

# **The Economic Impact of Snowmobiles in Alberta in 2009**

**Submitted To  
Alberta Tourism, Parks and Recreation**

**Submitted By  
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## ***Introduction***

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The popularity of snowmobiling as a recreational activity has increased dramatically over the past three decades in Alberta. Sight-seeing close to home on a managed trail is quickly becoming the preferred pastime of thousands of environmentally conscious snowmobile enthusiasts across Alberta.

In 2009, total sales of new snowmobiles, parts and accessories in Alberta exceeded \$111.3 million. This is made up of \$54 million in new snowmobiles, and about as much on clothing, accessories and parts. An additional substantial amount of \$254.6 million was spent on operating these vehicles and on tourism related activities. These figures have continued to increase with higher incomes and rising prices despite a major recession that started in 2008.

Conservative estimates suggest that total expenditures on snowmobiles and related activities in Alberta exceeded \$366.5 million in 2009. This total includes capital expenditures of about \$111.7 million (by snowmobiling enthusiasts and clubs), tourism expenditures of about \$254.7 million, and other expenditures of money raised and spent by snowmobiling associations and clubs.

Snowmobiling in Alberta is not only a major recreational activity for Albertans it is also a major economic activity with far reaching economic impacts on the province, especially in many local rural areas with limited economic alternatives. What was once just a hobby has turned into one of the major new sources of income and employment for many remote communities in Alberta where snowmobile tourism has become synonymous with economic development. More recently snowmobile tourism has helped address the seasonality of tourism and its impact upon operator profitability, especially where there is no downhill skiing.<sup>1</sup>

The sport of snowmobiling is responsible for many spin-off economic benefits in Alberta. These include:

- Jobs for thousands of Albertans; jobs which enable them to further stimulate the economy through additional expenditures on goods and services; jobs which provide significant income tax revenues to provincial, local and federal treasuries and dramatically reduce unemployment and welfare payments.
- Millions of dollars in tax revenues derived from snowmobiles and related businesses (including, but not limited to manufacturers, suppliers, distributors, dealers, resort and hotel facilities, campgrounds, restaurants, service stations, insurance agencies, hardware stores, clothing suppliers, etc.).

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<sup>1</sup> Canadian Tourism Commission. The National Snowmobile Tourism Study. 2002.

- Millions of dollars in tourism spending which support rural local economies in and outside the snow belt areas of the province.
- Millions of dollars in provincial gas, beverage and room tax revenues.

Snowmobiles enthusiasts in Alberta have formed many local clubs most of which operate under the umbrella of the Alberta Snowmobile Association (ASA). These clubs operate and maintain an expanding network of groomed trails throughout the province and educate the riding public on safety and environmental friendly usage of their vehicles. There are an estimated 225,000 miles of signed and maintained snowmobile trails in North America that have been developed primarily by snowmobile clubs and associations, and often in cooperation with provincial, state and local governments.

This study is commissioned by Alberta Tourism, Parks and Recreation in partnership with the Alberta Snowmobile Association and conducted by Econometric Research Limited to assess the impact of snowmobiles expenditures on the economy of Alberta in 2009.

## ***Methodology***

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A dollar spent on operating a snowmobile circulates and re-circulates within the economy, multiplying the effects of the original expenditures on overall economic activity.

This process is referred to as the economic multiplier process. It operates at several levels. The initial expenditures on wages and materials are generally referred to as the direct expenditures and their effects are referred to as the initial (direct) effects. Subsequent purchases by suppliers of materials and services to sustain the original and derivative expenditures are called the indirect effects. Induced effects emerge when workers in the sectors stimulated by initial and indirect expenditures spend their additional incomes on consumer goods and services. The circulation and recirculation of impacts are contingent, however, on local sourcing of materials and on the maturity and diversity of the local economic base. To the extent that imports are purchased, the circulation process is aborted. Moreover, the less diverse and incomplete the local industrial base, the less the local community is likely to retain and capture any of the spin-off effects of the original expenditures.

Operating and capital expenditures of snowmobiling enthusiasts will be assumed to be new monies that are not spent on other uses and purposes in the province and as such can be treated as incremental expenditures to the local economy.

Typically expenditures are divided into two types—capital and operating expenditures. Capital expenditures are generally concentrated in space and time. Employment generated by these expenditures is considered to be temporary and often non-sustainable. It is necessary in such cases then to draw a distinction between permanent jobs and

person-years of employment. It is also not easy to translate person-years into jobs. Our preference is to avoid using any arbitrary conversion and to simply distinguish between capital and operating employment, the former being temporary and non-sustainable and typically considered over a few years, whereas the latter is more likely to be recurrent and sustainable. Under the operating phase it is not difficult to claim that the person years associated with the operating expenditures (tourism) sustain jobs. It is not justified to claim the same for capital expenditures particularly if these expenditures are lumpy and bunched together and are not expected to be made regularly. In the case of snowmobiles capital expenditures refer to new vehicles and while these are not made annually, it is assumed that they are made over a number of finite years but made regularly.

Economic impact analysis is a useful mathematical tool capable of quantifying the patterns and magnitudes of interdependence among sectors and activities. It is predicated on two fundamental propositions.

- Regardless of the inherent value of primary activities such as recreation or enjoyment of nature, to the extent that activities involve the use of scarce resources they generate economic consequences that can be measured and compared.
- Economic impacts are only partially captured by assessing direct expenditures. Inasmuch as the economy is a complex whole of interdependent and interacting activities, there are some significant indirect and induced impacts associated with direct expenditures. These indirect and induced impacts are often larger than the direct impacts.

## ***The Model***

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The impact model used here is a special application of a regional impact model developed by Econometric Research Limited. It is a unique model that captures the economic impact of investment projects and activity related expenditures at the local level (counties or economic regions), the provincial level (Alberta) and the national level. The model is based on a novel technology that integrates input-output analysis and location theory. The system in Alberta is known as DEIM (Demand-side Economic Impact Model) or TEIM (Tourism Economic Impact Model). It has already been applied to the study of The Economic Impact of Tourism in Banff and Canmore, several Alberta Economic Development projects, The Economic Impact of West Edmonton Mall, The Economic Impacts of TransAlta Power Generation, etc.

Generally, the economic impact of activities is measured from the demand side by considering the expenditures associated with the activity in the local area. Only rarely has this analysis been made from the supply-side by considering the operations of clubs and establishments. The system adopted here measures impact from the supply side. Our main motivation for such an emphasis on the supply-side is based, in part, on the structure of data and on our findings in several applications that the two sides may be

made to reconcile to a very small difference (this reconciliation procedure is unique to our system).

## ***Economic Impact Measures***

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Economic impact may be measured using a number of indicators, each measuring a different aspect of this impact. For example, gross output includes the total value of goods and services sold by businesses to sustain the project's operations. Direct sales include the value of goods and services bought for on-site operations but exclude taxes, depreciation, wages and salaries and net profits. Total sales represent the entire turnover of goods and services needed to sustain the activity. The limitation of this measure is that, by including the sales of both inputs and outputs, it double counts a certain amount of economic activity. For example, the sale of dressed wood to a furniture manufacturer is counted as is the selling of the chairs that result.

In contrast, value added avoids double counting of products sold during the accounting period by including only final goods. For instance, only chairs are included, whereas the wood that goes into making them does not appear separately. Total value added is the equivalent of Gross Provincial Product (GPP). It may be calculated by adding wages, interest, rent and profits or by subtracting the total cost of purchased inputs from revenues.

Since there is no reason to expect a one-to-one correspondence between value added and jobs, employment measures become a necessary addition. Different industries exhibit different labour intensities and employ different grades of labour; hence they generate different employment impacts per unit of output. Further, because compensation levels (wage rates) vary by sector and from place to place, it is important to include as measures both person-years of employment and employment income.

Another measure of impact is the amount of tax revenue generated as a result of operating expenditures. Tax revenues associated with different activity levels measure the relationship of government to the economy. Since more than one level of government collects taxes (and each level collects an assortment of different taxes), federal, provincial and local tax impacts are itemized separately.

Not all of the impacts generated are retained by the local economy. Some fraction will also leak to neighbouring economies. The volume of imports provides a good indicator of the magnitude of these leakages. And since imports from other provinces are different from out-of-country imports, the import measures in this study are separated into these two components. Imports from other provinces are taken as a direct estimate of the benefits derived by other provinces from the project under study.

The impact measures will not be restricted to the economic sphere. Equally important are measures of social impacts, particularly on small northern or rural communities with limited economic bases. Snowmobiling expenditures on grooming, equipment, gas,

lodging etc. will create economic opportunities in areas where there may be few alternatives.

## ***Inputs***

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Detailed input data on capital equipment and maintenance, operating (tourism) expenditures and tourism related expenditures were not readily available for 2009. We had some good data for 1995 and 2002 on new sales of vehicles and accessories, acceptable data on clothing and fuels. Also some limited data was available on tourism related activities for snowmobile enthusiasts. This data was complemented by information provided by the International Snowmobile Manufacturers Association (ISMA) and the Alberta Snowmobile Association (ASA).

A large set of surveys and economic impact studies of snowmobiling activities have been conducted in a number of Canadian and American jurisdictions. We reviewed some of these studies and surveys in particular those conducted in Quebec, Ontario, Pennsylvania and Colorado in search of comparable norms and average activity expenditures and profiles.

Expenditures on both capital, operations of clubs and tourism, differentiated by commodity were entered into the DEIM model as net final expenditures. An expanded and open version of the DEIM model was then run to calculate all the other rounds of expenditures needed to sustain the new final demands. First, total gross output by industry was calculated and then used to calculate value added, labour income, taxes and employment utilizing the various industry and commodity specific parameters.

The model also utilizes a large set of economic and technical databases that are regularly published by Statistics Canada. A short list includes the inter-provincial input output tables, employment by sector, taxes by type of tax and the level of government collecting it, prices of products, energy used in physical and energy units, etc.

## ***Impact Results***

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We first present the economic impact of capital expenditures on the purchase of snowmobiles, trailers, helmets and other accessories. Then we present the economic impact of expenditures by snowmobile enthusiasts on maintenance, clothing, insurance, fuel, food, lodging and clubs. All of these expenditures are expected to be made each year. This is why their impacts can be added together in order to present the total sustainable impacts of the activity of snowmobiling in Alberta.

## ***The Economic Impact of Snowmobiling Expenditures***

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Our estimates show that snowmobile enthusiasts in Alberta generated more than \$366.5 million in expenditures on capital, tourism and clubs in 2009. This is a significant change from 2002 when \$238.7 million was spent on similar activities. Snowmobiling enthusiasts in Alberta spent \$111.3 million on capital including new snowmobiles, accessories and parts, and clothing in 2009. A stream of expenditures of \$254.7 million was spent on operating and maintaining these vehicles and on tourism related activities. Another \$226.3 thousand was spent by the member clubs of the Alberta Snowmobile Association on donations, office operations, insurance and other operating expenditures in 2009. This is in addition to an estimated total expenditure of \$317.6 thousand on trail upgrading and repairs.

These expenditures supported and sustained a steady stream of impacts in Alberta and its regions. The impact results are displayed in tables 1-6 and figures 1 and 2. The major quantitative benefits include:

- The Gross Provincial Product of Alberta is permanently increased annually by about \$387.8 million as a result of expenditures related to snowmobiling. Of this total \$284.7 million are generated by the tourism expenditures and another \$102.6 million by the capital expenditures of snowmobiling enthusiasts in Alberta in 2009.
- ASA member clubs added \$326.3 thousand to GPP by capital expenditures and another \$226.2 thousand by club operating expenditures.
- More than 6,574 Albertans owe their full time jobs to the recurrent capital and operational expenditures of snowmobile enthusiasts.
- Wages and salaries in Alberta are augmented by a total of about \$213.9 million annually by the snowmobiling expenditures in 2009.
- All three levels of government realize about \$142.0 million in taxation revenues annually from snowmobiling. The federal government collects the largest stream of \$92.9 million annually. The provincial government nets about \$36.6 million, whereas local governments in Alberta collectively collect about \$12.6 million.
- Imports from other provinces fall short of imports from the rest of the world. Other provinces support \$45.4 million in exports to Alberta on account of operational and capital expenditures of this activity in Alberta. Imports from the rest of the world are about \$51.8 million and are for the first time higher than the imports from other provinces.

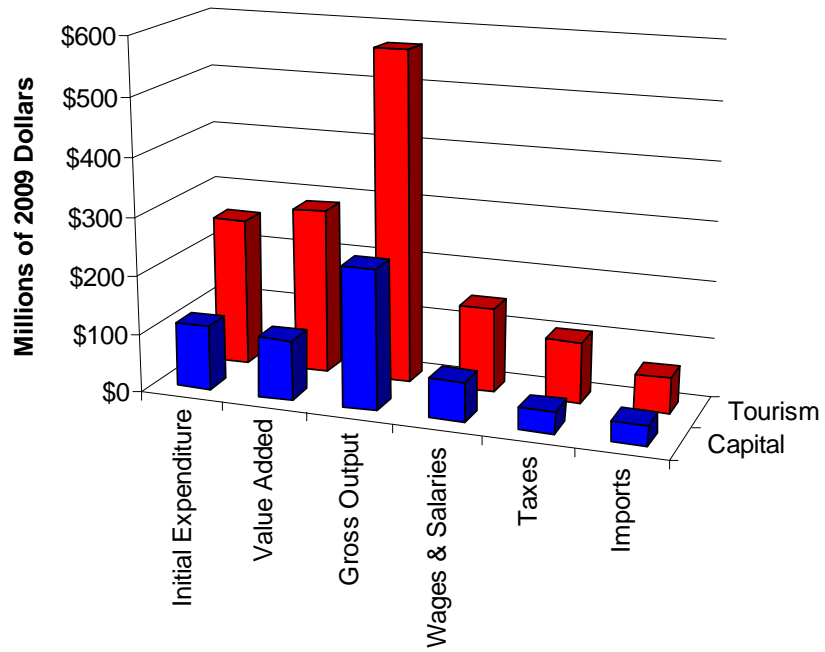
**Table 1**  
**Economic Impact of Snowmobiles in Alberta**  
(2009 Dollars)

	Clubs		Snomobiling		Total
	Capital	Operations	Capital	Tourism	
<b>Initial Expenditure</b>	\$317,584	\$226,269	\$111,345,000	\$254,666,000	\$366,554,853
<b>Value Added</b>					
Direct	\$99,856	\$73,814	\$35,448,743	\$106,772,902	\$142,395,315
Indirect & Induced	\$226,430	\$152,347	\$67,112,333	\$177,922,828	\$245,413,938
Total	\$326,286	\$226,161	\$102,561,076	\$284,695,730	\$387,809,253
Multiplier	1.03	1.00	0.92	1.12	1.06
<b>Gross Output</b>					
Direct	\$317,584	\$226,269	\$111,345,000	\$254,666,000	\$366,554,853
Indirect & Induced	\$419,033	\$282,867	\$129,803,229	\$313,870,890	\$444,376,019
Total	\$736,617	\$509,136	\$241,148,229	\$568,536,890	\$810,930,872
Multiplier	2.32	2.25	2.17	2.23	2.21
<b>Wages &amp; Salaries</b>					
Direct	\$80,165	\$46,829	\$29,224,444	\$58,925,667	\$88,277,105
Indirect & Induced	\$118,348	\$81,158	\$38,990,868	\$86,395,715	\$125,586,089
Total	\$198,513	\$127,987	\$68,215,312	\$145,321,382	\$213,863,194
<b>Employment</b>					
Direct	1.4	1.5	1,479	1,931	3,413
Indirect & Induced	2.9	1.9	984	2,172	3,161
Total	4.3	3.5	2,463	4,103	6,574
Multiplier	3.10	2.27	1.66	2.13	1.93
<b>Taxes</b>					
Federal	\$80,849	\$54,580	\$26,234,032	\$66,522,302	\$92,891,763
Provincial	\$28,226	\$21,343	\$8,882,516	\$27,641,585	\$36,573,670
Local	\$9,695	\$7,331	\$3,050,989	\$9,494,401	\$12,562,416
Total	\$118,770	\$83,254	\$38,167,537	\$103,658,288	\$142,027,849
<b>Imports</b>					
From Other Provinces	\$46,278	\$30,452	\$17,939,150	\$27,339,268	\$45,355,148
From Other Countries	\$49,338	\$34,063	\$17,048,640	\$34,623,409	\$51,755,450
Total	\$95,616	\$64,515	\$34,987,790	\$61,962,677	\$97,110,598

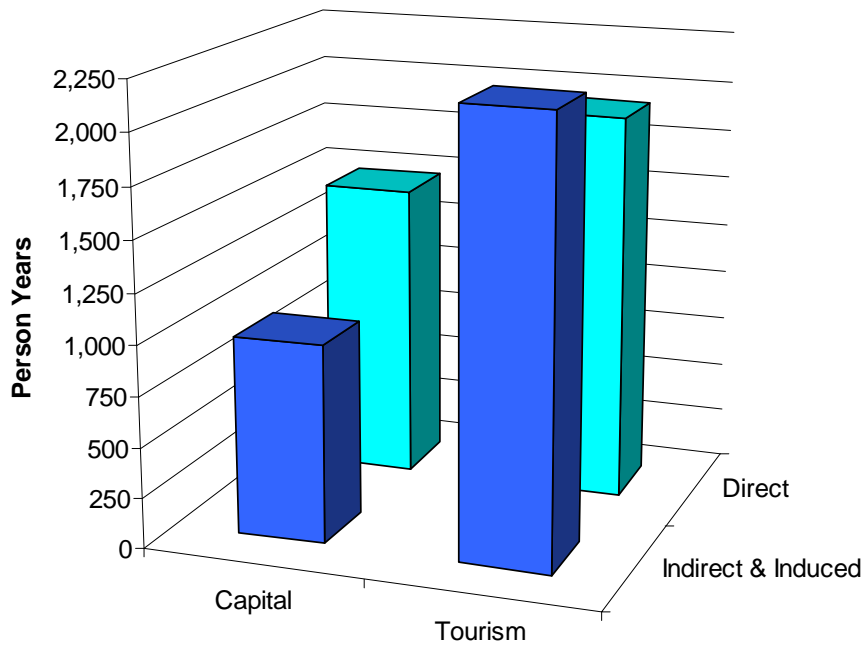
Source: Econometric Research Limited



**Figure 1**  
**Economic Impact of Snowmobiling in Alberta**



**Figure 2**  
**Employment Impacts of Snowmobiling in Alberta**



**Table 2**  
**Tax Impacts of Capital Expenditures - Snowmobiling**  
(2009 Dollars)

	<b>Federal</b>	<b>Provincial</b>	<b>Local</b>	<b>Total</b>
Personal Income Tax	\$12,442,154	\$4,768,997	\$0	\$17,211,151
Indirect Business Tax	\$0	\$1,538,072	\$0	\$1,538,072
Goods & Services Tax	\$4,866,773	\$0	\$0	\$4,866,773
Corporate Profit Taxes	\$3,979,447	\$1,660,819	\$0	\$5,640,266
Property & Bus. Tax	\$0	\$0	\$3,050,989	\$3,050,989
Tobacco & Liquor Tax	\$0	\$126,262	\$0	\$126,262
Tourism Levy	\$0	\$0	\$0	\$0
Employment Insurance	\$1,607,277	\$0	\$0	\$1,607,277
Workers' Compensation Board	\$0	\$788,366	\$0	\$788,366
CPP Contributions	\$3,338,381	\$0	\$0	\$3,338,381
<b>Total</b>	<b>\$26,234,032</b>	<b>\$8,882,516</b>	<b>\$3,050,989</b>	<b>\$38,167,537</b>

Source: Econometric Research Limited

**Table 3**  
**Tax Impacts of Tourism Expenditures - Snowmobiling**  
(2009 Dollars)

	<b>Federal</b>	<b>Provincial</b>	<b>Local</b>	<b>Total</b>
Personal Income Tax	\$26,505,943	\$10,159,556	\$0	\$36,665,499
Indirect Business Tax	\$0	\$5,586,676	\$0	\$5,586,676
Goods & Services Tax	\$13,331,949	\$0	\$0	\$13,331,949
Corporate Profit Taxes	\$16,148,509	\$6,739,567	\$0	\$22,888,076
Property & Bus. Tax	\$0	\$0	\$9,494,401	\$9,494,401
Tobacco & Liquor Tax	\$0	\$458,617	\$0	\$458,617
Tourism Levy	\$0	\$3,017,686	\$0	\$3,017,686
Employment Insurance	\$3,424,036	\$0	\$0	\$3,424,036
Workers' Compensation Board	\$0	\$1,679,483	\$0	\$1,679,483
CPP Contributions	\$7,111,865	\$0	\$0	\$7,111,865
<b>Total</b>	<b>\$66,522,302</b>	<b>\$27,641,585</b>	<b>\$9,494,401</b>	<b>\$103,658,288</b>

Source: Econometric Research Limited

**Table 4**  
**Tax Impacts of Snowmobile Clubs - Capital**  
(2009 Dollars)

	Federal	Provincial	Local	Total
Personal Income Tax	\$36,208	\$13,878	\$0	\$50,086
Indirect Business Tax	\$0	\$5,429	\$0	\$5,429
Goods & Services Tax	\$15,445	\$0	\$0	\$15,445
Corporate Profit Taxes	\$14,804	\$6,179	\$0	\$20,983
Property & Bus. Tax	\$0	\$0	\$9,695	\$9,695
Tobacco & Liquor Tax	\$0	\$446	\$0	\$446
Tourism Levy	\$0	\$0	\$0	\$0
Employment Insurance	\$4,677	\$0	\$0	\$4,677
Workers' Compensation Board	\$0	\$2,294	\$0	\$2,294
CPP Contributions	\$9,715	\$0	\$0	\$9,715
<b>Total</b>	<b>\$80,849</b>	<b>\$28,226</b>	<b>\$9,695</b>	<b>\$118,770</b>

Source: Econometric Research Limited

**Table 5**  
**Tax Impacts of Snowmobile Clubs - Operations**  
(2009 Dollars)

	Federal	Provincial	Local	Total
Personal Income Tax	\$23,344	\$8,948	\$0	\$32,292
Indirect Business Tax	\$0	\$4,873	\$0	\$4,873
Goods & Services Tax	\$10,581	\$0	\$0	\$10,581
Corporate Profit Taxes	\$11,375	\$4,747	\$0	\$16,122
Property & Bus. Tax	\$0	\$0	\$7,331	\$7,331
Tobacco & Liquor Tax	\$0	\$400	\$0	\$400
Tourism Levy	\$0	\$896	\$0	\$896
Employment Insurance	\$3,016	\$0	\$0	\$3,016
Workers' Compensation Board	\$0	\$1,479	\$0	\$1,479
CPP Contributions	\$6,264	\$0	\$0	\$6,264
<b>Total</b>	<b>\$54,580</b>	<b>\$21,343</b>	<b>\$7,331</b>	<b>\$83,254</b>

Source: Econometric Research Limited

**Table 6**  
**Tax Impacts of Snowmobiles in Alberta**  
(2009 Dollars)

	Federal	Provincial	Local	Total
Personal Income Tax	\$39,007,649	\$14,951,379	\$0	\$53,959,028
Indirect Business Tax	\$0	\$7,135,050	\$0	\$7,135,050
Goods & Services Tax	\$18,224,748	\$0	\$0	\$18,224,748
Corporate Profit Taxes	\$20,154,135	\$8,411,312	\$0	\$28,565,447
Property & Bus. Tax	\$0	\$0	\$12,562,416	\$12,562,416
Tobacco & Liquor Tax	\$0	\$585,725	\$0	\$585,725
Tourism Levy	\$0	\$3,018,582	\$0	\$3,018,582
Employment Insurance	\$5,039,006	\$0	\$0	\$5,039,006
Workers' Compensation Board	\$0	\$2,471,622	\$0	\$2,471,622
CPP Contributions	\$10,466,225	\$0	\$0	\$10,466,225
<b>Total</b>	<b>\$92,891,763</b>	<b>\$36,573,670</b>	<b>\$12,562,416</b>	<b>\$142,027,849</b>

Source: Econometric Research Limited

## ***Limitations***

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The following outlines salient limitations imposed on the approach and findings of this analysis:

- An effort has been made to ensure estimates in the report are made in a conservative manner to avoid overstating the results.
- Benefits are not always easily expressed in monetary terms. For example, social and recreational benefits and costs from tourism and the development of trails are not easily measured. This report presents exclusively the quantitative estimates of economic impacts.
- Econometric Research Limited used data from industry associations, previous surveys and extensive secondary data from reports and surveys done for other jurisdictions in Canada and the United States. We are not in a position to evaluate the accuracy of this data or its complete applicability to Alberta.
- The impact results are based on data compiled from a variety of sources including Statistics Canada, Alberta Economic Development, Alberta Tourism, Parks and Recreation, International Snowmobile Manufacturers Association, Alberta Snowmobile Association, and local snowmobile clubs in Alberta. The data may not be strictly statistically reliable and therefore subject to a margin of error.
- The model used is a simulation model and, as such, it creates a theoretical picture of the future of the economy. It does this on the basis of a series of assumptions, which may or may not hold true over time. These assumptions are discussed in the Technical Manual of DEIM.

## ***Conclusions***

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Snowmobiling activities constitute an industry that has become one of the cornerstones of the recreational infrastructure and community tourism of Alberta. It generates significant, stable and nature-based employment for hundreds of mechanics, salespersons, insurance agents, and other workers located throughout Alberta. These jobs cultivate local talent pools and a body of work that supports other local industries and initiatives particularly in the rural and remote regions of the province.

Our estimates show that the expenditures of snowmobile enthusiasts on capital, operations and clubs have generated \$366.6 million in direct annual expenditures in Alberta in 2009. These expenditures supported and sustained a stream of economic benefits in Alberta. Among the most relevant impacts we include:

- The Gross Provincial Product of Alberta is permanently increased annually by about \$387.8 million.
- More than 6,574 Albertans owe their full time jobs to these impacts.
- Wages and salaries in Alberta are augmented by a total of about \$213.9 million annually.
- More than \$142.0 million in tax revenues are realized annually by the three levels of government from the impacts of this industry in Alberta.
- The provincial government annually collects about \$36.6 million in taxation from snowmobiling expenditures, whereas local governments in Alberta collect about \$12.6 million.
- Other provinces realize gains on the operations of the industry in Alberta. Imports from other provinces (\$45.4 million) fell short of the imports from the rest of the world (\$51.8 million).
- The employment impacts of snowmobiling activities are widely spread over most industries in the province through the extensive forward and backward linkages that these activities maintain in Alberta.

Even though the focus of this report is upon quantification of the economic impacts of the snowmobiling activities in Alberta, it is important to remember that the economic impact indicators presented here cannot measure in terms of dollars alone the importance of the diverse and profound recreational and tourism contributions to the province and its regions made by this industry.

## ***Appendix A – Input Data***

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The starting point in the estimation of the respective expenditures is with capital expenditures. The purchases of snowmobiles in Alberta come from the ISMA. We also obtained data on parts and accessories from the ISMA but the expenditures on fuel and oil, insurance, accommodations and meals came from many sources including surveys administered by the ASA.

**Table A1**  
**Snowmobile Capital Expenditures**  
**in Alberta**  
(2009 Dollars)

Snowmobiles	\$48,360,299
Trailers	\$5,817,549
Clothing	1,780,152
Accessories	\$55,387,000
Total	\$111,345,000

Source: ISMA & Survey conducted by ASA

**Table A2**  
**Snowmobile Tourism Expenditures**  
**in Alberta**  
(2009 Dollars)

Insurance	\$41,484,140
Fuel and Oil	\$80,009,206
Repairs	\$21,408,100
Accommodations	75,442,144
Shopping	\$36,322,410
Total	\$254,666,000

Source: ISMA & Survey conducted by ASA

Club expenditures were collated by the respective associations. We did not have a complete tally of these expenditures at the time we prepared this report. The impact results are based on an extrapolation of data received from six clubs to the entire club population of sixteen.