

**Enhancing Financial and
Economic Yield
in Tourism:**

**Public Sector:
Local Government and
Regional Yield Report**

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Yield Report 11



LINCOLN
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Te Whare Wānaka O Aoraki



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Contents

Contents	i
List of Tables	iii
Executive Summary	v
Chapter 1 Introduction	1
1.1 The Definition of Yield.....	1
1.2 Research Objectives and Approach	2
Chapter 2 Methods	5
2.1 Financial Yield calculations for the Private Sector	5
Chapter 3 Christchurch Case Study	7
3.1 Survey Structure	7
3.2 Survey Limitations.....	7
3.3 Tourist Type Analysis in Christchurch.....	8
3.4 Data on Tourist Expenditure.....	8
3.5 Calculating yield	8
Chapter 4 Rotorua Case Study	13
4.1 Survey Structure	13
4.2 Calculating Yield	13
Chapter 5 Conclusions	17
References.....	19
Appendix A Christchurch Case Study	21
Appendix B Rotorua Case Study	27

List of Tables

Table 1	Employment, Value Added and Economic Value Added per \$million Spent.....	6
Table 2	EVA by Sector in Christchurch: 2005	9
Table 3	Total Value Added & Employment by Sector in Christchurch (2005).....	10
Table 4	Typical Christchurch City Community Yield from Tourism in 2005	11
Table 5	EVA by Sector in Rotorua: 2005	14
Table 6	Gross Value and Employment by Sector in Rotorua (2005)	15
Table 7	Typical Rotorua District Community Yield from Tourism in 2005	16
Table 8	Summary of Visitor Contributions to Public Costs and Revenues (Christchurch)	23
Table 9	Summary of Visitor Contributions to Public Costs and Revenues (Rotorua).....	29

Executive Summary

The programme “Enhancing Financial and Economic Yield in Tourism” has included a range of investigations into various dimensions of private sector yield of tourism businesses, as well as public sector yield of tourism at local and national levels. In this report we focus on yield from the regional perspective. Yield in this report is understood as *net financial or economic benefit*. For the private sector, the measure of yield used is Economic Value Added¹, while for local government the measure of yield is the difference between costs and revenue.

Local government yield related to tourism can best be interpreted within the context of regional total value added from tourism. While local government may have a negative yield for its own tourism-related business, it judges this to be worthwhile from the community perspective because of the commercial benefits to the community as evidenced by total value added and employment

In this report we focus on regional yield in Christchurch City and Rotorua District from the perspective of both the private sector and local government. We show private sector yield as Economic Value Added (EVA), which is the relevant measure for private investors, as well as the more common national accounting measure of total value added and total employment.

We have estimated the private sector commercial yield on the basis of surveys of visitor expenditure² and analysis of private sector financial yield ratios by sector³, and the net costs and benefits to the local government sector on the basis of an analysis of local government revenue and spending.

The research objectives were to:

Derive estimates of private sector commercial yield for visitors to a region;

Estimate the net financial yield (cost or benefit) to local government in the region;

Estimate total regional value added (i.e. business and personal income) and employment which is tourism-dependent; and

Comment on the reasons for, and the sustainability of, such yield

Results

In 2005 private sector investors (excluding air transport) received a positive yield from tourism in that the return to their investments in tourism was slightly above the returns elsewhere in the economy. In Christchurch the Economic Value Added in 2005 (excluding air transport⁴) is estimated to have been \$19 million per annum. In Rotorua, EVA excluding air transport is estimated to have been \$10 million per annum. These figures are based on tourism spending in 2005, and on national average EVA : expenditure ratios calculated over the period 1999 – 2003.

From this perspective tourism in these regions is in the regional interest. When broader measures of economic impacts are considered, we find that in Christchurch in 2005 there

1 Economic Value Added is conventional value added (as defined in the national accounts) less (cost of labour + depreciation + the opportunity cost of capital). For the purposes of this analysis we have assumed the opportunity cost of capital to be the average financial yield over the rest of the New Zealand economy which in the relevant period of 1999 – 2003 was 5.7 per cent after tax.

2 See Becken, 2007.

3 See Moriarty, 2007

4 We estimate that air transport reduced Christchurch EVA by almost \$20 million per year and Rotorua EVA by \$0.7 million per year. However, this is based on economic ratios calculated for the period 1999 – 2003. We believe that air transport returns have improved significantly since then, but the data to verify this are not yet available. In any case we would not expect Christchurch City Council to be too concerned about air transport EVA because it is primarily concerned with the employment and household incomes generated by air transport, rather than the losses to investors.

were 16,800 jobs supported by tourism and \$940 of income earned by households (wages and salaries) and businesses (returns to capital). In Rotorua the figures were 6,300 jobs and \$300 million of income.

In 2005 Christchurch City Council as a local government entity probably had a negative yield from tourism. That yield was estimated to be -\$1.6 million, which is about 5 per cent of the revenue the council generates from catering for tourism and only 0.6 per cent of total council spending. If the council views this modest negative yield in the context of the 16,800 jobs and \$940 million of total city income which are supported by tourism, it might well decide that the negative yield is justified in terms of the total benefits which tourism generates for the city.

In 2005 Rotorua district council had a positive tourism-related yield of \$6.0 million, although the medium term yield is likely to be around \$1 million per year. From the council's direct perspective then, tourism is beneficial. This benefit is increased by the knowledge that tourism generates an estimated \$10 million per year of EVA in the regional businesses in which tourists spend their money directly, and that the total impact of tourism in the region is to generate 6,300 jobs and total value added of \$300 million per year.

The yields for individual councils are calculated on the basis of numerous assumptions, and it can be argued that the yield differs significantly from that which we have calculated. However, in our view the important point to note is that the councils' financial yields, whether positive or negative, are small in the context of total costs of tourism-related services provided by the councils, and very small in comparison to the total tourism-dependent value added in their economies.

Summary Table
Typical Regional Financial Yields from Tourism in 2005

	Estimated Local Government Yield	EVA arising directly from tourist spend	Total Tourism-Dependent Economic Activity	
			Business & Household Income	Employment
Christchurch	- \$1.6 m / yr	\$19m / yr	\$940 m / yr	16,800 FTEs*
Rotorua	\$1.0 m / yr	\$10 m / yr	\$300 m / yr	6,300 FTEs*

* FTE is a Full Time Equivalent job. A part time job for six months per year is 0.25 FTEs

Sustainability of Tourism in the Regions

The above analysis suggests that in the regions we examined, tourism generates substantial net financial benefits, income and employment. The positive EVA suggests that tourism is sustainable from the perspective of investors, and the positive or small negative local government financial yields suggest that tourism is sustainable from their perspective when they take account of the substantial and widely dispersed economic impacts. An examination of the impacts of tourism on the physical or social environment in these regions is not included in this analysis, but is an important consideration in determining the overall sustainability of tourism.

The fact that there is a significant private sector financial benefit associated with tourism should not be taken as a justification for local government to subsidise the activity, any more

than it justifies a subsidy of any other industry which generates significant regional economic activity. Subsidies are still likely to be distortionary and may redistribute income in ways which are not consistent with social objectives, and there is still every reason for local government to try and ensure that the costs of supporting tourism are levied on those who benefit financially.

What this paper and the background working papers⁵ have done is provide local governments with a framework within which they can analyse the net costs to themselves of tourism, and have indicated through case studies that this net cost may well be small. This paper also indicates how widely the private sector benefits of tourism are spread, a point which should give pause for thought to councils who seek to impose narrowly-based charges⁶ to fund perceived costs of specific tourism-driven projects which provide widely dispersed benefits.

5 Available in due course from TREC, Lincoln University.

6 E.g. accommodation taxes

Chapter 1

Introduction

Tourists have varying impacts on the regions which they visit, and these impacts depend both on the money they spend and the money which local government in the region has to spend to provide tourism facilities and services. When making decisions on how much money to allocate to tourism-related projects, local government has to weigh up the net costs which tourism may impose upon it against the benefits and costs of tourism to the wider community. Estimates of public sector tourism yield from the perspective of central government have been published in a separate report, but that report did not include data on the yield in regional economies and to the local governments which form part of these. In this study we have estimated the commercial yield of tourism to both the private sector and local government, and the more widespread community flow-on effects of employment and business and household income (value added).

1.1 The Definition of Yield

Yield in this report is understood as *net benefit* – and in this report we focus on financial and economic net benefits. In the private sector the measure of net benefit from an investor’s perspective is the Economic Value Added, which is the total income earned by labour and capital (this is Total Value Added in National Accounts terminology) less the opportunity cost of labour, economic depreciation⁷ and the opportunity cost of capital (which could be equated to the “average” return to capital). We have estimated the regional economic yield on the basis of surveys of visitor expenditure⁸ and analysis of private sector financial yield by sector⁹, and have assumed an opportunity cost of capital equivalent to the 5.7 per cent after tax return on capital estimated for the entire New Zealand economy¹⁰.

From the investor’s perspective, income earned by labour is not a benefit, and earning just the “average” cost of capital is not a net benefit since it could have been earned elsewhere. A community often believes there is some net benefit associated with generating employment, wages and salaries and “normal” returns to capital, which is to say that the community perceives the earnings of labour and the “normal” return to capital to be greater than the opportunity cost of these resources. For this reason Economic Value Added is often perceived to understate total financial benefit from the broad community perspective. To give a fuller context to discussions of yield, we also report the estimated total earned income (total added value) and employment which is dependent on tourism.

From the local government direct financial perspective, the financial yield is the difference between the costs and revenue of providing services associated with tourism. We have estimated this on the basis of an analysis of local government revenue and spending. A negative tourism-related yield does not mean tourism is not worthwhile since local government has to balance potential negative tourism-related yields to themselves against total tourism-related yields to the community as a whole. In this report we calculate the net tourism-related financial yield to Christchurch City and Rotorua District, and place this in the

7 Economic depreciation is the true reduction in value of an asset, as opposed to depreciation for tax purposes.

8 Becken, 2007

9 Moriarty, 2006

10 Moriarty, 2005

context of the net yields to the private sector in these regions. We emphasize that the local government yield estimates are based on assumptions which we believe are reasonable, but which we accept are open to debate. For example, we have assumed that the costs of maintaining the collections at Canterbury museum and Christchurch Art Gallery are not attributable to tourism since we believe that the community is willing to pay this money in order that they are available to be visited. On the other hand, we believe that the costs associated with visiting the collections should be shared between visitors and residents on the basis of the proportion of all visits to the gallery or museum, whereas some would argue that most of those costs would be incurred anyway just to enable residents to visit the gallery and museum, and hence in their view we have overstated the marginal costs imposed by tourism on the council.

We accept that the numbers are imprecise, and emphasize that our objective is to give some understanding of the approximate net yield to councils of tourism, and to put this yield into the broader context of council's concerns, which include total regional tourism-dependent economic activity.

1.2 Research Objectives and Approach

The research objectives were to:

1. Derive estimates of commercial yield derived from visitors to a region;
2. Estimate the net yield (cost or benefit) to local government entities associated with tourism in the region;
3. Estimate the total regional income (value added) and employment which is tourism-dependent; and
4. Comment on the reasons for, and sustainability of, such yield.

A case-study approach was taken and data on tourist spending were collected in Christchurch and Rotorua, which had both already been analysed with respect to public sector yield. The tourism spending surveys were undertaken by Becken *et al.* for the purposes of estimating yield by tourist type, and are reported in Becken 2007. Readers of the Becken report will note that sections of this paper which report the survey process replicate Becken. Where we divert from Becken is that we are trying to calculate the total yield for a region, whereas Becken is trying to find the difference in yield per person for a number of visitor types. While we have defined visitor-types according to the type of accommodation they use, our purpose in doing so has been to enable us to rate up these figures according to the number of users of each accommodation type so that we can calculate total regional yield. The visitor-types we have used are not intrinsically interesting, and our analysis of yield per visitor type is only a means to the end of estimating regional yield.

The tourist survey in Christchurch resulted in a sample size of 1,028 and Rotorua yielded 452 usable surveys. Full details of the survey are provided in Becken *et al* 2007¹¹, but in broad terms the samples were biased towards English-speaking international visitors and away from non-English speaking coach tourists. The sample bias is only problematic if there is an assumption that different markets would behave quite differently in relation to yield-relevant parameters. The under-sampling of Asian tourists is likely to be a bigger issue than the low representation of domestic visitors.

11 Becken et al 2007. Tourism Yield by Visitor Type

For the purpose of this study, eleven tourist types have been determined on the basis of the form of accommodation in which they stayed¹². We then estimated the average spend by industry sector¹³ per night for each tourist type and scaled this up on the basis of total tourist nights in each type of accommodation¹⁴ to determine a total annual regional spend by industry sector. The tourist types differ significantly with respect to both their level of spending and the sectors in which their spending takes place.

Tourists were interviewed about their activities over the preceding 24 hours, or from the point in time when they arrived in the centre, whichever was the shorter time. The expenditure by tourists was estimated by identifying all activity a tourist had engaged in while in the case study area, and the cost associated with this. These activities typically include time spent at the accommodation, eating, visiting or exploring the destination, transport and engaging in recreational activities such as a walk through the park. Tourists allocate their time and resources to a wide range of activities involving both public and private sectors. Typically, tourists require some form of transport, accommodation and hospitality services. They also engage in a wide range of other activities that may involve private sector companies (operators) or draw on services and amenities provided by the public sector (e.g. National Parks, publicly supported events). Furthermore, tourists inevitably draw on public facilities in satisfying their basic everyday needs. This is particularly true of public spaces and urban infrastructure such as water and sewage systems. Expenditure by visitors on long distance travel and travel agents was excluded from the survey data because bookings generally occur long before travel takes place. Economic values associated with these activities were based on the region's share of employment in these industries and national tourist expenditure on these services. Air travel posed a particular problem. First, we are interested in inward tourism whereas a substantial part of the industry is associated with outward tourism. For this reason we included only half of the impacts of air travel. Secondly, much of the value added and EVA relates to the capital investment as opposed to the employees, and the ownership of airline capital is believed to generally be held outside the region. While this external ownership occurs in other sectors, air travel is notable for its relatively low wage content¹⁵. Finally, air travel had a particularly low return on capital during the analysis period of 1999-2003, and we do not believe this is representative of the current situation. For these reasons we resolved to show the EVA results with and without air travel.

12 This differs from Becken 2007, who defined tourist types on a different basis.

13 E.g. Hotel, motel, backpacker, tax, local bus, long distance bus, etc. etc.

14 Total visitor nights by type of accommodation were based on information from the International Visitor Survey and the Domestic Travel Study.

15 Wages are equivalent to approximately 12 % of turnover, compared with over 20 per cent for accommodation, 21 % in pubs and 28 % in cafes and restaurants. Many recreational businesses also have high wage : turnover ratios. Source: Moriarty 2006.

Chapter 2 Methods

2.1 Financial Yield calculations for the Private Sector

Value Added is commonly reported in Tourism Satellite Accounts¹⁶, where total output (which is broadly equivalent to tourist expenditure) is broken down into intermediate input from other industries and value added by the tourism industry. EVA deducts from Value Added the costs of labour and economic depreciation as well as the opportunity cost of capital (assessed at 5.7 % of total asset value per annum for the purposes of this analysis¹⁷). EVA is in a sense the net benefit, or dis-benefit in the case of a negative EVA, of investing capital in tourism rather than in some other typical average sector of the economy. A further implication of negative EVA in a business is that in the long term the business may not be sustainable. Alternatively, and provided that the business has positive cashflow, negative EVA implies that the returns to equity are less than could be achieved in an alternative investment. Provided that the business owners understand the true returns to equity and are satisfied with this and the returns to their labour having taken into account any other non-financial benefits that the business generates for them, then the business is sustainable.

Our intention is to derive the yield for each of eleven tourist types by estimating their average daily expenditure in each sector and multiplying this by the number of visitor-days per year for this visitor type. We then summed over the visitor-types to get total direct visitor spending per year for each sector, and used this as the basis for estimates of direct EVA in tourism as well as for total (direct plus indirect) tourism-dependent household and business income (value added) and employment in the region.

EVA : expenditure ratios for each sector were generated in another part of the tourism yield project¹⁸ and were applied to the direct annual visitor spending in that sector to get direct tourism-based EVA per year for each sector. The results were then summed across all sectors to get direct EVA / year for all tourism in the region.

Direct and total income (value added) : expenditure ratios as well as direct and total employment : expenditure ratios for each tourism sector were generated in an independent project¹⁹, and were applied to the direct annual visitor spending in that sector to get total tourism-based income and employment per year for each sector. The results were then summed across all sectors to get total tourism-dependent income per year and employment in the region

¹⁶ For example, Statistics New Zealand. Tourism Satellite Accounts, 2004

¹⁷ One could argue about an appropriate alternative WACC (Weighted Average Cost of Capital). We have chosen to use the average after tax returns to assets across all sectors of the economy, using the same definitions of FCF and assets as have been used in our calculations for tourism (see J Moriarty (2005)).

¹⁸ Moriarty (2006)

¹⁹ Butcher 2005. A 2003-04 National Input Output table and associated Regional Economic Multipliers (unpublished). The sectors in this project were more aggregated than in the Moriarty project, but the direct ratios for particular sectors were similar to the direct ratios calculated by Moriarty.

Table 1
Employment, Value Added and Economic Value Added per \$million Spent

ANZSIC	Activity	Jobs	Value Added (\$m)	EVA ¹ (\$m)
G511010	Supermarkets	4.7	\$0.13	\$0.016
G5125xx	Takeaway Food	4.7	\$0.24	\$0.021
G521000	Department Stores	4.7	\$0.21	\$0.022
G525900	Retailing nec	4.7	\$0.19	\$0.026
G532100	Automotive Fuel Retailing	1.4	\$0.09	\$0.018
H571010	Hotels (Accommodation)	14.5	\$0.43	-\$0.027
H571020	Motels and Motor Inns	14.5	\$0.39	\$0.001
H571030	Hosted Accommodation	14.5	\$0.41	-\$0.113
H571040	Backpacker and Youth Hostels	14.5	\$0.46	\$0.031
H571050	Caravan Parks and Camping Grounds	14.5	\$0.41	-\$0.069
H571090	Accommodation not elsewhere specified	14.5	\$0.46	-\$0.048
H572000	Pubs/ Taverns and Bars	14.4	\$0.30	\$0.039
H573000	Cafes and Restaurants	14.4	\$0.36	\$0.032
I612100	Long Distance Bus & Rail Transport	12.5	\$0.38	-\$0.036
I612200	Short Distance Bus Transport (inc. Tramway)	12.5	\$0.58	\$0.048
I612300	Taxi and Other Road Passenger Transport	12.5	\$0.47	\$0.042
I640x00	Scheduled Int & Domestic Air Travel		\$0.09	-\$0.106
I640300	Non-Scheduled Air transport		\$0.32	\$0.020
I664100	Travel Agency Services		\$0.48	\$0.074
L774100	Motor Vehicle Hiring		\$0.59	\$0.062
P921000	Libraries (all those which report stand-alone financial results to IRD or Statistics NZ)		\$0.56	-\$0.067
P922000	Museums (all those which report stand-alone financial results to IRD or Statistics NZ)		\$0.44	-\$0.80
P923x00	Zoos, Botanic Gardens, Recreational Parks and Gardens		\$0.52	-\$0.09
P93xxxx	All Recreation services (including visitor activities, racing, gaming, gambling & sports)		\$0.36	\$0.09

1 Assumes the opportunity cost of funds after tax is 5.7 %

Chapter 3

Christchurch Case Study

3.1 Survey Structure

Surveyors undertook face to face surveys of 1,028 visitors to Christchurch during January and February 2006. Respondents were asked to describe all their activities in the preceding 24 hours and to recall what expenditure had been associated with each activity.

3.2 Survey Limitations

The sample size of 1,028 results in a maximum sample error of 3.1 per cent at a 95 per cent confidence level when variables are analysed for the whole sample without further disaggregation into sub-groups. Since the tourist type analysis requires further segmentation, the sample error will increase depending on the sample size within each segment.

The sample is biased towards English-speaking international visitors and under-represents domestic visitors and those from non-English speaking countries. A substantial proportion of Asian visitors in the sample came to New Zealand for educational purposes or to visit friends and relatives. In contrast, the segment of Asian coach tourists is under-represented. The reasons for this bias include tourists' time constraints, language barriers and willingness to undertake a tourist survey. The employment of a Mandarin speaking interviewer did not improve the response rate significantly. The age and gender representation of the sample is good. Also, the sample was diverse in terms of transport and accommodation choices and hence reflected a good spread of possible tourist behaviour. The sample includes a number of long-staying tourists; probably because the likelihood of intercepting a tourist who stays a long time compared to a short-term visitor is much higher. Also tourists who stay for longer are likely to have more time on any given day to participate in a survey. Since longer staying tourists also have a greater influence on yield than shorter staying ones, the overrepresentation of these kinds of tourists is not considered a bias²⁰.

A comparison between the survey described here and an earlier survey carried out in 2003²¹ showed very similar spend per day figures and similar relationships between spending in different industries for Christchurch visitors. This provided additional confidence that the results of this survey are reasonably reliable.

The information on visitors' activities and expenditure is very detailed but there are always problems with recollections of expenditure and there are also problems in coding expenditure, as described by respondents, to industry groups, as defined by Statistics New Zealand.

20 Consider a tourist with yield \$x / day who stays one day and another tourist with yield \$y / day who stays for 365 days. The latter will influence Christchurch's yield by 365 * \$y/day compared to a contribution of only \$x by the other tourist. Having more tourists of the longer staying type in the sample gives more weight to them, which actually reflects their real impact at a destination over time.

21 Butcher, 2003

3.3 Tourist Type Analysis in Christchurch

Tourists were grouped into types based on the choice of accommodation, including “not staying” for day visitors. This was done because of an expectation that different accommodation would be associated with different average expenditure per day, that we expected to under-sample some categories, and because data were available on the total number of visitor-days for each type of accommodation to enable calculation of total annual expenditure appropriately weighted by numbers of each visitor-type.

3.4 Data on Tourist Expenditure

Tourists were interviewed about their activities over the preceding 24 hours or from the point in time when they arrived in Christchurch, whichever was the shorter time. The expenditure by tourists was analysed through the “24-hour budget”, which is every activity a tourist had engaged in within the last 24 hours in the case study area. These activities typically include time spent at the accommodation, eating, visiting or exploring Christchurch, transport and engaging in recreational activities such as a walk through the Botanic Gardens. For the purpose of the financial analysis, accommodation and transport were analysed separately from the 24-hour activity analysis.

To estimate yield, the expenditure categories from the tourist survey were allocated to ANZSIC²² codes for which yield coefficients were available (see Table 1). Some allocations are crude. For example, all shopping had to be aggregated into the category of “retail not elsewhere specified”²³ because no finer detail on the form of retail expenditure was available from the survey. Souvenir shopping has been identified as a separate category and was matched with the code of ‘department stores’. Spending in the I-Site information centre was included in recreational spending, as typically tourists would book tours and attractions

Once spending by industry per person for each visitor type was established, this was scaled up by the total number of visitors of each type²⁴ to give total spending within each ANZSIC code industry. We then scaled each industry total by 91 per cent to ensure that the sum of all industry totals was consistent with the total regional spending estimate for 2005 reported on the Tourism Research Council website.²⁵ We did this because we felt that the latter total was more reliable than our calculation, given the error margins in our sampling, our visitor recall of expenditure and the data on visitor numbers which we used to rate up our survey data to the whole visitor population.

3.5 Calculating yield

3.5.1 Economic Value Added (EVA)

EVA is total value less economic depreciation, the cost of labour and the opportunity cost of capital. It is perhaps best described as the economic benefit of investing, from the perspective of investors. EVA by sector was estimated by multiplying expenditure in each

22 Australian/New Zealand Standard Industry Classification

23 The EVA per dollar of visitor expenditure for “all retail” is almost 60% higher than for “retail nec”. Hence this assumption leads to a potential understatement of tourism yield.

24 Estimated on the basis of other tourism data sources including the Domestic Travel monitor and the International visitor survey (The Ministry of Tourism) and the Commercial accommodation monitor (Statistics NZ).

25 Forecasts of Regional Tourism Activity in New Zealand by Year 2006-2012

industry by the EVA : expenditure ratio for that industry²⁶ and the results are shown in Table 2.

Table 2
EVA by Sector in Christchurch: 2005

Sector	EVA (\$)¹
	\$m/yr
Takeaway Food	\$0.6
Automotive Fuel Retailing	\$1.6
Other Retailing	\$9.6
Hotels (Accommodation)	-\$2.6
Motels and Motor Inns	\$0.1
Hosted Accommodation	-\$3.6
Backpacker and Youth Hostels	\$0.5
Caravan Parks and Camping Grounds	-\$0.3
Accommodation not elsewhere specified	-\$4.2
Pubs/ Taverns and Bars	\$1.0
Cafes and Restaurants	\$4.3
Long Distance Bus & Rail Transport	-\$1.4
Short Distance Bus Transport (inc. Tramway)	\$1.5
Taxi and Other Road Passenger Transport	\$0.8
Travel Agency Services	\$1.5
Motor Vehicle Hiring	\$4.5
Libraries	Inc. in council yield
Museums	Inc. in council yield
Zoos, Botanic Gardens, Recreational Parks and Gardens	-\$1.3
Tourist activities & other services incl. racing, gaming & sports	\$6.3
TOTAL excluding air services	\$18.8
Air Services	-\$19.7
Total including Air Services	-\$0.9

1 Assumes the opportunity cost of funds after tax is 5.7 %

We estimate that private sector Economic Value Added in Christchurch in 2005 (excluding air transport) was approximately \$19 million. A positive EVA implies that from the perspective of investors, tourism in Christchurch is sustainable because it generates a return which is higher than the opportunity cost of capital. As a measure of the opportunity cost of capital, we used the average after tax financial return in all sectors of the New Zealand economy over the period 1999 – 2003. So to put things another way, a positive EVA implies that the return to investment in tourism is higher than the average return to investment over the entire economy. Having said that, we acknowledge that EVA calculations are open to considerable debate, partly because the ratios we have used relate to 1999-2003 and may have changed since then, and partly because the opportunity cost of capital has been assumed to be 5.7 per cent after tax, whereas some would argue for a different rate depending on their assessment of the risk associated with tourism and the returns available in alternative investments.

While any of the EVA : expenditure ratios may have changed between the 1999 – 2003 estimating period and 2005, we believe that the ratio for air transport in particular had changed substantially. While data are not yet available to provide quantitative support for that belief, we are of the view that by 2005 the air transport industry had substantially

recovered, and for this reason we have excluded the air services figure from our primary discussions on regional EVA.

3.5.2 Total Private Sector Value Added and Employment

Value Added in the national accounting framework includes all household and business income including wages, a “normal” return to capital and depreciation. Hence it is a much more inclusive measure than EVA which excludes wages and salaries, depreciation and the opportunity cost of capital.

We estimate that direct tourism-related income in Christchurch in 2005 was \$469 million in 2005, and associated with this income were 11,300 Full Time Equivalent jobs²⁷. Total tourism-dependent income and employment takes into account the flow on, or multiplier, effects of tourism on other industries. We estimate that total tourism – dependent income in Christchurch in 2005 was \$936 million, and total tourism-dependent employment was 16,800 FTEs (see Table 3).

Table 3
Total Value Added & Employment by Sector in Christchurch (2005)

	Employment (FTE ¹ s)		Business and Household Income (\$m/yr)	
	Direct	Total ²	Direct	Total ²
All Retail	2,060	2,940	78	154
Accommodation	4,130	5,490	156	273
Pubs, Restaurants etc	2,300	3,170	70	145
Transport	1,330	2,680	83	196
Travel Agents & Vehicle hire	460	980	50	92
All other Services	980	1,580	32	77
Totals (rounded)	11,300	16,800	470	940

1 Full Time Equivalent jobs

2 Including direct, indirect (through supporting businesses) and induced (through wages & salaries).

3.5.3 Local Government Financial Yield

The local government financial costs and benefits associated with tourism in Christchurch are reported in more detail in Appendix 2 of this report. In broad terms it is estimated that the financial yield of tourism to the Christchurch City Council in 2005 was -\$1.6 million. This is only about 5 per cent of the revenue the council generates from catering for tourism and is only 0.6 per cent of total council spending. It is also recognised that some of the assumptions made in measuring the net yield from the Council’s perspective could be hotly debated, and a single changed assumption²⁸ could reverse the sign on the yield from negative to positive.

27 A person working half time is 0.5 FTEs, and a person working half time for only six months of the year is 0.25 FTEs. Given the significant use of casual workers, this is a coarse measure of actual employment volumes, and significantly understates numbers employed at peak times.

28 For example, it could be argued that virtually the entire cost of the new art gallery is attributable to city residents who like to know that the city has a gallery that they can visit, even if they seldom or never do so. These residents may be perfectly willing to meet

3.5.4 Total Community Yield

Whatever the exact value of council yield, we note that it is a relatively minor value in the context of total council revenue from tourism-related services and the \$19 million of EVA to the private owners of capital, and an extremely small number in the context of 16,800 jobs and \$940 million of total income supported by tourism in the city. If the council views its own modest negative yield in this context, it might well decide that the yield is justified in terms of the total benefits tourism generates for the city.

Table 4
Typical Christchurch City Community Yield from Tourism in 2005

Estimated Local Government Yield	EVA arising directly from tourist spend	Total Tourism-Dependent Economic Activity	
		Business & Household Income	Employment
-\$1.6 m / yr	\$19m / yr	\$940 m / yr	16,800 FTEs

the budget deficit of the gallery, in which case the choice we have made of attributing a significant part of the deficit to visitors to the gallery, many of whom are visitors to the city, is arguably wrong.

Chapter 4

Rotorua Case Study

4.1 Survey Structure

The Rotorua survey was similar to the Christchurch survey, but covered 452 respondents including 102 from New Zealand and 350 from overseas. Similar limitations apply to the sample as those already discussed for the Christchurch sample, especially the under-representation of non-English speaking nationalities and package tourists. However in Rotorua a larger sample of domestic visitors was surveyed. The dominance of the I-site as a sampling location means that a large number of tourists travelling on the InterCity coach were interviewed, and this may have introduced some bias towards independent travellers who chose to travel by bus (rather than rental car or any other mode).

The accommodation expenditure data for the Rotorua sample was sparse with only 127 tourists providing sufficient information to derive costs per person per night. All coach tourists who provided costs were only able to do so in the form of a total package price, of which accommodation (and transport) is part. It was not possible to extract hotel costs for Rotorua and Christchurch data for accommodation was used as a proxy where necessary. Use of proxy data substantially increases error margins, and we suspect that in this case it has led to considerable overstatement of the total accommodation impacts²⁹. If accommodation expenditure is too high, then expenditure in other areas is too low³⁰. We suspect that there has been considerable misallocation of spending between accommodation (too high), and restaurants and cafes (too low). In the Rotorua sample more than 40 per cent of spending was coded to accommodation and 4 per cent to pubs, restaurants and cafes, whereas in Christchurch the comparable figures were 20 per cent and 11 per cent. We also reported expenditure on services, including recreation, is higher than we would expect and suspect that some of that was also actually related to pubs and cafes. The net effect of this likely overstatement of accommodation expenditure may be that EVA is actually greater than we have estimated because the EVA per dollar of turnover is less in accommodation than in other industries. Offsetting this potential understatement of EVA is that the likely overstatement of recreational and other activities have led to overstatement of EVA.

4.2 Calculating Yield

4.2.1 Economic Value Added

To estimate yield, the expenditure categories from the tourist survey were matched with ANZSIC³¹ codes for which yield coefficients were available (see Table 1, page 10). In some cases there was no clear relationship between expenditure as specified and industry groups, and “best fit” allocations to industry groups were made. This gave us spending by industry by visitor type and this was rated up by the total number of visitors of each type³² to give total spending by industry. We then scaled spending in each industry by 92 per cent to ensure

29 The estimate of accommodation employment we get from this method is significantly higher than is suggested by the regional accommodation employment data provided by Statistics New Zealand.

30 Given that the sum of expenditure is adjusted to equal the regional total.

31 Australian/New Zealand Standard Industry Classification

32 Estimated on the basis of other tourism data sources including the Domestic Travel monitor, the International visitor survey and the commercial accommodation monitor.

that total visitor spending was consistent with the total regional spending estimate of \$431 million for 2005 reported on the Tourism Research Council website.³³

Table 5
EVA by Sector in Rotorua: 2005

Sector	EVA (\$)¹
	\$m/yr
Takeaway Food	\$0.1
Automotive Fuel Retailing	\$0.3
Other Retailing	\$1.3
Hotels (Accommodation)	-\$2.2
Motels and Motor Inns	\$0.1
Hosted Accommodation	-\$2.3
Backpacker and Youth Hostels	\$0.2
Caravan Parks and Camping Grounds	-\$0.5
Accommodation not elsewhere specified	-\$1.4
Pubs/ Taverns and Bars	\$0.1
Cafes and Restaurants	\$0.4
Long Distance Bus & Rail Transport	-\$0.7
Short Distance Bus Transport (inc. Tramway)	\$0.0
Taxi and Other Road Passenger Transport	\$0.1
Travel Agency Services	\$0.2
Motor Vehicle Hiring	\$0.4
Libraries	Included in Council yield
Museums	Included in Council yield
Zoos, Botanic Gardens, Recreational Parks and Gardens	-\$0.1
Tourist activities & other services incl. racing, gaming & sports	\$13.9
TOTAL excluding air services	\$9.9
Air Services	-\$0.7
Total including Air Services	\$9.2

1 Assumes the opportunity cost of funds after tax is 5.7 %

EVA is total value less economic depreciation, the cost of labour and the opportunity cost of capital. It is perhaps best described as the economic benefit of investing, from the perspective of investors. As is shown in Table 5 above, we estimate that private sector Economic Value Added in Rotorua in 2005 was approximately \$9 million. The positive EVA implies that from the perspective of investors, tourism in Rotorua is sustainable because it generates a return which is higher than the opportunity cost of capital, which we assume to be the 5.7 per cent average after tax financial return in all sectors of the New Zealand economy over the period 1999 – 2003. Having said that, we acknowledge that EVA calculations are open to considerable debate, partly because the ratios we have used are national averages relating to 1999-2003 and they may be different for Rotorua or have changed by 2005, and partly because the opportunity cost of capital has been assumed to be 5.7 per cent after tax, whereas some would argue for a different rate depending on their assessment of the risk associated with tourism and the returns available in alternative investments.

4.2.2 Total Business and Personal Income and Employment

Business and personal income (value added) includes all household and business income including wages and including a “normal” return to capital and depreciation. We estimate that direct tourism-related income in Rotorua in 2005 was \$175 million in 2005, and

33 Forecasts of Regional Tourism Activity in New Zealand by Year 2006-2012

associated with this income were 4,700 Full Time Equivalent jobs³⁴. Total tourism-dependent income and employment takes into account the flow on, or multiplier, effects of tourism on other industries. We estimate that total tourism –dependent income in Rotorua in 2005 was \$300 million, and total tourism-dependent employment was 6,300 FTEs (see Table 6).

Table 6
Gross Value and Employment by Sector in Rotorua (2005)

	Employment		Business and Household Income (\$m/yr)	
	Direct	Total	Direct	Total
All Retail	320	410	12	20
Accommodation	2,600	3,100	97	143
Pubs, Restaurants etc	220	280	7	11
Transport	38	70	3	5
Travel Agents & Vehicle hire	46	80	5	7
All other Services	1,480	2,360	52	111
Totals (rounded)	4,700	6,300	175	300

4.2.3 Public Sector Yield

The local government costs and benefits associated with tourism in Rotorua are reported in more detail in Appendix 2 of this report. In broad terms it is estimated that the net yield of tourism to the Rotorua District Council in 2005 was \$6 million. This figure was significantly affected by the large net benefit from the event venues (+\$2.5 million) whereas it has been suggested that in the long term this is likely to be a net cost of \$1 – 3 million, but even if this is deducted the net yield of tourism to the council is still estimated to be \$1 million³⁵ per annum.

The estimate of public sector yield is based on numerous assumptions, and changing these assumptions could change the results significantly. What is unlikely to change is the conclusion that net positive or negative yield is small in relation to total council spending and in relation to the total regional economic activity driven by tourism.

4.2.4 Total Community Yield

From the council’s direct financial perspective tourism is beneficial, while from the private sector viewpoint tourism generates an estimated \$10 million per year of EVA in the Rotorua businesses in which tourists spend their money directly, and the total direct and indirect impact of tourism in the region is to generate 6,300 jobs and total value added of \$300 million per year (see Table 7).

34 A person working half time is 0.5 FTEs, and a person working half time for only six months of the year is 0.25 FTEs

35 \$6.0m - \$2.5m (event centre surplus in 2005) - \$2.5m (forecast typical event centre losses)

Table 7
Typical Rotorua District Community Yield from Tourism in 2005

Estimated Local Government Yield	EVA arising directly from tourist spend	Total Tourism-Dependent Economic Activity	
		Business & Household Income	Employment
\$1.0 m / yr	\$10 m / yr	\$300 m / yr	6,300 FTEs*

Chapter 5

Conclusions

In the regions which we investigated, tourism generated net returns to investors over and above the opportunity cost of capital, and generates substantial private sector total value added (business and household income) and employment. The net financial outcomes for local government are variable, and are affected by the way in which council funds its services and, in some cases, by whether it has invested in successful tourism businesses³⁶.

Positive private sector EVA suggests that tourism is sustainable from the perspective of investors, and the significant income and employment dependent on tourism suggests that there are significant benefits to the wider community, otherwise tourism would not be able to successfully compete for the resources which it uses. Tourism may or not be beneficial from the financial perspective of local government, but even if there is a net financial cost this is generally modest in comparison to total council spending on tourism-related services, and small in comparison to the total regional economic activity driven by tourism. For this reason tourism is sustainable from the perspective of local government.

The fact that tourism is sustainable from the local government perspective and generates substantial private sector benefits does not imply that a negative yield for council, and the implied subsidy of tourism by households and other sectors, is necessarily the optimal way for local authorities to fund their expenditure on tourism services and infrastructure. Subsidies generate distortions in resource allocation, and may also redistribute income in ways which are not consistent with social objectives. For this reason there is still every reason for local government to try and ensure that the costs of supporting tourism are levied on those who benefit financially from it.

What this paper and the background working papers³⁷ have done is provide local governments with a framework within which they can analyse the net costs to themselves of tourism, and have indicated through case studies that this net cost may well be small. This paper also indicates how widely the private sector benefits of tourism are spread, a point which should give pause for thought to councils who seek to impose fund tourism infrastructure through narrowly-based charges³⁸ to fund perceived costs of specific tourism-driven projects which provide widely dispersed benefits.

While this paper suggests that tourism is sustainable from the financial perspective of investors, the wider community and local government in the two regions we have analysed, we have not tried to estimate the impacts of tourism on the physical or social environment in these regions. These impacts are an important consideration in determining the overall sustainability of tourism.

36 The event centre in Rotorua and the Thermal pools complex in Hurunui are obvious examples in the councils we investigated.

37 Available in due course from TREC, Lincoln University.

38 Such as a levy on accommodation, which, in the case of Christchurch for example, gains only 30 % of total tourism-dependent income

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Appendix A
Christchurch Case Study

Table 8
Summary of Visitor Contributions to Public Costs and Revenues (Christchurch)

	Total Cost (\$'000)	Visitor Cost (est.) (\$'000)	Total Revenue (est.) (\$'000)	Visitor Revenue (\$'000)	Net Visitor Revenue³⁹ (\$'000)	Comments
Council rates and general services						
General Differential Rates	0	0	117 261	10,670	10,670	Levied on capital value of rating units (properties)
Uniform Annual General Charge	0	0	17,364	420	420	\$115 per rating unit ⁴⁰ .
Targeted Rate - Land Drainage	0	0	12,521	1,140	1,140	Levied on capital value of rating units (properties)
Christchurch International Airport— Dividend Income	n.a.	n.a.	6,524	2,350	2,350	Based on CCC receiving 75% of CIA's 2004 dividends. Note that 2003 dividends were approximately double this.
City Streets	72,851	7,060	15,959	1,600	-5,460	Road costs allocated by 13% share vehicle nights. Uncertainty is high. Pedestrian component allocated by 7.7% of person nights Bus component allocated by 8% of trips.
Buses	21,557 ⁴¹	1,730 (or 388)	9 728	778 (180)	-950 (or -210)	LATE – receives ECan subsidy of \$13.2m Allocated by 8% of trips (or in brackets, 1.8% of trips by visitors excluding visa students)
Environmental Policy and Regulation (net cost of service)	10,484	310	0	0	-310	For services approximately recovering costs, assume costs recovered from visitors. For remaining services, allocated net cost of service by 7.7% of person nights.
Parking	9,421	940	13 948	1,390	450	Costs and revenues based on est. 13% of vehicle nights in Chch. Uncertainty is high.

³⁹ Is defined as 'tourist revenue' minus 'tourist cost'.

⁴⁰ This estimate has been made by counting the number of rated businesses, a small number of which may actually involve multiple rating units.

⁴¹ Estimated as revenue less net surplus after taxation (CCC, 2004).

	Total Cost (\$'000)	Visitor Cost (est.) (\$'000)	Total Revenue (est.) (\$'000)	Visitor Revenue (\$'000)	Net Visitor Revenue³⁹ (\$'000)	Comments
Water Supply	13,766	411	4,063	0	-411	Assume no operating revenues from tourism
Targeted Rate – Water supply	0	0	14,871	1,350	1,350	Levied on capital value of rating units (properties) Attributed as for general differential rates
Wastewater	21 943	660	5 307	0	-660	Assume no operating revenues from tourism Costs based on 7.7% of person nights
Targeted Rate – Sewerage	0	0	22,965	2,090	2,090	Levied on capital value of rating units (properties) Attributed as for general differential rates
Waste	22 098	660	20 475	612	-48	Costs and revenues based on 7.7% of person nights Assume per capita cost and revenues are equal for residential and accommodation sectors
Attractions, public facilities and events						
The Arts Centre (CCC grant for building upkeep)	118	4	n.a.	n.a.	-4	The Arts Centre is a private not-for-profit organisation. Only CCC funding considered.
Parks and Waterways (includes Botanic Gardens, Hagley Park, etc.)	31,317	940	2,421	0	-940	Assume equal per capita visitor and local use and 7.7% of person nights.
Canterbury Museum	4, 790	2,030	3,105	90	-1,940	Independent Trust Board, but treated as part of the public sector in Christchurch. Non-conservation operating costs allocated 65 % to visitors based on use. Cost of maintaining collection allocated 100 % to residents (public good).
Christchurch Art Gallery	7,419	4,230	1,279	730	-3,500	57% of costs and revenues attributed to visitors, based on entry survey data and supplementary information.
Christchurch Cathedral	240	211	0	0	-211	Funding from CCC to support tourism

	Total Cost (\$'000)	Visitor Cost (est.) (\$'000)	Total Revenue (est.) (\$'000)	Visitor Revenue (\$'000)	Net Visitor Revenue³⁹ (\$'000)	Comments
Christchurch City Library	23,286	605	1,958	0	-605	Cost associated entirely with student visitors. Relatively small use of open access facilities by other visitors is not accounted for.
City Promotion	1,043	1,043	0	0	-1,043	Allocated 100% to tourism
Visitor Promotions	2,010	2,010	0	0	-2,010	Visitor services, provided under contract by CCM. Allocated 100% to tourism
Events and Festivals (CCC support)	2,483	570	0	0	-570	Allocated 17% to tourism.
Convention Centre, Westpac Sports & Entertainment Centre, Town Hall	13,432	6,700	10,661	5,300	-1,400	
Jade Stadium	9,108	+	8,388	+	-	Possible small net cost for non-series sporting events is unquantified
Totals for analysed system⁴²	267 400	30,100	288,800	28,600	-1,600	CCC activities and services of no relevance to tourism excluded. Asset boundary does not exactly correspond to CCC asset boundary.

⁴² Totals rounded to the nearest hundred thousand.

Appendix B

Rotorua Case Study

Table 9
Summary of Visitor Contributions to Public Costs and Revenues (Rotorua)

	Total Cost ⁴³ (\$'000)	Visitor Cost (est.) (\$'000)	Total Revenue ⁴⁴ (\$'000)	Visitor Revenue (est.) (\$'000)	Net Visitor Revenue ⁴⁵ (est.) (\$'000)	Comments
Council Rates and General Services						
General Differential Rates	0	0	27 572	6,755	6,755	Household Rates (VFR) and Accommodation sector business rates only. Total tourism-related rates would be higher. Rates are levied on capital value of rating units (properties)
Uniform Annual General Charge	0	0	9 086	675	675	Estimate of business rates due to tourism
Remission of RDC rates	737	0	0	2	2	
Rotorua Regional Airport Ltd	0	0	34	17	17	Based on 51% share of the dividend paid to RDC
Targeted Rate – Lakes enhancement	0	0	unknown	2	2	Estimate of business rates due to tourism
Parking	0	0	457	68	68	Net surplus. Allocation of 14.9% based on visitor density.
Land Drainage	3 044	454	105	16	-438	Allocated on the basis of visitor density of 14.9%.
Local Roads	9 625	188	0	0	-188	Based on visitor density applied to a small subset of expenditure Marginal tourism costs est. >\$56 000.
Road Safety	118	24	60	12	-12	Based on 20% of accidents caused by visitors.
State Highways (National impact)	n.a.	392	n.a.	n.a.	n.a.	This is the visitor cost for State Highway's building and maintenance, managed by RDC on behalf of Central Government. These costs are treated as a national impact of tourism and are included here only for reference.
Water Supply	5 418	807	0	0	-807	Estimate based on tourist density of 14.9%

⁴³ In general, operating expenses plus cost of capital renewal has been included.

⁴⁴ In general, this refers to direct income only, and excludes funds received from other levels of government.

⁴⁵ Defined as 'tourist revenue' minus 'tourist cost'.

	Total Cost ⁴³ (\$'000)	Visitor Cost (est.) (\$'000)	Total Revenue ⁴⁴ (\$'000)	Visitor Revenue (est.) (\$'000)	Net Visitor Revenue ⁴⁵ (est.) (\$'000)	Comments
Targeted Rate – Unmetered water supply	0	0	4,433	523	523	Estimate based on VFR density and tourism expenditure
Wastewater	8 453	1 260	288	43	-1,217	Allocation based on tourist density of 14.9%.
Targeted Rate – Sewerage	0	0	7 060	1,730	1,730	Tourism contribution estimated from accommodation sector and residential rates.
Waste	3 771	562	1 979	295	-267	Revenue is net of targeted rate (below). Estimates based on tourist density of 14.9%
Targeted Rate – Refuse	0	0	1 351	523	523	Tourism contribution estimated from accommodation sector and residential rates.
Attractions, public facilities and events						
Aquatic Centre	2 205	293	973	119	-174	Based on visitors comprising 15% of entries.
CBD	1 372	412	8	0	-412	Assumed zero visitor revenue and 30% visitor cost based on above-average presence in CBD
Event Venues	3 518	1,759	8,589	4,295	2,536	Revenue for 2005 was unusually high. Forecasts for future years suggest average net cost of \$1 – 3 million / year
Public Gardens/General Reserves	9 059	675	1 196	178	-497	Assumed 50% of expense and 100% of revenues applicable to visitors and applied lower total tourist density.
Rotorua Museum of Art & History	2 364	2,009	925	878	-1,130	Assume 100% of revenue from tourism (free admission for locals)
Economy Group						
Destination Rotorua – Marketing	1 615	1 615	365	365	-1 250	Assume 100% allocation to tourism
Economic Development	423	+	6	0	-	Support for tourism development to be ascertained.
Tourism Rotorua Travel and Information	1 218	1 218	812	812	-406	Assume 100% allocation to tourism

	Total Cost ⁴³ (\$'000)	Visitor Cost (est.) (\$'000)	Total Revenue ⁴⁴ (\$'000)	Visitor Revenue (est.) (\$'000)	Net Visitor Revenue ⁴⁵ (est.) (\$'000)	Comments
Totals for analysed system	52 900	11,300	65,300	17,300	6,000	Totals are rounded to the nearest \$100 000 Note that total revenue greatly exceeds total expenditure in this table, as activities unaffected by tourism are not considered.