Benje Patterson
People & Places

October 2026

Potential use of the Dunedin Tunnels Trail



Report commissioned by the Dunedin Tunnels Trail Trust

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October 2026

Version history:

Report issued 15 October 2026

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2. Executive summary

This report has been commissioned by the Dunedin Tunnels Trail Trust. Its purpose is to give an indicative estimate of how many people could use the Dunedin Tunnels Trail once it is complete from Wingatui to Caversham and connected onward into the city. It also estimates the visitor spending associated with that use, to support the Trust's funding applications and conversations with funders and sponsors.

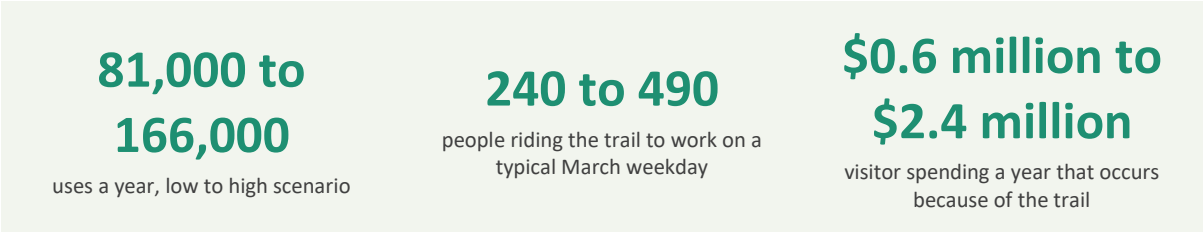
At its heart, this report answers the following questions:

- How many people could use the completed trail each year, and who would they be?
- How does that level of use compare with counted use on other New Zealand trails?
- How much visitor spending could be associated with the trail?
- What could the planned Middlemarch and Waihola connections add?

2.1. Key findings

- It is estimated that the completed trail could attract between 81,000 (low scenario) and 166,000 (high scenario) uses a year once use has settled, where a use is one person on the trail on one day. The low scenario alone would exceed use on 15 of New Zealand's 23 Great Rides, with the trail being an urban and commuter path used mostly by locals, as well as being a destination ride.
- Recreational use by local residents is estimated at 34,000 to 56,000 uses a year, most of it from the roughly 30,600 people who live along the corridor from Mosgiel to Caversham.
- Commuting for work is the largest component at 36,000 to 84,000 uses a year, or about 240 to 490 people riding to work on a typical March weekday. Census 2023 shows 8,964 people commute between the corridor suburbs and workplaces the trail would connect, and only 12 of them cycle today, because the Chain Hills and Caversham hills stand between home and work.
- Education travel adds 3,500 to 9,000 uses a year, led by some of the 280 Taieri College students living in Green Island, Abbotsford and Fairfield, who will be able to ride to school in Mosgiel.
- Visitors to Dunedin who add the trail to their stay contribute 7,000 to 18,000 uses a year, and it is estimated that around $0.6 million to $2.4 million a year of visitor spending could be attached to the trail, about a quarter of it on cycle hire, shuttles and activities and the rest on accommodation, food and drink and retail as they extend their stay to take in the trail. The lower end of this range assumes the trail is an incidental add-on to existing stays, while the upper end of the range assumes the trail drives more of the visitors to come to Dunedin in the first place and also captures more cruise passengers using the trail as an activity.
- Once built, connections to the Middlemarch and Waihola trails could add around 10,000 to 24,000 uses a year to these ranges, if they achieve their own projected usage. These connections would also strengthen the trail's role as a destination driver in attracting visitors to Dunedin.

Figure 1 – Headline estimates of potential trail usage, author estimates



3. The Dunedin Tunnels Trail

3.1. The trail and its stages

The Dunedin Tunnels Trail follows the original railway alignment between Wingatui and Caversham, a 9.5 kilometre corridor of easy rail gradient that passes through the Chain Hills tunnel and the Caversham tunnel. Stage 1, 1.5 kilometres through the Chain Hills tunnel, opened in December 2025. Stages 2 to 5 will carry the trail through Fairfield, Abbotsford, Green Island and Concord to Caversham. Dunedin City Council is planning the onward route from the Caversham end into the city centre and waterfront, and the link between Wingatui and Mosgiel, so that the completed route would run about 15 kilometres from Mosgiel to the central city. The trail is being built as a grade 1 to 2 shared path: mostly off road, partly lit, with an easy gradient and a surface suited to all users.

The Trust's open day on 1 February 2026 gave a first glimpse of demand on the short section already open: 352 walkers, 63 cyclists and 54 dogs passed through the tunnel in eight hours.[1]

3.2. The trail will reduce a hill barrier

The trail does more than move people from the road to a safe path. The suburbs of the Taieri and the south-western corridor are separated from the city by the Chain Hills, the Caversham and Lookout Point hills and the Southern Motorway. These topographical hurdles are a further reason why so few people cycle from these suburbs today (section 4.3). Railway engineers solved these topographical challenges by tunnelling to reduce the gradient, and the trail inherits their easy gradient. New Zealand research consistently identifies hills as one of the main barriers to cycling: in the 2024 NZTA Walking, Cycling and Micromobility Monitor, 26% of people who are able to cycle said that cycling is not enjoyable because of the hills, and the route choice models used in NZTA's demand research show that the steeper a route the less likely it is to be chosen.[2] Removing the gradient, rather than only the traffic, is expected to produce a larger response than a typical new cycleway, and the scenarios in section 4 draw on Dunedin's own flat corridors and on Christchurch for that reason.

At the city end the trail will connect to Dunedin's existing network, including Te Aka Ōtākou along the harbour and the Port to Port ferry between Port Chalmers and Portobello, which carries bikes. Together these make extended scenic journeys possible, for example a ride from Mosgiel through the tunnels to the harbour, around the harbour loop by ferry, and home again. At the Taieri end, the planned Mosgiel to Outram trail, the proposed Waihola to Taieri link and a potential Middlemarch connection through the Taieri Gorge would join the trail to the Clutha Gold Trail and the Otago Central Rail Trail (section 6).

3.3. The catchment

About 30,600 people live in the corridor suburbs within about 1.5 kilometres of the trail (Table 1), 24% of Dunedin City's 128,901 residents at the 2023 Census. Mosgiel and the Taieri account for almost half of the corridor population and are its fastest growing part, having added about 950 residents between the 2018 and 2023 Censuses.[3]

[1] Dunedin Tunnels Trail Trust, project overview and correspondence, September 2026
[2] NZTA, Walking, Cycling and Micromobility Monitor 2024, p.70; NZTA Research Report 676, Latent demand for walking and cycling (2021), pp.18 and 29.
[3] Stats NZ, 2023 Census usually resident population counts by Statistical Area 2.

Table 1 – Population of the corridor suburbs, 2023 Census

Area (Statistical Area 2)	Usually resident population
Mosgiel and the Taieri (Mosgiel Central, Mosgiel East, Bush Road, Seddon Park, East Taieri, Wingatui)	14,589
Saddle Hill-Chain Hills	1,302
Fairfield	2,550
Abbotsford	2,916
Green Island	2,376
Concord	1,488
Kaikorai Valley (Kaikorai-Bradford, Kenmure)	3,120
Caversham	2,292
Corridor suburbs	**30,633**

Source: Stats NZ, 2023 Census population counts by SA2; Dunedin City total 128,901.

4. How many people could use the trail?

4.1. Approach

Potential use has been built using a bottom-up approach. Four types of use are estimated: recreational use by locals, commuting for work, education travel, and visitors to Dunedin. Each use component is estimated under a low and a high scenario, and the results describe the settled level of use, about three years after completion, rather than the opening year, which on other new trails has run 20 to 30% above the settled level.

A use is one person using the trail on one day, whether an out-and-back walk or a commute there and back. The assumptions behind each component are set out in the sections that follow.

In total across these four user groups, trail usage could range from approximately 81,000 uses a year through to 166,000.

4.2. Recreational use by locals

It is estimated that local recreational use would be 34,000 (low) to 56,000 (high) uses a year. This usage would range from about 40 to 60 recreational uses on a winter weekday, through to about 300 to 450 recreational uses each summer weekend day.

Recreational use has been estimated by applying a rate of use per resident to the population of the corridor suburbs and, at a much lower rate, to the rest of Dunedin City. The rates are benchmarked against counted use on other trails. The Lake Dunstan Trail, for example, counted 71,614 uses in the June 2025 year, of which about 17% were by local residents, which across the Cromwell, Alexandra and Clyde catchment of roughly 14,000 people is about 0.85 uses per resident a year for a trail that is a short drive

from most homes.[4] The low scenario applies 0.8 uses per corridor resident and the high scenario 1.5, reflecting a trail that runs through the middle of the suburbs it serves; the high rate is equivalent to about 5% of residents being regular users, given that local residents of the Great Rides average 30.8 use occasions a year. The rest of Dunedin is assumed to contribute about 0.1 uses per resident.

4.3. Commuting for work

Commuting has been estimated from Census 2023 residence-to-workplace flows.[5] There are 8,964 people who live in the corridor suburbs and work in the central city, the campus precinct, the harbourside or South Dunedin, or in another corridor suburb, or who make the reverse journey from the city to the corridor (Table 2). Of these people, just 12 cycle at present, a bicycle share of 0.15%, compared with a bike-to-work share of 5.8% for Dunedin's flat southern suburbs, 7.7% for North East Valley and Opoho and 5.9% for the harbour suburbs served by Te Aka Ōtākou (Table 3).

The scenarios assume that once the trail is open the corridor behaves at a rate approaching Dunedin's flat corridors in the low scenario and just below Christchurch's best-served suburbs (10%) in the high scenario, with the share falling with distance. Table 2 highlights an assumption that 4% to 8% of commuters on pairs up to five kilometres apart would bike, down to 1% to 2% on the 15 to 20 kilometre journey between Mosgiel and the central city, where an e-bike makes a 40 to 50 minute ride.[6]

> Over 230 working days, and allowing for winter, wet days and hybrid working, it is estimated that commuting would generate 36,000 to 84,000 uses a year. That gives 240 (low) to 490 (high) people riding the trail to work on a typical March weekday, or an average of 2.7% to 5.4% across the corridor commuter pool.

Table 2 – Commuters the trail would connect, by distance between home and work, 2023 Census, and the share assumed to ride the trail

Distance by the trail	Commuters (2023)	Share riding, low	Share riding, high	Riders a day, low	Riders a day, high
2 to 5 km	2,700	4.0%	8.0%	108	216
5 to 10 km	3,051	3.0%	6.0%	92	183
10 to 15 km	1,533	1.5%	3.5%	23	54
15 to 20 km	1,680	1.0%	2.0%	17	34
All pairs	**8,964**	**2.7%**	**5.4%**	**239**	**486**

Source: Stats NZ 2023 Census commuter flows; author assumptions. Riders a day are for a typical March weekday, before the seasonal adjustment (it is assumed average annual daily use in the low scenario is 65% of its March peak and 75% of its March peak in the high scenario).

[4] 2025 Evaluation of Ngā Haerenga Great Rides of New Zealand (NZCT, November 2025); local share from the Trailforks origin analysis in Economic impacts of a Taieri Gorge extension to the Otago Central Rail Trail (Benje Patterson, October 2023).

[5] Stats NZ, 2023 Census main means of travel to work by Statistical Area 2. Pairs less than two kilometres apart along the corridor and people who work at home are excluded; counts under six are suppressed by Stats NZ and treated as zero, which makes the figures slightly conservative.

[6] Christchurch, a flat city with a connected and largely separated network, reached 6.9% of work commuters by bicycle at the 2023 Census, up from 6.2% in 2018, with nine suburbs above 10%; Nelson 9.5%, Wellington 5.0%, New Zealand 2.3% (Cycling in Christchurch analysis of Census 2023; EHINZ, https://cyclingchristchurch.co.nz/2024/10/13/2023-census-stats-show-cycling-growth-in-christchurch/).

Table 3 – Bicycle share of commuting today: the corridor compared with other Dunedin corridors and other cities, 2023 Census

Corridor	Commuters	By bicycle	Description
Corridor suburbs to the city and along the corridor (this pool)	8,964	0.15%	Chain Hills, Caversham hill and the motorway between home and work
Flat southern suburbs to the central city and campus	3,912	5.8%	2 to 5 km, flat, on-road cycle lanes
North East Valley and Opoho to the central city	1,803	7.7%	3 to 4 km, gentle valley gradient
Harbour suburbs to the central city	1,791	5.9%	5 to 12 km on the Te Aka Ōtākou shared path
Hill suburbs to the central city	4,851	3.4%	Mornington, Roslyn, Maori Hill, Wakari: steep
Dunedin City, all commuters	44,169	2.0%	Excluding people who work at home
Christchurch City, all commuters		6.9%	Flat, connected separated network; nine suburbs above 10%
Nelson City, all commuters		9.5%	Highest in New Zealand
New Zealand, all commuters		2.3%	

Source: Stats NZ 2023 Census commuter flows (author calculations).

4.4. Education travel

The Trust has identified 280 Taieri College students who live in Green Island, Abbotsford and Fairfield and currently travel over the Chain Hills to Mosgiel. If 10% to 20% of them used the trail on a typical school day, over 190 school days and allowing for weather and sport[7], education travel would add 3,500 to 9,000 uses a year.

Other students travelling along the corridor to the city's schools and tertiary institutions have not been counted and are an upside.

4.5. Visitors to Dunedin using the trail

It is estimated that visitors would contribute 7,000 to 18,000 uses a year, about 10% of total use of the Tunnels Trail.

This estimate draws on the International Visitor Survey, which shows that 9.2% of the roughly 206,000 international visitors who stayed in Dunedin City in the year to March 2026 cycled at some point during their New Zealand trip, while commercial accommodation in Dunedin recorded 314,000 domestic visitor arrivals in the June 2026 year. These baselines were then combined with the assumption that domestic visitors are as likely to cycle as international ones, and that 10% to 25% of visiting cyclists would ride the trail while in Dunedin, and that 0.5% to 1% of all visitors would walk through the tunnels as an outing. The high scenario also makes a larger provision for users of other trails (for example Otago Central Rail Trail riders) continuing onto the trail, and for cruise passengers riding the trail as an activity while in port.

[7] In the low scenario, the students who ride are assumed to ride on 70% of school days, while in the high scenario that share rises to 80%.

4.6. Bringing it together

Taken together, the four components give 81,000 uses a year in the low scenario and 166,000 in the high scenario (Table 4 and Figure 2), equivalent to an average of about 220 to 450 people a day across the year.

Commuting is the largest component in both scenarios and the main source of the difference between them: the high scenario requires the corridor to approach the cycling shares that Christchurch's best-served suburbs have already reached, which in turn depends on a surface, lighting and convenient city-end connections.

Table 4 – Potential annual use of the completed trail, uses a year, author estimates

Component	Low scenario	High scenario
Recreational use by locals	34,000	56,000
Commuting for work	36,000	84,000
Education travel	3,500	9,000
Visitors to Dunedin	7,000	18,000
Total	**81,000**	**166,000**
Average people a day across the year	220	450

Components are rounded to the nearest 1,000 (nearest 500 below 5,000), so they may not add exactly to the totals.

Figure 2 – Potential annual use by component, low and high scenarios, author estimates

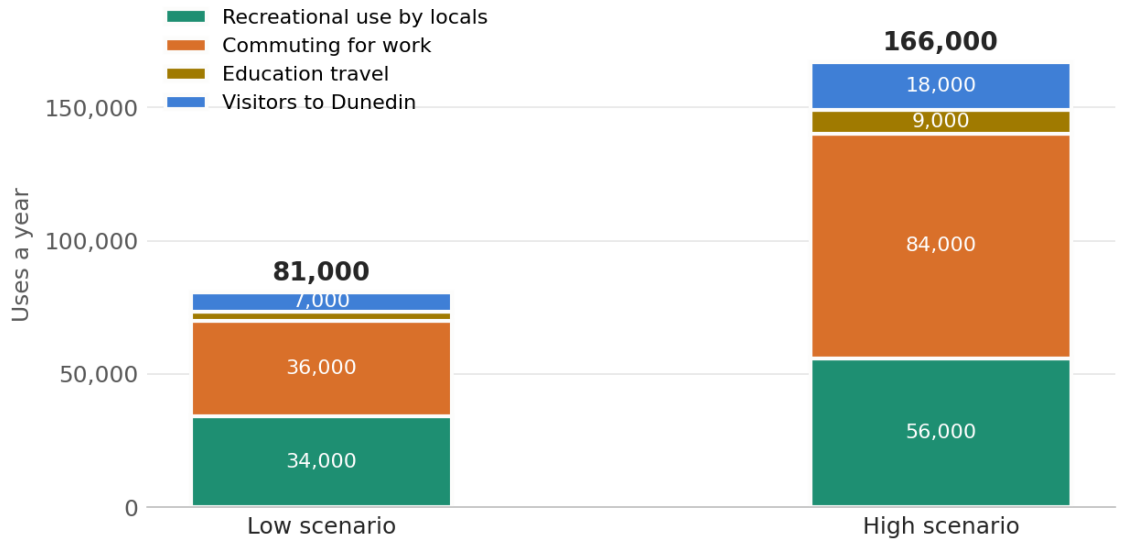
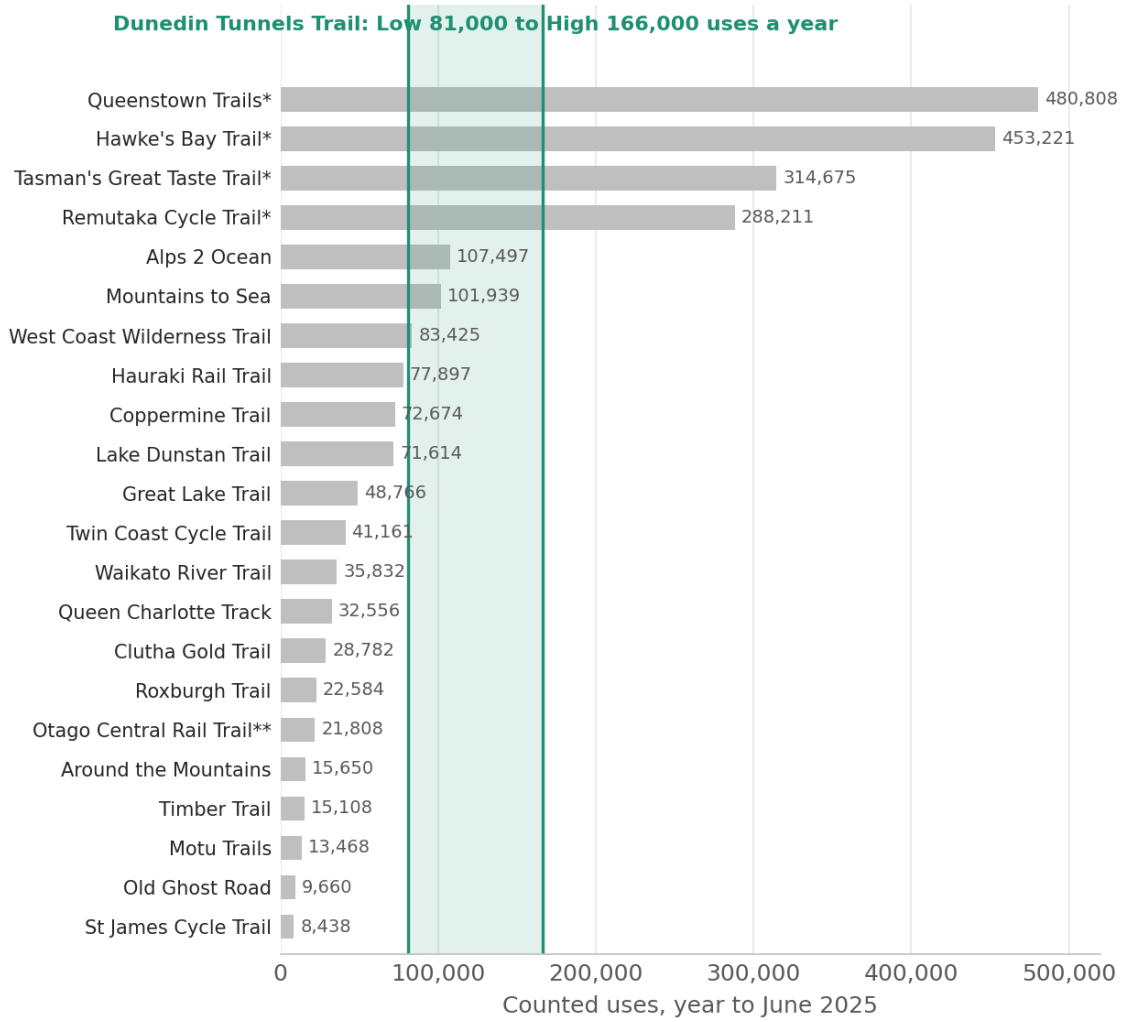


Figure 3 places the range against counted use on New Zealand's Great Rides. The low scenario alone would exceed 15 of the 23 Great Rides and the high scenario 18 of them, including the Lake Dunstan Trail. The comparison should be read with care: the Great Rides are destination trails whose use is mostly by visitors, whereas most use of the Tunnels Trail would be by locals, as is the case for the urban Hawke's Bay Trail and Remutaka Cycle Trail networks at the top of the chart.

Figure 3 – Counted use on the Great Rides, year to June 2025, compared with the estimated range for the Dunedin Tunnels Trail



*Source: 2025 Evaluation of Ngā Haerenga Great Rides of New Zealand, Appendix C. * Trail networks. ** NZCT estimate only; the 2023 Taieri Gorge report counted 12,756 core Rail Trail users.*

5. Visitor spending associated with the trail

An order of magnitude estimate of potential visitor spending associated with visiting trail users has been given to demonstrate spending that could be attracted because of the trail. For visitors to Dunedin who choose to use the Tunnels Trail during their stay, it is assumed that a quarter extend their stay in Dunedin by a day and spend $284 a day.[8] This daily spend assumption is also used for trail users who connect onwards from other trails.

In the high scenario, it is further assumed that a small share of visitor uses (5%) are additional visitors who come to Dunedin because of the trail and spend $964 over their trip.[9] For cruise passengers who use the trail, additional spend of $150 per passenger on the activity is assumed.

[8] This is the average daily spend by cycle travellers in the NZCT 2025 evaluation.
[9] This is the average total trip spend by cycle travellers in the NZCT 2025 evaluation.

It is estimated that around $0.6 million (low) to $2.4 million (high) a year of visitor spending could be attached to the trail. Following the pattern across the Great Rides, about a quarter of that spending would be cycle-trail specific, on bike hire, shuttles and activities, and about three quarters would flow to accommodation, cafes and restaurants, groceries, fuel and retail.[10]

Spending by local residents is not counted because it would largely occur in Dunedin in any case, and the figures do not include the wider health, transport and community benefits of the trail, which are outside the scope of this report.

6. What onward connections to other trails could add

The core analysis in this report has considered potential usage of the Tunnels Trail in isolation from other trail developments that are being progressed. However, the potential for additional connections between the Tunnels Trail and other trail developments has also been considered. These effects are separate from the Tunnels Trail usage estimates modelled in this report and would be additional.

Two connections are in prospect. A Middlemarch connection through the Taieri Gorge would join the Tunnels Trail to the Otago Central Rail Trail; Benje Patterson's 2023 feasibility work for the Otago Central Rail Trail Trust estimated 23,000 to 39,000 uses a year for that extension, made up of about 9,000 to 11,000 through riders and 14,000 to 28,000 day riders.[11] A Waihola link would join the Tunnels Trail to the Clutha Gold Trail, which counted 28,782 uses in the June 2025 year after its extension from Lawrence to Waihola opened in 2023.

If half to three quarters (50% to 75%) of Rail Trail through riders, a tenth to a quarter (10% to 25%) of Taieri Gorge day riders and 15% to 30% of Clutha Gold Trail users continued along the Tunnels Trail, the connections could add in the order of 10,000 to 24,000 uses a year on top of the ranges in this report. These figures are indicative and conditional: the connections must be built, and their own projected usage realised. The scale of the visitor opportunity is nonetheless clear: a continuous easy-grade route from Central Otago into the middle of Dunedin, finishing on the harbour with the peninsula and the Port to Port ferry within reach, would make the trail part of a destination journey. The potential economic benefits of such a destination journey could be large, with the 2023 work estimating $6.9 million to $11.4 million a year of visitor spending could be associated with the Taieri Gorge extension.

[10] NZCT 2025 evaluation: Cycle-trail specific transport (7%) and activities and fees (18%) account for a quarter of that spending, with accommodation (33%), food and drink (27%), fuel, other transport, other activities and retail making up the rest.

[11] Economic impacts of a Taieri Gorge extension to the Otago Central Rail Trail (Benje Patterson, October 2023), Clutha Gold Trail count from the NZCT 2025 evaluation.

7. Concluding remarks

The analysis in this report suggests that the completed Dunedin Tunnels Trail could attract in the order of 81,000 to 166,000 uses a year once use has settled: 34,000 to 56,000 recreational uses by locals, 36,000 to 84,000 commutes to work, 3,500 to 9,000 education trips and 7,000 to 18,000 uses by visitors to Dunedin. Even conservative assumptions related to additional visitor spending that occurs because of changes to visitor behaviour as a result of the trail could add $0.6 million to $2.4 million a year.

Those figures would place the trail among the busier trails in New Zealand. A key catalyst of the usage would be the fact that the trail removes a hill barrier between about 30,600 residents and the city they work, study and shop in, on a corridor where almost nobody cycles today. The low scenario assumes the corridor achieves no more than Dunedin's flat suburbs already do in terms of cycling by commuters, while the high scenario asks it to approach the cycle usage already seen in Christchurch's best-served suburbs.

This report is a high level, order of magnitude assessment rather than a complete economic impact assessment. Its estimates are built from published data and stated assumptions that can be updated as stages open, counters are installed and design decisions are made.

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