their travel times before the new roads were introduced, so we again apply the rule of a half to estimate their benefit, and combine with the benefit for existing road users.

‘Altogether, the reduction in deaths and serious injuries associated with the new roads has resulted in an annual average saving to society of \$15.8m, with the annual cost reduced from \$30m to \$14.5m.’

Higher vehicle operating costs

With higher travelling speeds and a hillier route (in the case of Transmission Gully), using the three new roads comes at the cost of higher vehicle operating costs for existing users (those that switch from the old route to the new route).

For new users (those that didn't previously travel on either the old or new route), we don't know they would have done without the new roads, so we assume no change in vehicle operating costs. For Transmission Gully, vehicle operating costs are estimated to be \$15.0m higher per year. For Mackays to Peka Peka, vehicle operating costs are \$9.8m higher per year. For Peka Peka to Ōtaki, vehicle operating costs are \$4.2m higher per year.

Travel time and reliability savings worth \$187m

Total travel time savings to society reflect the number of vehicles travelling (based on NZTA traffic counts), changes in travel times and reliability from the new roads (based on TomTom data), and the value of their time (based on NZTA's Monetised benefits and costs manual).

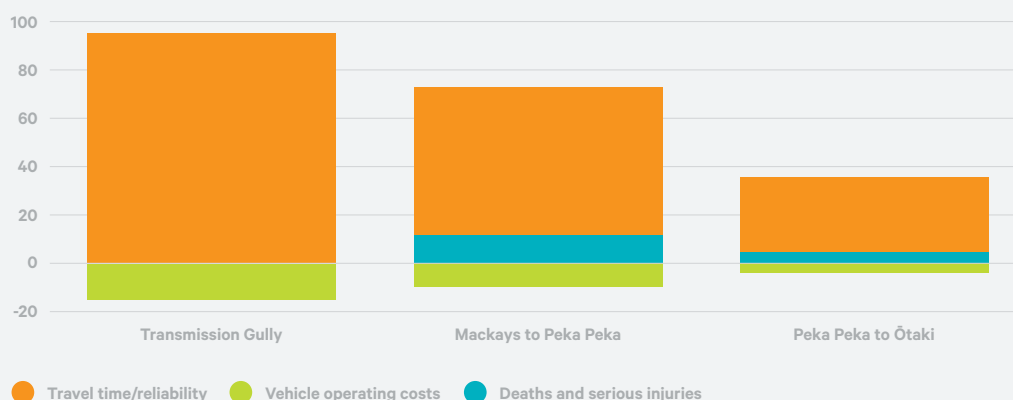
More reliable travel times save road users time, because they don't need to allow extra time for delayed journeys, such as by leaving early or allowing more time between appointments. Ultimately, more reliable travel times mean road users can fit more into their day.

Travel time savings of 1.9m hours from Transmission Gully are valued at \$94m in 2024. Travel time savings of 1.2m hours from Mackays to Peka Peka are valued at \$61m. Travel time savings from Peka Peka to Ōtaki of 0.7m hours are valued at \$31m. Altogether, the new roads saved 3.8m hours in travel time in 2024, valued at \$187m.

Chart 20

Combined monetary benefits of new roads

\$m, Infometrics estimates, 2024



Source: Infometrics

Combined benefit of \$173m from new roads

Bringing together the travel time savings, reduced cost of deaths and serious injuries, and higher vehicle operating costs, the combined benefit of the new roads is \$173m per year. Chart 20 shows that for Transmission Gully, a combined benefit of \$79m is made up of travel time and reliability savings of \$94m, offset by higher vehicle operating costs of \$15m. With no change in the overall death and serious injuries cost (due to higher death and injuries on the old route), there is no benefit or dis-benefit here for Transmission Gully.

For Mackays to Peka Peka, the combined benefit is \$63m, made up of travel time and reliability savings of \$61m, reduced death and serious injury cost of \$11m, and higher vehicle operating costs of \$9.8m

For Peka Peka to Ōtaki, the combined benefit of \$31m is made up of travel time and reliability savings of \$31m, reduced death and serious injury costs of \$4.3m, and higher vehicle operating costs of \$4.2m (totals do not add due to rounding).

In choosing which route to take, users compare travel time and reliability savings with vehicle operating costs. In aggregate, travel time and reliability savings significantly outweigh higher vehicle operating costs for all three routes.

The fact that traffic volumes have shifted towards the new roads shows that road users consider the new roads to be worthwhile, even taking into account the higher operating costs.

Emissions

Changes in travel associated with the new roads – more traffic movements, and higher vehicle operating costs – result in higher direct carbon emissions from travelling. The social cost of higher emissions is accounted for in the carbon price, which is included in the cost of fuel. Therefore, when an individual chooses to use the new roads, they face the cost of their additional emissions.

At a national level, the higher emissions associated with the new roads could increase the cost of carbon emissions abatement, for New Zealand to meet its nationally determined contributions to emission reduction. In particular, if the marginal cost of abating emissions is higher than the prevailing carbon price which road users pay through the carbon tax on their fuel. As of 2024, the prevailing price for one New Zealand unit – one tonne of CO₂ emissions – is \$60. Even if the marginal cost of emission abatement reached as high as \$200, the additional cost to society would be \$450,000,³ which is within the error margin for estimates of overall vehicle operating costs.

³ Based on fuel costs amounting to 37.5% of vehicle operating costs (as per NZTA Monetised benefits and costs manual), 2024 carbon price of \$60/tCO₂, potential carbon price of \$200/tCO₂, and the \$60 carbon price adding 5% to the price of petrol.



Improved Accessibility

The new roads improve accessibility for a number of communities by adding new travel options, reducing travel times, and increasing the reliability of travel times. The benefit of improved accessibility is expected to come through in a range of indicators – where people commute to, how many people are in the catchment for key amenities, and where people choose to live. Improvements in accessibility can make areas relatively more attractive, which can manifest as changes in house prices.

The effect of COVID-19 and working from home

The COVID-19 pandemic struck while TG and PP20 were being built, which had a significant effect on society both during and after. Infometrics analysis of Stats NZ's Business Operations Survey shows a persistent increase in the potential to work from home, from around 23% of the workforce being able to work from home in 2006, to 29% in 2018, and then to 43% in 2023. Although around 43% of the workforce have the potential to work from home, around 33% of people actually do work from home at some point in a given week according to official statistics. This change has a significant effect on how the improved accessibility benefits of the new roads are utilised. Being able to work from home and the addition of the new roads both make longer work commutes more attractive.

In order to isolate the effect of the new roads, we have used two control areas. The **Wellington control area** consists of Wellington City, up to Tawa, which is south of the new roads, so therefore not directly affected, and more proximate to Wellington CBD so less affected by working from home. The **Hutt control area** consists of Lower and Upper Hutt. The Hutt is not directly affected by Transmission Gully, but would have had a comparable

impact from the permanent shift towards working from home, as parts of the Hutt are a similar travel time from Wellington as Porirua and Kāpiti Coast are to Wellington City.

Waitangirua and Whitby link roads

The Waitangirua Link Road and Te Ara Kapehu (Whitby Link Road) provided a step change in road connectivity for Eastern Porirua. Previously, the suburbs of Whitby and Waitangirua faced a drive time of up to 7 minutes to access state highway interchanges. The addition of the link roads has improved access to state highways from these suburbs, however, it has not necessarily reduced travel times to regional amenities such as the Wellington CBD. The original business case for Transmission Gully outlined a series of more nuanced benefits from these roads for Eastern Porirua, including:

- More efficient, safer and reliable road access to Hutt Valley, Kāpiti Coast and Wellington City.
- Reduced adverse effects from arterial traffic through Porirua
- Provision of alternative arterial routes and connectivity, to support integrated land transport and development.
- Support revitalisation of Waitangirua Village Centre.⁴

The link roads have broadly achieved these results – however, as travel times to Wellington CBD have not materially changed, we wouldn't expect a material effect on house values (whereas improved travel times to the CBD would have made these houses more desirable and therefore valued higher).

⁴ <https://nzta.govt.nz/assets/projects/transmission-gully/docs/business-case.pdf>

Employment at businesses located in Waitangirua has risen from 136 in 2014 to 163 in 2024, an increase of 27 jobs or 20%. This increase is a positive sign for the revitalisation of Waitangirua Village Centre, but it's not clear if this increase can be entirely attributed to the Waitangirua Link Road.

The benefit of the link roads are likely to manifest over time, especially as the Eastern Porirua Development increases the population density of Eastern Porirua, and ongoing growth of Whitby adds to the population. These developments could have otherwise contributed to congestion on arterial routes between the suburb and state highway interchanges.

15% more population within 60 minutes of Porirua

The new roads have changed accessibility within the region, effectively bringing population centres closer to central business districts (CBD), adding scale to existing CBD. Chart 20 shows the most pronounced effect of the new roads is on the Porirua CBD, which has an additional

74,400 people within a 60-minute driving time, a 15% increase. Additions to the more limited 30-minute catchment for Porirua include parts of Lower Hutt and Upper Hutt, and Paraparaumu, together adding 54,000. Additions to the 30-to-60-minute catchment for Porirua include Levin, adding 20,400.

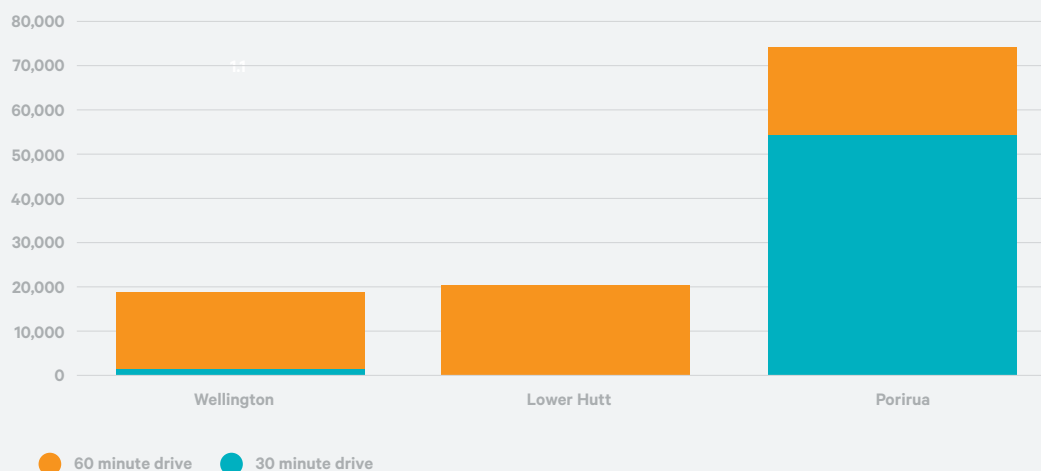
Wellington and Lower Hutt CBD benefited from the new roads to a lesser degree, each receiving a 4% increase in the population within a 60-minute drive time. Additions to the 60-minute catchment for Wellington CBD include Ōtaki and Manukau, together 17,240. Paekākāriki Hill is also added to the 30-minute catchment for Wellington CBD, adding 1,410. Additions to the 60-minute catchment for Lower Hutt CBD include Ōtaki and Manukau, adding 20,200.

These increases in catchment only include areas that were previously not accessible (within 30- or 60-minute drive) and now are as a result of the roads. There have been further increases in the population within the catchments of each as a result of population growth within the previously accessible area.

Chart 21

Population added to CBD catchment by new roads

Population 2024



Source: Stats NZ, Infometrics

Effects of improved accessibility

To understand the effect of improved accessibility associated with the new roads, we have analysed population, dwelling, and house value growth across four area groupings:

- **Direct benefit** areas have improved accessibility as a result of the new roads. This area includes Horowhenua, Kāpiti, and parts of Porirua directly connected to Transmission Gully.
- **Indirect benefit** areas have improved accessibility through less congestion on the old road SH59. This area includes remaining parts of Porirua not directly connected to Transmission Gully.
- **Hutt Valley**, including Lower Hutt and Upper Hutt, is mostly unaffected by the new roads, but has similar characteristics in terms of a significant commuting population, and similar distance to Wellington CBD, as Porirua and Kāpiti.
- **Wellington City** is unaffected by the new roads, and as its residential areas are closer to the CBD, is expected to be less affected by shifts in working from home.

We have compared these four areas by benchmarking growth relative to 2010, to identify any effects arising before the new roads (i.e. population growth in anticipation of improved accessibility) and afterwards.

Faster population growth around new roads

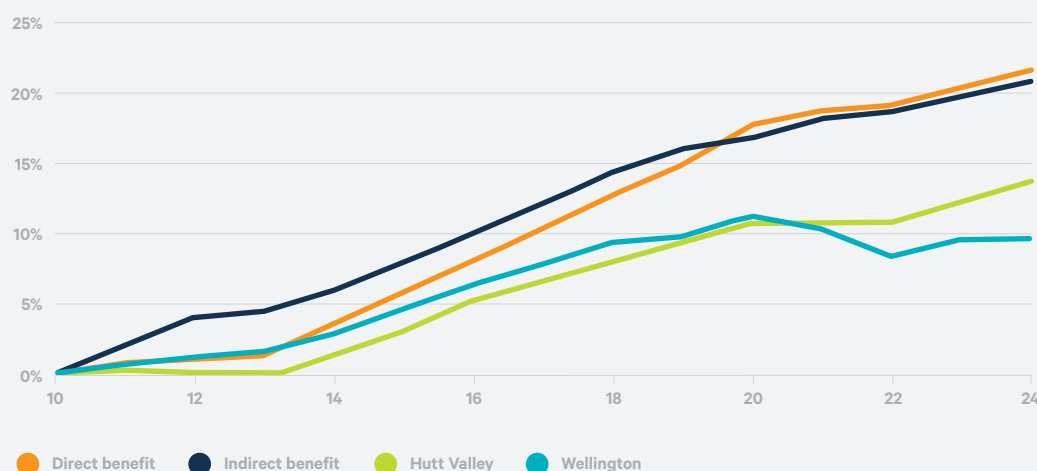
The population of the direct and indirect benefit areas has grown significantly faster since 2010 than the Hutt Valley or Wellington. Chart 22 shows that the population of the direct benefit area (Horowhenua, Kāpiti and parts of Porirua) was 22% larger in 2024 than it was in 2010. For the indirect benefit area (the rest of Porirua), the population was 21% larger. By contrast, the population in the Hutt Valley was only 14% larger and Wellington only 10% larger.

Population growth in the direct benefit area started accelerating from 2013 onwards. Construction of Mackays to Peka Peka started in 2013, and Transmission Gully in 2014.

Chart 22

Population growth by new road accessibility

% increase from 2010 (cumulative)



Source: Stats NZ, Infometrics

Faster dwelling growth around new roads

Associated with faster population growth, growth in the number of dwellings was faster in the direct benefit areas of the new roads. Chart 23 shows that the number of dwellings in the direct benefit area was 19% higher in 2024 than 2010. Unlike population growth, dwelling growth in the indirect benefit area (13%) was closer to that of the Hutt Valley (12%) and Wellington (10%). Dwelling growth in the indirect benefit area accelerated from 2019 onwards, potentially in anticipation of Transmission Gully opening (which was at the time expected in 2020).

Faster dwelling growth reflects a higher rate of new dwelling construction, which supports population growth. However, greater utilisation of existing dwelling stock – such as increasing the number of occupants, or reducing downtime between occupants when dwellings are sold or rented – can also accommodate population growth.

Similar house price growth

Although the population and number of dwellings in the direct and indirect benefit areas grew appreciably faster than Hutt Valley and Wellington, the trend for house prices is far more mixed. Chart 24 shows that by 2024, house prices were 123% higher than 2010 in the direct benefit area, and 128% higher in the indirect benefit area. Hutt Valley prices increased 112%, and Wellington lagged with an 88% increase.

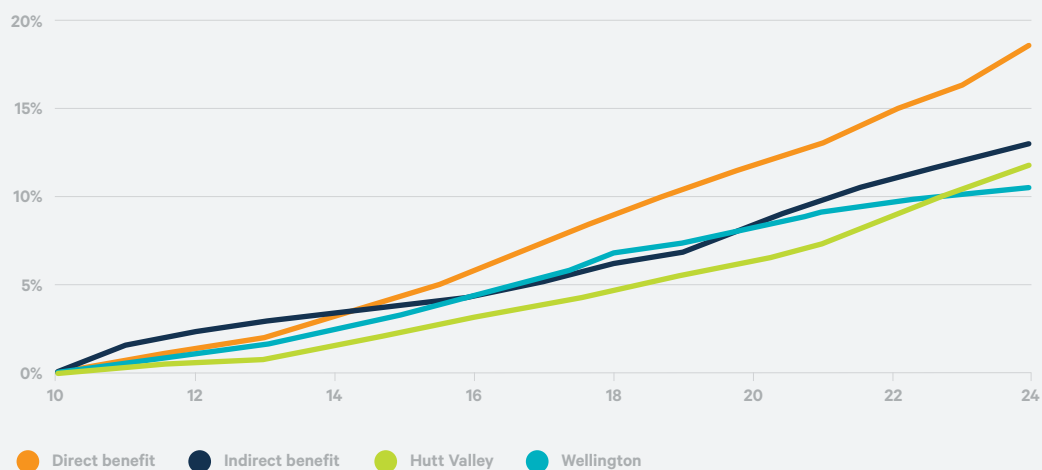
The new roads have improved accessibility for the direct and indirect benefit areas, which could have applied upwards pressure on house prices in those areas. However, a strong supply response – with the strongest dwelling growth occurring in the direct benefit areas – may have softened the overall impact of improved accessibility on house prices.



Chart 23

Dwelling growth by new road accessibility

% increase from 2010 (cumulative)



Source: REINZ, Infometrics

Chart 24

House price growth by new road accessibility

% increase from 2010 (cumulative)



Source: REINZ, Infometrics

House price gaps close

Faster house price growth in the direct and indirect benefit areas, and Hutt Valley to a lesser degree, have reduced the gap between Wellington prices and the rest of the region. This change reflects that faster travel times and higher uptake of working from home increases the relative attractiveness of suburban areas. Chart 25 shows that house prices in the direct and indirect benefit areas have overtaken the Hutt Valley by a small margin. All three areas benefited from working from home, but only the direct and indirect benefit areas have benefited from the new roads.

House price gap closes by \$63k

House prices in Wellington City remain significantly higher than the rest of the region, but the house price gap has narrowed. Chart 26 focuses on the difference in house prices between different parts of the region, to highlight the impact of the new roads.

Between 2010 and 2022, the gap between house prices in the direct benefit area and Wellington increased, with the average house price in the direct benefit area being \$324,500 less than in Wellington in the March 2022 quarter. However, after Transmission Gully opened on 31 March 2022, this gap closed, down to \$200,300 in the March 2025 quarter.

Quarterly house prices are subject to a degree of volatility, but econometric testing shows a structural break in the house price difference between the direct benefit area

and Wellington occurred between the June 2022 and September 2022 quarters. This statistically significant difference means that the opening of Transmission Gully is associated with a material change in house prices within the region. Regression analysis shows that the gap closed by \$63,400 between September 2022 and March 2025, a more robust measure of the change associated with Transmission Gully.

The house price gap with the indirect benefit area and Hutt Valley have also changed but is not as statistically robust as the difference with Wellington. The house price gap between the direct benefit area and the indirect benefit area closed by \$26,800 between September 2022 and March 2025, which reflects that Porirua and Kāpiti are now closer in terms of travel time. The house price gap between the direct benefit area and Hutt Valley reduced by \$41,800, with average values in the direct benefit area now higher than the Hutt Valley.

A rise in working from home from 2020 onwards would have made Wellington relatively less attractive than the other three areas. However, the fact that the differences started reducing in 2022, and that the difference with the Hutt and indirect benefit area also reduced, suggests that the change can be credited to the new roads.

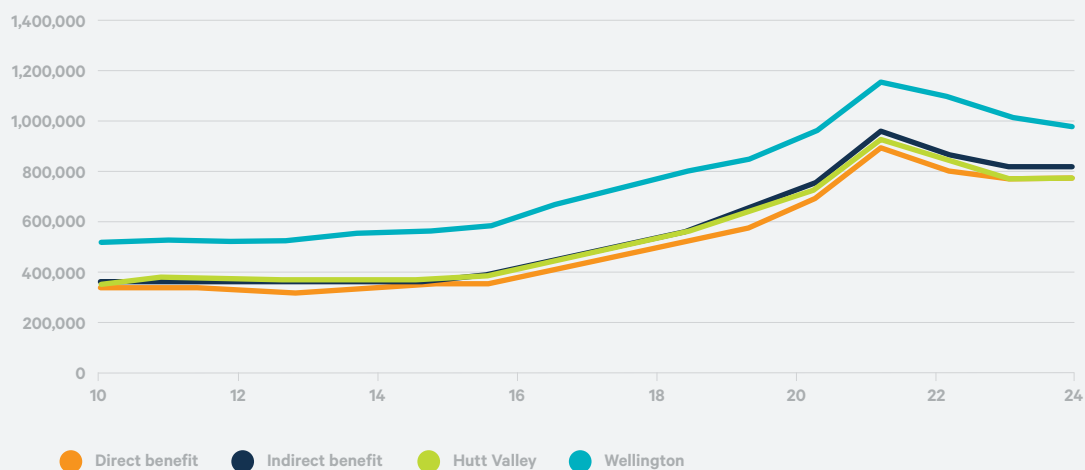
Although the construction of new roads is apparent to commuters for several years before the roads open, there doesn't appear to be a significant anticipatory effect – that is, house price changes don't start until after the new roads are open.

‘The number of dwellings in the direct benefit area was 19% higher in 2024’

Chart 25

House prices by new road accessibility

Annual average, March years

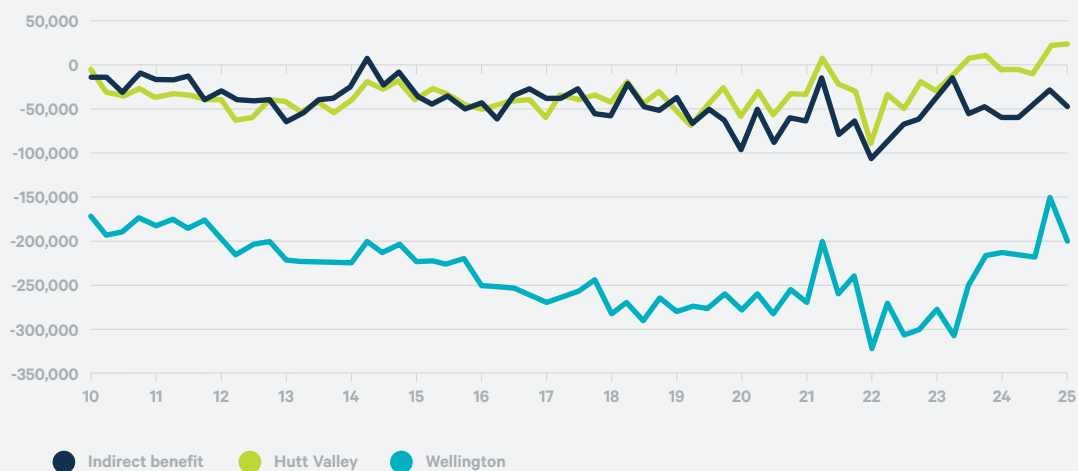


Source: REINZ, Infometrics

Chart 26

House price differences by new road accessibility

Difference from direct benefit area, quarterly average



Source: REINZ, Infometrics

More working from home, throughout region

Improvements in accessibility increase access to jobs around the region, so over time we would expect to see changes in commuting in response to the new roads. However, between the 2018 and 2023 Census, shifts in working from home practices had a more significant effect on commuting, making it challenging to isolate the effect of the new roads.

Across the Wellington Region and Horowhenua, the proportion of employed persons that mostly work from home rose from 13% in 2018 to 22% in 2023. Chart 27 shows that areas further from Wellington – Kāpiti and Horowhenua – already had higher rate of working from home in 2018. In 2023, 28% of employed persons living in Kāpiti mostly worked from home.

Within Wellington, Lower Hutt, Upper Hutt, and Porirua, the rate of working from home rose and evened out, from 10-13% in 2018 to 21-22% in 2023.

Slight increase in commuting across the region

The proportion of employed persons living in Wellington Region or Horowhenua that commuted to work in a different territorial authority area rose slightly, from 22% in 2018 to 24%. Chart 28 shows that this increase was driven by a higher proportion of people living in Wellington City and Horowhenua commuting out of area. Across Kāpiti, Porirua, Lower Hutt and Upper Hutt, where commuting out of area was already more prevalent, there was a slight reduction in commuting out of area.

Wellington CBD is the key employment centre of the region. The proportion of the Wellington Region and Horowhenua employed population commuting into Wellington CBD decreased from 40% in 2018 to 32% in 2023. This magnitude of the decrease in commuting to Wellington CBD is similar to the increase in working from home – reflecting that working from home means fewer workers need to commute into Wellington CBD.

Mixed change from Whitby and Waitangirua

The Waitangirua and Whitby link road improved connectivity between these areas and Lower Hutt, but has had a mixed effect on commuting patterns to date. The proportion of employed residents of Whitby commuting to work in Lower Hutt decreased from 7.5% in 2018 to 6.8% in 2023. The proportion of employed residents of Waitangirua commuting to work in Lower Hutt increased from 2.4% to 6.1%.

There are significant differences in industry of employment for Whitby and Waitangirua residents, with Whitby residents more likely to work in professional services and public administration, and Waitangirua residents more likely to work in construction and manufacturing. Different industries are spread differently throughout the region and have differences in the ability to work from home, which will affect how changes in road connectivity affect commuting patterns.

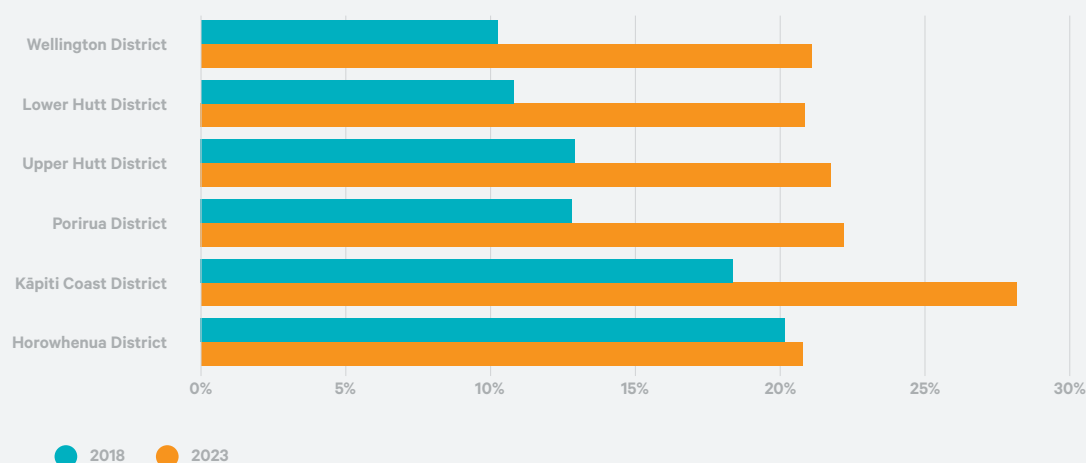
Commuting changes may take time

Existing commuting patterns were heavily disrupted by the shift to working from home between 2018 and 2023. Changes stemming from the new roads may take time to manifest, as they reflect decisions by individuals around where they live and where they work. In addition, the economic downturn and public sector job cuts in 2024 will affect commuting patterns. Most importantly, the new roads broaden the options for where people can commute to work.

Chart 27

Working from home

% of employed persons mostly working from home

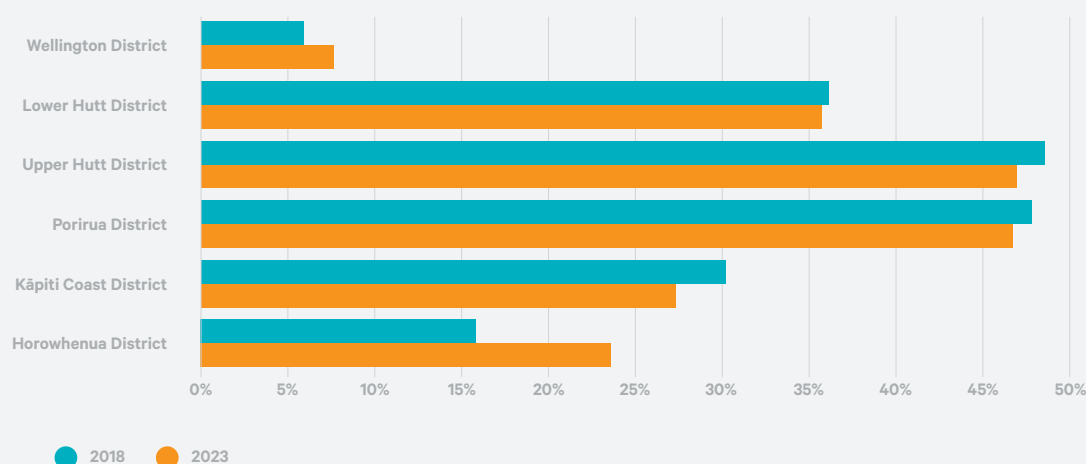


Source: Stats NZ, Infometrics

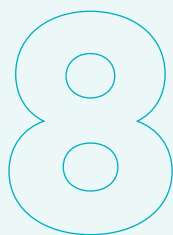
Chart 28

Commuting to a different territorial authority

% of employed persons commuting to work in a different area



Source: Stats NZ, Infometrics



Bypassed Investments

A long gestation

The new roads were proposed and discussed for several decades before their completion, resulting in significant investment in the old routes which were eventually bypassed.

- The Mackays to Peka Peka expressway was proposed in the 1950s, with the Government acquiring land as early as 1958 for what was then described as the Wellington-Foxton Motorway.⁵ The route was formally designated, and further land acquisitions made, during the 1990s.⁶
- The concept of Transmission Gully has been recorded as early as 1919, with more concrete investigations from the 1980s onwards, and land acquisitions being made in the 1990s. As an aside, there is an often-quoted myth that US Marines stationed nearby during World War Two offered to build Transmission Gully, but there is no evidence of this offer being made.⁷
- The Peka Peka to Ōtaki expressway has a shorter history, with options resembling the expressway first considered in 2002,⁸ although it would have been considered in a general sense as part of the Wellington-Foxton Motorway from the 1950s onwards.

Significant investments bypassed

With long-standing uncertainty over if and when the new roads would be built, safety and congestion problems were addressed through significant investment in the old route, which is now State Highway 59 and local roads.

Table 1 outlines seven investments made to improve safety and capacity on the old route during the 2000s and 2010s. The first five of these investments were made at a time when it was unknown whether the new roads would progress, or when they would progress. The latter two investments (in 2012 and 2014) were made as the new routes were being finalised and built. Ultimately, all seven projects may not have been needed, certainly at their full scale, had the new roads been confirmed and constructed earlier.

In total, the seven projects represent \$75m investment (in 2025 dollars) which could have instead been put towards earlier delivery of the new roads.

⁵ Infometrics analysis of LINZ land parcel records

⁶ <https://www.nzta.govt.nz/assets/projects/transmission-gully-application/docs/aee-full-report.pdf>

⁷ Ibid.

⁸ <https://www.Kapiticoast.govt.nz/media/5qkpy55/20091211-workshop-presentation-part-1-of-4-sfs.pdf>

Table 1

State highway investments bypassed by new roads

TG = Transmission Gully, M2PP = to Peka Peka

Project	Year completed	Bypassed by	Cost at completion (\$m)	Cost in 2025 (\$m)
Pukerua Bay to Plimmerton upgrade	2002	TG	\$9.5	\$20.8
Lindale underpass	2004	M2PP	\$3.3	\$7.2
Pukerua Bay to Paekakariki safety upgrade stage 1	2004	TG	\$1.0	\$2.1
Plimmerton to Paremata upgrade	2005	TG	\$4.3	\$9.8
Pukerua Bay to Paekakariki safety upgrade stage 2	2007	TG	\$14.5	\$26.3
Plimmerton to Paremata clearway	2012	TG	\$1.6	\$2.4
Otaihanga roundabout	2014	M2PP	\$4.5	\$6.6
Total				\$75.1



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