

September
2021

Dunedin Railways – the economic impacts of future options



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September 2021

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Executive Summary

This report assesses the economic impacts of Dunedin Railways on Dunedin. The analysis covers a pre-Covid baseline, current activity, and future options short-listed by Dunedin City Holdings Limited (DCHL)¹. The focus of this report is on the additional economic benefits to the city from attracting spending – the report is not a financial assessment of the accounting viability of Dunedin Railways as an entity.

Economic impacts stem from the spending of out-of-town rail passengers on Dunedin Railways' services, as well as these visitors' spending on other goods and services throughout the rest of their stay in Dunedin. The analysis assumes that the railway is a key reason for these visitors to have come to Dunedin. Spending associated with local passengers is not included as it is likely that Dunedin residents would have spent a similar amount on other activities in Dunedin had they not taken a rail excursion.

Key questions addressed

At its heart the report considered the following questions:

1. What were the direct economic impacts of Dunedin Railways during a pre-Covid baseline?
2. What were the direct economic impacts of the 'Trains not Planes' summer season (20 December 2020 to 28 March 2021)?
3. What are the potential direct economic impacts of DCHL's short-listed options for continued operations and what other considerations are relevant to deciding between these options?

Results

Direct economic effects of a pre-Covid baseline

The economic effects of spending by out-of-town rail passengers before Covid-19 were assessed in a March 2020 report by Benje Patterson (Dunedin Railways - economic impacts on Dunedin's economy). This baseline scenario shows how much annual economic activity would be generated if out-of-town visitors to Dunedin Railways eventually recover to their pre-pandemic baseline.

In terms of total spend², it was estimated during the 2019 financial year that:

- There were 79,100 tickets sold by Dunedin Railways, of which 76,120 were to visitors.
- Visitors, who rode on Dunedin Railways, spent a total of \$24 million in Dunedin during their visit.
- Of this total, \$6.7 million was spent directly on rail tickets, while \$17.2 million was spent on other attractions, local commissions, hospitality and retail during their visit to Dunedin.
- The total spent by rail excursion passengers during their time in Dunedin equated to 3.1% of total visitor spending in Dunedin.

Translating these spending estimates into direct economic value added (GDP) shows that during 2019:

- Direct economic value added to Dunedin's economy associated with Dunedin Railways' passengers was \$10.0 million in the 2019 financial year.
- Dunedin's total tourism GDP is estimated by Infometrics to have been \$417.2 million in 2019.
- In proportional terms, economic value added by Dunedin Railways' visitors' spending represented approximately 2.4% of Dunedin's total tourism GDP.

¹ From DCHL's April 2021 report to Dunedin City Council (Future options for Dunedin Railways Ltd).

² Total spend by rail visitors shouldn't be confused with GDP from rail visitors. Total spending is the economics equivalent of revenue, while GDP measures value added and is the economics equivalent of accounting profit.

Direct economic effects of 'Trains not Planes'

After having been originally placed in hibernation on 1 July 2020 with a budget of \$1.05 million, an opportunity for Dunedin Railways was identified to operate tourist train services from 20 December 2020 to 28 March 2021. The promotion was entitled 'Trains not Planes', during which 5,831 tickets were sold, of which one third (1,944) were sold to visitors from outside of Dunedin.

In terms of total spend by visitors to Dunedin for 'Trains not Planes', it was estimated that:

- Visitors to Dunedin for 'Trains not Planes' spent a total of \$553,555 during their visit.
- Of this total, \$63,066 was spent directly on rail tickets, while \$490,489 across other goods and services during their Dunedin visit.
- The total spent by rail excursion passengers during their time in Dunedin equated to less than 0.6% of total visitor spending in Dunedin across the summer months.

Translating these spending estimates into direct economic add (GDP) shows that:

- Direct economic value added to Dunedin's economy associated with Dunedin Railways' passengers was \$200,020 across the 'Trains not Planes' promotion.
- These calculations of the economic value added from the 'Trains not Planes' promotion factor in additional costs from the promotion but ignore costs that had already been sunk by the original decision to hibernate Dunedin Railways.
- Future 'Trains not Planes' promotions would have a reduced economic impact, because they would require a fresh decision to continue hibernating assets. Renewed hibernation costs could push direct economic returns from another 'Trains not Planes' promotion into negative territory.

Direct economic effects of future options short-listed by DCHL

This report analysed two scenarios presented by DCHL for continued operations of Dunedin Railways under city ownership once the borders reopen. The first of these scenarios, with minimal international visitors, would necessitate an annual budget of \$1.579 million, while the second scenario, with a strong tourist market, would necessitate a budget of \$2.318 million. Both these scenarios were contained within short-listed option 3 (operating along the national rail network only) and option 4 (operating along both the national rail network and Taieri Gorge).

For the scenario with minimal international visitors, it was estimated that:

- At pre-Covid ticket prices (\$69.85) there would be 22,606 tickets sold each year to breakeven, with 16,775 being visitors (13,638 domestic and 3,137 international).
- The total spend by out-of-town rail passengers during their time in Dunedin would be \$5.4 million compared to a pre-Covid estimate of spending by rail visitors of \$24 million.
- The direct economic value added (GDP) from out-of-town rail passengers under this scenario would be \$2.0 million, compared to a pre-Covid estimate of GDP from rail visitors of \$10 million.

For the scenario with a strong tourist market, it was estimated that:

- At pre-Covid ticket prices (\$69.85) there would be 33,191 tickets sold each year to breakeven, with 27,360 being visitors (17,128 domestic and 10,233 international).
- The total spend by out-of-town rail passengers during their time in Dunedin would be \$8.8 million compared to a pre-Covid estimate of spending by rail visitors of \$24 million.
- The direct economic value added (GDP) from out-of-town rail passengers under this scenario would be \$3.6 million, compared to a pre-Covid estimate of GDP from rail visitors of \$10 million.

Economic value added each year from each border scenario must also be compared against the capital expenditure needed for Dunedin Railways under its short-listed options for continued operations:

- Under option 3 (operating along the national rail network only), capital investment in rolling stock could total up to \$2.4 million over 10 years (which averages \$240,000 per annum).
- Under option 4 (operating along both the national rail network and Taieri Gorge), capital investment in the Taieri Gorge line could range from \$6.5 million to \$14.8 million over 10 years depending on how much of the line is preserved, with as much as a further \$2.8 million needed for rolling stock. This total cost ranges on average from \$930,000 to \$1.76 million per annum.
- The direct economic value added to Dunedin under the Dunedin Railways' two border scenarios was estimated on the previous page to range from \$2.0 million to \$3.6 million each year.
- These levels of economic value added at face value appear to leave a relatively comfortable buffer against the capital investment requirements of option 3, but offer a wafer thin margin against the level of capital investment needed to maintain services along the whole of the Taieri Gorge (option 4).

Other considerations relevant to deciding between short-listed options

There are also other factors that will influence decisions between short-listed options. These include:

- Border reopening is unlikely to occur by this summer as DCHL anticipated in April. This situation creates more risk to short-term expectations of economic value added from rail visitors and pushes out timelines for when tourism could approach anything resembling pre-Covid activity.
- DCHL's option to use the national rail network only is inconsistent with historical visitor demand, which favoured the Taieri Gorge. The option to operate on the national rail network only (option 3) would require selling more tickets on such services than was occurring pre-Covid.
- DCHL identifies several options for reducing capital investment on the Taieri Gorge line, while preserving parts of the line. These options included: cycle trails, rail carts, and community rail. But these options must be more thoroughly scoped out before informed analysis can be made.
- Dunedin Railways' position as a heritage product is consistent with Dunedin's brand and identity. Research by Angus and Associates shows that history and heritage are themes which domestic visitors, Australian visitors, and Dunedin residents associate most commonly with Dunedin.
- Despite its hibernation, Dunedin Railways is continuing to drive online traffic to Dunedin over the past year. Analysis of data from the Tourism New Zealand and the DunedinNZ.com websites shows that Dunedin Railways was the number one referral destination from both sites.

Summary remarks

When looking at the future short-listed operating options presented by DCHL, the key challenge is that although stopping services on the Taieri Gorge line would dramatically reduce capital investment, this option would leave Dunedin Railways operating in a manner that was inconsistent with historical visitor demand patterns. The reality is that most passengers in a pre-Covid world rode along the Taieri Gorge. It would be brave to expect Dunedin Railways to return to anything approaching its pre-Covid levels of visitor attraction if it were to only operate in future along the national rail network.

Before making any long-term decisions regarding operations, and in particular the future of the Taieri Gorge line, it would be prudent to perform a more detailed investigation of the viability of other options that were identified for alternate uses of the line. After all, once the tracks are ripped up, you can't go back.

Economic effects of a pre-Covid baseline

This section outlines the direct economic effects of spending by out-of-town rail passengers across the June 2019 year before Covid-19. The findings are drawn from a March 2020 report by Benje Patterson (Dunedin Railways – economic impacts on Dunedin’s economy).

Base inputs and assumptions

To calculate the economic impacts in Benje Patterson’s March 2020 report, some base inputs were needed regarding rail passenger numbers and their associated spending patterns.

Dunedin Railways figures

Rail passenger numbers in the report were provided directly from Dunedin Railways. The following table gives out-of-town passenger numbers and average ticket prices received by Dunedin Railways during the 2019 financial year (after factoring in commissions paid to ticket agents). Rail touring and charter services have not been included.

Table 1 – Dunedin Railways passenger numbers and average ticket price, 2019 financial year (table taken from: Benje Patterson – March 2020 report)

	Non-cruise	Cruise
Out-of-town passenger estimate	56,617	19,503
Average received ticket price	\$69.85	\$143.01

Out-of-town passenger estimates for non-cruise rail customers were then split into an estimate of international and domestic visitors to Dunedin. This split was necessary to refine spending estimates on non-rail activities when people are in Dunedin. No such distinction has been made for cruise passengers as cruise spending statistics are only available for the average passenger regardless of origin.

Table 2 – 2019 passenger numbers by visitor origin (table taken from: Benje Patterson – March 2020 report)

	Non-cruise		Cruise
	Domestic	International	
Passenger numbers	35,450	21,167	19,503

Visitor spending assumptions

Spending on rail tickets can be set against the rest of each passenger’s budget when they are in Dunedin, in order to see what they spend on other things during their Dunedin visit. The following table gives the estimated total level and pattern of spending for each non-cruise international and domestic visitor while they are in Dunedin.

Table 3 – Estimated average spend by non-cruise international and domestic visitors during their stay in Dunedin (table taken from: Benje Patterson – March 2020 report)

	International visitors	Domestic visitors
Average spend per visitor across Dunedin visit	\$446.66	\$284.80
Spending split		
Accommodation, restaurants and bars	\$155.51	\$55.99
Retail	\$132.20	\$147.25
Activities and transportation (Ticket price received by Dunedin Railways)	\$69.85	\$69.85
Activities and transportation (Other)	\$89.10	\$11.71

All spending figures exclude GST because GST revenue accrues directly to central government, with the level of government spending within Dunedin not tied in any way to its GST revenue share. Commissions paid to domestic agents are captured within 'activities and transportation (other)'.

The average spend by a cruise passenger to Dunedin is given in the following table.

Table 4 – Estimated average spend per cruise passenger to Dunedin (table taken from: Benje Patterson – March 2020 report)

Average spend per cruise passenger	\$253.39
Spending proportions	
Onshore activity, retail and hospitality spend	\$164.67
Vessel spend per passenger	\$88.72

Results from pre-Covid baseline analysis

The assumptions above were used to calculate the following estimates of total spend by rail passengers within Dunedin. The estimates factor in the revenue that accrued to Dunedin Railways, money that went to Dunedin based sales agents, and the residual amount that was spent by visitors outside of their rail excursions. Revenue that accrued to non-Dunedin sales agents and mark-ups on cruise ships is excluded from these estimates as it leaks from Dunedin.

Table 5 – Total spending by Dunedin Railways visitors on rail product and other aspects of Dunedin visit during 2019 financial year (table taken from: Benje Patterson – March 2020 report)

	Non-Cruise	Cruise	Total
Rail ticket sales to Dunedin Railways	\$3,954,603	\$2,789,108	\$6,743,711
Dunedin based agent commissions	\$88,365		\$88,365
Residual spent on other things during Dunedin visit	\$15,398,372	\$1,730,307	\$17,128,679
Total visitor spend within Dunedin by rail passengers	\$19,441,340	\$4,519,415	\$23,960,755

The data shows that there was a total of \$24 million spent by Dunedin Railways passengers on rail excursions and on other things during their stay in Dunedin during the 2019 financial year. Of this total, \$19.4 million was by non-cruise visitors, while \$4.5 million was cruise passengers.

As a point of comparison, this total spend by rail passengers during their visit compares to the total visitor spend in Dunedin by all visitors to the city in the March 2019 year of \$773 million, of which approximately \$60 million was spent by cruise ships. In proportional terms, total spending associated with rail

passengers was equal to about 3.1% of all spending by visitors to Dunedin. Splitting further into the non-cruise and cruise market shares tells a slightly different story, with non-cruise passengers' share of total non-cruise spending sitting at 2.7%, while cruise passengers' share of total cruise spending is 7.5%.

These spending statistics were then translated into GDP to get an estimate of economic value added³. There were two methods employed to do this. Direct spending on Dunedin railways product was converted to economic value added based on the ratio of EBITDA (earnings before interest, taxation, depreciation and amortisation) plus wages (and directors' fees) to revenue. Such a calculation is usual practice for converting accounting concepts into direct economic value added. Local agents' commissions and residual spending by visitors on the rest of their stay in Dunedin was run through Infometrics' events impact tool to estimate the direct contribution to Dunedin's GDP.

This methodology resulted in the following estimates of GDP.

Table 6 – Direct economic value added (GDP) from Dunedin Railways passenger spending on rail and other aspects of their Dunedin visit during 2019 (table taken from: Benje Patterson – March 2020 report)

	Non-Cruise	Cruise	Total
Economic value add from ticket sales	\$2,001,331	\$1,411,502	\$3,412,833
Value add: commission and other spending by visitor:	\$5,878,788	\$677,239	\$6,556,027
Total direct economic value add associated with rail	\$7,880,119	\$2,088,741	\$9,968,860

The data shows that the direct economic value added associated with Dunedin Railways passengers' visits to Dunedin was \$10.0 million in the 2019 financial year. As a point of comparison, Dunedin's total tourism sector GDP was estimated by Infometrics to be \$417.2 million⁴ during 2019. In proportional terms, economic value added by Dunedin Railways visitors represents approximately 2.4% of Dunedin's total tourism GDP.

³ GDP shouldn't be confused with total spend by rail visitors. Total spending is the economics equivalent of revenue, while GDP is a measure of value added and is the economics equivalent of an accounting profit. The key difference between an economic and accounting profit is that an economic profit considers the value added for both capital owners and labour resources (workers) across the economy, while an accounting profit is only focussed on the returns to the capital owner of the business in question.

⁴ Note: this estimate was sourced from Infometrics on 14 September 2021 and has been revised down from an earlier \$454 million estimate made by Infometrics that was quoted in Benje Patterson's March 2020 report.

Economic effects of ‘Trains not Planes’

After having been originally placed in hibernation on 1 July 2020, an opportunity for Dunedin Railways was identified to operate tourist train services from 20 December 2020 to 28 March 2021. The promotion was entitled ‘Trains not Planes’. This section considers the direct economic impacts from spending by out-of-town rail passengers across the promotion.

Base inputs and assumptions of ‘Trains not Planes’

Some base inputs and assumptions were needed to estimate the economic impacts of ‘Trains not Planes’.

Dunedin Railways figures

Figures taken from DCHL’s April 2021 report to Dunedin City Council (Future options for Dunedin Railways Ltd) show that there were 5,831 tickets sold on ‘Trains not Planes’ services, with approximately one third (1,944) of tickets being sold to visitors from outside of Dunedin.

Dunedin Railway’s sales revenue from 20 December 2020 to 28 March 2021 amounted to \$189,197 – which suggests approximately \$63,066 was earned from sales to visitors to Dunedin. On a per passenger basis, this equates to approximately \$32.45 of revenue to Dunedin Railways from each visitor.

Visitor spending assumptions

In lieu of more recent estimates of domestic spending, it was assumed that domestic visitors during the most recent summer spent similar amounts across their visit to those estimated in Benje Patterson’s March 2020 report (\$284.80). Factoring in a \$32.45 spend with Dunedin Railways, this suggests that \$252.35 was spent on other goods and services throughout the rest of the visitors’ time in Dunedin.

Sunk costs

The draft cost attributable to the ‘Trains not Planes’ promotion was \$196,586 (provided in DCHL’s report). It is important to note that these were additional costs of the promotion above and beyond the existing costs of hibernating operations that had already been sunk because of earlier decisions. The sunk hibernation costs originally approved by Dunedin City Council were \$1.05 million over the 18 Months to 31 December 2021.

Results from analysis of ‘Trains not Planes’

The assumptions above were used to calculate total spend in Dunedin by out-of-town rail passengers during the ‘Trains not Planes’ promotion from 20 December 2020 to 28 March 2021.

Table 7 – Total spending by Dunedin Railways visitors on rail product and other aspects of Dunedin visit during the ‘Trains not Planes’ promotion

	Spending
Sales revenue to Dunedin Railways	\$63,066
Residual spent on other things during Dunedin visit	\$490,489
Total visitor spend within Dunedin by rail passengers	\$553,555

As a point of comparison, this \$553,555 of total spend by out-of-town rail passengers during the past summer period compares to MBIE’s estimate of \$97 million of card spending by visitors to Dunedin across the three months to March 2021. In percentage terms, this suggests that less than 0.6% of visitor spending in Dunedin over the summer months was associated with visitors for ‘Trains not Planes’.

Spending statistics were then translated into GDP to get an estimate of economic value added. There were two methods employed to do this. Direct spending on Dunedin railways product was converted to economic value added based on the ratio of net cash flows (plus staff costs)⁵ to revenue from the 'Trains not Planes' promotion. Residual spending by visitors on the rest of their stay in Dunedin was run through Infometrics' events impact tool to estimate the direct contribution to Dunedin's GDP.

This methodology resulted in the following estimates of GDP in the table below.

Table 8 – Direct economic value added (GDP) from Dunedin Railways passenger spending on rail and other aspects of their Dunedin visit during the 'Trains not Planes' promotion

	Value add
Economic value add from Dunedin Railways sales revenue	\$24,385
Value add: other spending by visitors	\$175,635
Total economic value add associated with 'Trains not Planes'	\$200,020

The data shows that the additional direct economic value added (GDP) associated with Dunedin Railways passengers' visits to Dunedin during the 'Trains not Planes' promotion was \$200,020. As a point of comparison, the direct economic value added associated with Dunedin Railways passengers' visits to Dunedin was \$10.0 million across the 2019 financial year before Covid-19.

It is important to note that these calculations of the economic value added from the 'Trains not Planes' promotion ignore costs that had already been sunk by the original decision to hibernate Dunedin Railways. This approach is consistent with standard economic theory, which suggests that you should ignore costs that have already been incurred (sunk costs) and only focus analysis on what is changed by a decision.

Any future 'Trains not Planes' promotions would have a much smaller economic impact, because they would involve making a fresh decision to continue hibernating assets. In short, future hibernation costs could no longer be ignored as sunk and would need to be netted off the returns from the 'Trains not Planes' promotion. Given that 'Trains not Planes' only generated economic value added of \$200,020, further hibernation costs would quickly push the direct economic returns from another 'Trains not Planes' promotion into negative territory. In simple terms, if an additional \$1.05 million of hibernation costs were incurred for the sole purpose of a second 'Trains not Planes' promotion of a similar scale, with no further benefits supported by the incursion of these costs, then there would be a negative direct value add effect of -\$850,000.

Given this situation it would only make sense to consider another season of 'Trains not Planes' if there was a reasonable expectation by Dunedin Railways that it could:

- generate offsetting positive direct economic returns in the future, or if
- there were other considerations (including non-economic) that offer value to the city.

The next sections address these two factors.

⁵ Using a ratio of net cash flow (or in some cases EBITDA) plus staff costs to revenue is usual practice for converting accounting concepts into direct economic value added. The reason for adding staff costs back in before calculating the ratio is so that the returns that accrue to labour are factored in – returns to labour inputs are an important component of economic value added, with the other component being returns accruing to capital owners (which net cashflows approximate).

Economic effects of DCHL's short-listed future options

DCHL's report to Council in April 2021 outlined the financial case for four potential short-listed options for Dunedin Railways going forward.

These options were:

1. Base Case: Close Dunedin Railways Ltd and sell assets
2. Sale or lease transaction with an external party to operate a train service
3. Retain a train operation in city ownership, using KiwiRail's national rail network only
4. Retain a train operation in city ownership, using both the national rail network and Taieri Gorge

This report has focussed on assessing the future economic effects of rail visitor spending associated with options 3 and 4 only. Option 1 would remove any future rail visitation and so has a long-term economic impact from visitor attraction of zero. Option 2 is merely running trains under a different ownership model – so at face value option 2 is largely a financial rather than a distinguishing economic consideration (assuming visitors have no strong preferences over who operates the train they jump on).

Base inputs and assumptions of future operations

DCHL focussed its analysis of options 3 and 4 around two scenarios for its operations once international borders reopen. These two scenarios were based on the premise of breaking even from a financial perspective. The first of these scenarios, with minimal international visitors, would necessitate an annual budget of \$1.579 million, while the second scenario, with a strong tourist market, would necessitate a budget of \$2.318 million. Neither scenario made any allowance for a specific cruise market.

To calculate the economic impacts of these two scenarios, the following assumptions were used.

Base inputs and assumptions of operations with minimal international visitors

Under the minimal international visitor scenario, average ticket prices in future were assumed to settle back at their pre-Covid level (\$69.85).

Utilising this ticket price, in conjunction with the DCHL's assumption that revenue would be \$1.579 million under this scenario suggests there would be approximately 22,606 tickets sold in total. If the ratio of visitors to Dunedin residents within this sales total is in line with 'Trains not Planes' (1 to 3) then this would translate into 16,775 out-of-town visitors. Indicatively, 13,638 of these visitors would be domestic visitors and 3,137 would be international visitors if the share of international visitors settles back to half its level seen in pre-Covid commercial accommodation data. For this analysis, it is further assumed that spending patterns of these visitors remain the same as in Benje Patterson's March 2020 report.

Base inputs and assumptions of operations with a strong tourist market

Under the strong tourism market scenario, average ticket prices were also assumed to be \$69.85.

Utilising this ticket price, in conjunction with the DCHL's assumption that revenue would be \$2.318 million under this scenario suggests there would be approximately 33,191 tickets sold in total. If the ratio of visitors to Dunedin residents within this sales total is in line with 'Trains not Planes' (1 to 3) then this would translate into 27,360 out-of-town visitors. Indicatively, 17,128 of these visitors would be domestic visitors and 10,233 would be international visitors if shares of visitors from both origins settle back to levels seen in pre-Covid commercial accommodation data. For this analysis, it is again assumed that spending patterns of these visitors remain the same as in Benje Patterson's March 2020 report.

Results from analysis of options for future operations

The assumptions above were used to calculate total spend in Dunedin by out-of-town rail passengers across both operating scenarios.

Results from analysis of operations with minimal international visitors

The following total spend by out-of-town rail passengers under a scenario of minimal international visitors is estimated.

Table 9 – Total spending by Dunedin Railways visitors on rail product and other aspects of Dunedin visit under a minimal international visitor scenario

	Domestic	International	Total visitors
Rail ticket sales to Dunedin Railways	\$952,614	\$219,113	\$1,171,727
Residual spent on other things during Dunedin visit	\$3,441,583	\$1,182,011	\$4,233,190
Total visitor spend within Dunedin by rail passengers	\$4,394,197	\$1,401,124	\$5,404,917

As a point of comparison, this \$5.4 million of total spend during a minimal international visitor scenario compares to the earlier estimate that rail visitors spent \$24 million in 2019 before Covid.

Spending statistics were then translated into GDP to get an estimate of economic value added. There were two methods employed to do this. Direct spending on Dunedin railways product was converted to economic value added based on the ratio of net cash flows (plus staff costs) to revenue calculated from DCHL's estimated operating budget in its report. Residual spending by visitors on the rest of their stay in Dunedin was run through Infometrics' events impact tool to estimate the direct contribution to Dunedin's GDP.

This methodology resulted in the following estimates of GDP in the table below.

Table 10 – Direct economic value added (GDP) from Dunedin Railways passenger spending on rail and other aspects of their Dunedin visit under a minimal international visitor scenario

	Value add
Economic value add from ticket sales	\$476,476
Value add: commission and other spending by visitors	\$1,544,158
Total direct economic value add associated with rail visitors	\$2,020,634

The data shows that the additional direct economic value added (GDP) associated with Dunedin Railways passengers' visits under a minimal international visitor scenario is \$2.0 million. As a point of comparison, the direct economic value added associated with Dunedin Railways passengers' visits to Dunedin was \$10.0 million across the 2019 financial year before Covid-19.

Results from analysis of operations with a strong tourist market

The following total spend by out-of-town rail passengers under a scenario of a strong tourist market is estimated.

Table 11 – Total spending by Dunedin Railways visitors on rail product and other aspects of Dunedin visit under a strong tourist market scenario

	Domestic	International	Total visitors
Rail ticket sales to Dunedin Railways	\$1,196,365	\$714,761	\$1,911,127
Residual spent on other things during Dunedin visit	\$4,322,204	\$3,855,802	\$6,904,479
Total visitor spend within Dunedin by rail passengers	\$5,518,569	\$4,570,564	\$8,815,606

As a point of comparison, this \$8.8 million of total spend during a strong tourist market scenario compares to the earlier estimate that rail visitors spent \$24 million in 2019 before Covid.

Spending statistics were translated into economic value added (GDP) using similar methods to earlier.

Table 12 – Direct economic value added (GDP) from Dunedin Railways passenger spending on rail and other aspects of their Dunedin visit under a strong tourist market scenario

	Value add
Economic value add from ticket sales	\$998,749
Value add: commission and other spending by visitors	\$2,622,759
Total direct economic value add associated with rail visitors	\$3,621,508

The data shows that the additional direct economic value added (GDP) associated with Dunedin Railways passengers' visits under a strong tourist market scenario is \$3.6 million. As a point of comparison, the direct economic value added associated with Dunedin Railways passengers' visits to Dunedin was \$10.0 million across the 2019 financial year before Covid-19.

Weighing up this economic value added against capital investment

Economic value added each year must also be compared against the capital expenditure needed to continue operations. This comparison can help establish whether a positive return can be generated, and whether the return from a particular option is better than other potential uses of the capital.

In its report, DCHL has suggested that:

- Under option 3 (operating along the national rail network only), capital investment in rolling stock could total up to \$2.4 million over 10 years (which averages \$240,000 per annum).
- Under option 4 (operating along both the national rail network and Taieri Gorge), capital investment in the Taieri Gorge line could range from \$6.5 million to \$14.8 million over 10 years depending on how much of the line is preserved, with as much as a further \$2.8 million needed for rolling stock. This total cost ranges on average from \$930,000 to \$1.76 million per annum.

From an economics perspective, any judgement regarding how worthwhile it is to invest this much capital, should weigh up how much economic value added will be returned from the investment.

Analysis in the previous section showed that the estimated direct economic value added to Dunedin under the Dunedin Railways' two border scenarios would range from \$2.0 million to \$3.6 million each year. These levels of economic value added appear to leave a relatively comfortable buffer against the capital investment requirements of option 3, but offer a wafer thin margin against the level of capital investment needed to maintain services along the whole of the Taieri Gorge (option 4).

Other factors to consider regarding DCHL's future scenarios

It is also important to comment on the reasonableness of other DCHL assumptions and factors in the broader context that will influence decisions.

Border reopening scenarios might be optimistic

It is incredibly difficult to assess when borders will open, but they are likely to take longer than previously expected. This situation creates more risk to short-term expectations of economic value added from rail visitors and pushes out timeframes for when tourism will approach anything resembling pre-Covid activity levels.

DCHL, in its report five months ago, anticipated that it could progress into its operational scenario of a border reopening that allowed for a minimal number of international visitors across the summer of 2021/22. Unfortunately, that prospect is looking increasingly unlikely and a better working assumption in the current environment would be for that scenario to not be realistic until the following summer (2022/23). That would leave little prospect of Dunedin Railways operations adding economic value over the 2021/22 summer season, with earlier analysis showing that a second 'Trains not Planes' promotion would almost certainly leave a small negative direct economic impact.

DCHL's other operational scenario of a strong tourism market was anticipated by DCHL in its report to not be possible until at least 2023/24. The timing of this scenario is much more uncertain, given that it is a longer time in the future. Nevertheless, DCHL's assumption is still a year ahead of the Tourism Export Council of New Zealand, which anticipated a strong tourism market of 100% of pre-Covid levels could occur by the May 2025 year.

How realistic would it be to sell enough tickets on the national rail network alone?

A key difference between DCHL's options 3 and 4 is that option 3 would involve only running services along the national rail network, while option 4 would also incorporate the Taieri Gorge line. As part of any decisions regarding these options, visitor demand preferences over travelling on these different rail lines must be considered.

A comparison to pre-Covid baselines suggests that visitor demand historically tended to favour Taieri Gorge services, with fewer passengers taking Seaside services along the national rail network. In 2019, there were 79,100 tickets sold, of which around 18,289 were Seaside tickets, 41,308 were Taieri Gorge tickets and 19,503 were Cruise tickets (which also ran on the Taieri Gorge). In other words, 77% of passengers have historically used services that involved the Taieri Gorge, compared to 23% that used Seaside services that were exclusively on the national rail network.

In this report, it was estimated that 22,606 tickets must be sold in DCHL's minimal international visitor scenario and 33,191 tickets in its strong tourism market scenario for DCHL to achieve its targets under each scenario. Either one of these scenarios would require ticket sales that exceed what the Seaside has historically carried along the national rail network in pre-Covid times (18,289 passengers). This situation makes it difficult to imagine that option 3 is particularly achievable, unless rail passengers are willing to dramatically shift away from their previously observed preference of riding the Taieri Gorge railway.

At first brush, this observation makes option 4 seem more appealing from a ticket sales perspective. But remember that the problem with option 4 is that the economic value added under either of DCHL's border scenarios look wafer thin compared to the capital investment required to keep the Taieri Gorge line open in its entirety. In other words, for option 4 to be viable from an economic perspective, you

would need to find a way of lifting the economic value added from the Taieri Gorge or reducing the capital investment requirements.

DCHL identifies several options in its report for reducing capital investment in the Taieri Gorge, while simultaneously preserving some parts of the line. These options included: cycle trails, rail carts, and community rail. The problem though is that these options need to be more thoroughly scoped out to allow for informed analysis as to their potential to create economic value or other intangible benefits. In short, before these options can be realistically considered, DCHL needs to investigate them more deeply.

Heritage matters for branding and identity

It is also important to be aware of Dunedin Railways broader relevancy to Dunedin's branding and identity. These factors are hard to directly quantify in terms of their economic value, but they are worthwhile to consider within any decision-making process, particularly when you think about the broader suite of tourism products on offer across Dunedin and how rail fits within that package.

Dunedin Railways positioning as a heritage product is consistent with Dunedin's brand association.

Recent research by Angus and Associates (June 2021) showed that:

- 50% of New Zealanders associate the city with history and heritage, which was the highest association score ahead of hospitality (39%).
- 28% of Australians associate Dunedin with history and heritage, followed by parks and reserves (22%) and hospitality (22%).

A complimentary piece of research by Angus and Associates (July 2021) highlighted that Dunedin residents also closely associate Dunedin with its heritage. The survey showed that 35% of Dunedin residents associate Dunedin with heritage, followed by nature and beaches (25%).

Given this brand association with heritage in Dunedin, it is no surprise to see that a heritage product like Dunedin Railways is continuing to drive online traffic to Dunedin over the past year.

Tourism New Zealand data has shown there is still significant interest in Dunedin Railways. Over the 12 months to March 2021, 11% of all Dunedin operator referrals from the Tourism New Zealand website were for Dunedin Railways. Dunedin Railways had the second highest rate of referrals behind Larnach Castle. Before Covid-19, Dunedin Railways was the Dunedin operator with the most referrals from Tourism New Zealand. Over the 12 months to February 2020, Dunedin Railways accounted for 22% of all of Tourism New Zealand's Dunedin referrals.

The DunedinNZ.com website shows similar interest in Dunedin Railways. From 1 December 2020 to 28 February 2021, there was a total of 2,189 referrals to Dunedin Railways' website. This was, by far, the number one referral from DunedinNZ.com during this period.

Another page on DunedinNZ.com with information about Dunedin Railway's Taieri Gorge Railway⁶ saw high visitation (3,152 page views over the same period) and high visitor engagement – average time spent on this page was 3 times the website-wide average. Of these visitors, 371 clicked on a link to get email contact details for the railway.

This analysis of online traffic highlights the significant role Dunedin Railways continues to play within the suite of tourism products being viewed online by potential visitors to Dunedin.

⁶ dunedinnz.com/visit/see-and-do/tours/heritage/dunedin-railways-taieri-gorge-railway

Closing comments

The analysis in this report is set against a context of heightened uncertainty. Much of this uncertainty persists because we don't know when borders will reopen, but we are also unsure as to the nature of the tourism sector recovery that will ensue thereafter.

When looking at the future short-listed operating options presented by DCHL, the key challenge is that although stopping services on the Taieri Gorge line would dramatically reduce capital investment, this option would leave Dunedin Railways operating in a manner that was inconsistent with historical visitor demand patterns. The reality is that in a pre-Covid world only 23% of rail passengers took a Dunedin Railways service on the national rail network, with the remaining 77% taking a journey along the Taieri Gorge. It would be brave to expect Dunedin Railways to return to anything approaching its pre-Covid levels of visitor attraction if it were to only operate in future along the national rail network.

DCHL identifies several options in its report for reducing capital investment in the Taieri Gorge, while simultaneously preserving some parts of the line. These options included: cycle trails, rail carts, and community rail. The problem though is that these options need to be more thoroughly scoped out to allow for informed analysis as to their realistic viability or potential to create economic value or other intangible benefits.

Before coming to any long-term decisions regarding the future of the Taieri Gorge line it would be prudent to perform a much more detailed investigation of these other options. After all, if the tracks are ripped up, then that is not a decision you can change if you later regret it.

In the meantime, while time is taken to gather this evidence, we do know that Dunedin Railways continues to play an important role in the brand, identity, and profile of Dunedin, even if the direct economic value added by its current operations are low.