

**SOUTHERNER RAIL PASSENGER SERVICE**

# **VIABILITY STUDY**

*Prepared for the*

**Ministry of Economic Development**

*By*

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**&**

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# **1 Introduction**

## **1.1 Background**

The Southerner rail service is due to close on February 10, 2002. TranzRail offered the Southerner service for sale as part of the sale of TranzScenic, its long distance passenger services. TranzRail has signed a terms sheet (June 2001) with West Coast Rail for the sale of several passenger services, rolling stock and other assets. Negotiations between West Coast Rail (WCR) and local and central government to secure a subsidy for continuation of the service were unsuccessful, and the Southerner service is not included in the assets being purchased by WCR.

## **1.2 Objective**

The study objective is to assess the potential net benefits of a rail passenger or other service being continued, and the implications of the Southerner's closure.

The potential net benefits encompass the direct private benefits arising from a viable passenger rail service, and the wider private and public benefits to the community and regional economies from having a service operate south of Christchurch. However, the existing service is not operating profitably, and WCR initially sought a subsidy for the train. This means there is a direct trade-off between the costs to the community of supporting the service until it achieves viability, and the economic and other benefits to the community of having a rail service.

The study has been commissioned by the Ministry of Economic Development and undertaken by Market Economics Ltd and Gravitass Research and Strategy Ltd.

## **1.3 Options**

The Government, together with regional councils and territorial authorities in the areas served by the Southerner recognise there are potential benefits (including intangibles) of maintaining a rail passenger service, and are concerned to identify the

true cost (to the community) of maintaining that service, relative to these benefits. Given the uncertainty around the actual cost of maintaining the Southerner (how much might be required and for how long), and the extent of benefits, the Government and councils do not want to relinquish the benefits if the cost of maintaining them is small, on the one hand, nor contribute substantial public funds if the prognosis is poor and the benefits minor, on the other.

The options are not clear cut. While the existing Southerner service is losing money, there is potential to provide a reduced or changed rail service, where the net costs may be reduced initially, and the service achieve viability. TranzRail is keen to quit long distance passenger operations and concentrate on freight movement as its core business, so the only options for TranzRail are to sell the service or close it.

West Coast Rail has been heavily involved in negotiations to finalise the purchase of TranzScenic services from TranzRail, and is not yet in a position to complete the detailed assessment of all the possible service configurations for the Southerner to determine whether it can be a viable operation. The short time between the completion of the TranzScenic purchase (late November 2001) and the planned closure of the Southerner means WCR will not be in a position to undertake this assessment and reach any decision prior to February 2002.

It is possible for a stand-alone operator (ie not WCR) to purchase the service, and operate independently. However, WCR's purchase will include all the long distance passenger rolling stock including that currently used for the Southerner, so a stand-alone service would be dependent on satisfactory arrangements with both WCR and TranzRail (for track access).

The short time frame before the planned closure is a significant constraint. It means that the options for Government and councils are to let the service lapse if the benefits are not considered greater than the costs, or to construct an interim arrangement beyond February 10, 2002 if the benefits are seen to outweigh the costs, as a stepping stone to a long term solution in mid-2002. It is very unlikely that a long term outcome which continued the service would be in place before then.

## **1.4 Approach**

To address the key issues, the study team has undertaken seven main tasks:

1. Established a comprehensive Evaluation Framework to support cost and benefit analysis, and wider economic impact appraisal.
2. Defined the options for the Southerner service and the parameters for each option.
3. Defined the economic and tourism/travel environment for the service.
4. Examined the role of the Southerner within the economies of Canterbury, Otago and Southland regions.
5. Reviewed the Southerner's potential relative to the international and domestic tourism markets, and the domestic inter-city market.
6. Consulted with tourism and transport operators to explore market and operational opportunities.
7. Applied this information in the Evaluation Framework to compare options, analyse likely outcomes, and identify critical success parameters.

The study findings are presented in this Report.

## **1.5 Information Sources**

The Study draws from a wide variety of information and consultation, notably:

- a) Cost, revenue and market information supplied on a confidential basis by TranzRail, and discussions with TranzRail staff.
- b) Published information from TranzRail.
- c) Discussions with West Coast Rail, and Taieri Gorge Ltd.

- d) Discussions with staff from Christchurch City, Dunedin City, Otago Region, Environment Canterbury, Clutha District councils.
- e) Discussions with inbound and other tourism operators, regional tourism officers.
- f) Data from the 1999 and 2000 Domestic Travel Study (DTS), including customised analysis of domestic visitor flows by mode along the Christchurch-Dunedin-Invercargill axis.
- g) Data from the 2000 International Visitor Study, including visitation and expenditure data by destination.
- h) International and domestic visitor forecasts, including regional forecasts of visitors numbers, nights and expenditure to 2007.
- i) Regional economic models for the Canterbury, Otago and Southland regions.

A list of organisations consulted is in Appendix 2.

## **1.6 Report Status**

This is the Final Report. It provides the final results of the market analysis, economic impacts and evaluation of main service options, based on cost information provided by TranzRail and checked within the options modelled. While firm cost projections for train operations have been used in the analysis, together with estimates of capital and marketing costs, there is considerable uncertainty about one important cost item - the actual level of track access charges which would apply for a passenger service. As a commercially sensitive item, no figures to indicate even a cost-range have been disclosed to the study team. To complete the analysis, allowance has been made for track access charges of \$140-250,000 per year, but the actual amount – which would be the subject of negotiation between the service operator and TranzRail – may lie well outside this range.



## **1.7 Confidentiality**

Market Economics Ltd has signed a confidentiality agreement with TranzRail to not divulge sensitive data. This report is forwarded to the Government only, on the understanding that figures will remain confidential.

## 2 Key Findings

### 2.1 Economic Significance

The study results show that the Southerner service makes a minor contribution to the regional economies of the areas it serves. The train carries reasonable numbers of inter-city travellers, and domestic and international leisure visitors. The expenditure of these visitors, together with TranzRail expenditure to operate the service, contributes some \$10.8m to the GDP of the Canterbury, Otago and Southland regions, allowing for flow-on effects through the economy.

In the short term, closure of the service would have limited negative impact on these regional economies. This is because the Southerner carries only a small share of visitors – some 3.5% of international visitors to Dunedin, and 2.1% of domestic travellers along the Christchurch-Dunedin-Invercargill axis. There is abundant capacity in coach and air services to handle these visitors if the Southerner service closed, so that most of the visitor activity would be sustained.

Nevertheless there would be some negative impact from closure, from the loss of the Southerner's operational expenditure in the regions, and because there would be some reduction in traveller and visitor numbers if the train service were not available. The negative impact is in the order of \$4.1m in GDP annually across the three regions, with Otago having the largest share \$2.2m. In NPV terms (over 10 years) the negative impact is estimated at \$27.6m, including \$14.5m for Otago.

The negative impact would be potentially greater in the longer term. This is because an attractive rail service has potential to be an important support for development of tourism product and infrastructure in these regions, especially Otago. It means that a significant share of any negative impact of closure is an opportunity cost through the potential slowing of future tourism growth, rather than the actual cost of removing an established economic activity.

As well as the current and future contribution to the regional economies, through the tourism sector, there are some strategic, community service and other benefits in

maintaining a passenger rail service as an alternative to road transport. However, the abundance of coach capacity with low utilisation on the route means there will be little net reduction in community service (alternative services are available, at higher frequency and lower cost), beyond loss of choice and unsatisfied preference for rail travel. Similarly, the small number of train users indicates little net impact (maximum two coaches per day, and probably none) on the road network, and therefore very small net impact in emissions or road/traveller safety.

## **2.2 Options**

Five service options were analysed, using information on actual operating costs and revenues supplied by TranzRail, estimated capital costs and track access charges, and estimates of retained market share where service coverage would be reduced. The options are:

- Option 1: 7 day train service Christchurch-Invercargill (current situation)
- Option 2: 7 day train service, Christchurch-Dunedin
- Option 3: 4 day train service Christchurch-Invercargill
- Option 4: 7 day railcar service, Christchurch-Dunedin (using Silver Ferns)
- Option 5: 7 day railcar service, Christchurch-Dunedin and 3 day service Dunedin-Invercargill.

## **2.3 Viability**

Analysis of the options suggests that the Southerner service can become viable (ie total annual revenue exceeds total annual costs, including capital maintenance of rolling stock, return on capital and track access) within the medium term (3-4 years), and operate longer term as a profitable service. Option 5 (and possibly 3 and 4) offers prospect of viability. The lower cost of the Silver Fern railcars is a key factor in

reducing the annual deficit, although the option of operating just a Christchurch-Dunedin service would be less sustainable – while it would also offer considerable cost savings, it would mean the loss of around 40% of the current passenger base.

However, service viability will depend on sustaining a very substantial increase in passenger numbers, which would need to be supported by higher investment in marketing, improvements in levels of service, and greater service reliability. While there is reasonable support for rail services among international visitors and domestic leisure travellers, considerable effort would be required to achieve the necessary growth in the medium term - passenger numbers would need to nearly double from current levels. Indeed, growth of 75-80% would be required to achieve simply an operating surplus - prior to return on capital for rolling stock or track access charges.

The indicated viability also depends on two critical costs which are not yet finalised - the purchase cost of the rolling stock to be used on the service (the sale to WCR was only completed 30 November, 2001), and the cost of track access. Until these costs are determined, any assessment of viability is provisional.

Table 2.1 shows the annual operating surplus/deficit for each option in years 1 and 3 or later, together with the total surplus/deficit after allowance for capital recovery (10%) and track access charges. The medium passenger growth projections assume a 52% increase in numbers is achieved (year 3 or later). However, none of options shows an operating surplus, and none shows a break even with a total surplus (including capital and track access).

**Table 2.1 Medium Growth Operating & Total Surplus Estimates by Service Option.**

OPTION	Annual Operating Surplus/(Deficit) (\$000)		Annual Total Surplus/(Deficit) (1) (\$000)	
	Year 1	Year 3+	Year 1	Year 3+
Christchurch Invercargill 7 Days/Wk, Current Rolling Stock	-\$ 1,180	-\$ 310	-\$ 1,600	-\$ 730
Christchurch Dunedin 7 Days/Wk, Current Rolling Stock	-\$ 1,000	-\$ 430	-\$ 1,260	-\$ 700
Christchurch Invercargill 4 Days/Wk, Current Rolling Stock	-\$ 690	-\$ 140	-\$ 1,000	-\$ 450
Christchurch Dunedin 7 Days/Wk, Silver Ferns	-\$ 690	-\$ 110	-\$ 970	-\$ 390
Christchurch Dunedin 7 Days/Wk, Dunedin-Invercargill 3 Days/wk, Silver Ferns	-\$ 720	\$ -	-\$ 1,100	-\$ 380

(1) Includes allowance for 10% capital recovery, and some track access charges

Table 2.2 shows the situation with high passenger growth projections with a 90% increase (year 3 or later). In this growth future, three of the options show a total surplus, though two of these are very small. Option 5 (railcar service Christchurch-Dunedin 7 days and Dunedin-Invercargill 3 days) shows a positive total return, but the results suggest the break even would require growth of 75% to 80% in passenger numbers.

**Table 2.2 High Growth Operating & Total Surplus Estimates by Service Option**

OPTION	Annual Operating Surplus/(Deficit) (\$000)		Annual Total Surplus/(Deficit) (1) (\$000)	
	Year 1	Year 3	Year 1	Year 3
Christchurch Invercargill 7 Days/Wk, Current Rolling Stock	-\$ 1,180	\$ 370	-\$ 1,600	-\$ 50
Christchurch Dunedin 7 Days/Wk, Current Rolling Stock	-\$ 1,000	-\$ 30	-\$ 1,260	-\$ 290
Christchurch Invercargill 4 Days/Wk, Current Rolling Stock	-\$ 690	\$ 370	-\$ 1,000	\$ 50
Christchurch Dunedin 7 Days/Wk, Silver Ferns	-\$ 690	\$ 300	-\$ 970	\$ 20
Christchurch Dunedin 7 Days/Wk, Dunedin-Invercargill 3 Days/wk, Silver Ferns	-\$ 720	\$ 580	-\$ 1,100	\$ 200

(1) Includes allowance for 10% capital recovery, and some track access charges

## 2.4 Key Issues

### ***Passenger Growth***

As noted, the viability would rest on a very big turnaround in passenger numbers, which will not be achieved without concerted marketing effort and investment. While the relatively low market shares mean there is considerable scope for improvement, there is strong competition from coach transport. Similarly, private cars remain the dominant mode for domestic travellers. Further, domestic inter-city travellers are the largest segment, and potential to increase their numbers is not as good as prospects for domestic and international leisure travellers.

### ***Network Integration***

The Southerner service is much more likely to be viable if it is operated as an integrated part of a national network of services. This is because a stand-alone operator is likely to face significantly higher entry costs (especially for an operating licence), and start-up and operating costs, and at the same time would have less flexibility in rolling stock and infrastructure resources, and less security in track access. In addition, WCR have purchased the passenger rolling stock, so there is

no guarantee of access to that resource for another operator through lease or purchase. Since the purchase of the major TranzScenic services is a 50:50 deal between TranzRail and WCR directors, this means that a service operated by the new entity WCR is the most likely to be viable.

### ***Marketing Costs***

Tranzrail have spent very little on marketing the Southerner in recent times. A significant marketing effort required to boost passenger numbers would mean significant additional costs over the current cost structure – in the order of \$150-250,000 per year.

### ***Capital Costs***

The capital cost of rolling stock has been included in the analysis, with allowance also for capital maintenance (engine reconditioning, bogie upgrade). However, the purchase cost of the Southerner service itself has been counted as \$0, since on its own the service is not currently profitable.

### ***Track Access Costs***

The future cost of track access for WCR or another operator remains a major issue, and depends on the TranzRail charging structure. Track access charges for the Southerner route are not available to the study team. Because such charges are determined by negotiation, it is unlikely there will be firm figures on the costs of track access until a specific service configuration for a Southerner service is defined.

Nevertheless, the charges applied will have a major impact on final service viability - at the track access charge levels reportedly applied to private excursion operators, none of the options studied would be viable.

The situation is complicated by the difference in track maintenance costs between freight service lines (with maximum speed of 80 kph), and passenger service lines (with maximum speed of 100 kph), while there is no definition of the basis for calculating access charges.

The base case viability analyses for each Option are based on a track access cost of \$0.57 per train km, drawn from TranzRail published data on average track “maintenance level” capital expenditure (Tranzrail Annual Report, 2000 and 2001) combined with revenue km data, to derive a per tonne/km rate. This rate – factored up allowing for a 120-tonne train to \$0.57 per train km - is believed to be well below that currently charged to private operators using TranzRail tracks.

### ***Continuity***

If the service ceases, then the immediate diminution of the customer base and the higher cost of a re-start would make the prospect of re-introducing the service in the future much more difficult. Therefore, maintaining continuity is considered important for the long term viability.

## **2.5 Next Steps**

### ***Subsidy Costs and Regional Income***

Most of the effects of retaining the Southerner will arise from the additional economic activity it will help sustain. It is therefore possible to compare the cost of a subsidy with the additional income to regional households and businesses. Where the subsidy cost is greater than the additional income which the service sustains, then the regional communities would be worse off – in income terms – by paying the subsidy, than if the Southerner service closed. A 10-year horizon has been used for this assessment, which takes into account income sustained by Southerner-related activity, compared with compensating income from state support for households (via WINZ).

The growth projections allow for medium and high growth passenger numbers to be reached in Year 5. This means that the required subsidy (deficit) is greatest in year 1, and progressively decreases, while the net gain in incomes is positive from Year 5.

In both the medium and high passenger growth scenarios, regional households are worse off in income terms over the first 5 years, in present value terms – by -\$1.2m in the medium scenario, and -\$0.2m in the high. While over 10 years, the medium



growth future would still have a negative outcome (-\$0.1m), the high growth scenario would have a net gain of \$1.5m.

Higher costs – for marketing and track access charges – would reduce the net gain, and eliminate it over 10 years if both marketing costs and track access charges were high.

This means that achieving a positive outcome from a subsidy (equating with annual total deficits of the service) would depend on achieving a combination of high passenger growth, with moderate marketing costs, and base level track access charges, and the positive outcome would be achieved after year 5 or later.

### ***Timing***

The timing of events is a key influence in the Southerner's future. WCR have not purchased the Southerner service and associated track access in the deal with TranzRail, and there will be a significant time gap before a viable Southerner service can be defined and implemented. The key steps include:

1. Completion of the purchase of TranzScenic from TranzRail.
2. Confirmation of the position and requirements of all other services purchased by WCR (TranzAlpine, TranzCoastal, and others), including rolling stock, arrangement with staff and unions, suppliers and complementary activities (such as tour operators).
3. Reconsideration of the potential for the Southerner in the context of completed arrangements for other core services, and with regard to feasibility of integration with other rail network services, available rolling stock, and the service interface with TranzRail as the track provider and supplier of other rail services.
4. (Re)-definition of a potentially viable service to maximise potential markets potentials and integrate with other services.

5. Negotiation between WCR and Tranzrail on track access charges, other services and line access conditions, in parallel with negotiation with regional/territorial authorities on cost sharing.

For WCR, at best this process can take place in parallel with planning for the other TranzScenic services. This suggests that the earliest decision to continue a re-defined Southerner would be reached in mid 2002, well after the planned closure.

## **2.6 Options**

This means there are two options for the public sector, acting from the community perspective:

### Option 1: Cease Involvement

- a) Decide now that the benefits of the Southerner service do not outweigh the cost of maintaining it.
- b) As a consequence, do not extend the subsidy beyond February 2002.
- c) Leave it to WCR (or another operator) to examine options for a service between Christchurch and Dunedin or Invercargill in the future, at which time they may approach councils again.

### Option 2: Pursue an interim arrangement to maintain the Southerner

- a) Decide that the benefits of the Southerner service do equal or outweigh the cost of maintaining it.
- b) Establish a process and timetable (deadline) to define and test a long term service configuration for the Southerner (rolling stock, service frequency, routes), with opportunity for WCR to undertake market testing and assessment of options.

- c) Either, negotiate with WCR and TranzRail to extend the service (existing or reduced) in the short term (July 2002), or
  
- d) Let the current service lapse, and allow for the additional costs in re-starting a future service, rather than incur those costs in maintaining the current operation.

## 3 Service Options

### 3.1 Overview

There are several options for a passenger service, with various combinations of destinations served, service frequency, and rolling stock used.

The options for destinations to be served are dictated by the geography and current patronage – possible destinations for an inter-city service are only Christchurch, Dunedin and Invercargill, while the Christchurch-Dunedin leg of the service attracts around 60% of passengers. On this basis, the only potentially viable services are Christchurch-Invercargill, and Christchurch-Dunedin. The Dunedin-Invercargill leg has low passenger numbers, so has not been evaluated as a stand-alone service (though it has been considered as part of a total service on a less frequent basis).

Service frequency also offers many variations. Currently, the Southerner operates 7 days per week, with northbound and southbound services. Patronage varies between days of the week, and options are to operate on a less frequent timetable (3, 4 or 5 days per week). The trade-off for a less frequent service is that costs are lower, but some of the passengers will switch to other modes, rather than re-schedule their travel to fit the train timetable.

Two changes to service frequency have been evaluated – one for a full Christchurch-Invercargill service to operate on 4 days per week, and one for a Dunedin-Invercargill service to operate 3 days per week, in conjunction with a 7 day a week service from Christchurch to Dunedin.

Various rolling stock (train configuration) options have been discussed, ranging from continuation of the existing service, to railcars, and steam engines (with regard to re-locating the Kingston Flyer). The steam option would involve significantly higher costs and infrastructure needs, and has not been considered.

In addition, the purchase by WCR includes all the TranzScenic rolling stock, so that the options realistically available are limited to that inventory. Any purchase of

rolling stock from overseas would greatly increase the cost of the service if new plant was required, and is still likely to mean a significant cost increase if second-hand plant is acquired.

Accordingly, two base options for rolling stock have been considered:

- a) the existing train, with a diesel-electric locomotive, 2-3 passenger carriages, and service van
  
- b) a rail car service, using the Silver Fern railcars currently used in the North Island.

## **3.2 Options**

Five main options have been evaluated. These have been selected to cover the range of possible outcomes, while avoiding being overly complex with a multitude of options. It is important to recognise that each of these options could be further refined, with changes to assumptions and projection as more information becomes finalised.

### ***Option 1***

7 day/week two train service Christchurch-Invercargill and Invercargill Christchurch, using existing rolling stock.

This is continuation of the existing service, though the cost structure will be different in some areas, notably maintenance and depreciation costs for a new operating entity, and probably track access charges. The key assumptions are:

#### ***Rolling Stock***

- 4 Dc diesel-electric locomotives
- 7 Ao passenger carriages (50 seat capacity)
- 3 As buffet/passenger carriages (26 seat capacity)

- 3 Ag Vans

### **Services**

- 730 services per year (365 northbound, 365 southbound)

### **Passengers (base)**

- 25,600 domestic inter-city passengers (52%)
- 11,300 domestic leisure passengers (23%)
- 12,300 international leisure passengers (25%)

### **Cost Structure**

- Current cost structures for all train operation, passenger service, sales and track services.
- Higher maintenance and depreciation costs with new entity.

## **Option 2**

### 7 day/week service Christchurch-Dunedin and return, using existing rolling stock.

This would continue the northern part of the current operation. It would be possible with one train, with a southbound service then a northbound return each day. The main changes to the cost structure would be the requirement for less rolling stock, and reduced operational spending. However, it would only serve around 60% of passengers who currently use the service, the balance boarding or alighting at points south of Dunedin. The key assumptions are:

### **Rolling Stock**

- 2 Dc diesel-electric locomotives
- 4 Ao passenger carriages (50 seat capacity)
- 2 As buffet/passenger carriages (26 seat capacity)
- 2 Ag Vans

### **Services**

- 730 services per year (365 northbound, 365 southbound)

### ***Passengers (base)***

- 14,800 domestic inter-city passengers (48%)
- 7,700 domestic leisure passengers (25%)
- 8,400 international leisure passengers (27%)
- No passengers who currently board/alight south of Dunedin are retained.

### ***Cost Structure***

- Pro-rata cost reductions for changes in train kilometres travelled (-38%), hours worked (-40%), and passengers carried (-38%).
- Lesser reductions (20-30%) in other costs, including shunting, advertising and marketing, other train operations and service expenses, and mechanical fixed costs.
- Current costs for all other services.
- Higher maintenance and depreciation costs per locomotive and carriage, though applied to smaller train fleet.

### ***Option 3***

A 4 day/week two train service Christchurch-Invercargill and Invercargill Christchurch, using existing rolling stock.

This is less frequent continuation of the existing service. The variable cost structures will be different because of fewer services, fewer kilometres travelled, and fewer passengers carried. This will require two trains (though it is noted that an alternative of 3 services each way each week could be achieved with one train). Main changes are in reduced operational spending. It is estimated that this service would retain 75% of those who currently use the service, with 25% opting to change modes rather than change their trip timing. The key assumptions are:

### ***Rolling Stock***

- 4 Dc diesel-electric locomotives
- 7 Ao passenger carriages (50 seat capacity)
- 3 As buffet/passenger carriages (26 seat capacity)
- 3 Ag Vans

### ***Services***

- 416 services per year (208 northbound, 208 southbound)

### ***Passengers (base)***

- 19,200 domestic inter-city passengers (52%)
- 8,500 domestic leisure passengers (23%)
- 9,200 international leisure passengers (25%)
- 25% of passengers of each type would opt for other modes because of reduced service availability

### ***Cost Structure***

- *Pro-rata* cost reductions for changes in train kilometres travelled (-44%), hours worked (-44%), and passengers carried (-25%).
- Same cost per service for other costs, including shunting, advertising and marketing, other train operations and service expenses, and mechanical fixed costs.
- Higher maintenance and depreciation costs per locomotive and carriage.

### ***Option 4***

A 7 day/week service Christchurch-Dunedin only, using Silver Fern railcars.

This would continue the northern part of the current operation, though with the railcars rather than existing trains. Two railcars would be required, with one in operation each day providing a southbound service then a northbound return each day, the other as a spare or for servicing (there are only three Silver Fern railcars, and substituting other rolling stock in the event of breakdown or line delay can be



difficult, so two would be required for one daily service). The main changes to the cost structure would be the lower operating cost of the railcar, and lower maintenance costs. As with the train service over the same route, the railcar would only serve those whose travel is contained within the Christchurch-Dunedin leg, and it is assumed all those boarding or alighting at points south of Dunedin would opt to change modes for the whole journey rather than undertake only part by rail. The key assumptions are:

### ***Rolling Stock***

- 2 Silver Fern railcars

### ***Services***

- 730 services per year (365 southbound, 365 northbound).

### ***Passengers (base)***

- 19,200 domestic inter-city passengers (52%)
- 8,500 domestic leisure passengers (23%)
- 9,200 international leisure passengers (25%)
- All passengers south of Dunedin would opt for other modes.

### ***Cost Structure***

- Operating cost reductions for changes in train kilometres travelled (-38%), hours worked (-40%), and passengers carried (-38%), including lower fuel costs per km.
- No shunting costs.
- Lesser reductions in other labour costs, marketing, other line expenses, and track services.
- Lower maintenance and depreciation costs.

## **Option 5**

### 7 day/week service Christchurch-Dunedin, plus a 3 day/week service Dunedin-Invercargill, using Silver Fern railcars

This option would continue the northern part of the service, and maintain a limited 3 day/week service on the Dunedin-Invercargill leg, for which passenger numbers are much lower. Three railcars would be required, with one as a spare or for servicing on days when two are in operation. However, there would be surplus Silver Fern capacity for excursion or tour operations, which may reduce some costs).

The main changes to the cost structure would be the lower operating cost of the railcars, and lower maintenance costs. Not all of those south of Dunedin who currently use the Southerner would remain with the rail service, and it is assumed only 65% would be retained. The key assumptions are:

#### ***Rolling Stock***

- 3 Silver Fern railcars

#### ***Services***

- 1042 services per year (365 each way Christchurch-Dunedin, 156 each way Dunedin-Invercargill).

#### ***Passengers (base)***

- 21,800 domestic inter-city passengers (51%)
- 10,100 domestic leisure passengers (24%)
- 10,900 international leisure passengers (26%)
- 35% of passengers south of Dunedin would opt for other modes.

#### ***Cost Structure***

- Operating cost reductions for changes in train kilometres travelled and hours worked (-25%), fewer passengers carried (-19%), including lower fuel costs per km.

- No shunting costs.
- Lesser reductions in other labour costs, marketing, other line expenses, and track services.
- Lower maintenance and depreciation costs.

### **3.3 Analysis of Options**

Each of these service options has been defined within a specific spreadsheet model, which identifies costs and revenues for the current year, and for a projected future year 3. The base model for each option applies detailed cost information provided by TranzRail using the current actual costs of the existing service, together with the major operational parameters – kilometres travelled, hours of train operation, passengers carried, and number of train services.

Within each model, major variable costs have been calculated as a unit cost relative to the main influences on that cost – for example, fuel costs are based on kilometres travelled, applying a cost per kilometre, while crewing costs are based on the numbers of hours of train operation.

Other costs contain a mix of fixed and variable costs within one category, so that changes in train operations or passenger numbers will bring about some change, but not a pro-rata change in costs. In general, these costs change more slowly than shifts in operations or numbers – for example, a 30% decrease in passenger numbers may result in only a 15% decrease in costs. For the analysis, the change in these costs has been estimated for each option, based on examination of the make up of each cost category.

The cost structures are assumed to remain relatively stable. Allowance has been made for a small recent increase in labour costs per hour, on the assumption that existing employment conditions will remain. Similarly, it has been assumed that existing arrangements where locomotive crews are able to inter-change with freight train services are maintained. If this arrangement does not continue, the labour cost of alternative services is likely to be higher than currently, assuming constant employment conditions (wage rates and working hours). While there may be changes in labour and other contract services costs once a new operator manages the

passenger service network, there is currently no basis for assuming any shift.

Further, because any new operator would be running on the TranzRail track, and likely to be purchasing a range of services from TranzRail, then substantial changes in the cost structure for these services is not likely. However, for the future projections, allowance has been made for a reduction of 25% in the current costs of booking/reservations. More than offsetting this, however, is allowance for additional marketing effort of \$150,000 annually (by year 3), since current marketing expenditure is very low.

Fuel costs are relatively high at present, and allowance has been made for a real drop in fuel costs per litre of 15%, to better reflect the historical average.

For each option, the operational parameters have been combined with the unit and other costs, to produce cost and revenue estimates consistent with actual train operation, for the base year and future years.

Key assumptions are set out as ‘live’ inputs to the models, to allow testing of different assumptions and outcomes. This is particularly important, as projections of future events involving a different service or frequency structure are difficult to forecast with any accuracy, and testing of assumption is critical for showing range of possibilities and risks.

### ***Performance Indicators***

The base performance indicators for the viability assessment are:

- a) Annual Operating Costs (\$)
- b) Annual Total Revenue (\$)
- c) Operating Surplus/Deficit (\$)
- d) Return on Capital (10%)
- e) Annual Total Costs (\$) (operating costs, plus Return on Capital at 10% and Track Access Charges)

- f) Total Surplus/Deficit (\$)

### **3.4 Future Projections**

The projected cost and revenue figures for future years are similarly driven by the existing cost structures, with allowance for changes in operational activity and passenger loadings. The base assumptions applied for assessment of the future performance levels are:

- a) Passenger growth scenarios, based on the market evaluation (Section 4), showing outcomes under Medium and High growth futures.
- b) The current fare structure is maintained in the medium term. Because of the strong competition from coach services, which are cheaper and operate more frequently than the train service, and because a large component of the current market is inter-city travellers, the base position is that there is little scope to increase fare levels while trying to build passenger numbers. Similarly, mean catering revenue per passenger is assumed to remain the same.
- c) Costs and revenues are estimated in \$2001 terms (ie with no allowance for inflation).
- d) In each option, no allowance is made for increased service frequency or capacity over the time period. This is because utilisation levels in each case are low in Year 1, and even the very high growth projection does not exceed passenger capacity.
- e) There is no significant change in the cost structure. This means that most operational costs remain constant between years 1 and 3, with the only major changes being in passenger-associated costs, and revenue.

The main outputs are the Performance Indicators for each Option, for each growth scenario (Medium and High).

## **4 Market Prospects**

### **4.1 Context**

The key to having a viable rail passenger service is improving passenger numbers. The fixed cost component of a rail operation is high, and the existing Southerner has been operating at well below capacity in recent years. There is limited scope for reducing costs, given the length of haul, and the fact that only one service operates each day in each direction. Similarly, the fare levels are higher than the competing coach services, and there is a high proportion of inter-city, non-leisure travellers in the Southerner's customer base. This means very limited scope, in the medium term, to bridge the gap between costs and revenue by increasing average fare levels.

Accordingly, the project team placed strong emphasis on the potential for improving passenger levels, particularly the scope to increase numbers of domestic and international leisure travellers. This work was led by Gravitas Research and Strategy, during October and November 2001, and examined the current and potential markets for the Southerner, in terms of current service performance and patronage, market requirements and preferences, and potential market opportunities.

This assessment is based on some limited market research information provided by TranzRail, and consultation with the tourism sector. There was no opportunity within the study time frame to undertake any direct consumer research.

### **4.2 Situation**

#### ***The Current Service***

The Southerner rail service runs daily from Christchurch to Invercargill and from Invercargill to Christchurch. The south-bound service leaves Christchurch at 8:15am, arriving in Dunedin at 2:01 pm (5 hours, 45 minutes) and Invercargill at 5:15pm (9 hours total). The north-bound services leave Invercargill at 8:25am, arriving in Christchurch at 5:15pm (8 hours 50 minutes).

Between Christchurch and Dunedin, stops are made at Ashburton, Timaru, Oamaru and Palmerston. Between Dunedin and Invercargill, stops are made at Mosgiel, Milton, Balclutha, Gore, Maitua and Edendale. No stops of any significant duration are made en route. The longest stop made is in Dunedin (10-15 minutes).

### ***On Board***

The carriages used for the southerner Service were originally commissioned in 1930s and 1940s and are of wooden construction. They have since been refurbished inside, but are the oldest carriages used on the three main South Island services. While they are tidy inside, many of those consulted commented that they are not up to a standard that might be expected by international visitors who had travelled by train overseas. It is generally considered by tourism operators that the carriages are in need of a major overhaul.

The carriages contain a mixture of row seating (similar to a coach) and facing seating around a table. Windows on most carriages are large, but do not extend overhead as they do on some carriages on the TranzAlpine. At least one of the carriages used still has older style small windows. Seats are comfortable. There is limited room for overhead bag storage on shelves running the length of the carriages. The air-conditioning system used is considered not up to the standard used on the other South Island services.

The service usually runs with one locomotive, one baggage car, one full carriage (Ag carriage, approximately 50 seats) and one buffet car - carriage (As carriage 26 seats, half buffet car). More carriages are used when demand is high.

Intermittent commentary is provided over the public address system by one of the two staff members who work on train at any one time. The commentary highlights places and features of interest along the journey. However, there are a number of significant points of interest (historical, ecological, agricultural) on the journey, which are not currently highlighted in the on-board commentary.

Hot and cold food and drinks are available on board from a small bar. Food ranges from a light breakfast to noodles, curry, fritters, sandwiches and muffins. However,

supply is limited meaning there is not a full range of food available for the full length of the journey.

### ***The Route***

From Christchurch, the Southerner travels south across the Canterbury Plains for two hours, until Timaru. Highlights include the crossing of many braided rivers and the Southern Alps to the west. Between Timaru and Oamaru the train travels through flat and rolling countryside, at times following the coast. Oamaru contains a number of historic buildings and also has a penguin colony – a popular tourist attraction. South of Oamaru, the service follows the coast passing through Moeraki, site of the famous boulders. Between Palmerston and Dunedin, the track becomes very windy as it enters the Otago Peninsula. This section of the track is generally considered the most spectacular and scenic, even though speeds here are low. Between Dunedin and Invercargill the route heads inland, through rolling countryside. This leg of the journey is considered pleasant, but not spectacular and has no real claim as a scenic route.

The condition of stations en route is varied. Christchurch Station is modern and comfortable, but located some distance from the city centre (a \$20-\$25 taxi fare to Christchurch central). The station at Oamaru is old and grand, but very run down and with no attractions. The station at Dunedin is attractive, and a listed historic building, completely refurbished and close to the centre of town. The Invercargill station is modest.

In summary, the journey is pleasant, with a number of points of interest. However, apart from the sector between Oamaru and Dunedin, the scenery is considered as less dramatic and attractive than either the TranzAlpine or the TranzCoastal services.

### ***Fares and Ticketing***

The Standard Adult and Saver Adult fares for key trips on the Southerner are shown in the table below. The Saver Adult fare on the Southerner can be obtained by booking several days in advance, while limited special fares are available on occasions (e.g. student specials, return specials).



**Table 4.1 Southerner Adult Fare Structure (November 2001)**

	<b>Standard Adult (\$)</b>	<b>Saver Adult (\$)</b>
Christchurch– Timaru	39	27
Christchurch–Dunedin	79	55
Christchurch-Invercargill	125	88
Dunedin-Timaru	44	31
Dunedin-Invercargill	55	39

Tickets are available through an 0800 number, the TranzRail booking system, and a variety of travel outlets. However, the booking system is widely regarded as substandard, with a relatively complex entry for Internet bookings, limited outlets (especially near stations), and reputedly no means to determine whether a seat is booked for the whole journey or just a segment of it.

### **4.3 Perceptions of the Service**

The study team sought response on key informants' perceptions of the Southerner, relative to other train services in the South Island, and to alternative services on the Christchurch-Invercargill route.

The key strengths of the Southerner Rail services are as follows:

The intrinsic benefits of *rail travel*. This is commonly regarded as a more comfortable and relaxing mode of transport, as passengers have more room and can freely walk around during the course of the journey. Rail travel is also commonly regarded as more romantic, is more 'experiential', and affords a better opportunity to enjoy an all round view than travel by road. These benefits are believed to have particular appeal to groups with young children, senior citizens and, of course, rail enthusiasts.

- **On board services.** Refreshments are available on board and a commentary points out places of interest
- **Scenery.** While not considered to be as spectacular as the scenery on the Trans Alpine and Trans Coastal, the scenery en route is spectacular in places, generally pleasant and certainly marketable (particularly if enhanced by a superior commentary service), and the views from the train are believed to be more spectacular than those from the road, on the same route.
- **Stops of Interest.** There are a range of centres en route that could be considered to be of interest, in particular Oamaru and Dunedin. Each has a number of attractions including historic buildings and opportunities to see unique wildlife (penguins, albatrosses).
- It provides an **alternative** to road. The length and nature of the road journey between the main centres on the route make it an onerous trip, for some. Particularly mentioned are the increasing number of heavy trucks and limited opportunities to pass in some areas. It is perceived, therefore, that some current users are “road avoiders” and others have no access to a car for that journey.
- Is part of a wider **rail network**. The connection and potential development of the links to other services is perceived as a potential strength, perhaps under-exploited currently.

The main weaknesses of the Southerner Service are as follows

- **Speed.** In comparison to the journey by car, the Southerner is very slow - 5.5 hours by rail from Christchurch to Dunedin compared with 4 hours by car. The trip between Dunedin and Invercargill is considered very slow with six stops en route.
- **Cost:** In comparison to a coach or shuttle bus, the Southerner can be up to three times the price (depending on fare levels). As such it has little appeal to

the budget traveller

- **Reliability.** Anecdotal evidence suggests the service is not particularly reliable, frequently running late, although there is also some evidence that perception of this may be stronger than fact.
- **Comfort and Service.** While comfortable, the Southerner carriages are old and are not at the level of comfort of other train services in New Zealand and overseas. The food and general service provided are functional and adequate, but are not consistent with a premium quality tourism experience. The level of staff service provided on the Taieri Gorge Railway (and in particular the commentary) are frequently cited as a benchmark to aspire to.

The European, North American and Japanese tourist markets are specified as having high expectations for quality of transport and service. It is felt that although the carriages on the TranzAlpine and TranzCoastal routes are also not of a premium quality, this is compensated by the spectacular scenery these routes afford. The Southerner scenery is somewhat inferior in this context and consequently the quality of carriages will likely be more critical.

- **Booking System.** Seen as difficult, and can result in capacity being under-utilised.
- **Competition.** In comparison to the TranzAlpine, the TranzCoastal and the Taieri Railway, the Southerner is considered a less attractive trip.
- **Marketing.** Despite the above limitations, the Southerner is seen to suffer from a distinct lack of marketing. While the other three services are heavily marketed and packaged, the Southerner and its attractions are not.
- **Length:** The length of the current Southerner trip (593 km over 9 hours) makes it too long to market as a day trip providing a return service.

- **Stations;** Many of the stations en route are dilapidated and unattractive
- **Luggage Handling:** Systems are basic, particularly with respect to international tourists' expectations.
- **Inconvenience** of the timetable, necessitating overnight stays for longer journeys.
- **Appearance:** the two or three carriage train is "small looking" and therefore doesn't have the appearance of a service of much significance.
- **Christchurch Station:** the location of the Christchurch station relative to the city centre is inconvenient.
- **Fare Access.** It is reported that currently cheaper fares can be purchased in advance but few people seem to understand this system and that therefore it is under-utilised.
- **Rolling Stock Quality.** The consensus is that the service and equipment is tired and very "run down".

The general view is that the service would benefit if run more frequently, the journey time shorter and if good links to other transport modes were offered at all main stations. It is noted that some of these weaknesses arise simply because of the route length and the track limitations.

A key weakness consistently mentioned is the perceived lack of promotion and marketing of the Southerner service. As a consequence, there is a lack of consumer awareness and understanding about the service and what it offers - in both domestic and international markets. Similarly, there is a level of misperception about service quality and frequency. This is considered significant – that customer perceptions of travel times, train speed, reliability and comfort may be worse than reality, notably in the markets along the route, and among tourism operators.

## 4.4 Current Patronage and Market Structure

The Southerner attracts approximately 65 passengers on average per day on each route, with a high count of approximately 50 on the train at any one time (approximately 49,260 passengers per year). Passenger high count numbers increase over the summer months to approximately 60 per day and drop to closer to 40 per day over winter.

Estimates of the current passenger market structure vary, though the consensus is that between 65-75% of passengers are New Zealanders and the remainder are international tourists. TranzRail estimates indicate 25% are international visitors, with another 23-24% domestic leisure travellers, and 51-52% domestic inter-city travellers.

Perceptions are also that the market structure varies along the route. On the Christchurch to Dunedin sector, international travellers are *relatively* more important, though domestic travellers still make up over two-thirds of the market and locals travelling inter-city out-number domestic leisure travellers. Those familiar with the Invercargill to Dunedin sector indicate that users on this leg are more likely to be NZ residents travelling as rail is their preferred mode of transport, with fewer tourists reported using this section of the journey.

The main international segment is seen as FITs (free independent travellers) especially backpackers, mainly from the UK or Europe, some Australians and a few Asian tourists. This segment is described as being reasonably affluent and not particularly price sensitive and that the main motivation for travel for some of these passengers is the eco tourism opportunity - to see the wild life and natural and historical sites of interest along the way, between Oamaru and Dunedin in particular.

The 'locals' are described as predominately senior citizens who are travelling because train is their mode of preference, because they have more time, because they are perhaps more affluent (it being more expensive than coach or car), because they have no access to a car, or for relaxation/health reasons.

Another market identified is the 45 to 54 year old who are interested in heritage and

travel from Christchurch to Dunedin on a domestic tourism trip.

Families with young children are also mentioned as another observed passenger group, often making the shorter trips from say Balclutha to Dunedin as a day trip, with the rail experience as the main motivation.

Tertiary students are also mentioned as a key group that use the train, taking advantage of cheap rates to and from Dunedin (Otago University), and Invercargill, and preferring the train for start- and end-of-year journeys, because they can take large amounts of belongings between their flatting accommodation and home.

Domestic travellers making the trip from Dunedin, Oamaru and Timaru to Christchurch to join international air flights are also mentioned.

A number indicated that senior citizens often travel to Dunedin from Invercargill for medical reasons and to use the hospital, now that medical services are more centralised.

The consultation suggests that key motivations for using the Southerner are:

- people who have the time to make the extended journey length by rail,
- people who prefer, or are motivated by rail travel,
- people who are motivated by some tourist attractions along the route.

### ***Domestic Travel Study***

Data from the New Zealand Domestic Travel Study 2000 on all train travellers in New Zealand, suggests that domestic train travellers are more likely to be :

- Older (55+ years) or younger (under 25)

- Travelling for the purpose of visiting friends or relatives
- Travelling either alone, or with a larger party (5 or more)
- On a lower personal annual income
- Female

In terms of this profile, train travellers are most like bus/coach travellers, who tend to be younger or older, travelling alone, or in a larger group, female, and on a lower income. Bus and coach travellers however are more likely to be travelling for holiday/leisure purposes.

**Table 4.2: Age of Traveller by Mode of Transport**

Trips	Age	All	Train	Bus/Coach	Air	Car
	15-24	23.3	33.9	41.8	12.3	23.3
	25-34	21.9	19.3	11.1	24.9	21.7
	35-44	19.8	12.7	8.1	22.9	19.9
	45-54	16.5	9.5	5.6	21.9	16.2
	55-64	9.2	11.9	4.2	9.6	9.5
	65+	9.3	12.6	29.3	8.4	9.4
		100	99.9	100.1	100	100

Source: *New Zealand Domestic Travel Study 2000*

**Table 4.3 Purpose of Trip by Mode of Transport**

Trips	Purpose	All	Train	Bus/Coach	Air	Car
	Business	13.9	4.7	5.5	44.9	9.7
	Holiday	42.4	39.2	47.2	23.1	44.5
	VFR	35.1	49.2	32.4	27.7	37.1
	Other	8.6	6.8	14.9	4.3	8.7
		100	99.9	100	100	100

Source: New Zealand Domestic Travel Study 2000

**Table 4.4 Size of Travelling Group by Mode of Transport**

Trips	Party size	All	Train	Bus/Coach	Air	Car
	One	21.9	34	39.3	51.3	17.3
	Two	33.9	26.4	19.6	24.3	36.5
	Three	14.7	12.8	3.1	8.7	16.1
	Four	13.7	3.2	3	5.1	15.5
	Five plus	15.9	23.5	35	10.6	14.6
		100.1	99.9	100	100	100

Source: New Zealand Domestic Travel Study 2000

**Table 4.5 Relationship of Traveller by Mode of Transport**

Trips	Relationship	All	Train	Bus/Coach	Air	Car
	Alone	21.9	34	39.3	51.3	17.3
	Partner	31.5	26.5	8.6	18.1	35
	Friends	21.4	22.3	14.9	7.4	22.8
	Family	31.4	28.2	12.6	15	36
	Business Assoc	4.1	1	1.5	12.2	2.8
	Other	4.3	5.1	28.9	3.6	2.8
		114.6	117.1	105.8	107.6	116.7

Source: New Zealand Domestic Travel Study 2000

**Table 4.6 Gender of Traveller by Mode of Transport**

Trips	Sex	All	Train	Bus/Coach	Air	Car
	Male	52.3	42.7	32.3	55.2	50.9
	Female	47.7	57.3	67.7	44.8	49.1
		100	100	100	100	100

Source: New Zealand Domestic Travel Survey 2000



**Table 4.7 Personal Income of Traveller by Mode of Transport**

<b>Trips</b>	<b>Personal Income</b>	<b>All</b>	<b>Train</b>	<b>Bus/Coach</b>	<b>Air</b>	<b>Car</b>
	0-30k	56.9	63.6	77.9	32.2	59.2
	30-50k	21.8	21.9	12.9	22.6	22
	50-70k	6.7	1.9	2.4	14.7	5.9
	70+ k	6.3	3.6	0.5	20.8	4.6
	Ref/DK	8.4	9	6.3	9.7	8.3
		100.1	100	100	100	100

*Source: New Zealand Domestic Travel Study 2000*

Some tour companies offer 5 and 7 day coach/rail package deals which include the Christchurch to Dunedin leg of the Southerner trip. One company is also known to offer train/rental car package deals, some of which use the Southerner. However, these trips are not heavily booked, suggesting tourists on package deals comprise only a small proportion of Southerner passengers. Occasionally bus loads will be put on the Southerner for the south bound leg from Christchurch to Dunedin

### ***International Visitor Survey***

Analysis of data from the International Visitors Survey indicates that international travellers using the train are most commonly Free and Independent Travellers (FITs), including back-packers. The IVS also shows that of all international visitors to the South Island Marketing Alliance Region<sup>1</sup>, those travelling by train are:

- More likely to be travelling for holiday or other reasons and less likely to be travelling for business
- More likely to be in the younger (under 30) and older (55+) age brackets
- More likely to be female

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<sup>1</sup> Comprises the regional tourism Organisations, Christchurch and Canterbury Marketing, Tourism West Coast, Tourism Dunedin, Tourism Southland, Mackenzie tourism and Development and Central south Island Tourism.

- More likely to be from Europe or America and less likely to be from Asia. These Europeans and Americans are also more likely to travel by rental car and/or air, suggesting they fit more into the mould of the free and independent traveller (FIT)
- FITs are a growing segment of the international tourist market, and are particularly important because they venture off tourism's 'main axis' (Auckland-Rotorua-Wellington-Christchurch-Queenstown) to secondary destinations such as Dunedin and Oamaru.

International train travellers have a different profile to international bus/coach travellers who are more likely to be from Asian markets.

**Table 4.8 Reason For Travel by Mode of Transport**

	<b>Total</b>	<b>Train</b>	<b>Air</b>	<b>Rental</b>	<b>Backpacker Bus/Coach</b>
Holiday/vacation	78%	79%	73%	84%	90%
Visit friends/relatives	9%	9%	10%	8%	3%
Business	7%	4%	11%	4%	3%
Other	6%	8%	6%	4%	5%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

*Source: International Visitors Survey*

**Table 4.9 Age of Traveller by Mode of Transport**

	<b>Total</b>	<b>Train</b>	<b>Air</b>	<b>Rental</b>	<b>Backpacker Bus/Coach</b>
15 to 19 years	3%	<b>5%</b>	2%	2%	4%
20 to 24	11%	<b>11%</b>	7%	10%	11%
25 to 29	15%	<b>16%</b>	13%	<b>18%</b>	11%
30 to 34	12%	7%	11%	<b>14%</b>	9%
35 to 39	8%	6%	8%	9%	8%
40 to 44	7%	6%	6%	7%	4%
45 to 49	7%	5%	8%	8%	7%
50 to 54	9%	5%	<b>11%</b>	<b>10%</b>	8%
55 to 59	8%	<b>9%</b>	9%	8%	9%
60 to 64	9%	<b>12%</b>	<b>13%</b>	7%	<b>14%</b>
65 and over	10%	<b>18%</b>	<b>13%</b>	7%	<b>15%</b>
	100%	100%	100%	100%	100%

Source: International Visitors Survey

**Table 4.10 Sex of Traveller by Mode of Transport**

	<b>Total</b>	<b>Train</b>	<b>Air</b>	<b>Rental</b>	<b>Backpacker Bus/Coach</b>
Male	53%	45%	53%	<b>56%</b>	47%
Female	47%	<b>55%</b>	47%	44%	<b>53%</b>
	100%	100%	100%	100%	100%

Source: International Visitors Survey

**Table 4.11 IVS Region of Origin by Mode of Transport**

IVS Region	Total	Train	Air	Rental	Backpacker Bus/Coach
Australia	23%	23%	12%	<b>32%</b>	12%
USA	14%	<b>19%</b>	<b>18%</b>	13%	15%
Canada	3%	<b>4%</b>	3%	2%	3%
UK	14%	<b>20%</b>	11%	<b>18%</b>	9%
Nordic	2%	<b>3%</b>	1%	<b>3%</b>	2%
Germany	5%	4%	3%	<b>7%</b>	3%
Switzerland	1%	1%	1%	1%	1%
Netherlands	2%	3%	1%	3%	2%
Other Central Europe	4%	5%	2%	5%	3%
Japan	13%	4%	<b>24%</b>	3%	<b>23%</b>
South Korea	2%	1%	<b>4%</b>	0%	<b>4%</b>
Taiwan	2%	2%	<b>3%</b>	0%	<b>4%</b>
Hong Kong	2%	1%	<b>4%</b>	1%	<b>6%</b>
Other Nth Asia	1%	0%	2%	1%	1%
Singapore	3%	3%	2%	2%	3%
Malaysia	2%	1%	1%	1%	2%
Thailand	1%	0%	1%	1%	2%
Other SE Asia	1%	<b>7%</b>	1%	1%	0%
Other Countries	6%	0%	8%	6%	5%
Total	100%	100%	100%	100%	100%
Total	801,860	66786	341,155	323,583	292,882

*Source: International Visitors Survey*

## 4.5 Total Route Market

The Southerner faces strong competition as a means of travel between Christchurch, Dunedin and Invercargill. The railway broadly parallels State Highway 1 which runs through all centres, so travellers can follow the same route and have the same scenic and other opportunities (apart from coastal areas north of Dunedin) if travelling by private or hired vehicle. Table 4.12 shows the alternative services operating on the route during an average week. This is based on seven coach/shuttle services running between Christchurch and Dunedin and six between Dunedin and Invercargill. The flight activity is based on Air New Zealand services only.

**Table 4.12 Scheduled Transport Options - Christchurch. and Invercargill**

Route Between	Transport Mode		
	Southerner	Air	Bus
Christchurch – Dunedin	7	56	57
Dunedin – Invercargill.	7	NA	41
Christchurch. – Invercargill.		39	

*Based on one weeks scheduled services for the week beginning 5<sup>th</sup> November 2001*

Anecdotal evidence suggests competition in the shuttle bus market between Dunedin and Christchurch in particular is very intense. Prices are low in comparison to the Southerner. For example, coach and shuttle fares on that route range from \$20 to \$48 compared to the \$79 Southerner fare. Table 4.13 below shows comparative pricing between the Southerner and other key modes servicing the route

**Table 4.13 Comparative Pricing Between the Southerner and Other Modes**

	Southerner (Standard Adult)	Southerner (Saver Adult)	Inter-City Coach (Standard Adult)	Shuttle (Atomic)	Air
Chch – Timaru	39	27	27	20	NA
Chch – Dndn	79	55	48	30	235
Chch – Inv	125	88	49	70	275
Dndn – Timaru	44	31	31	15	NA
Dundn – Inv	55	39	42	25	NA

Analysis of data from the Domestic Travel Study (1999/2000), suggests The Southerner accounts for 1.2% of domestic overnight trips made between the centres serviced by the Southerner . Private vehicles account for the highest proportion of trips (81.6%) followed by domestic air travel (4.2%) and bus/tour coach travel (3.9%).

**Table 4.14 Domestic Overnight Trips by Mode of Transport**

	Chch - Dndn	Chch - Inv	Dndn – Chch	Dndn - Inv	Inv - Dndn	Inv - Chch	All
Rail	1.1%	7.0%	2.9%	1.8%	1.6%	1.2%	1.2%
Air	9.3%	17.5%	11.2%	0.3%	0.0%	17.9%	4.2%
Pvt Car	77.7%	67.8%	74.9%	85.1%	84.5%	62.2%	81.6%
Rent Car	2.0%	1.3%	2.4%	4.6%	5.2%	0.0%	2.8%
Bus/Coach	5.9%	2.7%	4.4%	0.7%	4.4%	4.8%	3.9%
Other	4.1%	3.7%	4.1%	7.4%	4.4%	13.9%	6.2%
Total	100%	100%	100%	100%	100%	100%	100%

*Source: New Zealand Domestic Travel Study 2000*

Data from the IVS indicates that 4-5% of visitors to the South Island Marketing Alliance area have travelled by rail. This area however also includes the regions serviced by the TranzAlpine and TranzCoastal Services.

## **4.6 Product Development and Potential Markets**

The consultation and statistical data provides important information on both aspects of improving patronage levels for the Southerner – through product development/improvement, and targeting of market segments with most potential.

### ***Product Development***

The Southerner service has had little marketing and promotion in recent times. Awareness and understanding of the service is likely to be low, particularly in the tourist markets (domestic and international). Consequently, if market potential exists, then any marketing activity should increase patronage.

Key informants spoken to can all generally see potential for increasing passenger numbers - and this is mainly due to the fact that the Southerner is currently so under promoted. There is a general consensus that the service would have to be improved before it was marketed, to successfully create new patronage levels.

A variety of small and medium-scale improvements are required to significantly

enhance the existing product, including:

- Development of on-board commentary/information. The commentary needs to be improved perhaps with a head phone system so people can choose to use it or not. Informants report that there are a significant number of points of interest and potential for much more comprehensive commentary than exists at the moment.
- Achievement and maintenance of high reliability, including running to time and being able to complete journeys by train (not bus).
- Improved on-board service levels, notably clean windows for viewing scenery, improved range of on-board food and drink, and availability throughout the journey, and better luggage management.
- Improved ticketing system, to make booking of tickets easier and more convenient
- Synchronised connections to relevant attractions and destinations.
- Ability to link to other transport modes at key stations, particularly Christchurch
- Upgrading and maintenance of carriages/accommodation.

The existing timetable is also seen as a barrier to attracting international travellers, especially older visitors. The Southerner departs from Christchurch at 8.15am, and the logistics of getting to the station in plenty of time (15-20 mins to spare), taxi from the central city in morning traffic (10-15 mins), hotel check-out (10 mins) and packing luggage (10 mins) leaves little time for a good breakfast prior to a full day on the train.

## ***Positioning and Packaging***

Reaching markets with major potential requires not just service improvement, but also packaging and promoting of the service to enhance its general and specific appeal.

Key opportunities include:

- Promoting the journey as an eco-tourism/heritage trip. This would involve promotion and integration of the various natural attractions on the route (penguins, albatrosses, boulders, scenery), together with natural and built heritage, especially historical buildings and townscapes of interest in Oamaru and Dunedin. Packaging the journey with coach/car exploration of the Southern Scenic Route is also a potential opportunity.
- Packaging the Southerner into a total rail package whereby international visitors can travel around the whole country by rail perhaps using flat price time based tickets (eg monthly pass) and allow people to structure their journeys as they wish. In this context the Southerner would provide opportunity to travel by rail to some of the South Island's most important and popular tourist destinations.
- Domestic tourism focused on the experience of rail travel. There is believed to be a market for rail travel based around it being a romantic and comfortable experience. Children in particular are felt to represent an opportunity with their family groups potentially travelling on the Southerner. These trips could be based on the shorter segments of the Southerner route comprising return day trips (for example, Dunedin to Balclutha or Oamaru, Christchurch to Timaru), marketed as a day trip experience for the family and priced accordingly. Or as 'long weekend' type trips, based on travel to and from Christchurch and Dunedin and packaged with trips on the tourist rail routes at these directions (TranzAlpine, Taieri Gorge) as well as tourism time in the City itself.



- Linking in with the tour operators or backpacker based bus services would provide the opportunity to offer a journey on the Southerner which is hassle free and links conveniently to transport other attractions or centres of interest (e.g. link coaches to Mount Cook and the McKenzie country, or to central Otago from Oamaru or Palmerston).
- Emphasising and developing a more unique rail experience is perceived as a potential opportunity by some. This would involve enhancing the existing engine and rolling stock in some way which would make the journey more interesting and unique - the Kingston Flyer was cited as an example of what can attract visitors. This notion centres around the fact that tourists are believed to be looking for "a different" experience.

Views on fare pricing are split. On one hand, the cost of tickets for New Zealanders making domestic trips is perceived as relatively high in comparison to alternative modes, leaving limited scope to increase fares since domestic travellers currently account for around three-quarters of passengers. Conversely, ticket prices from an international tourist perspective are seen to be relatively low, with even backpackers viewed as having low price sensitivity surrounding activities that are perceived as attractions. Generally, tourism based experiences (domestic and international) are felt to have more potential for higher fare levels, based on added value, than pricing as an alternative mode for the route.

Most of those consulted from the tourism sector agree that patronage could easily be increased through packaging and promotion, and a number of participants mentioned that passenger numbers could be doubled without too much difficulty. However, the lead time for development of international markets is reported to be significant, anecdotally around two years from release of the product to New Zealand in-bound operators to seats being occupied by overseas visitors.

A number of key informants also comment that the cost of raising the standard of the trains and supporting infrastructure to an appropriate level to achieve significant passenger growth are likely to be very significant, and are uncertain whether, even with greater customer numbers, the service could be financially viable. Several feel it is "too late" and that the service has been allowed to deteriorate to such a level that

the capital investment now required is prohibitive. Such perceptions are important with regard to tourism sector confidence in the permanence of the service if they are to promote it to their customers.

### ***Potential Market Segments***

The following markets will offer the greatest potential for growth if the service is packaged, delivered and marketed appropriately.

- **International FIT Travellers**

Attraction factors will be the mode of travel for the Christchurch to Dunedin journey and the tourist attractions en route and at Dunedin. Two main market opportunities are observed. Those who already have this route as part of their itinerary who will have a propensity and a liking for rail travel - based on its intrinsic benefits (safety, relaxation, scenery, romanticism) and their familiarity with the mode from their home countries and those who will be motivated by the heritage and eco-tourism attractions (Timaru, Oamaru, Dunedin and links to Mackenzie Country, Mt Cook and the Southern Scenic Route) and may potentially add this leg to their route to Queenstown and beyond. European and North American visitors, backpackers and older tourists are likely to present the most potential.

It is clear that Christchurch and Dunedin currently attract a fairly high share of travellers from Europe and North America. These travellers - accustomed to travelling by rail in their home country and also more drawn to travelling by train in New Zealand, are an obvious target segment.

**Table 4.15 International Visitors to Christchurch and Dunedin**

Visitors	NZ	Christchurch	Dunedin
Australia	32%	22%	26%
USA	11%	<b>15%</b>	<b>12%</b>
Canada	2%	<b>3%</b>	<b>3%</b>
UK	11%	<b>13%</b>	<b>18%</b>
Nordic	2%	<b>3%</b>	<b>3%</b>
Germany	3%	<b>5%</b>	<b>8%</b>
Switzerland	1%	<b>2%</b>	<b>2%</b>
Netherlands	1%	<b>2%</b>	<b>4%</b>
Other Central Europe	3%	2%	3%
Japan	9%	<b>14%</b>	3%
South Korea	4%	2%	0%
Taiwan	2%	3%	<b>3%</b>
Hong Kong	2%	2%	1%
Other Nth Asia	2%	1%	1%
Singapore	2%	<b>3%</b>	<b>3%</b>
Malaysia	1%	1%	1%
Thailand	1%	1%	0%
Other SE Asia	1%	0%	0%
Other Countries	10%	7%	6%
Total	100%	100%	100%

- **International Tour Members**

Potential exists to include the Southerner as part of other coach, rail and cruise based tours – particularly as the tourism offer in Dunedin and Oamaru is developed and promoted. This market will be slower to come to fruition as these package deals are generally developed at least 18 months in advance, and sold 18-6 months in advance. They will need to be developed in conjunction with inbound operators, who will need assurance of service quality, reliability and permanence. Again, tourists with a greater affinity with rail travel (older, Europe/UK, Nth America, rail enthusiasts) will be most attracted. Quality of product and service will be very important to these markets.

- **Domestic Holidaymakers**

Motivated by the rail travel experience and the attractions en-route. Families with younger children and older travellers will present the best opportunity. Key markets will be visitors to the South Island as well as residents of the cities on the route.

- **Domestic Day Trippers**

Shorter part route trips (e.g. Christchurch to Timaru and Dunedin to Oamaru) have the potential for development as daytrips, with appeal to both local residents and visitors (domestic and international) to the three cities serviced. Again, family groups and older travellers should be key segments. Attraction factors will be a combination of the train journey and activities available at the destinations.

- **Domestic Travellers**

Some potential exists to increase patronage by people currently travelling on the route by other modes, for non-tourism reasons (VFR, business, education, personal business). Functional constraints of journey time, cost and timetabling limit the potential with these travellers. However, if the existing service is indeed currently undersold, then some increase in mode share could be expected from this segment.

## **4.7 Impacts of Service Closure**

Most of the key informants consulted perceive little impact on the existing tourism sector if the Southerner service were withdrawn. This is due to the current low passenger levels and also a sense that the majority of those currently travelling by the Southerner will be likely to still travel to the same locations by other modes of transport, so their contributions to the local economy will not be lost. Groups mentioned that might be affected are senior citizens who prefer to travel by train for reasons of comfort and insecurity around driving lengthy distances, particularly

with the numbers of trucks on the road. Also mentioned is a loss of some amenity for residents living between Dunedin and Timaru who may potentially use the Southerner for journeys which link to international flights and the loss of amenity related to it as a domestic tourism attraction for residents and their visitors.

The main impact identified by key informants is the loss of any potential that may exist if the Southerner were to be packaged and promoted effectively. Key informants comment that viable services and tourism products may be possible and that it would be a pity to lose this potential, without being sure of what was being foregone.

## **4.8 Passenger Projections**

Passenger growth on the Southerner can be achieved partly from increases in the size of the international and domestic markets, but primarily from increasing the train's share of the markets. To put numbers on the potential growth, the study team has analysed current visitor numbers to the main destinations on the route (for international visitors) and traveller volumes by mode along the Southerner route (for domestic overnight and day travellers). These volumes set the market bounds, and form the basis of estimating a reasonable/sustainable market share for the Southerner.

### ***Domestic Travellers***

Currently, there are some 1.75 million domestic overnight journeys between destinations from Christchurch and Invercargill, including 880,000 southbound, and 875,000 northbound. In addition, there are some 4.0 million domestic day trips, centred around the major population centres of Christchurch and Dunedin. The 37,000 domestic passengers on the Southerner represent just 2% of this total, and 0.6% of the combined day and overnight trips along the route.

Most of the travel is by private car, however, and the main potential to capture market share is primarily from coach, rental car and other mode travellers. A medium growth projection of 52,000 domestic passengers is based on attracting market shares of 2.2% from the coach segment, 2.75% from other modes, 0.5% from the private car

market, and 1,500 day trips (Table 4.16). The high growth projection, for another 28,000 domestic travellers (to an annual total of 65,000) is based on attracting market shares of 5% from the coach segment, 5% from other modes, 3.55 from the rental car market, 0.8% from the private car market, and 5,000 day trips (Table 4.16).

**Table 4.16 Rail Market Capture by Mode - Domestic Passengers**

CURRENT MODE	Medium Growth	High Growth
Rail	100%	100%
Air	0.05%	0.10%
Bus/Coach	2.20%	5.00%
Private Car	0.50%	0.80%
Rental Car	1.00%	3.50%
Other Mode	2.75%	5.00%
<b>TOTAL</b>	<b>2.53%</b>	<b>3.09%</b>
Day Trips	2,500	5,000
ADDITIONAL DOMESTIC PAX	12,000	28,000

While these market shares appear small, they would represent considerable marketing effort to change established patterns. On the other hand, the numbers in each case are relatively small, especially from the day tripper market.

### ***International Travellers***

Comparable figures are not available from the International Visitor Survey to show overnight journeys along the Southerner route. Currently, Dunedin attracts some 220,000 international visitors (including those aged under 15, while Christchurch attracts some 700,000 (IVS, 2001). Projected growth in international arrivals will take the numbers by 2003 to 242,000 for Dunedin, and 770,000 for Christchurch.

The Southerner passenger statistics suggest that the train currently carries some 3.5% of total international visitors to or from Dunedin, and 1.3% to or from Christchurch. This is slightly lower than the shares reported in the IVS and Dunedin Visitor Survey.

The passenger growth scenarios allow for an increase from 12,000 international passengers currently to 23,000 (medium scenario) and 29,000 (high scenario) by year 3, 2004). Assuming *pro rata* growth in international travel on each part of the

route, this would mean the Southerner's share of Dunedin visitors would increase to 6% (medium) and 7.4% (high scenario). For Christchurch, the figures would be 2.2% and 2.75% respectively.

**Table 4.17 Southerner Passenger Growth Scenarios by Segment**

<b>SEGMENT</b>	Current	Medium Growth	Increase (%)	High Growth	Increase (%)
<b>Total Passengers</b>					
Domestic Commuters	25,600	30,800	20%	40,700	59%
Domestic Leisure	11,300	21,200	88%	24,200	114%
International Tourists	12,300	23,100	88%	28,800	134%
<b>TOTAL</b>	<b>49,200</b>	<b>75,100</b>	<b>53%</b>	<b>93,700</b>	<b>90%</b>
<b>Christchurch-Dunedin</b>					
Domestic Commuters	14,800	17,800	20%	24,500	66%
Domestic Leisure	7,700	15,500	101%	17,000	121%
International Tourists	8,400	16,700	99%	20,900	149%
<b>TOTAL</b>	<b>30,900</b>	<b>50,000</b>	<b>62%</b>	<b>62,400</b>	<b>102%</b>
<b>South of Dunedin</b>					
Domestic Commuters	10,800	12,900	19%	16,200	50%
Domestic Leisure	3,600	5,800	61%	7,200	100%
International Tourists	4,000	6,400	60%	7,900	98%
<b>TOTAL</b>	<b>18,400</b>	<b>25,100</b>	<b>36%</b>	<b>31,300</b>	<b>70%</b>

While the growth rate in both scenarios would be substantial, especially over a two year period, the market shares at the end would remain relatively small. The advantage of the existing small market share is that scope for growth is extensive, without requiring capture of very significant market shares.

## 5 Economic Impacts

### 5.1 Economy Overview 2000

#### *Canterbury Region*

Currently, the Canterbury Regional economy employs around 219,130 persons or the equivalent of 182,810 full time workers in around 37,350 individual businesses, excluding farms (*Statistics New Zealand Business Directory 2000*). In 1998 the regional economy generated around \$9.7bn in value added (analogous to GDP) from approximately 176,420 FTE's in 31,500 businesses (excluding farms). This estimate is generated using a regional Input-Output Model, which is due to be updated in the first quarter 2002. The model provides a good definition of the structure of the regional economy but not necessarily the current scale of the economy. However, there are details within the model that allow the current size of the regional economy to be estimated.

The model calculates value added and output productivity levels on a \$ per FTE basis. These do change over time but are unlikely to have moved a great deal since 1998. Under these assumptions the Canterbury Regional economy generated around \$10.4bn in value added (Table 5.1).

**Table 5.1 Canterbury Regional Economy, 2000**

Sector	Economy
Businesses	37,350
Persons Engaged	219,130
FTE's	182,810
Gross Output (\$000)	\$ 23,036,400
Estimated Value Added (\$000)	\$ 10,416,500

#### *Economic Structure*

The Canterbury economy is characterised by high concentrations of employment in the Manufacturing, Communications Services and Health and Community Services



sectors and low concentrations of employment in the Mining, Utilities and Finance and Insurance sectors (in comparison with the New Zealand averages).

In terms of contribution to GDP and in comparison with the New Zealand average, the economy is characterised by high contributions by Meat and Meat Product Manufacturing, Textile and Apparel Manufacturing, Machinery and Equipment Manufacture and Air Transport. There is lower than average contributions to GDP by Paper and Paper Product Manufacturing, Petroleum Product Manufacturing, Basic Metal Industries and the Commercial sector activities – Insurance and Finance. Detailed tables of Canterbury’s economic structure are appended to this report.

In total the Rail sector employs 180 FTE’s and is estimated to contribute around \$8m to the region’s value added, or approximately 5% of the combined Road and Rail Transport sectors. However, the rail transport sector is a facilitating sector in that its greatest contribution to the economy is as a facilitator of economic activity – rather than through its own operations.

### ***Otago Region***

In the 2000 year the Otago Regional economy generated employment for around 79,900 persons (66,060 FTE’s) in 13,660 businesses (excluding businesses). In 2000 Otago Region generated around \$3.5bn in value added from gross output of around \$7.5bn (Table 5.2)

**Table 5.2 Otago Regional Economy, 2000**

Sector	Economy
Businesses	13,662
Persons Engaged	79,884
FTE's	66,056
Gross Output (\$000)	\$ 7,452,200
Estimated Value Added (\$000)	\$ 3,496,400

### ***Economic Structure***

The Otago economy is characterised by high concentrations of employment in the Mining, Utilities and the Accommodation Cafes and Restaurants sectors reflecting the high importance of tourism to this economy. It is also characterised by low concentrations of employment in the Communication Services, Wholesaling and Finance and Insurance sectors (in comparison with the New Zealand averages).

In terms of contribution to GDP and in comparison with the New Zealand average, the economy is characterised by high contributions by; Meat and Meat Product Manufacturing, Services to Agriculture, Electricity generation and Accommodation Cafes and Restaurants. There is lower than average contributions to GDP by; Paper and Paper Product Manufacturing, Petroleum Product Manufacturing, Air Transport and the Commercial sector activities – Insurance and Finance. Detailed tables of Otago’s economic structure are appended to this report.

In total the rail sector employs 130 FTEs and is estimated to contribute around \$6m to the regions value added, or approximately 9% of the combined Road and Rail Transport sectors in the region.

### ***Southland Region***

In the 2000 year the Southland Regional economy generated employment for around 38,240 persons (32,360 FTE’s) in 6,390 businesses (excluding businesses). In 2000 Southland Region generated around \$1.8bn in value added from gross output of around \$4.4bn (Table 5.3)

**Table 5.3 Southland Regional Economy, 2000**

Sector	Economy
Businesses	6,392
Persons Engaged	38,236
FTE's	32,359
Gross Output (\$000)	\$ 4,444,500
Estimated Value Added (\$000)	\$ 1,792,800

### ***Economic Structure***

The Southland economy is characterised by high concentrations of employment in the Agriculture, Forestry and Fishing, Mining and Manufacturing sectors reflecting the high importance of primary industry to this economy. It is also characterised by low concentrations of employment in the tertiary sector industries of Communication Services, Finance and Insurance and Property and Business Service sectors (in comparison with the New Zealand averages).

In terms of contribution to GDP and in comparison with the New Zealand average, the economy is characterised by high contributions from; Basic Metal Industries (the Aluminium Smelter) Meat and Meat Product Manufacturing, Sheep Beef and Mixed Livestock farming, Fishing and Hunting and Services to Agriculture. There are low contributions to GDP by; Plastics and Chemical and Petroleum Product Manufacturing, Horticulture, Services to Transport and the Commercial sector activities – Insurance Real Estate and Business Services. Detailed tables of Southland's economic structure are appended to this report.

In total the rail sector employs 40 FTEs and is estimated to contribute around \$1.7m to the regions value added, or approximately 3.6% of the combined Road and Rail Transport sectors in the region.

## **5.2 Economic Impact of Closure**

Closure of the Southerner will have a range of economic impacts on the towns and regions it currently serves. This will come about through two major changes;

- The Diversion of Tourists
- Loss of Rail Activity

The impacts will be felt unevenly across the three regions based not only on the percentage of reliance of the region on the activity generated by the Southerner but also by the degree to which any of the regions can adapt to the changes. Businesses that seek out new customers may not be forced to lay off staff or close, however this would depend on the over riding economic conditions at the time. It is

important to note that the regions likely to be most impacted should the Southerner close are experiencing strong economic growth at present on the back of strong export returns from the rural sector and strong tourism returns.

### ***Diversion of Tourists – Direct Effects***

The closure of the Southerner rail service or parts of the service will reduce the number of tourists travelling the Christchurch – Dunedin – Invercargill route. The effects are not likely to be substantial. At present there is significant competition from bus and air services to ensure that those that wish to make the journey can do so. However, there are tourists both domestic and international who choose to travel on the Southerner because it is a train journey of note. These people are likely to substitute train journeys elsewhere within New Zealand rather than seek alternative means of travel along this route.

Therefore, the diversion is unlikely to be uniform across potential traveller groups. We have assumed for the purposes of this report that with the exception of 10% people, all those using the Southerner for business or intercity travel make alternative arrangements but carry out their journeys regardless. Currently travellers on the Southerner generate around \$7m in direct expenditure in the three regions (Table 5.4), excluding expenditure by those residing within the three regions. The bulk of the spend is generated by international visitors who travel on the Southerner (\$5.6m) followed by domestic travellers (\$0.9m) and intercity commuters (\$0.6m).

The majority of spend (\$3.8m) occurs in Otago region as international tourists are attracted to it's broader tourism offering and destination appeal. Almost \$2m of spend occurs in Canterbury Region with the remaining \$1.2m in Southland.

**Table 5.4 The Southerner Traveller Expenditure by Region (\$000)**

<b>Traveller Category</b>	<b>Canterbury</b>	<b>Otago</b>	<b>Southland</b>	<b>TOTAL</b>
Domestic Intercity	\$ 256	\$ 278	\$ 93	\$ 627
Domestic Leisure	\$ 264	\$ 482	\$ 107	\$ 853
International Spend	\$ 1,470	\$ 3,087	\$ 1,027	\$ 5,584
<b>TOTAL</b>	<b>\$ 1,989</b>	<b>\$ 3,847</b>	<b>\$ 1,227</b>	<b>\$ 7,063</b>

Following the closure of the Southerner, some passengers will be diverted from travelling staying and spending in all three regions. The estimated shares of Southerner travellers which would be lost to the regions is shown in Table 5.5. Greater international tourist impact would be felt in Otago and Southland than in Canterbury because Canterbury, or Christchurch specifically, is not reliant on The Southerner to deliver tourists to the city, therefore its closure will deter fewer people from going to Christchurch.

**Table 5.5 Southerner Traveller Diversion Rates**

<b>Traveller Category</b>	<b>Canterbury</b>	<b>Otago</b>	<b>Southland</b>
Domestic Intercity	10%	10%	10%
Domestic Leisure	15%	15%	15%
International Spend	20%	30%	30%

Applying these figures to direct expenditure allows calculation of the direct expenditure impacts (Table 5.6). The largest impact is felt in Southland where over 27% of current Southerner traveller expenditure is lost. In Otago the loss of \$1.0m is the greatest in monetary terms (27% of current total). Canterbury is expected to lose \$359m or 18% of current Southerner traveller expenditure.

**Table 5.6 Annual Direct Expenditure Expected to be Lost**

<b>Traveller Category</b>	<b>Canterbury</b>	<b>Otago</b>	<b>Southland</b>	<b>TOTAL</b>
Domestic Intercity	\$ 26	\$ 28	\$ 9	\$ 63
Domestic Leisure	\$ 40	\$ 72	\$ 16	\$ 128
International Spend	\$ 294	\$ 926	\$ 308	\$ 1,528
<b>TOTAL</b>	<b>\$ 359</b>	<b>\$ 1,026</b>	<b>\$ 333</b>	<b>\$ 1,719</b>

***Diversion of Tourists – Multiplier Effects***

Expenditure from travellers flows through the local economies generating a wider range of impacts than from the direct first round expenditure. Suppliers of goods and services to hotels restaurants and retail outlets all increase their production to accommodate the increased demands generated by tourists. This means that effects of The Southerner closure are felt across a broad section of the community.

It is possible to estimate the scale of these monetary effects using a regional input-output model that assesses inter-industry linkages within the regional economy. This approach allows calculation of multipliers that can be applied to direct expenditure providing estimates of total impacts on each regions GDP. Multipliers are estimated for two components of flow on expenditure, indirect and induced;

- ***Indirect Expenditure*** arises when shops or hotels purchase items from their suppliers to meet the additional demands placed upon them by growth in their customer numbers – from increased tourism for example. This generates profits, taxes, rents, etc which are components of value added. These suppliers must in turn, purchase raw materials and intermediate goods from their suppliers and so on. The indirect multiplier attempts to capture the sum of all the rounds of expenditure into a single number (multiplier) that is able to be applied to direct expenditure to measure total direct and indirect effects.
- ***Induced Expenditure*** arises from households that are paid wages and salaries from working in businesses either directly or indirectly impacted by the change in the economy – The Southerner closing for example. Households spend money on goods and services through out the economy

thereby generating a further round of flow on effects. The Type II multiplier attempts to capture these transactions into a single number that can also be applied to direct expenditure to estimate total direct, indirect and induced effects – the broadest measure of economic impact.

It is important to note that direct, indirect and induced expenditure does not necessarily generate economic benefits for the region. It is important to distinguish the component of expenditure and impact that relates to Value Added. It is the value added by businesses within the region that counts towards each regions GDP. The proportion of expenditure used to purchase raw materials and intermediate goods either from within or without the region should not be incorporated in a measure of regional “benefit” as this is simply a transfer.

Initially value added is calculated as a share of total direct expenditure then the value added type II multipliers are applied to estimate the total economic impact flowing from the loss of expenditure. Value added is estimated to make up around 52% of total direct expenditure or \$0.89m of the \$1.72m in lost direct expenditure. Once the Type II multipliers are applied, this expenditure translates to an economic impact of almost \$2.0m in the southern economies (Table 5.7)

**Table 5.7 Economic Impact of Tourist Diversion from Southerner Closure (\$000)**

<b>Category</b>	<b>Canterbury</b>	<b>Otago</b>	<b>Southland</b>	<b>TOTAL</b>
Value Added Share of Expenditure	0.52	0.54	0.45	
Direct Value Added (\$000)	\$ 186	\$ 557	\$ 151	\$ 893
Value Added Type II Multiplier	2.31	2.17	2.04	
<b>Total Value Added (\$000)</b>	<b>\$ 428</b>	<b>\$ 1,209</b>	<b>\$ 309</b>	<b>\$ 1,946</b>

### ***Loss of Rail Activity – Multiplier Effects***

Having established the scale of potential loss from diversion of tourists it is necessary to complete the analysis by assessing the economic impacts from the loss of rail activity associated with the Southerner. Under the Options, the total costs of the

Southerner would be approximately \$3.3m annually. The majority of this expenditure occurs in the regions (72% or \$2.4m) so represents a loss to the regions if the Southerner closes. A proportion of the expenditure would still occur following any closure as locomotives and bogies get converted to run freight along the main trunk route. For this analysis, it is estimated that 75% of direct expenditure would cease following the closure of the Southerner in each region.

**Table 5.8 Economic Impact from Closure of Southerner Rail Operation**

<b>Category</b>	<b>Canterbury</b>	<b>Otago</b>	<b>Southland</b>	<b>TOTAL</b>
Regional Share of Total Expenditure	35%	40%	25%	
Southerner Direct Expenditure	\$ 833	\$ 952	\$ 595	\$ 2,380
Proportion lost through Closure	75%	75%	75%	
Total Potential Loss	\$ 625	\$ 714	\$ 446	\$ 1,785
Value Added Share of Spend	0.49	0.60	0.51	
Direct Value Added (\$000)	\$ 305	\$ 431	\$ 229	\$ 964
Value Added Type II Multiplier	2.34	2.19	2.09	
<b>Total Value Added (\$000)</b>	<b>\$ 712</b>	<b>\$ 942</b>	<b>\$ 478</b>	<b>\$ 2,132</b>

In total it is expected that around \$1.8m of expenditure would be lost to the regions following the closure of the Southerner, annually. The value added component of this is approximately 54%, which means around \$0.96m of direct value added is lost to the regions. Once the flow on effects of this loss are taken into account, ie the multipliers have been applied the southern economies can expect the economic impact of the closure to equate to \$2.1m.

The bulk of this impact is felt in Otago Region which can expect to lose \$0.94m in value added or 44% of the total. Canterbury can expect to lose \$0.7m or 33% with Southland the remaining \$0.48m or 22% (Table 5.8).



### **Total Economic Impact**

The total annual economic impact is the sum of the diversion of travellers impact and the loss of the rail operation to the regional economies. Table 5.9 details the annual economic impact totals.

**Table 5.9 Total Economic Impact from Southerner Closure**

<b>Category</b>	<b>Canterbury</b>	<b>Otago</b>	<b>Southland</b>	<b>TOTAL</b>
Diversion of Travellers Economic Impact	\$ 428	\$ 1,209	\$ 309	\$ 1,946
Loss of Southerner Economic Impact	\$ 712	\$ 942	\$ 478	\$ 2,132
<b>Total Value Added (\$000)</b>	<b>\$ 1,140</b>	<b>\$ 2,151</b>	<b>\$ 787</b>	<b>\$ 4,078</b>
<i>Share of Regional GDP</i>	<i>0.01%</i>	<i>0.06%</i>	<i>0.04%</i>	<i>0.03%</i>

The economies of southern regions can expect to see GDP impacts of the order of \$4.1m should the Southerner cease operation. This translates to only 0.03% of the total combined GDP of Canterbury, Otago and Southland regions. The greatest impact is felt in Otago region with over half the total impact \$2.2m or 0.06% of regional GDP. This is followed by Southland which is expected to lose 0.03% of its GDP or \$0.79m and Canterbury 0.01% of GDP or \$1.1m.

## **6 Closure or Subsidy**

### **6.1 Issues**

The negotiations in late 2001 between WCR, Government and regional and territorial authorities were over a subsidy for the Southerner, since the projected costs were greater than the projected revenues of the service. The rationale for subsidy from public funds is that the community may realise the consequent or flow on benefits arising from continuation of the Southerner service, even though the service operates at a financial loss. These benefits or externalities are not usually captured in the normal market pricing mechanisms used by businesses to make commercial decisions, yet they may be important for the community as a whole.

The issue is the trade-off between the cost of any subsidy, relative to the actual and potential benefits of retaining the service, including externalities. This issue is complicated because the cost of a subsidy is measurable in dollar terms, while the value of externalities, including intangible benefits, cannot always be measured on the same basis.

Thus, the Southerner service sustains a range of flow on benefits from both the operation of the service and from the tourism activity and inter-city travel which it sustains, but many of these do not accrue to the operator of the Southerner as fare revenue. Such benefits only become a source of revenue when specifically converted to a dollar value through subsidy. It is important for regional and central government to understand the scale and scope of these potential wider benefits in consideration of possible further funding.

In the case of the Southerner, the service is an economic activity and a commercial operation. This means that most of the potential benefits can be at least approximated because the flow on effects are measurable as impacts within the regional economies, and the alternative services have also been defined.

The main benefits to the regional community would arise from additional economic activity in the tourism sector – based on the potential for an improved rail passenger

service to enhance the tourism product of the Dunedin and Coastal Otago economies, and provide one platform for further development of the sector. Currently, this south-eastern area of the South Island is at best a secondary tourism destination, but the sector has achieved significant growth, and there is good potential for further growth based on a larger and more diverse tourism infrastructure - including rail services.

Other benefits, including externalities such as levels of service to the community, and environmental/safety effects, are smaller. If the train ceases, then most of the “service” aspects – transport of people at the same or lower cost, with the same or better level of convenience – can be provided by existing coach services, without significant need for additional capacity. The main “service’ effect will be loss of choice between transport options, and the loss of preferred aspects of rail transport. The existing train service carries only a small share of travellers along the route, and even in the high growth scenario where passenger numbers nearly double, the share will remain small. This means that advantages from train travel rather than road travel in terms of lower diesel emissions and traffic safety are minor.

Since most of the benefits would be driven from the additional economic activity, a major tangible outcome for the regional community would be in increased household and business incomes from the higher level of activity.

Equally, the cost of any subsidy would be borne primarily by regional households and businesses through rates and council charges. It is therefore pertinent to consider the cost of the subsidy in direct relation to the additional income (to households and businesses) which continuation of the southerner service would generate.

## **6.2 Approach**

To address this, the base comparison is between the direct costs of subsidy – assuming it is borne by the regional community – relative to the income which would be forgone if the Southerner operation ceased and the potential tourism sector growth were not achieved. We note there is considerable uncertainty around such a comparison, because much of the additional income is potential, rather than proven.

The economic impact analysis, using multipliers to identify the level of flow-on impacts, shows the difference in economic activity between the “with Southerner” and “without Southerner” futures. The impact of closure is estimated at some \$4m - ie the combined regional GDPs would be \$4m smaller (around 0.03%, Table 5.9) without the Southerner in operation than they would with the service. Collectively this activity sustains around 66 full time equivalent jobs in the industries affected. Contained within the estimate of \$4m economic activity is household and (net) business income in the order of \$2m annually. This level of income accruing to the regional community would increase through time, if the passenger growth scenarios were achieved. This provides the basis for estimating the regional income situation for the “with Southerner” future.

However, if the Southerner service closed, this income flow would not simply cease. Some would be lost, but a significant share would be replaced by income from alternative sources. The level of replacement income has been estimated according to welfare payment levels, taking a worst-case assumption that if the service closed, then train-related (Southerner and tourist) activity would be lost, and those employed unable to find alternative employment. The net flow of compensating income has been estimated assuming that not all of those (currently and potentially) employed would be eligible for WINZ funding (it is assumed 15% would not be) and the income levels would be lower than the wages from employment. In addition, some (20.5% on a *per capita* basis) of such funding would originate through taxes paid by taxpayers in the regions affected, so only the net inflow to the regions should be considered. However, there would be a flow-on effect, as the compensating income would flow through the economy as household spending.

The net loss of income to the regions is therefore the difference between current and future potential, less the compensating support coming into the region from government. In broad terms, the level of compensating income would be about two-thirds the level sustained by the Southerner. Since a subsidy by regional or local government would come from households’ after-tax income, then the appropriate measure of net income foregone is the after-tax situation.

The annual net difference in household incomes in the regions is some \$0.48m initially. In the Medium growth scenario, the net difference in income would increase

to \$0.58m within a 5 year time frame, and in the High growth scenario, to \$0.64m.

To compare with this, it is assumed that the level of subsidy would equal the total annual deficit of the Southerner service, as long as the return was negative, and would cease as soon as the service returned a positive result (total revenues excluding subsidy exceeded total costs).

The comparison is straightforward - if the cost of the subsidy is greater than the cost of the net loss in income, then the community would be worse off from paying a subsidy to retain the service. If the cost of the subsidy were less than the net loss in income, then the community would be better off in income terms by paying a subsidy to retain the service (considering the community as a whole and ignoring the redistributive effects).

### **6.3 Results**

This comparison has been undertaken for the Base scenarios – Medium and High growth. It has also been completed to show the effects of different actual costs of marketing costs and track access charges, as these are major areas of uncertainty.

In the Medium growth scenario, the net difference is -\$0.1m in present value (PV) terms (10% discount rate over 10 years). In other words, the cost of the subsidy (\$4.4m undiscounted, and \$3.6m in PV terms) would be only \$0.1m less than the net gain in incomes to the regions' community (\$5.3m undiscounted, and \$3.5m in PV terms).

The situation differs markedly between Years 1-5 and years 6-10. In the first 5 years, the cost of the subsidy would be \$3.2m (PV), while the foregone income would be \$2.0m (PV), indicating the community would be worse off in income terms (by \$1.2m) from retaining the service. Over the latter period, allowing for growth in passenger numbers and a service requiring a progressively reducing subsidy, the cost of the subsidy (\$0.4m) would be less than the income foregone from not having it (\$1.5m).

If the cost structure of the service is higher than estimated, then the cost of the

subsidy becomes substantially higher than the incomes gained:

- a) If the track access costs are at the medium-high level (\$1.15 per train km), then the subsidy required is greater than the income gain, by \$1.4m over 10 years (present value).
- b) If the track access costs are at the medium-high level and marketing costs higher (\$0.25m per year rather than \$0.15m), then the required subsidy is greater than the income gain by \$1.9m (present value).
- c) If the track access costs are at the high level (\$1.50 per train km) and marketing costs higher, then the required subsidy is greater than the income gain by \$2.6m (present value).

In the High growth base case scenario, the net difference is \$1.5m in present value terms, where the incomes generated are greater than the subsidy required by this amount. The cost of the subsidy (\$2.5m undiscounted, and \$2.3m in PV terms) would be the less than the net loss of income to the regions' community (\$5.7m undiscounted, and \$3.7m in PV terms).

Again, the situation differs between the first 5 years – when the cost of the subsidy at \$2.3m (PV) would be just greater than the foregone income (\$2.1m) – and the later years – when the cost of the subsidy would be zero and foregone income \$1.6m.

This is the outcome in the best of the five Options assessed, where rapid growth (90%) in passenger numbers is achieved, and the cost of track access is low (around \$190,000 per year). As noted, higher levels of track access, marketing and/or other costs would significantly alter the situation, because the surplus is a small percentage of the total costs. Sensitivity analysis shows that:

- a) If the track access costs are at the medium-high level (\$1.15 per train km), then the net income is greater than the subsidy required by \$0.7m over 10 years (present value).

- b) If the track access costs are at the medium-high level and marketing costs higher (\$0.25m per year rather than \$0.15m), then the net income is greater than the cost of the subsidy required by \$0.5m over 10 years (present value).
  
- c) If the track access costs are at the high level (\$1.50 per train km) and marketing costs higher, then the net income gain is equal to the subsidy required to sustain it.

In all cases, the net gain in income over the first five years is substantially less than the cost of the subsidy, in present value terms (Table 6.1).

**Table 6.1 Comparison of Regional Incomes and Subsidy Required (\$m, PV)**

<b><i>Medium Growth</i></b>	Years 1-5	Years 6-10	Years 1-10
Base Scenario	-\$ 1.22	\$ 1.08	-\$ 0.14
Track Access Med-High	-\$ 2.10	\$ 0.68	-\$ 1.42
Track Access Med-High, Marketing High	-\$ 2.37	\$ 0.46	-\$ 1.91
Track Access High, Marketing High	-\$ 2.81	\$ 0.22	-\$ 2.59
<b><i>High Growth</i></b>	Years 1-5	Years 6-10	Years 1-10
Base Scenario	-\$ 0.15	\$ 1.64	\$ 1.48
Track Access Med-High	-\$ 0.89	\$ 1.64	\$ 0.75
Track Access Med-High, Marketing High	-\$ 1.17	\$ 1.63	\$ 0.46
Track Access High, Marketing High	-\$ 1.60	\$ 1.56	-\$ 0.04

## **Appendices**



## APPENDIX – ECONOMIC SUMMARY

### Regional Economic Structures

#### Canterbury Regional Council

1Digit Sector	Description	Share			Ratio to NZ		
		Businesses	Persons Engaged	FTE's	Businesses	Persons Engaged	FTE's
A	Agriculture, Forestry and Fishing	1,339	3,198	2,654	3.6%	1.5%	1.5%
B	Mining	42	243	238	0.1%	0.1%	0.1%
C	Manufacturing	3,174	38,105	36,028	8.5%	17.4%	19.7%
D	Electricity, Gas and Water Supply	39	447	434	0.1%	0.2%	0.2%
E	Construction	4,040	13,607	12,623	10.8%	6.2%	6.9%
F	Wholesale Trade	2,796	13,852	12,541	7.5%	6.3%	6.9%
G	Retail Trade	5,153	30,142	23,539	13.8%	13.8%	12.9%
H	Accommodation, Cafes and Restaurants	1,439	13,800	9,814	3.9%	6.3%	5.4%
I	Transport and Storage	1,463	10,292	9,073	3.9%	4.7%	5.0%
J	Communication Services	455	5,772	4,025	1.2%	2.6%	2.2%
K	Finance and Insurance	1,134	4,390	3,945	3.0%	2.0%	2.2%
L	Property and Business Services	10,319	26,649	21,583	27.6%	12.2%	11.8%
M	Government Administration and Defence	217	5,782	5,539	0.6%	2.6%	3.0%
N	Education	850	16,097	13,091	2.3%	7.3%	7.2%
O	Health and Community Services	1,952	23,945	17,159	5.2%	10.9%	9.4%
P	Cultural and Recreational Services	1,170	5,515	4,255	3.1%	2.5%	2.3%
Q	Personal and other Services	1,768	7,294	6,270	4.7%	3.3%	3.4%
<b>TOTAL</b>	<b>Canterbury Region Total</b>	<b>37,350</b>	<b>219,130</b>	<b>182,810</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

## Otago Region

	Description	Share of Regional			Ratio to NZ		
		Businesses	Persons Engaged	FTE's	Businesses	Persons Engaged	FTE's
A	Agriculture, Forestry and Fishing	738	2,523	2,006	1.42	1.43	1.39
B	Mining	37	331	310	1.62	1.83	1.81
C	Manufacturing	839	11,197	10,606	0.84	0.94	0.97
D	Electricity, Gas and Water Supply	27	527	511	1.46	1.63	1.67
E	Construction	1,364	4,840	4,604	0.90	0.88	0.90
F	Wholesale Trade	672	3,081	2,770	0.76	0.57	0.58
G	Retail Trade	1,940	11,334	8,887	1.11	1.04	1.06
H	Accommodation, Cafes and Restaurants	817	7,308	5,307	1.73	1.59	1.65
I	Transport and Storage	634	3,399	3,040	1.19	0.98	1.01
J	Communication Services	171	770	576	1.01	0.45	0.46
K	Finance and Insurance	422	1,233	1,093	0.84	0.55	0.54
L	Property and Business Services	3,404	7,558	6,221	0.84	0.70	0.70
M	Government Administration and Defence	130	1,702	1,647	1.59	0.66	0.69
N	Education	391	9,522	7,288	1.18	1.59	1.53
O	Health and Community Services	777	9,290	6,788	1.22	1.23	1.23
P	Cultural and Recreational Services	635	2,772	2,267	1.36	1.30	1.38
Q	Personal and other Services	664	2,497	2,137	1.09	0.90	0.92
<b>Otago Regional Council Total</b>		<b>13,662</b>	<b>79,884</b>	<b>66,056</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

## Southland Region

	Description	Share of Regional			Ratio to NZ					
		Businesses	Persons Engaged	FTE's	Businesses	Persons Engaged	FTE's			
A	Agriculture, Forestry and Fishing	641	2,359	1,931	10.0%	6.2%	6.0%	2.63	2.78	2.72
B	Mining	16	154	137	0.3%	0.4%	0.4%	1.50	1.78	1.64
C	Manufacturing	449	8,936	8,558	7.0%	23.4%	26.4%	0.96	1.56	1.59
D	Electricity, Gas and Water Supply	16	113	109	0.3%	0.3%	0.3%	1.85	0.73	0.72
E	Construction	580	2,296	2,181	9.1%	6.0%	6.7%	0.90	0.88	0.90
F	Wholesale Trade	325	1,462	1,321	5.1%	3.8%	4.1%	0.79	0.57	0.57
G	Retail Trade	917	5,420	4,327	14.3%	14.2%	13.4%	1.12	1.04	1.06
H	Accommodation, Cafes and Restaurants	271	2,419	1,655	4.2%	6.3%	5.1%	1.23	1.10	1.05
I	Transport and Storage	268	1,982	1,691	4.2%	5.2%	5.2%	1.07	1.20	1.15
J	Communication Services	75	317	234	1.2%	0.8%	0.7%	0.94	0.39	0.38
K	Finance and Insurance	205	622	565	3.2%	1.6%	1.7%	0.87	0.58	0.57
L	Property and Business Services	1,456	2,748	2,226	22.8%	7.2%	6.9%	0.77	0.53	0.51
M	Government Administration and Defence	57	850	798	0.9%	2.2%	2.5%	1.49	0.69	0.68
N	Education	212	2,731	2,180	3.3%	7.1%	6.7%	1.36	0.95	0.93
O	Health and Community Services	336	3,677	2,656	5.3%	9.6%	8.2%	1.12	1.02	0.99
P	Cultural and Recreational Services	241	785	597	3.8%	2.1%	1.8%	1.11	0.77	0.74
Q	Personal and other Services	327	1,365	1,195	5.1%	3.6%	3.7%	1.15	1.03	1.05
<b>Southland Regional Council Total</b>		<b>6,392</b>	<b>38,236</b>	<b>32,359</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>			

## Regional Economic Performance

### Canterbury Region

48 Sector Economy	Gross Output Share of Total	VA Share of Output	Gross Output Ratio to NZ	VA Ratio to NZ
Sheep, beef & mixed livestock	1.8%	2.3%	1.35	1.41
Dairy	0.5%	0.8%	0.41	0.42
Horticulture	0.5%	0.8%	0.73	0.74
Services to Agriculture	0.2%	0.4%	0.81	0.88
All other farming	1.6%	2.4%	4.94	5.12
Fishing and Hunting	0.2%	0.2%	0.75	0.73
Forestry & Logging	0.6%	1.1%	0.64	0.77
Oil and Gas Exploration and Extraction	0.0%	0.0%	0.03	-
Other mining & quarrying	0.1%	0.2%	0.46	0.54
Meat and Meat Products Manufacturing	2.9%	1.8%	1.35	1.41
Dairy Products	1.1%	0.8%	0.73	0.82
Manufacture of other food	1.8%	1.7%	1.15	1.21
Beverage, Malt & Tobacco Manufacture	0.6%	0.6%	1.03	1.11
Textile and Apparel Manufacture	2.2%	1.2%	1.80	1.57
Wood & Wood Products	1.2%	1.3%	0.96	1.05
Paper and Paper Product Manufacturing	0.2%	0.3%	0.25	0.32
Printing & Publishing	0.8%	1.2%	0.90	1.00
Rubber, Plastic and Other Chemical Product Mfg	1.2%	1.5%	1.16	1.28
Petroleum, Coal and Basic Chemical Product Mfg	0.6%	0.4%	0.43	0.44
Non-metallic Minerals	0.5%	0.7%	1.01	1.09
Basic Metal Industries	0.2%	0.2%	0.33	0.37
Fabricated Metal Products	0.9%	1.2%	0.85	0.91
Machinery and Equipment Manufacture	2.3%	2.4%	1.50	1.38
Transport Equipment	0.6%	0.7%	0.60	1.16
Other Manufacturing	0.1%	0.1%	0.89	0.92
Electricity Generation &	1.4%	1.9%	0.92	0.94
Gas Treatment & Distribution	0.0%	0.0%	0.10	-
Water works and supply	0.1%	0.1%	0.58	0.62
Construction	5.0%	3.7%	0.96	1.01
Wholesale and Retail Trade	6.8%	12.2%	0.94	0.98
Accommodation, Restaurants & Cafes	1.9%	2.7%	1.08	1.13
Road Transport incl Rail	1.0%	1.6%	0.97	1.04
Services Allied to Transport	0.8%	1.3%	0.99	1.10
Water Transport	0.7%	1.3%	1.19	1.20
Air Transport	1.5%	1.8%	1.36	1.41
Communications Services	1.6%	3.8%	0.90	0.90
Finance	1.7%	3.6%	0.71	0.76
Services to Finance and Insurance	0.2%	0.4%	0.66	0.69
Insurance	0.2%	0.3%	0.47	0.56
Real Estate	2.0%	4.3%	1.02	1.02
Business Services	2.2%	3.9%	0.79	0.81
Ownership of Owner-Occupied	2.9%	8.5%	1.13	1.12
Education	1.2%	3.4%	1.01	1.01
Health and Community Services	2.5%	6.4%	1.09	1.09
Cultural & Recreation Services	1.0%	1.6%	0.87	0.89
Personal, Other and Household Domestic Services	1.0%	1.6%	0.97	1.03
Central Government	1.5%	2.5%	0.84	0.85
Local Government	0.4%	0.7%	1.26	1.28
Household Consumption	19.4%	6.8%	1.02	1.00
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>		

## Otago Region

48 Sector Economy	Gross Output Share of Total	VA Share of Output	Gross Output Ratio to NZ	VA Ratio to NZ
Sheep, beef & mixed livestock	3.0%	4.2%	<b>2.29</b>	<b>2.53</b>
Dairy	0.6%	1.0%	<b>0.53</b>	<b>0.55</b>
Horticulture	0.7%	1.2%	1.06	1.11
Services to Agriculture	0.4%	0.8%	<b>1.56</b>	<b>1.88</b>
All other farming	0.3%	0.5%	0.99	1.00
Fishing and Hunting	0.2%	0.3%	1.02	1.20
Forestry & Logging	1.1%	1.9%	<b>1.26</b>	<b>1.35</b>
Oil and Gas Exploration and Extraction	0.0%	0.0%	<b>0.03</b>	-
Other mining & quarrying	0.3%	0.5%	<b>1.42</b>	1.22
Meat and Meat Products Manufacturing	5.0%	3.2%	<b>2.30</b>	<b>2.47</b>
Dairy Products	1.1%	0.8%	<b>0.69</b>	<b>0.73</b>
Manufacture of other food	1.6%	1.8%	1.04	<b>1.29</b>
Beverage, Malt & Tobacco Manufacture	0.3%	0.3%	<b>0.49</b>	<b>0.54</b>
Textile and Apparel Manufacture	2.3%	1.2%	<b>1.88</b>	<b>1.62</b>
Wood & Wood Products	1.0%	1.0%	0.81	0.83
Paper and Paper Product Manufacturing	0.1%	0.1%	<b>0.10</b>	<b>0.11</b>
Printing & Publishing	0.8%	1.2%	0.88	0.99
Rubber, Plastic and Other Chemical Product Mfg	0.2%	0.3%	<b>0.21</b>	<b>0.23</b>
Petroleum, Coal and Basic Chemical Product Mfg	0.3%	0.1%	<b>0.19</b>	<b>0.14</b>
Non-metallic Minerals	0.2%	0.3%	<b>0.45</b>	<b>0.51</b>
Basic Metal Industries	0.3%	0.3%	<b>0.60</b>	<b>0.59</b>
Fabricated Metal Products	0.6%	0.9%	<b>0.62</b>	<b>0.67</b>
Machinery and Equipment Manufacture	1.0%	1.4%	<b>0.68</b>	0.80
Transport Equipment	0.4%	0.6%	<b>0.43</b>	0.98
Other Manufacturing	0.1%	0.1%	<b>0.49</b>	<b>0.52</b>
Electricity Generation &	2.5%	3.3%	<b>1.63</b>	<b>1.59</b>
Gas Treatment & Distribution	0.0%	0.0%	<b>0.21</b>	<b>0.19</b>
Water works and supply	0.1%	0.1%	1.09	1.06
Construction	4.8%	3.7%	0.94	1.03
Wholesale and Retail Trade	6.1%	11.3%	0.85	0.91
Accommodation, Restaurants & Cafes	2.9%	4.2%	<b>1.65</b>	<b>1.76</b>
Road Transport incl Rail	1.1%	1.9%	1.11	1.24
Services Allied to Transport	0.5%	0.9%	<b>0.63</b>	0.83
Water Transport	0.4%	1.0%	<b>0.61</b>	0.95
Air Transport	0.3%	0.4%	<b>0.26</b>	<b>0.30</b>
Communications Services	1.1%	2.8%	<b>0.65</b>	<b>0.65</b>
Finance	2.0%	3.9%	0.82	0.84
Services to Finance and Insurance	0.2%	0.4%	<b>0.66</b>	<b>0.70</b>
Insurance	0.2%	0.2%	<b>0.33</b>	<b>0.41</b>
Real Estate	1.3%	2.9%	<b>0.67</b>	<b>0.68</b>
Business Services	1.7%	3.3%	<b>0.61</b>	<b>0.68</b>
Ownership of Owner-Occupied	3.3%	9.3%	<b>1.28</b>	1.22
Education	1.7%	4.6%	<b>1.39</b>	<b>1.36</b>
Health and Community Services	2.8%	6.9%	1.21	1.18
Cultural & Recreation Services	1.1%	1.6%	0.94	0.94
Personal, Other and Household Domestic Services	0.9%	1.5%	0.93	0.97
Central Government	1.3%	2.2%	<b>0.72</b>	<b>0.74</b>
Local Government	0.4%	0.7%	1.24	<b>1.25</b>
Household Consumption	22.6%	7.6%	1.19	1.12
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>		

## Southland Region

48 Sector Economy	Gross Output Share of Total	VA Share of Output	Gross Output Ratio to NZ	VA Ratio to NZ
Sheep, beef & mixed livestock	5.8%	8.8%	4.44	5.32
Dairy	1.3%	2.3%	1.17	1.30
Horticulture	0.2%	0.4%	0.31	0.33
Services to Agriculture	0.4%	0.9%	1.73	2.24
All other farming	0.5%	0.8%	1.58	1.69
Fishing and Hunting	0.9%	1.2%	3.90	4.41
Forestry & Logging	0.8%	1.3%	0.87	0.97
Oil and Gas Exploration and Extraction	0.0%	0.0%	0.03	-
Other mining & quarrying	0.5%	0.8%	1.96	2.03
Meat and Meat Products Manufacturing	9.8%	6.6%	4.51	5.21
Dairy Products	2.4%	1.7%	1.57	1.67
Manufacture of other food	1.0%	1.0%	0.63	0.70
Beverage, Malt & Tobacco Manufacture	0.0%	0.0%	0.03	-
Textile and Apparel Manufacture	1.9%	0.5%	1.51	0.62
Wood & Wood Products	0.8%	0.9%	0.62	0.69
Paper and Paper Product Manufacturing	1.0%	1.1%	1.09	1.16
Printing & Publishing	0.5%	0.8%	0.53	0.63
Rubber, Plastic and Other Chemical Product Mfg	0.0%	0.0%	0.04	0.04
Petroleum, Coal and Basic Chemical Product Mfg	0.8%	0.5%	0.57	0.55
Non-metallic Minerals	0.3%	0.4%	0.48	0.58
Basic Metal Industries	3.2%	4.4%	5.82	7.45
Fabricated Metal Products	0.7%	1.1%	0.71	0.82
Machinery and Equipment Manufacture	0.5%	0.7%	0.31	0.41
Transport Equipment	0.3%	0.3%	0.33	0.43
Other Manufacturing	0.0%	0.1%	0.34	0.43
Electricity Generation &	1.5%	2.1%	0.97	1.01
Gas Treatment & Distribution	0.0%	0.0%	0.10	-
Water works and supply	0.1%	0.1%	0.69	0.77
Construction	3.8%	3.3%	0.74	0.92
Wholesale and Retail Trade	4.9%	10.1%	0.69	0.82
Accommodation, Restaurants & Cafes	1.6%	2.6%	0.89	1.09
Road Transport incl Rail	1.0%	1.7%	0.97	1.14
Services Allied to Transport	0.2%	0.5%	0.30	0.43
Water Transport	0.6%	1.6%	1.05	1.46
Air Transport	0.3%	0.4%	0.26	0.34
Communications Services	0.7%	2.0%	0.43	0.48
Finance	2.3%	4.9%	0.97	1.05
Services to Finance and Insurance	0.2%	0.5%	0.63	0.73
Insurance	0.1%	0.2%	0.30	0.40
Real Estate	0.8%	1.9%	0.41	0.46
Business Services	1.0%	2.3%	0.36	0.48
Ownership of Owner-Occupied	2.8%	8.6%	1.09	1.13
Education	0.8%	2.5%	0.70	0.75
Health and Community Services	1.8%	4.8%	0.78	0.83
Cultural & Recreation Services	0.7%	1.3%	0.59	0.73
Personal, Other and Household Domestic Services	0.8%	1.4%	0.77	0.90
Central Government	1.1%	2.1%	0.60	0.70
Local Government	0.4%	0.7%	1.06	1.20
Household Consumption	17.6%	6.4%	0.92	0.95
<b>Total</b>	<b>63.9%</b>	<b>59.7%</b>		

## Canterbury Region

48 Sector Economy	Employment 2000 (FTE's)	Estimated Gross Output (\$000)	Estimated Value Added (\$000)
Sheep, beef & mixed livestock	-	\$ -	\$ -
Dairy	-	\$ -	\$ -
Horticulture	-	\$ -	\$ -
Services to Agriculture	2,269	\$ 88,326	\$ 48,696
All other farming	-	\$ -	\$ -
Fishing and Hunting	448	\$ 69,669	\$ 25,568
Forestry & Logging	2,242	\$ 642,175	\$ 366,101
Oil and Gas Exploration and Extraction	-	\$ -	\$ -
Other mining & quarrying	238	\$ 53,373	\$ 31,248
Meat and Meat Products Manufacturing	4,190	\$ 1,132,474	\$ 209,286
Dairy Products	782	\$ 409,205	\$ 92,907
Manufacture of other food	3,678	\$ 637,598	\$ 183,521
Beverage, Malt & Tobacco Manufacture	476	\$ 245,924	\$ 73,877
Textile and Apparel Manufacture	5,913	\$ 1,204,928	\$ 189,327
Wood & Wood Products	3,816	\$ 530,646	\$ 174,863
Paper and Paper Product Manufacturing	491	\$ 130,455	\$ 55,928
Printing & Publishing	1,235	\$ 146,508	\$ 69,827
Rubber, Plastic and Other Chemical Product Mfg	2,298	\$ 478,936	\$ 183,514
Petroleum, Coal and Basic Chemical Product Mfg	627	\$ 251,872	\$ 58,024
Non-metallic Minerals	899	\$ 220,490	\$ 81,521
Basic Metal Industries	321	\$ 81,002	\$ 29,344
Fabricated Metal Products	2,675	\$ 359,347	\$ 142,891
Machinery and Equipment Manufacture	6,067	\$ 1,027,503	\$ 326,316
Transport Equipment	2,077	\$ 243,317	\$ 87,067
Other Manufacturing	489	\$ 51,527	\$ 17,669
Electricity Generation & Gas Treatment & Distribution	365	\$ 257,171	\$ 106,623
Water works and supply	42	\$ 15,221	\$ 4,558
Construction	12,387	\$ 2,010,918	\$ 448,474
Wholesale and Retail Trade	29,579	\$ 2,610,663	\$ 1,418,886
Accommodation, Restaurants & Cafes	11,155	\$ 874,999	\$ 370,319
Road Transport incl Rail	3,920	\$ 365,787	\$ 174,475
Services Allied to Transport	2,575	\$ 348,919	\$ 170,117
Water Transport	776	\$ 262,631	\$ 147,215
Air Transport	1,654	\$ 526,909	\$ 199,788
Communications Services	6,537	\$ 1,377,300	\$ 1,018,841
Finance	1,996	\$ 490,034	\$ 309,855
Services to Finance and Insurance	1,310	\$ 109,789	\$ 62,156
Insurance	771	\$ 106,264	\$ 46,988
Real Estate	3,172	\$ 1,130,323	\$ 736,341
Business Services	10,165	\$ 754,752	\$ 416,058
Ownership of Owner-Occupied	186	\$ -	\$ -
Education	14,035	\$ 500,487	\$ 417,613
Health and Community Services	17,272	\$ 1,046,500	\$ 802,631
Cultural & Recreation Services	6,065	\$ 659,959	\$ 305,618
Personal, Other and Household Domestic Services	10,192	\$ 674,451	\$ 341,463
Central Government	4,778	\$ 677,779	\$ 352,265
Local Government	2,648	\$ 230,257	\$ 118,726
Household Consumption	-	\$ -	\$ -
<b>Total</b>	<b>182,810</b>	<b>\$ 23,036,387</b>	<b>\$ 10,416,508</b>

## Otago Region

48 Sector Economy	Employment 2000 (FTE's)	Estimated Gross Output (\$000)	Estimated Value Added (\$000)
Sheep, beef & mixed livestock	-	\$ -	\$ -
Dairy	-	\$ -	\$ -
Horticulture	-	\$ -	\$ -
Services to Agriculture	1,569	\$ 52,565	\$ 33,513
All other farming	-	\$ -	\$ -
Fishing and Hunting	141	\$ 22,792	\$ 10,519
Forestry & Logging	1,050	\$ 313,611	\$ 168,230
Oil and Gas Exploration and Extraction	-	\$ -	\$ -
Other mining & quarrying	310	\$ 59,693	\$ 26,742
Meat and Meat Products Manufacturing	2,894	\$ 746,368	\$ 148,756
Dairy Products	195	\$ 105,767	\$ 23,691
Manufacture of other food	1,074	\$ 168,315	\$ 59,873
Beverage, Malt & Tobacco Manufacture	150	\$ 53,206	\$ 17,231
Textile and Apparel Manufacture	1,693	\$ 391,366	\$ 63,472
Wood & Wood Products	1,161	\$ 167,874	\$ 54,501
Paper and Paper Product Manufacturing	55	\$ 13,158	\$ 4,845
Printing & Publishing	423	\$ 47,033	\$ 23,912
Rubber, Plastic and Other Chemical Product Mfg	188	\$ 30,980	\$ 12,178
Petroleum, Coal and Basic Chemical Product Mfg	58	\$ 40,254	\$ 6,982
Non-metallic Minerals	168	\$ 31,811	\$ 12,875
Basic Metal Industries	204	\$ 49,658	\$ 16,643
Fabricated Metal Products	510	\$ 64,125	\$ 27,178
Machinery and Equipment Manufacture	1,352	\$ 150,269	\$ 63,993
Transport Equipment	372	\$ 45,209	\$ 19,791
Other Manufacturing	99	\$ 10,522	\$ 3,801
Electricity Generation & Gas Treatment & Distribution	405	\$ 285,188	\$ 118,162
Water works and supply	53	\$ 20,116	\$ 5,752
Construction	4,552	\$ 686,644	\$ 168,811
Wholesale and Retail Trade	9,177	\$ 752,839	\$ 440,191
Accommodation, Restaurants & Cafes	5,827	\$ 464,128	\$ 210,501
Road Transport incl Rail	1,541	\$ 135,556	\$ 70,692
Services Allied to Transport	877	\$ 78,581	\$ 47,394
Water Transport	195	\$ 35,720	\$ 32,401
Air Transport	269	\$ 59,462	\$ 26,122
Communications Services	1,455	\$ 291,438	\$ 226,695
Finance	558	\$ 160,464	\$ 101,383
Services to Finance and Insurance	455	\$ 36,454	\$ 21,991
Insurance	119	\$ 15,601	\$ 7,309
Real Estate	990	\$ 294,696	\$ 201,573
Business Services	2,653	\$ 176,304	\$ 109,964
Ownership of Owner-Occupied	36	\$ -	\$ -
Education	7,488	\$ 257,878	\$ 220,600
Health and Community Services	6,827	\$ 391,316	\$ 305,995
Cultural & Recreation Services	2,719	\$ 265,200	\$ 125,165
Personal, Other and Household Domestic Services	3,997	\$ 214,646	\$ 110,855
Central Government	1,640	\$ 218,149	\$ 120,900
Local Government	563	\$ 47,247	\$ 25,225
Household Consumption	-	\$ -	\$ -
<b>Total</b>	<b>66,056</b>	<b>\$ 7,452,206</b>	<b>\$ 3,496,408</b>



## Southland Region

48 Sector Economy	Employment 2000 (FTE's)	Estimated Gross Output (\$000)	Estimated Value Added (\$000)
Sheep, beef & mixed livestock	-	\$ -	\$ -
Dairy	-	\$ -	\$ -
Horticulture	-	\$ -	\$ -
Services to Agriculture	1,323	\$ 44,336	\$ 28,349
All other farming	-	\$ -	\$ -
Fishing and Hunting	428	\$ 68,414	\$ 28,329
Forestry & Logging	447	\$ 132,036	\$ 68,520
Oil and Gas Exploration and Extraction	-	\$ -	\$ -
Other mining & quarrying	137	\$ 29,274	\$ 14,650
Meat and Meat Products Manufacturing	3,959	\$ 1,047,613	\$ 209,709
Dairy Products	325	\$ 186,029	\$ 39,144
Manufacture of other food	463	\$ 84,304	\$ 24,975
Beverage, Malt & Tobacco Manufacture	-	\$ -	\$ -
Textile and Apparel Manufacture	440	\$ 221,833	\$ 15,928
Wood & Wood Products	759	\$ 109,894	\$ 35,883
Paper and Paper Product Manufacturing	156	\$ 74,840	\$ 25,387
Printing & Publishing	212	\$ 23,848	\$ 11,984
Rubber, Plastic and Other Chemical Product Mfg	15	\$ 3,223	\$ 1,030
Petroleum, Coal and Basic Chemical Product Mfg	95	\$ 52,137	\$ 10,919
Non-metallic Minerals	142	\$ 23,427	\$ 9,528
Basic Metal Industries	909	\$ 234,412	\$ 95,204
Fabricated Metal Products	525	\$ 63,101	\$ 26,727
Machinery and Equipment Manufacture	347	\$ 35,554	\$ 15,949
Transport Equipment	164	\$ 32,198	\$ 7,646
Other Manufacturing	55	\$ 4,757	\$ 1,952
Electricity Generation & Gas Treatment & Distribution	65	\$ 45,626	\$ 18,915
Water works and supply	-	\$ -	\$ -
Construction	2,169	\$ 307,537	\$ 78,988
Wholesale and Retail Trade	4,480	\$ 354,279	\$ 214,903
Accommodation, Restaurants & Cafes	1,908	\$ 137,957	\$ 67,174
Road Transport incl Rail	1,171	\$ 96,647	\$ 49,587
Services Allied to Transport	148	\$ 18,407	\$ 11,316
Water Transport	231	\$ 46,646	\$ 35,435
Air Transport	113	\$ 27,037	\$ 12,500
Communications Services	380	\$ 74,097	\$ 59,148
Finance	231	\$ 103,069	\$ 64,747
Services to Finance and Insurance	323	\$ 22,440	\$ 13,844
Insurance	52	\$ 6,901	\$ 3,285
Real Estate	362	\$ 96,700	\$ 69,398
Business Services	1,105	\$ 71,959	\$ 49,754
Ownership of Owner-Occupied	12	\$ -	\$ -
Education	2,183	\$ 72,042	\$ 63,165
Health and Community Services	2,662	\$ 151,118	\$ 120,724
Cultural & Recreation Services	729	\$ 90,664	\$ 49,377
Personal, Other and Household Domestic Services	1,849	\$ 99,580	\$ 54,050
Central Government	880	\$ 111,236	\$ 64,902
Local Government	385	\$ 31,126	\$ 17,276
Household Consumption			
<b>Total</b>	<b>32,359</b>	<b>\$ 4,444,482</b>	<b>\$ 1,792,795</b>

## **Appendix 2 - Individuals and Organisations Consulted in this Study**

### ***Market Economics Limited***

Environment Canterbury  
Christchurch City Council  
Taieri Gorge Railway  
Otago Regional Council  
Dunedin City Council  
Tranzrail Hillside Workshop  
Clutha District Council  
West Coast Railways  
Tranzrail

### ***Gravitas Research and Strategy Limited***

Christchurch and Canterbury Marketing - Chief Executive  
Canterbury Leisure Tours - General Manager  
Pacific Tourways - Managing director  
Taieri Gorge railway – Manager and staff  
Citibus Newton , Dunedin – Chief Executive  
Tourism Dunedin – International Marketing Manager, Domestic Marketing Manager  
Leviathen Hotel, Dunedin – Manager  
Southerner Staff  
Australia Pacific Tours  
Thrifty Tours  
I.D. Tours - GM  
Landmark trave - GMI  
Harvey World Travel, Oamaru  
Oamaru Development Agency  
Tourism Southland - Manager  
Timaru DC – CEO and Mayor  
Venture Southland – Director and Manager  
Aoraki Development Trust  
Central South Island Tourism – CEO  
Invercargill DC – CEO and Mayor  
Waitaki DC – Mayor