

# **The Impact of the Tourism Sector on the Vermont Economy: The Input-Output Model**

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## Executive Summary

- On average, visiting domestic households spent \$333.91 for every trip.
- Visitor groups on average consist of 2.38 people; they visit 3.41 times per year and stay on average 3.52 nights.
- Seventy-five percent of the domestic pleasure travelers stayed over night with either lodging businesses or private residents.
- Over 29% of the total trips made were in the summer, followed closely by winter and fall (26% each).
- Bed and Breakfast counted for 36% of the lodging establishments in Vermont.
- Fifty-one percent of Vermont's lodging businesses have 10 rooms or less.
- The average occupancy rate is 38% with August and October having occupancy rates over 50%.
- The average ski area revenue in the winter season is \$19 million while in the summer and fall average ski area revenue is \$4.3 million
- Twenty-two percent of Vermont's skiers come from Vermont, while over 70% reside in the New England region
- On average, a ski area hires 130 full time year-round employees with the average salary of \$29,000. The average hourly wage is \$7.68.
- In 1997, 4.62 million tourists made 15.74 million person trips to Vermont
- Total direct domestic tourist spending in Vermont is about \$2.2 billion.
- The total domestic tourism impact is \$3.7 billion (direct, indirect, induced)
- The total impact of domestic tourist spending (direct, indirect, induced) is 15% of the GSP.
- Tourist activity in Vermont generates 23% of total state employment.
- 24% of the indirect business taxes are related directly and indirectly with tourism spending.
- For every million dollars spent by tourists, 38 jobs are created.
- For every dollar spent by tourists, additional 69 cents of spending is generated in the Vermont economy.

## **Executive Summary (Continued)**

- Large lodging businesses account for most of the lodging sector sales, but their multiplier effect is smaller
- Medium-size lodging businesses have output multipliers similar to those of small lodging businesses and they have the highest personal income multiplier
- Small lodging businesses show the highest employment multiplier and indirect business tax multiplier, but their profitability level is low
- For every dollar spent in ski areas, an additional 94 cents of spending is generated.
- For every million dollars of sales by the ski industry, 45 jobs are created.
- For every dollar of sales in the ski industry will generate 66 cents in personal income and 10 cents in indirect business taxes in Vermont.

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## INTRODUCTION

Vermont has become one of the most travel-expenditure-dependent economies in the United States in the nineties. In 1992 in-state and out-of-state travelers spent an estimated \$1.84 billion, accounting directly and indirectly for 40,500 jobs (Waters, 1996). That means the tourists' expenditure per capita is about \$3,270, ranking Vermont eighth of the fifty states (Table 1). Tourists' expenditure accounts for 15% of the Gross State Product (GSP), ranking Vermont sixth of the fifty states (Table 2).

**Table 1 Top Ten States of Tourists' Expenditure per Capita (1992)**

State	Tourists' Expenditure per Capita (\$)	Rank
Nevada	19,415	1
Hawaii	10,530	2
Washington D.C.	10,117	3
Alaska	4,472	4
Florida	4,224	5
Wyoming	4,057	6
Colorado	3,354	7
Vermont	3,270	8
New Mexico	3,241	9
Montana	3,079	10
U.S.	2,471	

\* 1990 census data

\*\*Travel Industry Yearbook, 1995-1996

**Table 2 Top Ten States of Tourists' Expenditure as Percentage of GSP (1992)**

	As % of GSP (1992)	Rank
Nevada	65	1
Hawaii	33	2
Florida	20	3
Montana	16	4
New Mexico	15	5
Vermont	15	6
North Dakota	15	7
Utah	14	8
District of Columbia	14	9
Wyoming	13	10
National Average	10%	

Sources: Travel Industry Yearbook, 1995-1996; Bureau of Economic Analysis

Although the tourism sector is important to the Vermont economy, there is a dearth of information on its economic impact. Reliable facts on the economic impacts of the tourism industry are not readily available because:

- (1) The tourism industry is not defined separately in the Standard Industrial Classification (SIC) system, making impact assessment difficult (Steven and Rose, 1985). Tourism is generally imbedded in a number of different industry sectors, such as “eating and drinking” (SIC 58), “hotel and lodging” (SIC 79), “amusements and recreation services” (SIC 79), some of “retail” (SIC 53, 54, 59) and “transportation”(SIC 41, 42, 44, 49 etc). To evaluate the economic impact of the tourism sector using an input-output model requires the disaggregation of these sectors into sales attributed to the tourism industry from the sales attributed to the non-tourism industry.
- (2) The state of Vermont has not had a complete, consistent, and accurate inventory data and economic analysis of its tourism industry. In the past twenty years, only a few studies have been conducted on the performance of the Vermont tourism industry. These studies, however, were not easily comparable because data were collected in an inconsistent manner. Longwoods International conducted the most recent Vermont economic impact study four years ago.
- (3) Some sub-sectors of the Vermont tourism industry need to be examined because their characteristics may differ from nationwide tourism industry sub-sectors. For example, the Vermont lodging industry structure is dominated by small businesses. Approximately 70% of the lodging businesses in the state have less than a 20-room capacity (Longwoods International, 1995). Small businesses have different business behavior and cost structure than larger businesses, and therefore have different economic impacts.

This lack of information is perhaps the industry's greatest barrier to reaching its full potential. Therefore, collecting primary data for the tourism sector and determining its impact on Vermont's economy is vital to the development and implementation of a comprehensive strategic marketing and public investment plan.

### **Objectives of This Study**

The objective of this study is to evaluate the economic impacts of Vermont tourists' expenditure and the tourism industry using an input-output model. The specific objectives of this study are:

1. To construct an input-output model for the tourism sector in Vermont (See Appendix A).  
This will entail collecting primary data for the tourism industry in Vermont.
2. To estimate the economic impacts of U.S. tourism spending on Vermont's economy by analyzing the tourism's effect on the gross state product, employment, tax generation and the strength of inter-industry linkages.
3. To estimate the economic impact of lodging businesses by size on the Vermont economy.
4. To evaluate the economic impact of ski areas in Vermont on the Vermont economy.

The study focuses on the domestic tourist spending within Vermont. There are two reasons for focusing initially on U.S. tourists. First, this is an ongoing project to explore the economic impact of tourism on the Vermont economy. International tourists' information will be gathered as the next phase of the project. It is also a very common practice, even at the national level, to study U.S. and international tourists separately due to their different travel behavior and expenditure patterns. Second, U.S. tourists account for most of the tourists and for Vermont U.S. tourists account about 87% of trips made to Vermont (Longwoods International, 1995).

## Definition of Tourists in This Study

There are a variety of definitions for tourists. For the purpose of this study, “tourists” are defined as pleasure travelers. Tourist activities include trips for pleasure only such as recreation, visiting friends and relatives, etc. The tourists defined in this study include both out-of-state residents and Vermont residents. The reason to include Vermont residents is that clearly a person is a tourist if he/she stays in southwestern Vermont for a weekend, whether he/she lives in Montpelier or New York City. Moreover, in some recreation industries such as ski areas, Vermont visitors account for a very significant number. “Tourist” is used as a synonym for “pleasure traveler” in this study.

## Analysis and Data Sources

To evaluate the economic impact of tourism on the Vermont’s economy, this study used the IMPLAN economic impact model, which traces the flow of goods and services, income, and employment among related sectors of the economy. The model estimates the *direct effects*, *indirect effects*, and *induced effects* of tourism spending. These effects characterize the way money is circulated through a region’s economy (See Appendix A for a more detailed explanation).

- *Direct Effect* refers to production change associated with a change in demand for the good itself. It is the initial impact to the economy.
- *Indirect Effect* refers to the secondary impact caused by changing input needs of directly affected industries (e.g., additional input purchases to produce additional output).
- *Induced Effect* is caused by changes in household spending due to the additional employment generated by direct and indirect effects.

The IMPLAN model also estimates an *output multiplier*, a *personal income multiplier*, an *employment multiplier*, and an *indirect business tax multiplier*. Multipliers are summary

indicators of tourism impact that characterize how changes in tourist spending can effect other sectors within the state's economy (see Appendix A for a more detailed explanation).

- **Output Multiplier:** An output multiplier for a sector is defined as the total production in all sectors of the economy that is necessary to satisfy a dollar's worth of final demand for that sector's output (Miller and Blair, 1985). In other words, every dollar change in final-demand spending (direct output) changes in the total value of output in all sectors.
- **Personal Income Multiplier:** For every dollar change in final-demand spending (direct output), the change in income received by households.
- **Employment Multiplier:** For every million-dollar change in final-demand spending (direct output) in a sector, the change in number of jobs in the economy.
- **Indirect Business Taxes Multiplier:** For every dollar change in final-demand spending (direct output), the change in indirect business taxes.<sup>1</sup>

### Visitor Survey

The IMPLAN economic impact model requires 3 data inputs to estimate spending and multiplier effects. First, the University of Vermont (UVM) developed a Vermont visitor survey to collect tourist expenditure and trip data. To administer the survey, UVM derived a sample population from a national group of 225,000 households, compiled by a national consulting firm (NPD Group). The survey includes a question to separate Vermont tourists from the sample, which reads "If you took a trip to or through Vermont anytime in the past year, please 'x' the season(s) in which you visited." Of the 225,000 households, 152,652 households responded to the question at a response rate of 68%. Subsequently, a geo-demographically balanced Vermont visitor sample of 6,800 was created from the national group. Then we took a random sample of

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<sup>1</sup> Indirect business taxes consist primarily of excise and sales taxes paid by individuals to businesses. These taxes occur during the normal operation of these businesses but do not include taxes on profit and income (IMPLAN manual, 1996).

2,940 Vermont visitors from the 6,800 households and sent them a detailed follow-up questionnaire asking about their trips to Vermont such as length, purpose, expenditure and party size etc. 1,753 questionnaires were returned at a response rate of 60%. A sample of the visitor follow-up survey is attached in Appendix B.

### Business Survey

Second, IMPLAN requires a survey of expenditures within tourism related businesses in the state. The business survey concentrates on the lodging industry and the ski industry for the first year of study, as these two industries are perceived as important to Vermont tourism. The purpose of lodging and ski area surveys was to establish the industry profiles and find out the total revenue and cost structure of the lodging businesses and ski areas in Vermont. The cost structure data collected were used to create the input-output coefficients for the lodging sector and the ski area sector. The lodging survey was sent to the entire population of 1,027 lodging businesses in Vermont in August 1998. 302 lodging businesses responded with a respond rate of 29%. Among the questions asked were type and size of lodging business, occupancy rate by month, employment number, total revenue, expenditures by categories, local purchase percentages, guest type, and tourist origin etc. Appendix C shows a sample of the lodging business survey. The ski area survey was sent to all members of state ski area association (14 ski areas) with questions similar to the lodging surveys. Ten ski areas responded with a response rate of 71%. Appendix D shows a sample of the ski business survey.

### IMPLAN

Finally, the Vermont input-output model uses data on Vermont's economy for the year 1995, the most recent year for which data are available. The Minnesota IMPLAN Group supplied the base data on a county level. Minnesota IMPLAN Group assembles its data from a number of sources, including the U.S. Bureau of Labor Statistics, the U.S. Bureau of Economic Analysis, USDA, and the U.S. Census of Agriculture (Minnesota IMPLAN Group).

# VERMONT TOURISM SECTOR

## Vermont Visitor Profile

This section presents the statistics from the Vermont visitor survey (For more information see A National Survey of the Vermont Visitor). The first section outlines the general information about Vermont visitors and gives a brief summary of our findings. The following sections present visitor information by number of visits by season, types of activity, origin of visitors, and where they stayed while in Vermont.

### General Information on Visitation and Expenditures

In 1997, 4.62 million U.S. tourists (1.92 million households) took an estimated 6.61 million trips to Vermont with an average party size of 2.38 persons, equivalent to 15.74 million person-trips.<sup>2</sup> Table 3 shows the average Vermont visitor profile from which these estimates were derived. On average each visiting household took 3.41 trips to Vermont. These visiting households stayed an average of 3.52 nights on each of their visits. Among Vermont visitors, 79% stayed overnight, while 21% said they took day-trips or were passing through the state on their way to another destination. The average size of each visiting group was 2.38, with an average of 0.45 children in each group. In other words more than half of the visiting households came to Vermont as couples without their children.

**Table 3 Visitor Profile for All Tourists**

	All Tourists
Average Trips per HH	3.41
Average Length of Stay (night) per Trip	3.52
Average Party Size	2.38
Average Children in Trip	0.45

Source: 1997 Vermont Visitor Survey

<sup>2</sup> Specific calculation is shown in the appendix E.

Table 4 shows the average expenditure per trip per household for all types of tourists. The total average expenditure for a household per trip is \$ 333.91, with lodging expenditure of \$ 89.99, restaurant expenditure of \$69.09, and retail expenditure of \$63.81.

**Table 4 Average Expenditure per Household per Trip (1997)**

	All Tourists	
Lodging	\$	89.99
Restaurant	\$	69.09
Retail	\$	63.81
Recreation	\$	49.92
Transportation	\$	31.25
Grocery	\$	19.17
Other	\$	10.68
<b>TOTAL</b>	<b>\$</b>	<b>333.91</b>

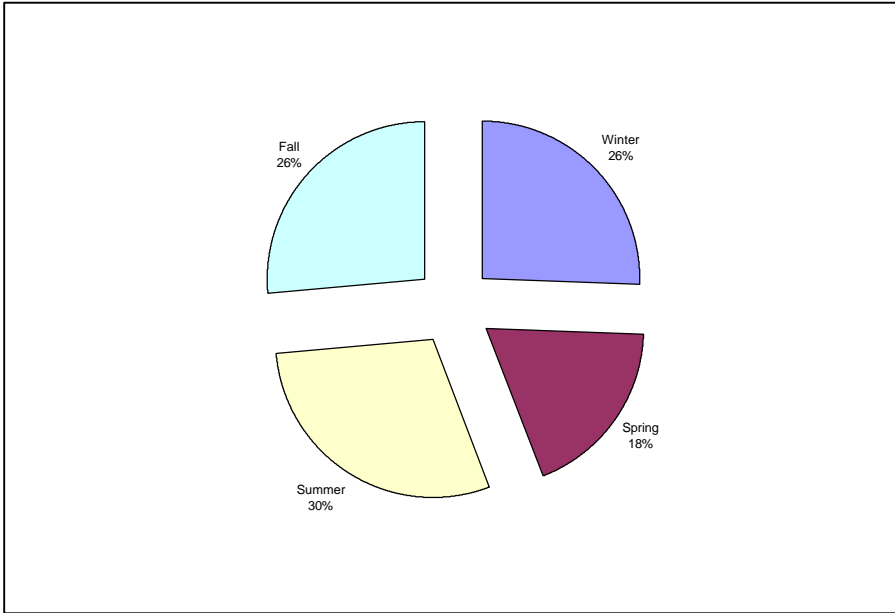
Source: 1997 Vermont Visitor Survey

### Seasonal Analysis

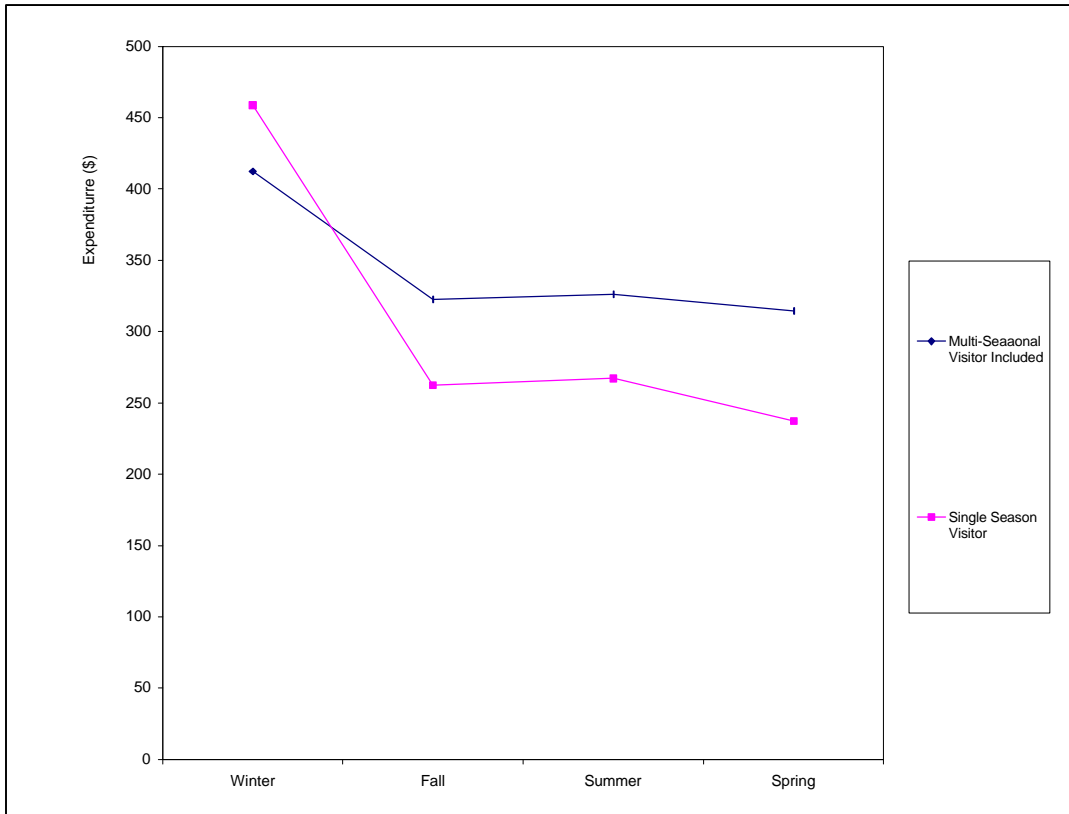
The numbers of tourists visiting Vermont are not evenly distributed throughout the year, and neither are their expenditures. This section examines two phenomena: variations in tourist visitations and in tourist expenditures by season.

Figure 1 shows the percent of trips made by season. Thirty percent of the trips to Vermont were made in the summer; 26% in the winter and 26% in fall; and 18% were made in the spring. Figure 2 shows that winter visitors tend to spend more money for each trip, or that winter trips are more costly. A one-way ANOVA analysis shows that there is a significant difference in expenditure by visitors in different seasons. A Bonferoni test shows that winter visitors' total expenditure is significantly higher than that of visitors in other seasons (\$202 higher than spring visitors, \$172 higher than summer visitors, and \$176 higher than fall visitors). Statistics also show that winter visitors spend a higher percentage of their money on lodging and recreation, while spring visitors spend more money on retail.

**Figure 1 Visiting Trips by Season (1997)**



**Figure 2 Expenditure per Household per Trip by Season (1997)**



## Activity Analysis

Most tourists' reasons for visiting Vermont is to visit friends and relatives (26%), followed by shopping (14%), skiing (11%) and viewing fall foliage (8%) (Table 5). Table 5 also shows the percentage of expenditures made by tourists of different purposes. For example, ski trips count for 11% of the total trips, but their expenditure count for 17% of the total tourists' expenditure.

**Table 5 Primary Purpose of Tourists' Trips and Expenditure (1997)**

	% of Total Trips	% of Tourist Expenditure
Visit friends/relatives	26%	23%
Shopping	14%	12%
Downhill skiing	11%	17%
Fall foliage tour	8%	7%
Family get-a-way	8%	10%
Auto-touring	6%	5%
Attend a specific event	6%	5%
Romantic get-a-way	5%	8%
Camping	2%	2%
Cross country skiing	1%	1%
Snowmobile touring	1%	1%
Hiking	1%	1%
Biking	1%	1%
Water sports	0.3%	0.3%
Other	9%	7%
Total	100%	100%

Source: 1997 Vermont Visitor Survey

Shopping appears to be an important reason for tourists visiting Vermont. However, statistics shows that 44% of the shoppers come from New York State, possibly because New York has the highest sales tax rate in the country. Thirty percent of friend/relative visitors come from New York or Massachusetts, while fall foliage visitors are distributed more evenly among different states.

## Origin Analysis

Table 6 shows that households in New England and the Mid-Atlantic States (i.e. New York, New Jersey and Pennsylvania) made up 56% of visiting households to Vermont. The percentage of expenditure by each region closely matches the visiting household percentage. So there is no significant expenditure per household difference among regions.

**Table 6 Tourist Origin (Census Region) and Expenditure (1997)**

Census Region	Visiting Households	Total Expenditure
Mid-Atlantic	30%	33%
New England	26%	22%
South Atlantic	18%	17%
East North Central	9%	11%
Pacific	5%	5%
West South Central	4%	4%
East south Central	3%	2%
Mountain	3%	4%
West North Central	2%	2%
Total	100%	100%

Source: 1997 Vermont Visitor Survey

New York and Massachusetts are the two states whose residents made up the highest percentage of Vermont tourists during 1997. Twenty percent of visiting households come from New York State and 11% come from Massachusetts. These two states are the top two in every season's visitation. Comparing these two states' visiting households with other states' tourists reveal the following: (1) these two states' tourists include a higher percentage of day trip and passing-through travelers (33% for NY, and 29% for MA) than those of other states (20%). The average length of stay of these two states' visitors is shorter than that of other states' visitors. (2) There are no significant differences in evaluating overall experience in Vermont between these two states' visitors and other states' visitors, but these two states' visitors indicate a higher possibility of visiting Vermont in the next 12 months. (3) A significantly higher percentage of these two states' visitors received information about Vermont from a newspaper article and advertising, and a significantly lower percent received information from a travel agent. Moreover, more New York and Massachusetts visitors reported that newspaper articles and

advertising are effective (“definitely influenced desire to visit Vermont”) and travel agents are ineffective (“definitely did not influence the desire to visit Vermont”) in influencing their travel decision to travel to Vermont.

Accommodation Analysis

Table 7 shows the places that tourists stayed in Vermont. Twenty one percent of the households who traveled to Vermont did not stay overnight. Day and passing-through visitors, although they make up more than one-fifth of the visiting households, count for only 7% of total visitor expenditures. Seventy nine percent of the visiting households stayed overnight and spent 93% of total visitor expenditures. Of the 79% overnight visitors, 24% stayed in the private residence of a friend or relative; 16% stayed in a hotel or motel chain; another 16% stayed in a locally owned hotel or motel; 7% stayed in a bed and breakfast or country inn; 7% stayed in a rented cabin/cottage/home or condo; and 2% stayed in a vacation home owned by themselves. The results showed that B&B establishments had a lower percent on visiting but a higher percent on expenditure similarly with rented cabin.

**Table 7 Tourists Place of Lodging and the Expenditure by Accommodation Type (1997)**

		% of Visiting HHs	% of Total Expenditure
Overnight Visitors	Private residence of a friend or Relative	24	21
	Hotel or motel chain	16	19
	Locally owned hotel or motel	16	21
	Other types of accommodations	8	6
	Bed and breakfast or country inn	7	12
	A rented cabin, cottage, home or condo	7	13
	Vacation home that you own	2	2
Day Trip or Passing Through		21	7
Total		100	100

Source: 1997 Vermont Visitor Survey

Table 8 compares the expenditure per household per trip by different types of tourists. Lodging guests, on average, spent \$457.09 for each trip, compared to \$103.60 for day/passing through visitors and \$271.12 for overnight visitors who stayed with friends and relatives. Lodging guests spent 37% (\$169.6) of their expenditure on lodging, compared to 0% for

day/passing through visitors and 8% for overnight visitors who stayed with friends and relatives.

Day/passing through visitors spent a higher percent (33%) of their total expense on retail than lodging guests (15%) and overnight visitors who stayed with friends and relatives (13%).

On average each household that stayed in a lodging business made 3.39 trips and stayed 3.49 nights for each trip.

**Table 8 Expenditures per Household per Trip by Different Types\* of Tourists (\$) (1997)**

	Day / Passing Through Visitors	Lodging Business Guests	Overnight Visitors Staying With Friends/Relatives
LODGING	0.00	169.63	21.81
RESTAURANT	28.02	90.20	67.36
RETAIL	34.18	70.45	35.62
RECREATION	12.33	61.07	63.79
TRANSPORTATION	19.79	36.74	39.01
GROCERY	5.68	17.64	31.12
OTHER	3.60	11.36	12.41
TOTAL	103.60	457.09	271.12

\*Note: Different types of tourists are identified by the types of accommodation where they spent the most nights.  
Source: 1997 Vermont Visitor Survey

## Vermont Lodging Industry Profile

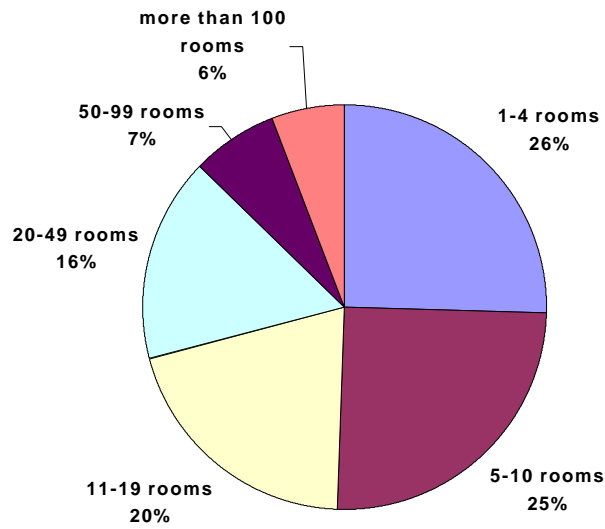
### Vermont Lodging Businesses: Size, Type and Geographical Location

In 1997, Vermont had 1,027 lodging businesses with a total of 26,098 rooms/units (Vermont Tourism Data Center, 1998). Vermont lodging businesses are mostly small in size. Over half (51%) have ten or fewer rooms/units. Over 70% have fewer than twenty rooms/units (Figure 3). Comparing our survey results to the Longwoods study (1995) reveals that the percentage of large lodging businesses (>50 rooms) increased in 1997. Six percent of the lodging businesses in 1997 had more than 100 rooms/units, and 7% had fifty to hundred rooms, compared to 3.5% and 6.1% respectively in 1994.

By type, the largest percentage of lodging businesses in Vermont is the bed and breakfast (36%), followed by country inn (21%), motel/motor hotel (15%), resorts (7%) and hotels (4%) (Figure 4). In total, motels, hotels and resorts add up to 26%, which is comparatively lower than New Jersey and Connecticut. In New Jersey and Connecticut, for example, the motels, hotels and resorts add up to 82% and 64%, respectively, of total lodging businesses.

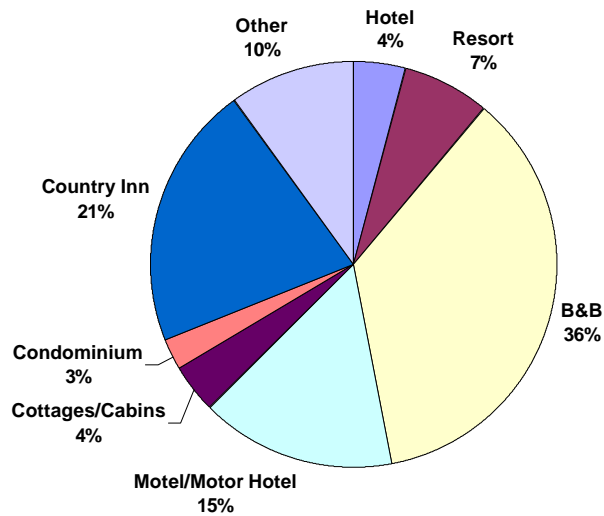
Information presented in the following sections about the lodging business and their guests is based primarily on responses to the 1997 Vermont Lodging Survey. To gauge the representativeness of the sample to the entire sector, we compared the survey sample profile with the population with respect to the number of rooms/units of the businesses and the number of businesses by regions (Tables 9 and 10). Moreover, a Chi-square goodness-of-fit was used to test whether sample percentages are significantly different from population percentages. This goodness-of-fit test compares the observed and expected frequencies in each category to test that each category contains a user-specified proportion of values (in our case, the population distribution). Tables 9 and 10 show that the survey sample profile and the population match closely in size and region. High asymmetric significance value in the Chi-square test also shows that we cannot reject the null hypothesis of no significant difference between the sample profile and the population (Table 11). The sample data is still weighted by size and geographical location, and the results are shown in the following sections.

**Figure 3 Size of Lodging Businesses in Vermont (1997)**



Source: Vermont 1997 Lodging Survey

**Figure 4 Lodging Businesses in Vermont by Type (1997)**



Source: Vermont 1997 Lodging Survey

**Table 9 Comparing Survey Sample Profile with Population by Size (1997)**

Room/unit	Survey Profile	Population
1 to 4 units	25%	29%
5 to 10 units	24%	25%
11 to 19	20%	20%
20 to 49	18%	15%
50 or more	13%	10%

Source: 1997 Vermont Lodging Survey

**Table 10 Comparing Survey Sample Profile with Population by Region (1997)**

Marketing Regions	Survey Profile	Population
Windham	13.9%	9.3%
Northwest	11.5%	13.0%
Rutland	11.4%	10.3%
Bennington	11.2%	11.0%
Northeastern VT	9.0%	8.7%
Central Vermont	8.4%	7.7%
Two Rivers-Ottawaquechee	7.9%	9.7%
Chittenden	6.9%	8.3%
Southern Windsor	6.8%	6.3%
Addison	5.1%	7.3%
Lamoille	4.7%	5.3%
Upper Valley-Lake Sunapee	3.0%	3.0%

Source: 1997 Vermont Lodging Survey

**Table 11 Chi-square Tests (Goodness of Fit) for Lodging Size and Geographical Location**

	Lodging Size (Unit)	Planning Region of the State
Chi-Square	5.55	11.06
Degree of Freedom	4	11
Asymmetric Significance	0.23	0.44

Source: 1997 Vermont Lodging Survey

### Occupancy Rate

Occupancy rates of all lodging businesses by month are shown in Figure 5. The annual average occupancy rate is about 38%. August and October have the highest occupancy rates (over 50%); April, May and November have occupancy rates below 30%. Over two-thirds (72%) of the state's lodging businesses are open year-round; over 90% are open from June through October. When calculating the monthly occupancy rates, an establishment was excluded if it is closed during a given month.

Figure 6 plots the occupancy rate by lodging business size by month. The study breaks down lodging businesses by three sizes: small size ranges from 1 to 9 rooms; medium size ranges from 10 to 49 rooms; and large has more than 50 rooms. Figure 6 shows clearly the larger lodging businesses, the higher the occupancy rates. The average annual occupancy rates for large, medium, and small lodging businesses are 54%, 42%, and 30% respectively.

### Room Rent

Average daily room rates vary widely within and among different lodging business types. Table 12 shows the simple average of single and double room rates by different sizes and types of lodging businesses. “Simple average” means that each establishment is weighted equally. On average, room rents are less expensive at bed and breakfasts and motels than at resorts, hotels and country inns. Table 13 shows more detailed information on room rates that compare small, medium, and large establishments across different seasons.

**Table 12: Room Rent by Lodging Business Type (1997)**

Lodging Business Type	Avg. Single Room Rent	Avg. Double Room Rent
Resort	\$177.03	\$183.24
Hotel	\$102.22	\$109.07
Country Inn	\$91.83	\$115.35
Bed and Breakfast	\$61.38	\$84.62
Motel/Motor Hotel	\$55.58	\$65.32

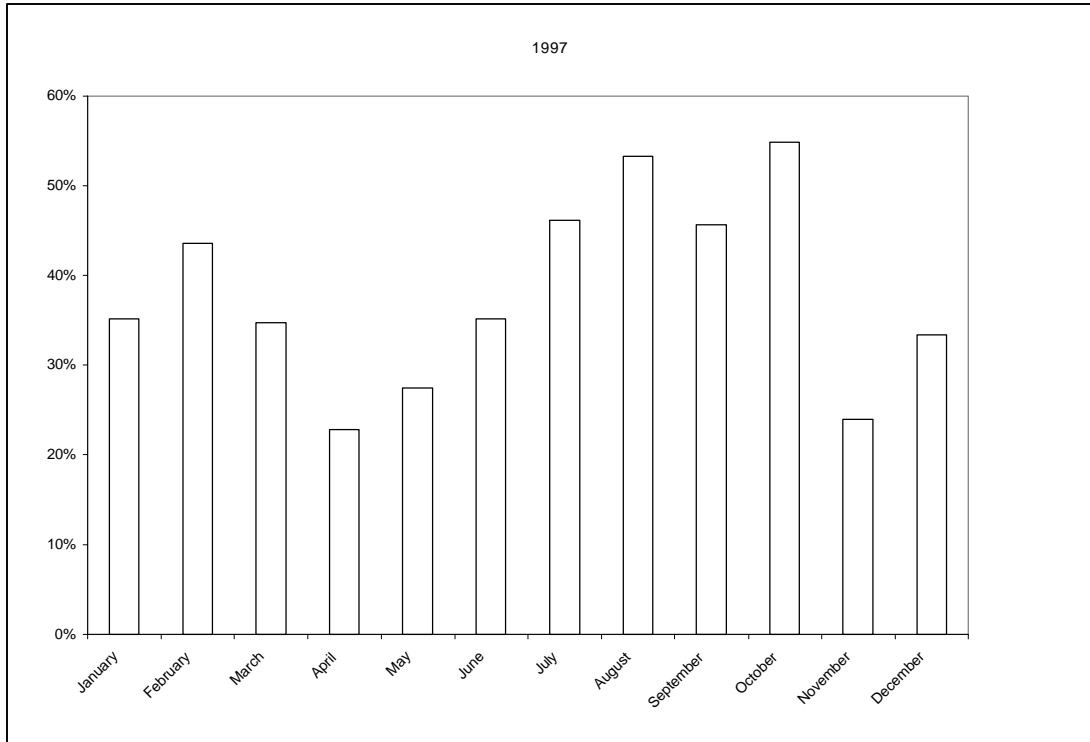
Source: Vermont 1997 Lodging Survey

**Table 13 Average Daily Room Rates**

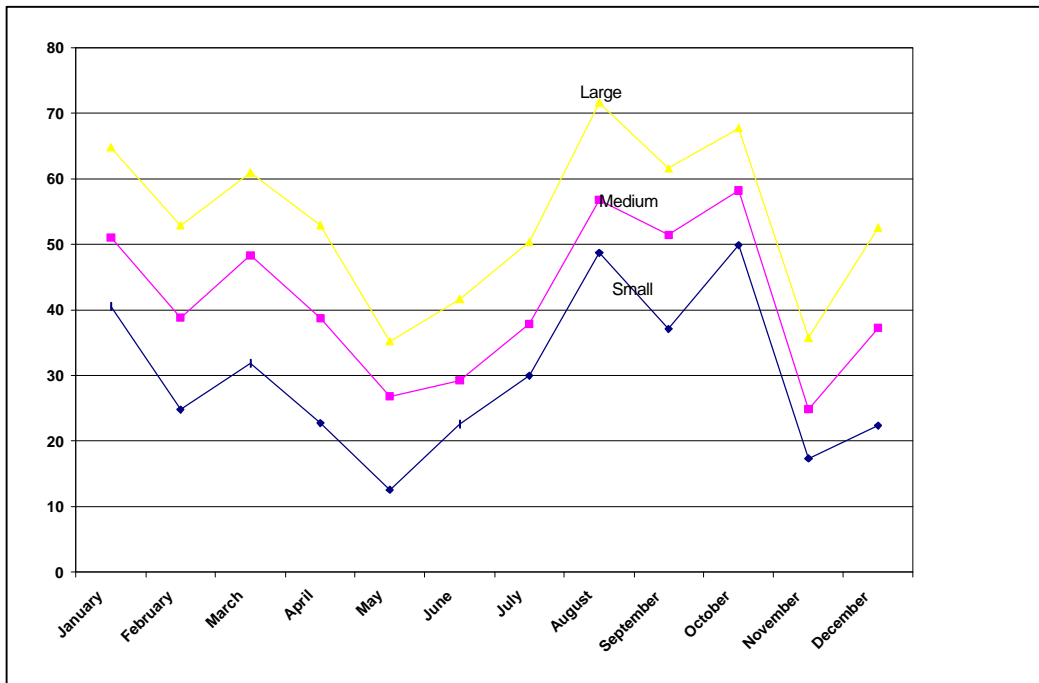
	small	medium	large	Total
High Season Single Minimum	\$59.10	\$72.02	\$117.59	\$73.71
High Season Single Maximum	\$78.27	\$111.63	\$312.44	\$131.69
High Season Double Minimum	\$77.80	\$76.10	\$108.43	\$81.12
High Season Double Maximum	\$104.62	\$130.38	\$227.51	\$131.64
High Season amount for Additional person	\$16.64	\$13.94	\$19.21	\$15.95
Low Season Single Minimum	\$54.68	\$49.52	\$93.32	\$60.03
Low Season Single Maximum	\$72.54	\$77.85	\$251.43	\$107.87
Low Season Double Minimum	\$72.22	\$72.78	\$84.51	\$74.16
Low Season Double Maximum	\$98.37	\$93.60	\$182.71	\$108.85
Low Season amount for Additional person	\$15.30	\$12.70	\$14.99	\$14.21

Source: Vermont 1997 Lodging Survey

**Figure 5 Occupancy Rate by Month for Lodging Businesses (1997)**



**Figure 6 Monthly Occupancy Rate by Lodging Business Size (1997)**



## Lodging Businesses' Financial Performance and Tax Impact

This section will cover the lodging sector's financial performance, such as revenue generation, costs of operation, and other related aspects such as where they buy their inputs and the impact of a 2% increase in the rooms and meals tax in 1997. The average revenue ranged from \$45,237 for a small lodging business (1-10 rooms) to \$3.6 million for a large lodging business (more than 50 rooms). A medium-size lodging business (11-49 rooms) on average receives revenue of about \$334,000. The state's total lodging sales are estimated to be \$667 million in 1997, according to our survey.

Table 14 presents the income and cost breakdown for small, medium and large lodging businesses. Medium-size lodging businesses earned the highest percentage of profit (20%), followed by large and small businesses. The larger the lodging business, the higher the percentage of their total costs that went to wages. The property tax and land/building rent are a significant percentage (22%) of total cost for small lodging businesses, while large lodging businesses' share is only 7% of the total cost.

Table 15 shows the percentage of local purchases by lodging businesses. For example, small lodging businesses purchase 73% of their nondurable goods such as cleaning material and paper products from Vermont-located businesses, versus 55% for medium-size lodging businesses and 63% for large-size lodging businesses. It reveals that small lodging businesses purchase a higher percentage from the Vermont market. In the food and drinks category, 87%, 68% and 45% of dairy products, fruits and vegetables, and poultry, respectively, are purchased from Vermont markets.

In the questionnaire, lodging businesses were asked how they think their occupancy rate was affected in 1997 when the rooms and meals tax rate increased from 7% to 9%. The majority of the businesses (60%) reported that their occupancy rate was not affected. Thirty three percent reported that their occupancy rate decreased, on average by 9%. Seven percent said that their

occupancy rate increased, on average by 3%, despite the increase in the tax (Table 16). The statistics show that there is no significant difference across different sizes and types of lodging businesses on this question.

**Table 14 Cost and Income Breakdowns for Lodging Businesses by Size (1997)**

	Small	Medium	Large
Salaries/Wages	17%	22%	28%
Food and Drinks	17%	12%	25%
Land/Building Rent and Loan Interest	15%	10%	5%
Utilities	7%	6%	4%
Property Tax	7%	3%	2%
Maintenance and Facility Repair	6%	4%	3%
Nondurable Goods	5%	5%	4%
Average Annual Investment on Durable Goods	5%	4%	5%
Marketing and Public Relations	5%	3%	5%
Insurance, Bank, Accounting and Legal Fees	4%	4%	3%
Business Taxes	4%	3%	2%
Profit/Proprietary Income	2%	20%	12%
Other*	7.4%	3.3%	4.3%
Total	100%	100%	100%

\* "Other" includes communication,, equipment rental and miscellaneous expense.  
Source: Vermont 1997 Lodging Survey

**Table 15 Lodging Businesses' Local Purchases by Category (1997)**

Category	Small	Medium	Large
Nondurable Goods	73%	55%	63%
Food and Drinks	77%	60%	61%
Average Annual Investment on Durable Goods	69%	57%	44%
Utilities	97%	94%	91%
Communication	68%	50%	33%
Insurance, Bank, Accounting and Legal Fees	79%	85%	64%
Marketing and Public Relations	85%	68%	56%
Maintenance and Facility Repair	93%	91%	74%
Misc. Expenses	65%	63%	60%
Other Services	90%	78%	79%

Source: Vermont 1997 Lodging Survey

**Table 16 Impact of 2% Increase of Rooms and Meals Tax Rate**

	Percent of Businesses	Degree of Change
Decrease	33%	9%
No Change	60%	
Increase	7%	3%

Source: Vermont 1997 Lodging Survey

## Employment

The average number of jobs in different sizes of lodging businesses is shown in Table 17. Larger businesses tend to hire more people and have a higher percentage of full-time year-round jobs. Fifty seven percent of lodging businesses with one to ten rooms reported they hire no full-time year-round employees.

**Table 17 Number of Jobs in Vermont Lodging Businesses by Room Size (1997)**

	1-10 rooms	11-25 rooms	26-49 rooms	> 50 rooms
Full-time year-round	1	2	9	40
Part-time year-round	1	3	7	21
Full-time seasonal	0	1	4	29
Part-time seasonal	1	2	5	19

Source: Vermont 1997 Lodging Survey

## Lodging Guest Information

Eighty two percent of the Vermont lodging guests are pleasure travelers, which is much higher than the national average (50% in 1993) and more significant than in other Northeast states (69.9% in New Jersey and 61.6% in Connecticut). Business travelers consist of about 10%, compared to a 47% national average. Another 8% of guests come for other reasons, such as for medical and education-related business.

The vast majority of pleasure travelers to Vermont in 1997 were out-of-state visitors. On average, 75% came from other U.S. states and 12% from Vermont. Seven percent are Canadian tourists and another 6% came from countries other than Canada.

Motor coach travel appears to have limited impact on Vermont lodging businesses. About 1% of rooms were rented to guests who arrived as part of a motor coach tour group, comparable to 1.6% reported in Vermont in 1994 (Longwoods, 1995) and 1.7% in Connecticut in 1993.

On average, 67% of the rooms were rented to two people, 15% were rented to one person, and another 14% to three to five people (Table 18). Table 18 also shows that large

establishments are more likely to host the business traveler, who is possibly the single traveler. They are also more likely to host larger groups of 5 or more people. Smaller establishments, on the other hand, are more likely to host the couple who travels in Vermont.

**Table 18 Percentages of Rooms/Units Rented to Different Numbers of Guests**

Number of Guests	Small	Medium	Large	Total
One	14%	13%	23%	15%
Two	73%	66%	47%	67%
Three to Four	10%	17%	18%	14%
Five to Eight	2%	3%	9%	3%
More than Eight	1%	1%	3%	1%

Source: Vermont 1997 Lodging Survey

On average, 33% for one night, 42% of the guests stayed for two nights, and 12% for three to four nights (Table 19). This table also shows that small establishments host shorter stay guests, with 77% staying for one or two nights (vs. 67% for large establishments). Conversely, large establishments are more likely to host longer stay guests. In large establishments, 17% of their guests stay for 5 nights or more, while only 12% of the small establishment guests stay for 5 nights or more.

**Table 19 Percentages of Rooms/Units Rented for Different Numbers of Nights**

Number of Nights	Small	Medium	Large	Total
One	34%	33%	28%	33%
Two	43%	42%	39%	42%
Three to Four	10%	13%	16%	12%
Five to Seven	3%	8%	13%	6%
More than Seven	9%	4%	4%	7%

Source: Vermont 1997 Lodging Survey

Finally, the survey asked if lodging business owners use computers for small business management, whether they have access to the Internet, and whether they use a web page to promote their business. Table 20 shows that overall three-fourths of the lodging establishments in the state use a computer to run their businesses. The same proportion has access to the internet, while just over half use a web page promote their business. Table 20 also shows that frequency of computer use is lower for smaller businesses and higher for large establishments.

**Table 20 Computer Technology in Lodging Businesses**

Item	Small	Medium	Large	Total
Does your business own a computer?	62%	83%	92%	74%
Do you have access to the internet?	62%	78%	92%	72%
Do you have your own World Wide Web page?	47%	65%	90%	59%

Source: Vermont 1997 Lodging Survey

## Vermont Ski Area Profile

### General Information about the Vermont Ski Areas Inventory

Skiing is one of the most important recreation activities in Vermont. In 1997, there were 21 ski areas in Vermont and we sent survey to 14 of them. The Vermont Department of Employment and Training reported 4.2 million skier days<sup>3</sup> in the year 1997-1998, a 5.4% increase over the year before. Skier days increased for all regions, particularly in the central region (6.9%) (Table 21).

**Table 21 1997-1998 Skier Days by Region (thousand skier days)**

Region*	1996-1997	1997-1998	% Change
North	918	946	3.0
Central	1,380	1,475	6.9
South	1,673	1,765	5.5
Statewide	3,972	4,187	5.4

\* North includes areas north of U.S. Rte 2. South includes areas south of U.S. Rte 4.

Source: Vermont Department of Employment and Training Survey to Vermont ski area

For the ten ski areas that responded to our survey, the total skier days reported are 3.96 million. Within these ten ski areas, the number of skier days varies widely, from 53,500 to 1,079,500.

### Services Provided by Ski Area

Table 22 shows the services provided by ski areas: all of the ski areas have recreation facilities; 70% have condo rentals, restaurants, real estate sales, and retail stores; 50% have hotels; 30% reported they have other services such as golf courses and property services.

**Table 22 Services Provided by Ski Areas (1997)**

Services	# of Ski Areas	% of Total Ski Areas
Ski/Recreation	10	100%
Condominium Rental	7	70%
Restaurant	7	70%
Retail Sales	7	70%
Real Estate Sales	7	70%
Hotel	5	50%
Other (Golf, Property Service, etc.)	3	30%

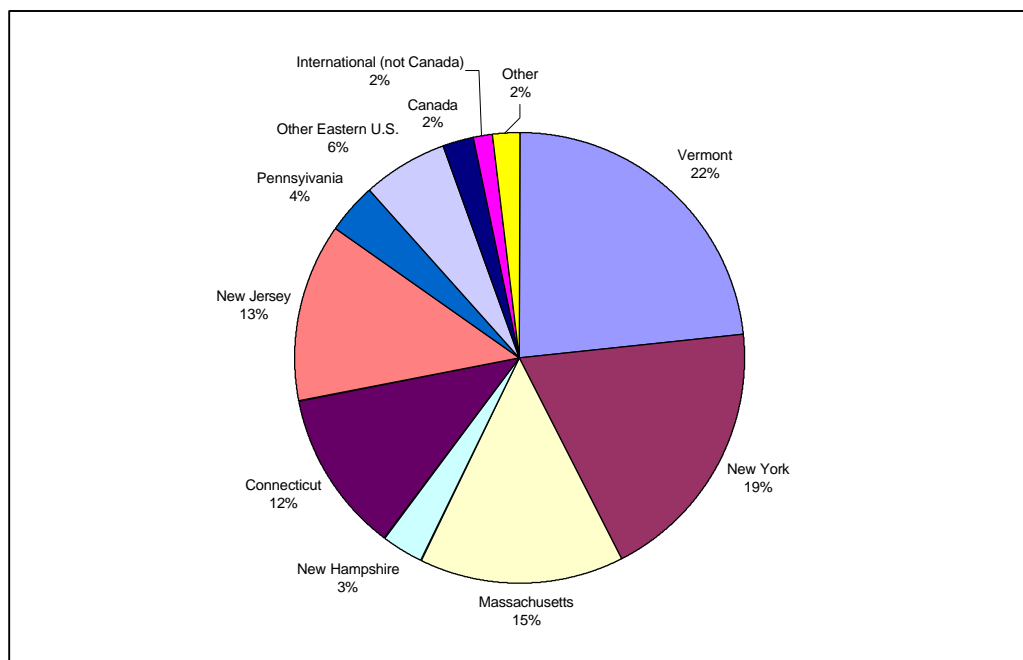
Source: 1997 Vermont Ski Area Survey

<sup>3</sup> 1 skier day = 1 person skiing for 1 whole day, 1 season pass accounts for approximately 25 skier days

## Skier Origin

In 1997, Vermonters were still the largest patrons of Vermont ski areas (21%), followed by residents of New York (19%), Massachusetts (17%), New Jersey (13%) and Connecticut (12%). Figure 8, which is weighted by skier days for every ski area, shows skier origins. For the year 1995-1996, the Department of Employment and Training reported fewer skiers from Vermont (19%) but more from New York (23%). It should be noted that ski areas record this information by counting the car plates. The Vermont number might be inflated because of the possibility of non-Vermonters renting cars from Vermont.

**Figure 7 Skier Origin (weighted by skier days)**



Source: 1997 Vermont Ski Area Survey

## Employment and Wages

On average, each Vermont ski area employs 881 people, with 130 full-time year-round employees, 7 part-time year-round employees, 407 full-time seasonal employees and 337 part-time seasonal employees. Not including benefits, a full-time year-round employee's average

salary is \$29,171 per year. The average hourly wage for part-time and seasonal employees is \$7.68 per hour.

Income and Cost

The survey requested the ski area businesses’ income by two seasons: winter and summer/fall. All respondents reported that their winter season begins in November and ends the following April. On average, each resort makes \$19 million in the winter season and \$4.3 million in the summer/fall season. Table 23 breaks down the income received by sources.

**Table 23 Ski Area Revenue by Source**

Category	Winter	Summer/Fall
Ski/Recreation	56%	36%
Lodging	15%	27%
Restaurant/Snack Bar	10%	11%
Real Estate Sales	8%	9%
Retail Sales	8%	8%
Other	3%	9%
Total	100%	100%

Source: 1997 Vermont Ski Area Survey

Table 24 shows the average costs reported by ski areas by category. The biggest component for ski area expenditure is employee compensation (24.4%), followed by cost of goods sold (17.2%), capital expenditure and improvement (i.e., investment on durable goods) (14%), depreciation (6.6%), and taxes (5.9%).

**Table 24 Cost Structure for Ski Area**

	Percentage of Total Cost
Employee Compensation	24.4%
Payroll	20.4%
Benefits (Expended Benefits)	1.2%
Benefits (Nonexpended Benefits)	2.8%
Tax	5.9%
Local Property Taxes	0.6%
Other Municipal Charges	0.1%
State Tax – Property	0.0%
State Tax -- Rooms and Meals	1.8%
State Tax – Sales	2.3%
State Tax – Income	0.2%
State Tax – Other	0.1%
Federal Tax—Income	0.7%
FICA and Unemployment Insurance	2.2%
Land Lease Payment	0.9%
State Forest Land	0.7%
Federal Forest Land	0.2%
Professional Services (e.g. lawyers, accountants)	0.9%
Utility	5.2%
Telephone	0.7%
Electric	3.8%
Fuel	0.7%
Insurance	1.6%
Liability	0.8%
Workers' Compensation	0.6%
Property	0.2%
Advertising and Marketing	5.0%
Supplies (nondurable goods like tickets, paper products, cleaning materials)	4.9%
Maintenance Repairs	1.8%
Costs of Goods Sold	17.2%
Other Goods	6.8%
Food and Drinks	4.2%
Real Estates	6.2%
Interest Expense	3.5%
Equipment Lease/ Rental (e.g., grooming equip, trucks, etc.)	1.5%
Capital Expenditure and Capital Improvement	14.1%
Depreciation	6.6%
Other Expenses	4.2%
Grand Total	100%

## **ECONOMIC IMPACT OF U.S. TOURISTS' EXPENDITURES AND TOURISM INDUSTRIES**

This section analyzes the economic impact of U.S. tourists' expenditures in Vermont overall and in particular in two specific tourism industries: lodging businesses and ski areas. In the first section, U.S. tourists' expenditures are presented by expenditure categories. Tourists' expenditures are the "direct"/ first-round impact to the Vermont economy. In the second section, a complete picture, including direct, indirect and induced impact of the tourists' spending, is presented in terms of industry output, employment, personal income and indirect business tax. Multipliers of the tourism sector are shown with a comparison to other sectors in the state. The next section presents the economic impact of different-sized lodging businesses on the Vermont economy. That impact is also examined in terms of output, employment, personal income, and indirect business taxes. The final section presents an economic impact analysis of the ski areas in Vermont.

### **U.S. Tourists' Expenditures in Vermont**

U.S. tourists spent a total of \$2.2 billion in Vermont in 1997. This was computed by multiplying together the number of visiting household (1.94 million), average visits per household (3.41 trips/household) and the expenditure per household per trip (\$333.91)<sup>4</sup>. This figure is a significant increase over the Longwoods study four years ago. The Longwoods study showed all travelers' expenditures to be \$2.08 billion in 1994 and \$2.04 billion in 1993. Those figures include international and Canadian travelers and business travelers, who are about 15% of total travelers according to the Longwoods report.

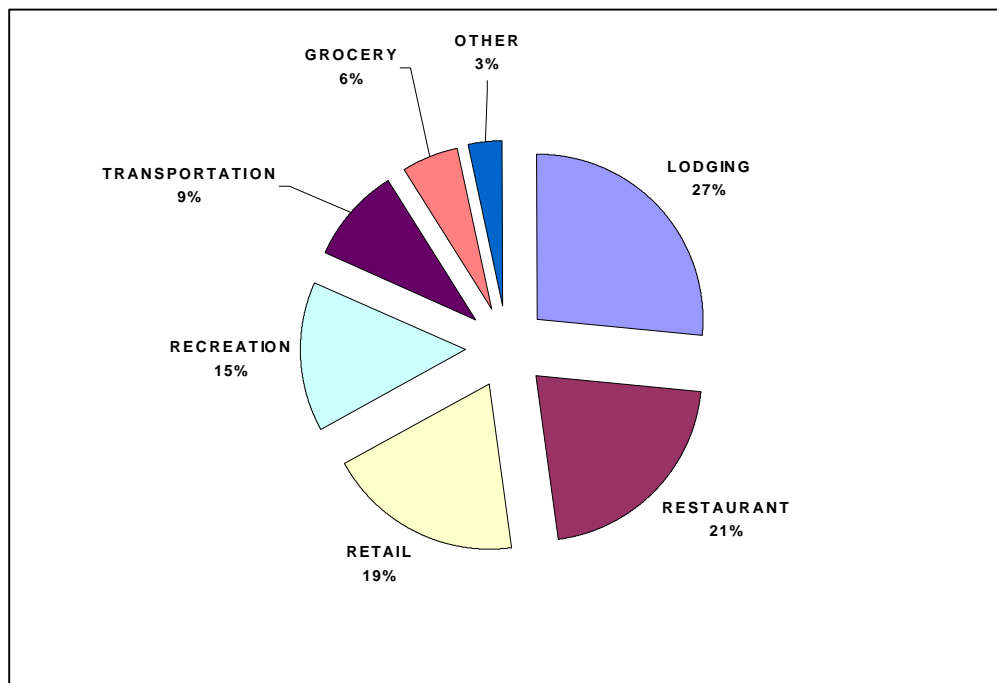
Figure 9 shows tourists' expenditures by each expenditure category. Expenditure categories are dominated by lodging (27%) and restaurant (21%) expenditures. Together these

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<sup>4</sup> Appendix D

account for nearly half (48%) of all U.S. tourists' expenditures in Vermont. However, retail purchases and recreation expenditures also have a significant impact, accounting for 17% and 15%, respectively. Twenty seven percent of U.S. tourists' expenditures are for lodging, and the percentage is presumably higher if we count business travelers and international travelers, who are more likely to stay in lodging businesses. As a comparison, the lodging expenditure represents only 11.6% of total travelers' expenditure in New Jersey (1994) and 13.9% in Connecticut (1993). At the national level, the percentage is 17%, according to the U.S. Travel Data Center's report in 1994.

**Figure 8 U.S. Tourists' Expenditure by Category**



**Economic Impact of U.S. Tourists' Expenditures**

Table 25 shows the impact of the tourism sector on output, employment, personal income, and indirect business taxes (business taxes excluding business income taxes). In 1997, U.S. tourist spending contributed to \$3.7 billion, or 15% of state output in total. Of that amount, \$ 2.2 billion was the direct impact and \$1.5 billion indirect and induced impacts. Tourist expenditures contributed to 80,047 jobs in total, which are about 22% of total jobs in the state.

Of that 80,047 jobs, 70% (55,740 jobs) were attributed directly to tourist expenditures and 30% (24,308 jobs) were created due to the indirect and induced impacts of tourist expenditures. These jobs include both full-time jobs and part-time jobs. Tourism also generates \$1.4 billion in personal income (employee compensation and proprietary income) and \$267 million in indirect business taxes for the state, which are 14% and 24% of total state personal income and indirect business taxes, respectively.

**Table 25 Tourism Economic Impact on Output, Employment, Personal Income and Indirect Business Taxes for 1997**

	Direct	Indirect	Induced	Total	% of State
Output (million \$)	2,210	626	909	3,745	15
Employment (jobs)	59,878	9,104	15,081	84,063	23
Personal Income (million \$)	850	204	335	1,389	14
Indirect Business Taxes (million \$)	183	30	54	267	24

The following section reports the economic multipliers for the expenditure of Vermont tourists whose origin is from the U.S. on the Vermont economy. The definitions of various economic multipliers can be found in Appendix G. For the tourism sector, the output multiplier is 1.69. (See Appendix H for a comparison with other output multiplier rates). We also estimated a personal income multiplier of 0.55; an employment multiplier of 38; and an indirect business tax multiplier of 0.12. This can be explained as follows: For every million dollars spent by tourists in Vermont, an additional \$694,417 worth of output is generated; personal income increases by \$545,363; 38 jobs are created; and indirect business taxes increase by \$120,754. As tourist spend \$2.2 billion, Table 25 shows the entire impact on the state.

Table 26 compares tourism output multiplier and employment multiplier with those of other sectors in the Vermont economy. The tourism output multiplier (1.69) is about average when compared to other sectors in the state. Total tourism employment multiplier (38) is relatively high among the sectors, meaning that relatively more jobs are created for every million

dollar brought in by the tourism sector. Our study also shows, however, but a large proportion of these jobs created is in the tourism sector itself.

**Table 26 Comparing the Tourism Sector Output Multiplier to Selected Sectors' Output Multipliers**

	<u>Output Multiplier</u>	<u>Employment Multiplier</u>
Education	1.95	42.68
Child Day Care Services	1.88	46.27
Doctors and Dentists	1.87	28.15
Legal Services	1.87	31.78
Advertising	1.86	32.24
Computer and Data Processing Services	1.86	25.92
Hospitals	1.85	32.46
Nursing and Protective Care	1.84	46.93
Government - State & Local	1.79	39.60
Newspaper and Periodicals	1.79	25.93
Textile	1.76	23.82
Construction & Maintenance	1.73	24.90
Wood Processing	1.73	16.39
Government – Federal	1.72	34.15
Insurance Carriers	1.69	20.02
<b>Tourism</b>	<b>1.69</b>	<b>38.03</b>
Games, Toys, and Children Vehicles	1.68	21.85
Agricultural Processing	1.66	12.99
Wholesale Trade	1.66	21.45
Misc. Crops	1.65	39.30
Misc. Livestock	1.65	56.37
Dairy Farm Products	1.62	18.94
Cattle	1.59	32.83
Mining	1.56	18.79
Communications, Except Radio and TV	1.52	13.26
Banking	1.44	15.30
Real Estate	1.42	17.59

Source: IMPLAN Model and study analysis

The indirect business tax multiplier for tourism is much higher than the state average. For every dollar tourists spend in Vermont, indirect business taxes will increase 12 cents, as compared to the state average of 7 cents. As such, the tourism sector has a higher than average ability to generate indirect business taxes for the state.

### **Impacts of Lodging Businesses on the Vermont Economy**

The lodging survey reveals that different sized lodging businesses have different cost structures, local purchase patterns, profitability levels and occupancy rates. It is important to

distinguish lodging businesses by size since Vermont is dominated by small sized lodging businesses. Table 27,28, 29 and 30 show the impacts of different sized lodging businesses.

**Table 27 Output Effect of Vermont Lodging Businesses by Size (1997)**

	Small	Medium	Large	State Total
Direct Output Impact (\$)	25,352,472	132,153,049	509,512,010	667,017,532
Indirect and Induced Impact (\$)	37,596,424	193,850,838	459,337,734	690,784,996
Total Impact (\$)	62,948,896	326,003,887	968,849,744	1,357,802,508
Output Multiplier	2.48	2.47	1.90	2.04

**Table 28 Employment Effect of Vermont Lodging Businesses (1997)**

	Small	Medium	Large
Direct	62	36	29
Indirect and Induced	20	20	12
Total	82	56	41

**Table 29 Personal Income Multiplier of Vermont Lodging Businesses (1997)**

	Small	Medium	Large
Direct	0.18	0.40	0.35
Indirect and Induced	0.49	0.49	0.30
Total	0.67	0.89	0.65

**Table 30 Indirect Business Tax Multiplier of Vermont Lodging Businesses (1997)**

	Small	Medium	Large
Direct	0.13	0.09	0.08
Indirect and Induced	0.07	0.07	0.04
Total	0.20	0.16	0.12

Table 27 shows that large lodging businesses, although fewer than any other size of lodging businesses (133 out of 1027 businesses), account for most of the lodging sector sales. However, small and medium lodging businesses have higher output multipliers. Specifically, for every dollar lodging guests spend in the small and medium lodging businesses, an additional \$1.48 of (spending) output will be generated. The multiplier is relatively smaller for large lodging businesses partially because large businesses purchase a higher percentage of goods and services from out of the state.

As to the employment multiplier, small businesses have a higher multiplier. Table 28 shows that for every million dollars of sales of small, medium and large lodging businesses, jobs

will be created in the state as follows: 82 jobs by small lodging businesses; 51 jobs by medium-size lodging businesses; and 46 jobs by large lodging businesses. Small lodging businesses seem to have a higher ability to generate jobs, but most of the jobs generated are in lodging sector itself (about 62 out of 82 jobs).

Table 29 shows the personal income effect of different-sized lodging businesses. The medium sized lodging business on average has the highest personal income multiplier. For every dollar sales in medium-sized lodging, 89 cents will be added to Vermont personal income, versus 67 cents and 65 cents for small and large lodging businesses respectively. Of the 89 cents, 40 cents goes to the lodging sector and 49 cents goes to other sectors.

Table 30 shows the contribution of indirect business taxes for the state by different-sized lodging businesses. The results show that the smaller the business the higher the contribution in terms of indirect business taxes. For a small lodging business each dollar spent by visitors generated a total of 20 cents of indirect business taxes. For medium and large lodging businesses, the amounts are 16 cents and 12 cents, respectively. For small lodging businesses every dollar of sales generates 13 cents of indirect business taxes directly from small lodging businesses themselves, versus 9 cents and 8 cents for medium and large lodging businesses, respectively. This indicates that small lodging businesses bear a heavier tax burden than the medium and large lodging businesses.

Small lodging businesses show some features that are noteworthy when compared to larger businesses, such as their ability to generate more local spending, employment and indirect business tax income. However, their profits seem to be low (Table 14). The lower profits could be partially attributed to their much lower occupancy rates (Figure 7) in addition to their higher tax burden. Medium-sized lodging businesses, according to data, show a better financial picture. They generate a higher profitability and have a greater ability to generate income for the state. Larger lodging businesses have the highest sales and historically accommodate most of the

visitors. However, the relatively weaker inter-industry linkages lower their impact of large lodging businesses to the rest of the economy.

### Economic Impact of Vermont Ski Areas

Ski areas contribute to the local and state economies by bringing in visitors and second-home owners. The economic impact of ski areas is estimated in this section in terms of output, employment, personal income and indirect business taxes.

One of the biggest difficulties in estimating the economic importance of ski areas lies in the diversified business forms ski areas engage in. Many ski areas include hotels, restaurants, snack bars, retail stores, and real estate (vacation home) operations.

**Table 31 Economic Multipliers of Vermont Ski Areas (1997)**

Multipliers	Direct	Indirect	Induced	Total
Output	1.00	0.39	0.55	1.94
Employment	32.1	4.5	8.2	44.8
Personal Income	0.35	0.12	0.19	0.66
Indirect Business Taxes	0.05	0.02	0.03	0.10

The ski area output multiplier of 1.94 means that for every dollar people spent in ski area, an additional 94 cents of spending is generated (Table 31). Ski areas have an output multiplier higher than that of the tourism sector (1.94 vs. 1.69). In terms of the employment multiplier, for ski areas every million dollar sales generates 44.8 jobs in total, much higher than the tourism sector figure of 38 jobs. The personal income multiplier is also higher than that of the tourism sector (0.66 vs. 0.55). However, the ski areas indirect business tax multiplier of 0.10 means that every dollar of sales in ski areas will generate 10 cents in indirect business taxes. This is lower than the tourism sector figure of 12 cents, but higher than the average of all the sectors in Vermont (seven cents).

## CONCLUSIONS AND SUMMARIES

There are only a few states in the United States in which state income relies heavily on tourism, and Vermont is one of them. Vermont has the advantage of possessing a spectacular landscape, a clean environment, and an attractive agriculturally based rural community, all of which provides an excellent opportunity for tourism industry development. Vermont also benefits from tourists' activities in the following ways: (1) tourists contribute a significant amount of income to the Vermont economy; (2) tourists' expenditures generate a significant amount of state tax revenue; and (3) the tourism industry contributes to the economic vitality of other sectors, such as retail, agriculture and services.

Understanding the economic importance of the tourism sector and the strength of its links to other sectors is important. This study quantifies the economic activities of tourism-related sectors in Vermont and estimates its economic impacts through the development of a tourism sector. Moreover, this study develops a profile for Vermont lodging businesses and ski areas and estimates their economic impact. Following are summaries of its findings:

1. The nationwide Vermont visitor survey showed that on average every visiting household spent about \$333.91 for every trip into Vermont. Every visiting household on average consists of 2.38 people, visits 3.41 times per year and stays on average 3.52 nights. Seventy nine percent of the U.S. tourists stay overnight. Twenty six percent of the trips made to Vermont were for visiting friends and relatives, followed by shopping, downhill skiing, and fall foliage tours. Over 29% of the total trips made were in the summer, followed closely by winter and fall (26% each). Winter visitors spent more than other-season visitors.
2. Bed and breakfasts counted for 36% of THE lodging businesses. Over 50% of the lodging businesses have 10 or fewer rooms. The average occupancy rate is 38% with August and October having rates of over 50%. Larger lodging businesses have significantly higher occupancy rates than smaller lodging businesses. The cost structure of lodging businesses

sizes varies with larger lodging business spending a higher percentage in wages and smaller lodging businesses spending a higher percentage in property taxes and land/building rents. In general a higher percentage of the total inputs purchased by small lodging businesses were from local markets.

3. The ski area survey estimates that on average, the revenue for a ski area is \$19 millions in winter and \$4.3 millions in summer/fall. In the winter season, ski areas on average receive 55% of their revenue from ski/recreation, 15% from lodging service, 8% from retailing, and 8% from real estate sales. The largest cost item is employee compensation (24%), followed by costs of goods sold (17%) and taxes (6%). Twenty two percent of the skiers come from Vermont and over 70% of the skiers come from the New England region. On average, a ski area hires 130 full-time year-round employees with an average salary of \$29,174.
4. In 1997, 4.62 million tourists made 15.74 million person trips to Vermont and spent \$2.2 billion. The tourism industry accounts for 15% of the total state output value, 23% of the state employment, and 24% of the indirect business tax. For every million dollars spent by tourists in Vermont, 38 jobs are created, an additional \$690,000 worth of output will be generated, personal income will increase by \$545,363, and indirect business taxes will increase by \$120,754. Compared to other sectors in the state, tourism has a high ability to generate employment and indirect business taxes for the state.
5. Large lodging businesses account for most of the lodging sector sales, but their multiplier effect is smaller. Medium-size lodging businesses have output multipliers close to those of small lodging businesses and they have the highest personal income multiplier. Small-size lodging businesses show the highest employment multiplier and indirect business tax multiplier, but their profitability level is low.
6. The ski area output multiplier of 1.94 means that for every dollar spent in ski areas, an additional 94 cents of spending is generated. In terms of the employment multiplier, for ski

areas, every million dollars of sales generates 45 jobs in total. The personal income multiplier is 0.66 and the indirect business tax multiplier is 0.10, meaning that every dollar sales of ski area will generate 66 cents in personal income and 10 cents in indirect business taxes in Vermont.

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## **Appendix A: Methodology**

This study adopted input-output analysis to estimate the status and importance of the tourism industry on the Vermont economy because of following reasons:

1. An input-output model is ideally suited to measure both the relative sizes of sectors that make up the economy and the linkages among them. I/O modeling produces a structural model that illuminates the interactions among many sectors and measures impacts as they reverberate through the economy. Understanding which types of economic activities generate higher returns can direct decision-makers toward enterprises that will stimulate economic development within the region.
2. Input-output modeling is the most commonly used method to assess the economic impact of tourism by many other states as well as at the national level. So it is expected to provide comparable results to other states' research, national data, and previous Vermont studies.
3. The advantage of an input-output model is that it provides impact estimates in a general equilibrium framework instead of single-market analysis (referred to as "partial equilibrium"). The input-output model captures not only the direct impact of tourists expenditure but also the indirect and induced impacts that occur when tourist dollars work their way through the economy.

### **Vermont Input-Output IMPLAN Model**

An input-output (I/O) analysis uses an economic model that traces the flow of goods and services, income, and employment among related sectors of the economy. The I/O approach triggers the flow of activities as follows: When final demand for a good changes, the sector producing the good (output) purchases inputs from other industrial sectors, which in turn purchase inputs from other industries. Moreover, all of these industrial sectors purchase

additional labor input. The employees use their compensation to purchase goods and services from the economy. Linkages among industries in a region create a ripple effect as a result of change in demand for a product. Strong linkages can lead to healthier economies, as capital flows through the economy rather than out of it.

An input-output model is a snapshot of an economy in equilibrium, where the gross output of each industry is equal to the gross inputs to the industry. The gross output of an industry includes both inter-industry sales and sales to final demand. The gross input of an industry includes the purchase of goods and services, labor, investment, and profit. The I/O model provides a means of examining relationships within an economy both among different sectors and between sectors and final consumers such as households and government. The model allows one to examine the impact on the entire economy of a change in one or several economic activities.

This study uses the IMPLAN software to evaluate the economic impact of the tourism sector. IMPLAN (IMpact analysis for PLANning) is the most widely used software for I/O analysis. The USDA Forest Service originally developed IMPLAN in 1979. It is a sophisticated software package that makes regional input-output models and forecasts regional economic impact based on these models. It is widely used by government agencies to make regional economic forecasts (Miller and Blair, 1985).

The I/O model works with a transaction table diagramming the flows among sectors (see Table 32). Rows and columns are the producing and purchasing sectors in the economy, respectively. The columns are buyers and the rows are sellers. The more sectors in the model, the more rows and columns there are, and the more inter-linkages the model has. The conventional seven-sector model of the United States economy includes agriculture, mining, construction, manufacturing, transportation, and services sectors. All economic activity that

does not fall within one of these six sectors is placed in the “other” sector (Miller and Blair, 1985; Taylor et al., 1992). IMPLAN has 528 sectors, of which 344 sectors exist in Vermont.

To interpret a transaction table let’s examine the agricultural sector. In Table 32, the agricultural sector is shown in the first column and the first row. Column one shows that the agriculture sector buys  $\$Z_{11}$  from the agriculture sector itself (row 1),  $\$Z_{i1}$  from the manufacturing (row  $i$ ),  $\$H_1$  from households for their labor, and so forth. Total input expenditure by the agriculture sector ( $\$X_1$ , found in the last row) is the sum of the first column.

To examine what sectors agriculture sells to, look at the first row in the I/O transaction table: the agriculture sector (row one) sells  $\$Z_{11}$  to the agriculture sector itself (column one),  $\$Z_{1j}$  to the manufacturing sector (column  $j$ ),  $\$C_1$  to households,  $\$G_1$  to government, and so on. Total output of the agriculture sector ( $\$X_1$ , found in the last column of the first row) is the sum of the first row. For each sector, total expenditures (input) always equal total earnings (output).

**Table 32 Input-Output Transaction Table: An Example**

		Purchasing Sectors (Buyers)				Total Gross Output
		Intermediate Demand		Final Demand		
		Agriculture Forestry Trade Manufacturing Finance Services 1.....j.....n	Household Consumption Govt. Expenditures Capital Formation Exports			
Sectors	Intermediate Inputs	Agriculture	1	$Z_{11} \dots Z_{1j} \dots Z_{1n}$	$C_1 \quad G_1 \quad I_1 \quad E_1$	$X_1$
		Forestry	:	$\vdots \quad \vdots \quad \vdots$	$\vdots \quad \vdots \quad \vdots \quad \vdots$	$\vdots$
		Trade	:	$\vdots \quad \vdots \quad \vdots$	$\vdots \quad \vdots \quad \vdots \quad \vdots$	$\vdots$
	Manufacturing	i	$Z_{i1} \dots Z_{ij} \dots Z_{in}$	$C_i \quad G_i \quad I_i \quad E_i$	$X_i$	
Finance	:	$\vdots \quad \vdots \quad \vdots$	$\vdots \quad \vdots \quad \vdots \quad \vdots$	$\vdots$		
Services	n	$Z_{n1} \dots Z_{nj} \dots Z_{nn}$	$C_n \quad G_n \quad I_n \quad E_n$	$X_n$		
Producing			III Primary Inputs to Production	IV Primary Inputs to Final Demand		
	Primary Inputs	Payments to Households		$H_1 \dots H_j \dots H_n$	$H_C \quad H_G \quad H_I \quad H_E$	H
		Government		$T_1 \dots T_j \dots T_n$	$T_C \quad T_G \quad T_I \quad T_E$	T
Depreciation			$D_1 \dots D_j \dots D_n$	$D_C \quad D_G \quad D_I \quad D_E$	D	
Imports			$M_1 \dots M_j \dots M_n$	$M_C \quad M_G \quad M_I \quad M_E$	M	
Total Gross Outlays			$X_1 \dots X_i \dots X_n$	$C \quad G \quad I \quad E$		

The input-output transaction table (Table 3) is always balanced at any given time. Any change in this table will trigger changes throughout the economy that will achieve a new balance. For example, suppose the household demand for agricultural goods ( $C_1$ ) increases due to increased product promotion. As a result there is a change in the demand for ( $C_1$ ). The change will increase the total earnings of the agriculture sector ( $X_1$ ), and row one changes. In order to meet the increase in demand for agricultural goods, the agriculture sector has to buy more intermediate input (e.g., machinery), and hire more people---everything in column one will change. Then the affected manufacturing sector has more earnings (output) because the agriculture sector buys more machines, and in turn the manufacturing sector will buy more

inputs from other sectors. The ripple (multiplier) effect due to an initial increase in the demand for agricultural goods will ripple through the economy, until the economy reaches a new balance.

The I/O model provides a means to capture and measure these effects. It uses three effects to measure economic impact: direct effect, indirect effect and induced effect.

- *Direct Effect* refers to production change associated with a change in demand for the good itself. It is the initial impact to the economy, which is exogenous to the model.
- *Indirect Effect* refers to the secondary impact caused by changing input needs of directly affected industries (e.g., additional input purchases to produce additional output).
- *Induced Effect* is caused by changes in household spending due to the additional employment generated by direct and indirect effects.

### Multiplier

Generally, economic multipliers estimate the economy-wide impact on related variables of changing one variable in the specified economy, such as a state (Tanjuakio, Hasting and Tytus, 1996). There are several multipliers calculated by IMPLAN model:

- **Output Multiplier:** An output multiplier for a sector is defined as the total production in all sectors of the economy that is necessary to satisfy a dollar's worth of final demand for that sector's output (Miller and Blair, 1985). In other words, every dollar change in final-demand spending (direct output) changes in the total value of output in all sectors.
- **Personal Income Multiplier:** For every dollar change in final-demand spending (direct output), the change in income received by households.
- **Employment Multiplier:** For every million-dollar change in final-demand spending (direct output) in a sector, the change in number of jobs in the economy.

- Indirect Business Taxes Multiplier: For every dollar change in final-demand spending (direct output), the change in indirect business taxes.<sup>5</sup>

#### Limitations of the Input-Output Model and Potential Sources of Error in IMPLAN Model

Input-output models incorporate several important assumptions (Miller & Blair, 1986; Minnesota IMPLAN Group, 1996) that place limitations on their interpretation:

- The I/O model assumes a linear production function, which means constant returns to scale and constant production functions for each firm within an industry. For example, the model assumes that a small sawmill would use the same inputs, in the same proportion, as a large sawmill. Furthermore, the model assumes that the percentage of these inputs that is purchased locally is constant from one firm to the next.
- Output is also assumed to be homogenous. In other words, the assumption is that the two sawmills would produce the same percentage of lumber, wood chips, and other outputs.
- It assumes that there are no constraints on the supply of any commodity.
- It assumes that increases or decreases in employment cause in- or out-migration from the state modeled, so that “full employment” is maintained.

The IMPLAN model combines the national average data and location-specific data. In the Vermont model, final-demand data and value-added data (such as employee compensation, proprietary income, property income and indirect business taxes) in the model are collected specifically for Vermont. Production functions for the 344 sectors in the model are derived from national averages. Potential sources of error in the IMPLAN model based on national averages include the production functions (what industries purchase to produce their output), the byproducts (the mix of products that industries actually produce), and the regional purchase

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<sup>5</sup> Indirect business taxes consist primarily of excise and sales taxes paid by individuals to businesses. These taxes occur during the normal operation of these businesses but do not include taxes on profit and income (IMPLAN manual, 1996).

coefficients, or RPC's (the percentage of a commodity that is purchased from local suppliers).

The greatest source of error in the base model data is the RPC's (Stevens, 1987).

### Creating a Tourism Sector

Tourism is not a sector in IMPALN model because it is not defined separately in the Standard Industrial Classification system. Tourism industry comprises a wide variety of businesses, such as bus/rail/air transportation, eating and drinking places, general retail, recreation, and lodging etc. However none of these businesses relies one hundred percent on tourism. Thus we need to separate the tourist expenditure from non-tourist expenditure in these sectors to construct the tourism sector. Primary data has been collected from the visitor survey to separate tourist expenditure from non-tourist expenditure in the lodging sector, eating and drinking sector, amusement and recreation sector, retail sector, and transportation sector. All of these tourism expenditures have been aggregated together to create a tourism sector in the input-output model.

### Refining Lodging Sector

The lodging sector is one of the key components in the tourism industry. The accuracy of lodging sector coefficients is very important to this study.

The Vermont lodging sector is quite different from the national pattern of business size, as it is dominated by small businesses. Therefore, the cost structure / production function vary from the national average. The IMPLAN model uses national average cost structure numbers as the coefficients in the lodging production function, which may not represent Vermont's situation accurately. By using primary lodging business survey data, we customized the lodging business production function to accurately reflect Vermont lodging, including foods and drinks, nondurable goods, utilities, etc .

Furthermore, the IMPLAN model assumes that the production function and the percentage of the locally purchased inputs are constant from one lodging business to the next. In

other words, scale of the business does not matter. This assumption impedes our understanding of the different economic impacts of different-sized lodging businesses, for we found that there is significant difference in both production function and local purchase tendency among different-sized lodging businesses. For this study we disaggregated lodging businesses into three sub-sectors according to the size of the operation (small lodging sector, medium lodging sector and large lodging sector). The inter-industry purchase amounts for each sub-sector are derived from primary survey data.

## Appendix B: 1997 Vermont Visitor Survey Questionnaire

**Directions:** We want your input in order to better understand those who visit Vermont. Please think back about any visits you've made to Vermont (whether they be Winter, Spring, Summer or Fall) and answer the questions below. Think about each question and answer them as accurately as possible.

1. Please indicate the NUMBER OF TRIPS you made to Vermont during EACH SEASON over the PAST YEAR. (leave blank if you did not visit during a particular season)
  - a. Winter \_\_\_\_\_ trips.
  - b. Spring \_\_\_\_\_ trips.
  - c. Summer \_\_\_\_\_ trips.
  - d. Fall \_\_\_\_\_ trips.
  
2. About how many pleasure trips (day trip or longer) did you make to Vermont over the past FIVE years?  
 \_\_\_\_\_ trips.
  
3. In the spaces below, please indicate in Column A the primary Vermont destination. Indicate in Column B the number of times you traveled to each town and indicate in Column C the purpose of your trip(s) over the PAST YEAR.

- |                                  |                      |                             |
|----------------------------------|----------------------|-----------------------------|
| 1. Downhill skiing               | 6. Shopping          | 11. Snowmobile Touring      |
| 2. Cross-country skiing          | 7. Fall Foliage Tour | 12. Attend a Specific Event |
| 3. Visit to friends or relatives | 8. Hiking            | 13. Camping                 |
| 4. Romantic get-a-way            | 9. Water Sports      | 14. Biking                  |
| 5. Family get-a-way              | 10. Auto-touring     | 15. Other: _____            |

	A	B	C
Destination #1: _____		# of Visits: _____	Purpose _____
Destination #2: _____		# of Visits: _____	Purpose _____
Destination #3: _____		# of Visits: _____	Purpose _____
Destination #4: _____		# of Visits: _____	Purpose _____
Destination #5: _____		# of Visits: _____	Purpose _____

Now we'd like you to think about your PAST YEAR OF TRAVEL to Vermont (whether Winter, Spring, Summer, or Fall). Please answer the following questions as accurately as possible.

4. Including yourself, how many people from your household went on your trip(s)? (If you made more than one trip, ON AVERAGE how many people went?)

\_\_\_\_\_ people.

5. How many children from your household under the age of 18 went with you on your trip(s)? (If you made more than one trip, ON AVERAGE how many children went?)

\_\_\_\_\_ children under 18.

6. How many nights did you spend in Vermont on your trip(s)? (If you made more than one trip, ON AVERAGE how many nights did you spend in Vermont?)

\_\_\_\_\_ nights.

7. While in Vermont, in which of the following types of accommodations did you spend the most nights? (check only one)

- 1 [ ] A locally owned hotel or motel
- 2 [ ] A hotel or motel chain
- 3 [ ] A bed and breakfast or country inn
- 4 [ ] A private residence of a friend or relative
- 5 [ ] A vacation home that you own
- 6 [ ] A rented cabin, cottage, home or condominium
- 7 [ ] Other \_\_\_\_\_

- 7b. If you stayed in "1," "2," or "3" above, what was the name(s) of the establishment(s)?

\_\_\_\_\_

8. Answer part 'a' below if you made one trip or part 'b' if you made more than one trip:

- a. If you only made one trip, did your trip include a Friday or Saturday night stay-over

- 1 [ ] Yes
- 2 [ ] No

- b. If you made more than one trip, how many trips included a Friday or Saturday night stay-over?

\_\_\_\_\_ trips.

9. Approximately how much money would you estimate was spent by your household while in Vermont in each of the following categories for your trip? If you made more than one trip, please indicate how much YOU SPENT ON AVERAGE in each category. Please do not consider costs incurred outside of the state such as airline tickets. All information is confidential and anonymous.

a. Lodging \$ \_\_\_\_\_

b. Recreation/Entertainment \$ \_\_\_\_\_

c. Transportation \$ \_\_\_\_\_

d. Retail Purchases \$ \_\_\_\_\_

e. Food/Beverage:

Restaurant \$ \_\_\_\_\_

Grocery/Conv. Store \$ \_\_\_\_\_

f. Other expense not covered \$ \_\_\_\_\_

1. Think about the amount of money you spent on your recent vacation(s). How would you rate the VALUE of a Vermont vacation relative to other recent vacation experiences? (please circle only one)

Poor	Fair	Good	Very Good	Excellent	Perfect
1	2	3	4	5	6

1. OVERALL, how would you rate your recent vacation experience(s) in Vermont relative to other recent vacation experiences? (please circle only one).

Poor	Fair	Good	Very Good	Excellent	Perfect
1	2	3	4	5	6

1. Was there any aspect of your trip(s) that significantly exceeded your expectations?

2 [ ] No

1 [ ] Yes (indicate) \_\_\_\_\_

2. Was there any aspect of your trip(s) that fell significantly short of your expectations?

2 [ ] No

1 [ ] Yes (indicate) \_\_\_\_\_



Finally, we would like to ask you some demographic questions. Your responses will be kept confidential.

1. AGE 49.1. Sex **73% Female 27% Male**

2. Which of the following categories contains your annual household income?

- 1 [ ] **22.6%** Less than \$25,000
- 2 [ ] **17.6%** \$25,000 to \$34,999
- 3 [ ] **17.8%** \$35,000 to \$49,999
- 4 [ ] **18.4%** \$50,000 to \$74,999
- 5 [ ] **12.5%** \$75,000 to \$99,999
- 6 [ ] **11.2%** \$100,000 Plus

21. In which state do you reside (use U.S. Postal abbreviation) \_\_\_\_\_.

22. Which of the following categories best describes the last level of education that you completed?

- 1 [ ] **29.8%** High School or Less
- 2 [ ] **28.4%** Some College
- 3 [ ] **19.2%** Undergraduate degree
- 4 [ ] **22.5%** Graduate work

23. How many children under the age of 18 live in your household? \_\_\_\_\_ children.

# VERMONT



## 1998 Vermont Lodging Survey



University of Vermont

## How to share your opinions

1. Please make sure all of your responses are complete.
2. Feel free to write any comments or explanations anywhere on this survey.
3. Your responses to this survey are **STRICTLY CONFIDENTIAL** and will never be associated with your name or the name of your establishment.
4. Please send your completed form in the enclosed pre-paid, pre-addressed envelope.
5. If you have any questions please call Varna M. Ramaswamy at the Vermont Tourism Data Center (802) 656-0623 or E-mail : [vramaswa@nature.snr.uvm.edu](mailto:vramaswa@nature.snr.uvm.edu)

**Thank you for your participation**

**NOTE: ALL OF THIS INFORMATION IS BEING USED TO COMPLETE AN ECONOMIC IMPACT MODEL FOR TOURISM IN VERMONT.**

**Part I**

**We would like to ask you some questions about your business:**

1. Please check the category that best describes your business (check one):

- Hotel                       Resort                       Bed and Breakfast  
 Motel/Motor Hotel       Cottages/Cabins       Condominium  
 Country Inn               Other (please specify \_\_\_\_\_)

2. Please tell us the number of rooms/units you had available in 1997: \_\_\_\_\_ Rooms/Units

3. What months were you open for business in 1997? From \_\_\_\_\_ to \_\_\_\_\_ (month)

4. Please estimate the monthly occupancy rate of your business in 1997: (For any month you were closed, please put "0")

Jan \_\_\_\_\_%   Feb \_\_\_\_\_%   Mar \_\_\_\_\_%   Apr \_\_\_\_\_%   May \_\_\_\_\_%   June \_\_\_\_\_%  
July \_\_\_\_\_%   Aug \_\_\_\_\_%   Sept \_\_\_\_\_%   Oct \_\_\_\_\_%   Nov \_\_\_\_\_%   Dec \_\_\_\_\_%

5. Please indicate the number of people you employed in 1997?

Year-round Employees

Seasonal Employees

Full Time _____ person(s)
Part Time _____ person(s)

Full Time _____ person(s)
Part Time _____ person(s)

6. In 1997, what were your room/unit rates, including state and local taxes for your high and low seasons.

a. Please specify if it is a daily rate or weekly rate (check one) :     Daily             Weekly

**b. High Season:**

from \_\_\_\_\_ (month) to \_\_\_\_\_ (month)

**Low Season:**

from \_\_\_\_\_ (month) to \_\_\_\_\_ (month)

SINGLE: From \$ _____ (min.) to \$ _____ (max.) DOUBLE: From \$ _____ (min.) to \$ _____ (max.) FOR EACH ADDITIONAL PERSON: \$ _____	SINGLE: From \$ _____ (min.) to \$ _____ (max.) DOUBLE: From \$ _____ (min.) to \$ _____ (max.) FOR EACH ADDITIONAL PERSON: \$ _____
--	--

## Part II

**We would like to ask you about your business operation in 1997:**

### Introduction

**This part of the survey deals with the financial aspects of your business.**

**The purpose of our survey is:**

- 1. to evaluate the economic contribution of the tourism industry in Vermont;**
- 2. to provide public policy analysis;**
- 3. to provide tourism-related businesses with information to make profitable decisions.**

**To provide this type of information, we need to gather financial information from your business. Please take a few moments to complete this important section of the survey. Your responses are important to us and we greatly appreciate your participation.**

*Be assured that your responses will be kept strictly confidential. Results of the data will be in aggregate measures such as averages and percentages.*

- 1. Please provide an estimate of your total revenue for your business in 1997?**

\$ \_\_\_\_\_

2. Please estimate the amount you spent on the following items and the percent of each item that was paid to a company located in Vermont in 1997:

**EXAMPLE:** If you purchased \$ 30,000 worth of “non-durable goods” last year and 80% was from a company in Burlington and 20% from a company in Boston, your answer for the following question is as follows:

	<u>Cost</u>	<u>percent from VT</u>
<b>NONDURABLE GOODS:</b>	\$ <u>30,000</u> / year	<u>80</u> %

<u>Expenditure Items</u>	<u>Cost</u>	<u>Percent of the items bought from Vermont- based companies</u>
<b>NONDURABLE GOODS:</b> (e.g. soap, linen, towels, office supplies, paper products, cleaning materials)	\$ _____ /year	_____ %
<b>FOOD AND DRINKS</b>	\$ _____ /year	_____ %
<b>AVERAGE ANNUAL INVESTMENT ON DURABLE GOODS</b> (e.g. furniture, mattress, buildings, vehicles)	\$ _____ /year	_____ %
<b>UTILITIES:</b> (e.g. water, gas, electricity)	\$ _____ /year	_____ %
<b>COMMUNICATION:</b> (e.g. telephone, faxes)	\$ _____ /year	_____ %
<b>INSURANCE, BANK, ACCOUNTING AND LEGAL FEES</b>	\$ _____ /year	_____ %
<b>MARKETING AND PUBLIC RELATIONS:</b> (e.g. printing)	\$ _____ /year	_____ %
<b>MAINTANANCE AND FACILITY REPAIR:</b> (e.g. landscaping, plumbing, auto repair, minor fixtures)	\$ _____ /year	_____ %
<b>EQUIPMENT RENTALS</b> (e.g. computer)	\$ _____ /year	_____ %
<b>OTHER SERVICES</b> (e.g. outside contracted house keeping services)	\$ _____ /year	_____ %
<b>MISCELLANEOUS EXPENSES</b> (e.g. gift shop, training, travel)	\$ _____ /year	_____ %
<b>SALARIES/WAGES AND BENEFITS</b>	\$ _____ /year	
<b>BUSINESS TAXES</b>	\$ _____ /year	
<b>PROPERTY TAX</b>	\$ _____ /year	
<b>LAND/BUIDLING RENT AND LOAN INTEREST</b>	\$ _____ /year	

## Part III

Next, we would like to ask you about the profile of your guests in 1997:

1. Approximately, what percentage of your guests in 1997 were:

Business travelers	_____	%
Pleasure travelers	_____	%
Others (please specify _____)	_____	%
Total		100%



2. Please estimate the percent of **Pleasure Travelers** that come from the following areas:

Vermont	_____	%
Other U.S. States	_____	%
Canada	_____	%
International (except Canada)	_____	%
Total		100%

3. On average what percentage of a single room/unit is rented to:

one person	_____	%
two persons	_____	%
three to four persons	_____	%
five to eight persons	_____	%
more than eight persons	_____	%
Total		100%

4. What percent of your guests stay for:

one night	_____	%
two nights	_____	%
3-4 nights	_____	%
5-7 nights	_____	%
7 and more nights	_____	%
Total		100%

5. What percent of your rooms in 1997 were rented to guests who arrived as part of a motor coach tour group? \_\_\_\_\_%

## Part IV

We would like to ask you about your purchases of Vermont agricultural products:

1. If you purchase any of the following products, what percentage of each do you buy from Vermont businesses?

Dairy products: \_\_\_\_\_%

Fruits + vegetables: \_\_\_\_\_%

Chicken, Poultry, Turkey: \_\_\_\_\_%

We would like to ask you about computer technology in your business:

2. Does your business own a computer?  No  Yes

3. Do you have access to the Internet?  No  Yes

4. Do you have your own World Wide Web page?  No  Yes

Finally, we are going to ask you about the impact of taxes on your business:

5. Last year, when rooms and meals tax rate increased from 7% to 9%, how do you think your occupancy rate was affected? (check or fill in)

Decrease by \_\_\_\_\_%  No change Increase by \_\_\_\_\_%

**If you have any questions, please contact:**

**Varna M. Ramaswamy  
Vermont Tourism Data Center  
University of Vermont  
(802) 656-0623**

# Appendix D: 1997 Vermont Ski Area Survey

**\*\* C O N F I D E N T I A L \*\***

## **BUSINESS SURVEY** For The 1997-1998 Season

1) Please check the categories that describe your business (check all that apply):

- Ski/Recreation       Hotel       Condominium Rental       Restaurant  
 Retail Sales       Real Estate Sales  
 Other (Please Specify \_\_\_\_\_ )

2) Please state the SIC code(s) that you indicate in federal tax return:

\_\_\_\_\_

3) What months were you open for business for the 1997-1998 season?

Summer/Fall (1998) \_\_\_\_\_  
Winter \_\_\_\_\_

4) Please estimate the number of skier days for the 1997-1998 season? \_\_\_\_\_

5) Please estimate the percent of skiers that came from the following areas for the 1997-1998 season:

Vermont	_____ %	New York	_____ %
Massachusetts	_____ %	New Hampshire	_____ %
Connecticut	_____ %	New Jersey	_____ %
Pennsylvania	_____ %	Other Eastern U.S.	_____ %
Canada	_____ %	International (not Canada)	_____ %
Other	_____ %		

6) Please indicate the number of people you employed for the 1997-1998 season?

	Year-round	Seasonal
Full Time	_____ Persons	_____ Persons
Part Time	_____ Persons	_____ Persons

7) What is the average annual salary for full time, year round employees (excluding benefits)?

\_\_\_\_\_ \$/Year

8) What is the average hourly wage for part-time and seasonal employees (excluding benefits and tipped positions)?

\_\_\_\_\_ \$/Hour

## FINANCIAL SURVEY

### For The 1997-1998 Season

- 1) What were your total revenues for the 1997-1998 season?  
(Exclude revenues from non-operational, non-recurring or extraordinary sources.)

	Winter	Summer/Fall (1998)
Total Revenues	\$ _____	\$ _____
Ski/Recreation (lift tickets, family/season/other passes, rentals, lessons, summer activities)	____%	____%
Lodging	____%	____%
Restaurant/Snack Bar	____%	____%
Real Estate Sales	____%	____%
Retail Sales	____%	____%
Other (Please specify _____)	____%	____%

- 2) What was your payroll for the 1997-1998 season? \_\_\_\_\_

- 3) How much was paid for employees' health insurance and other expensed benefit programs in addition to payroll costs set out above for the 1997-1998 season? \_\_\_\_\_

Estimate the retail value of your non-expensed benefits for the 1997-1998 season, such as season passes for employees and their families, and employee discounts for food, retail purchases, rentals, etc. \_\_\_\_\_

- 4) How much did you pay for taxes for the 1997-1998 season?
- a. Local property taxes \_\_\_\_\_
  - b. Other municipal charges \_\_\_\_\_
  - c. State taxes
    - Property \_\_\_\_\_
    - Rooms and meals \_\_\_\_\_
    - Sales \_\_\_\_\_
    - Income \_\_\_\_\_
    - Other \_\_\_\_\_
  - d. Federal income \_\_\_\_\_

- 5) How much did you pay in FICA and unemployment insurance for the 1997-1998 season? \_\_\_\_\_

- 6) How much did you pay in lease payments for the 1997-1998 season?
- a. For state forest land \_\_\_\_\_
  - b. For federal forest land \_\_\_\_\_

- 7) Excluding payroll, how much did you pay for lawyers, accountants, engineers and other outside professional services for the 1997-1998 season? \_\_\_\_\_
- 8) How much did you pay for fuel and utilities for the 1997-1998 season?  
 a. Telephone \_\_\_\_\_  
 b. Electric \_\_\_\_\_  
 c. Fuel \_\_\_\_\_
- 9) How much did you pay for insurance for the 1997-1998 season?  
 a. Liability \_\_\_\_\_  
 b. Workers' Compensation \_\_\_\_\_  
 3. Property \_\_\_\_\_
- 10) How much (excluding payroll) did you pay for advertising and marketing for the 1997-1998 season? \_\_\_\_\_
- 11) How much did you pay for supplies for the 1997-1998 season? (non-durable goods like paper products, tickets, cleaning materials, etc.) \_\_\_\_\_
- 12) How much (exclusive of payroll, professional fees or supplies already included above) did you pay for maintenance repairs for the 1997-1998 season? \_\_\_\_\_
- 13) What was your cost of goods sold for the 1997-1998 season (excluding real estate and food and drinks)? \_\_\_\_\_
- ..... 14) How much did you spend on food and drinks for the 1997-1998 season? \_\_\_\_\_
- 15) What was your basis for real estate sold for the 1997-1998 season? \_\_\_\_\_
- 16) What was your interest expense for the 1997-1998 season? \_\_\_\_\_
- 17) How much did you pay for equipment leases or rentals for the 1997-1998 season? (i.e.. grooming vehicles, cars, trucks, etc.)? \_\_\_\_\_
- 18) What were your capital expenditures and capital improvements for the 1997-1998 season? \_\_\_\_\_
- 19) What did you claim for depreciation for the 1997-1998 season? \_\_\_\_\_
- 20) What was the total of all other expenses and costs for the 1997-1998 season? \_\_\_\_\_

## Appendix E: Vermont Tourists Number and Expenditure

In this study total visiting household number is estimated by the following equation (1):

$$\text{Number of Visiting Household} = \frac{\text{Vermont Lodging Sales to U.S. Tourists}}{\text{Average Lodging Expense per Visit} \times \text{Average Visits per Households} \times \% \text{ of Tourists Staying in Lodging Businesses}} \quad (1)$$

$$\text{Number of Visiting Household} = \frac{\text{Vermont Lodging Sales to U.S. Tourists} (\$473.6 \text{ million})^1}{\text{Average Lodging Expense per Visit} (\$169.63)^2 \times \text{Average Visits per Households} (3.39)^2 \times \% \text{ Staying in Lodging Establishments} (42.5\%)^2} = 1.94 \text{ million Households} \quad (1a)$$

Total tourists' expenditures are derived by multiplying the total visiting household number by the average expenditure per household. Such that,

$$\text{Total Tourists Expenditure} = \text{Number of Visiting Household} \times \text{Average Expenditure Per Visiting Household per Trip} \times \text{Average Trips to Vermont per Household} \quad (2)$$

$$\text{Total Tourists Expenditure} = \text{Number of Visiting Household} (1.94 \text{ million}) \times \text{Average Expenditure Per Visiting Household} (\$333.91)^2 \times \text{Average Trips to Vermont per Household} (3.41 \text{ trips})^2 = \$2.2 \text{ billion} \quad (2a)$$

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Sources: 1. Lodging Business Survey. Domestic Tourists' Lodging Expenditure = Total Lodging Revenue (\$ 667 million) x % Domestic Origin Tourists (71%) = \$ 473.6 million 2. Visitor Follow-up Survey

## Appendix G: Glossary

- *Output*: industry output is a measure of the value of goods and services produced in the study area.
- *Employee compensation*: wage and salary payments as well as benefits, including health and life insurance, retirement payments and other non-cash compensation.
- *Proprietary Income*: consists of payments received by self-employed individuals as income. This includes income received by private business owners, doctors, lawyers and so forth.
- *Personal Income*: consists of employee compensation and proprietary income.
- *Direct Effect*: production changes associated with changes in demand for the good itself. It is an initial impact on the economy.
- *Indirect Effect*: the secondary impact caused by changing input needs of directly affected industries (e.g., additional input purchases to produce additional output).
- *Induced Effect*: caused by changes in household spending due to the additional employment generated by direct and indirect effects.
- *Indirect Business Taxes*: consist primarily of excise and sales taxes paid by individuals to businesses. These taxes occur during the normal operation of these businesses but do not include taxes on profit and income.
- *Output Multiplier*: An output multiplier for a sector is defined as the total production in all sectors of the economy that is necessary to satisfy a dollar's worth of final demand for that sector's output (Miller and Blair, 1985). In other words, every dollar change in final-demand spending (direct output) changes in the total value of output in all sectors.
- *Personal Income Multiplier*: for every dollar change in final-demand spending (direct output), the change in income received by households.
- *Employment Multiplier*: for every million dollar change in final-demand spending (direct output), the change in employment (jobs).
- *Indirect Business Tax Multiplier*: for every dollar change in final-demand spending (direct output), the change in indirect business taxes.

## Appendix H – Comparison with Other Multiplier Rates

One cannot directly compare multiplier rates between different studies because different studies use different methods and models to derive their multiplier estimates. However, the range of multiplier estimates from other studies can offer a sense of the magnitude of Vermont's 1.69 multiplier rate. Archer and Owen (1972) reported a multiplier rate of 1.25 among tourists in Anglesey County in the United Kingdom. They also cited multiplier rates of 1.80 for tourists in Walworth County in Wisconsin, and 1.34 for tourists in St. Andrews, Scotland. Archer (1982) reported multiplier rates from various states and counties in the United States ranging from 1.44 in Sullivan County, PA to 2.30 in Hawaii. Missouri reported a 1.88 multiplier, while Southwestern Wyoming had rates from 1.39 to 1.53. His study also shows that small island nations have multiplier rates from 1.58 in the British Virgin Islands to 2.20 in Dominica. Fletcher (1989) reported multiplier rates across the globe ranging from 1.39 in Western Samoa to 2.96 in Turkey. Vaughn (1979) reported a 1.29 multiplier from tourist spending at the Edinburgh Festival in Scotland. Stynes and Stewart's (1991) study of tourism in Traverse City, MI used multiplier estimates for Michigan that are built into the RIMS economic impact model, and which range from 1.8 to 1.9 depending on the sector (lodging, restaurants, transportation, etc.). Haupt's (1986) study of tourism economic impact in Vermont estimated multiplier rates between 1.6 to 1.8. State travel offices from selected states around the country report the following multiplier rates: Kentucky - 1.63, Montana - 2.08, New Jersey - 1.70, Nebraska - 2.70, Pennsylvania - 1.73.

There are 2 conclusions to be drawn from the tourism economic impact literature. First, larger geographic areas will have higher multiplier rates because they have more diversified economies with less leakage. Conversely, multiplier rates will be lower in smaller places (like cities, or even small states like Vermont) because tourism spending may be subject to more leakage. The U. S. Travel Data Center/Travel Industry of America (1996) estimated a 2.41

tourism multiplier rate for the United States in 1994. If one calculated state multiplier rates using their estimation technique (RIMS Input/Output Model), it would be unlikely that any state would exceed the national multiplier rate. Second, the academic literature typically does not report multiplier rates that exceed 2.5, except in nations with relatively diverse and somewhat insulated economies.