

4. ECONOMIC IMPACTS METHODOLOGY – SURVEY AND FIELDWORK

To obtain an objective evaluation of Vermont airports' contribution to the state economy, a comprehensive and rigorous data collection effort was established at the beginning of the Study.

The analysis used a “bottom-up” approach to estimate economic impact, starting from individual business entities – hotels, fixed-base operators, car rental facilities, etc. – and building to calculate aggregate economic impact for a given airport, local community, and ultimately the entire State. This approach ensured consistency, comparability, and conservatism.

The data collection program began with the Study team meeting with airport managers. The meetings allowed for the identification of important contacts – including tenants, airport-reliant businesses, and aircraft owners – that could contribute useful data to the study.

In order to avoid overestimating or double-counting benefits, extreme care was taken throughout this study to ensure that only the *local value added* component of any expenditure was included in the assessment of economic benefits. For example, FBO's are typically engaged in selling fuel to both general aviation users and commercial airlines. The direct impact of fuel sales to general aviation users should be limited to the FBO's markup, since the remainder of the sales is passed on to the refinery outside of local area. Additionally, the FBO's fuel sales to airlines should not be double counted along with the commercial airlines' fuel purchases.

The cooperation and support of the airport managers was crucial to the success of the survey effort. The airport manager or sponsor is the most central and complete source of accurate information on airport and tenant operations. The TAC, with its broad representation of tourism, economic development and regional development agencies, was also relied upon for its knowledge of Vermont airports and their users.

Accurate data is critically important for a reliable evaluation of economic impact. Thus, a major component of a successful statewide economic impact

study was the widest participation of airport users as possible. To achieve this goal, a large part of the Study effort was spent creating a survey procedure that would ensure the greatest success.

FIELDWORK SURVEY AND DESIGN

To capture the most complete pool of data possible, a substantial emphasis was placed on development of the surveys and creation of the most comprehensive list of relevant businesses and organizations. It was thus crucial to have the full cooperation and support of the airport management who, in turn, helped facilitate information gathering at their airport.

Despite the efforts undertaken, it would be unrealistic to expect a 100 percent response rate. In the cases where data was unobtainable through the survey process, one of two approaches was taken. Where there was some survey data available, ratios (such as employment to revenue and employment to payroll) were developed with the IMPLAN economic modeling tool and applied to the existing information to estimate the missing figures. If a tenant failed to respond at all, Dun & Bradstreet was consulted. Dun & Bradstreet reports approximate revenue and employment statistics for businesses throughout the country. Wages were then determined using the database ratios.

Airport Manager Survey

Once the survey forms were finalized, each airport manager was contacted with a letter from VTrans announcing the study, expressing the importance of participation, and introducing the Study team. The initial contact also discussed the types of information required by the survey effort. As a result, many of the airport managers were able to help pull together needed information in advance. Following this initial contact, individual site visits were scheduled and conducted by Study staff. All airports were visited and managers interviewed.

Overall, the survey effort was quite successful, with 100 percent response among the two commercial airports surveyed, and a 93 percent response rate among General Aviation airports (See Exhibit 4).

Airport Tenant Survey

A second survey, designed specifically for tenant businesses located on airport property, was conducted in person with as many airport tenants as possible. For those tenants that were not available for in-person interviews, surveys were mailed. Each tenant was surveyed for information about the nature of their aviation activity and their expenditures – revenue, wages and employees. Employees were broken out by full and part-time. Tenant response rates were also impressive. Of the 54 businesses surveyed, over 76 percent responded.

Aircraft Owner Survey

Registered aircraft owners were surveyed in order to determine their business dependency on Vermont's airports. Data from aircraft owners was more difficult to gather; however, the team was successful in gathering almost 200 completed surveys for a response rate of 33 percent.

Airport-Dependent Business Survey

Surveys were sent to all businesses employing over 20 people in Vermont. Specific businesses were identified by airport managers as having likely dependency on individual airports. Therefore, after survey responses tapered off, the Study team made phone calls to those businesses identified by airport managers to encourage them to reply. The sample size of 2,000 surveys may be a little misleading. Not all of those businesses were likely to have dependency on Vermont's public-use airports. The 254 responses that were received indicated a high dependency on Vermont's public-use airports and provided valuable information.

Airport Visitor Spending Survey

Members of the survey team conducted passenger surveys in person at each of the airports in order to capture visitor spending of commercial and general aviation visitors.¹ These surveys were designed to quantify average visitor spending for out-of-state visitors to Vermont. Actual numbers of visitors at each airport were calculated according to operations data provided by airport managers and national averages of general aviation visitors per aircraft. Results of visitor surveys included 448 commercial air passenger surveys – the majority having been completed at Burlington – and 64 general aviation surveys representing all but Robin's Nest.

¹ The exception was Robin's Nest Airport, which appears to be closed.

The Study team also designed a Freight Forwarder Survey. However, it was determined later that Vermont freight-forwarding businesses had already been reached through other Study survey efforts: freight forwarding businesses located on airport property had received the Airport Tenant survey, and those located off airport property had received the Airport-Dependent Business Survey. While tailored specifically to freight-forwarders, the Freight Forwarder Survey requested basically the same information in terms of revenue, employment, and use of airports as the other two surveys just mentioned, and thus no new information was to be gained. Further, sending a second survey risked double-counting an individual business' results, and imposing unnecessary labor on these businesses. The Freight Forwarder Survey was not deployed because the businesses that it targeted had already been reached through other Study survey efforts.

Exhibit 4
Survey Response Rates

Survey	Surveys Distributed	Surveys Received	Response Rate
Airport Manager Survey			
Commercial Airports	2	2	100.0%
General Aviation Airports	15	14 *	93.3%
Airport Tenant Survey			
Burlington International	36	22	61.1% **
Rutland	3	3	100.0%
Other	16	15	93.8% **
Aircraft Owners	591	196	33.2%
Airport-Dependent Business Survey	2004	254	12.7%
Airport Visitor Spending Survey			
Commercial Airlines	448	448	N/A
General Aviation Visitor	64	64	N/A

*Robin's Nest management indicated that the airport is closed

**Partial information was obtained for 100% of tenants, including those not returning surveys

A copy of each type of survey is included in Appendix II.

QUALITATIVE IMPACTS

The primary goal of this study is to communicate the full comprehensive impact of Vermont public-use airports on the communities they serve, and on the state as a whole. A great deal of attention was devoted to measuring airports' economic impact in dollars and employment. However, airports' contributions to their communities are not limited to their roles as economic engines. Each also contributes to the health, safety, security, recreation, and general quality-of-life in the communities they serve in ways that cannot be stated in dollar terms.

Among these qualitative impacts are emergency, safety, conservation and law enforcement flights aviation activity that the State's public-use airports facilitate. The Vermont State Police, together with the Air National Guard and the Civil Air Patrol, provide emergency medical evacuation, saving many lives each year through quick removal and transfer of patients. Troopers also locate offenders and missing persons from the air, and enforce the State's highway safety laws.

The Department of Agriculture engages in aerial spraying to control mosquitoes. Vermont's Forest, Parks and Recreation Department conducts aerial surveys and digital mapping. The Department of Fish and Wildlife has a medicated bait drop program to control rabies. The Department of Taxation does orthophoto tax mapping and valuation from the air.

Airport managers and tenants were surveyed to determine what particular qualitative benefits their airports contributed to the community. They were offered an inventory of potential benefits assembled by the study staff, and asked to specify which applied at their airport. These qualitative benefits were as follows:

- *Recreational flying or parachuting* – airports provide facilities to support aircraft ownership by individuals and organizations with a love of flying and parachuting
- *Ballooning* – airports provide the space and facilities to support ballooning activities
- *Preservation of Open Space, Wetlands, or Woodlands* – airports often

offer communities the opportunity to protect and preserve open space, wetlands and woodlands, as areas around airfields need to be kept clear of development

- *Flight Training* – airports provide facilities for flight instruction programs for individuals who seek to learn to fly
- *Career Training and Education* – airports provide facilities for training programs in aircraft maintenance, avionics, and allied disciplines. The State of Vermont sponsors annual Aviation Career Education (ACE) camps at various airports in the State
- *Search and Rescue* -- airports are used as a base of operations for lost individuals or downed aircraft
- *Emergency Medical Aviation* – airports serve as a base of operations for the transport for critical care patients to emergency rooms, as well as those suffering from chronic disease flying to treatments in metropolitan centers (“Angel flights” for cancer patients, for example)
- *Police and Other Law Enforcement Use* – State and Federal law enforcement officials use local airports as a base of operations for surveillance
- *Gateway for VIP or High Profile Visitors* – airports provide celebrities, business executives and government officials the opportunity to fly directly into an area on private aircraft for the sake of convenience and/or to avoid public notice
- *Staging Area for Community Events* – as airports often encompass large tracts of open space, this open space is sometimes used to host large community events that are too big for other common-use land in a city or town
- *Aerial Photography or Surveying* – airports serve as a base of operations for businesses and state agencies regularly engaged in aerial photography or surveying
- *Aerial Inspections* – pilots use airports as ground coordination points for power line inspections and other aerial inspections
- *Environmental Patrol* – airports serve as a base of operations for State

and publicly supported environmental agencies wishing to achieve close-in inspection of natural terrain; examples include, environmental monitoring vegetation for the effects of acid rain and wildlife counts for research projects

- *Aerial Advertising* – airports serve as a base of operations for businesses that engage in aerial advertising
- *Promotional Activities* – airports offer open houses, air shows, and other educational activities designed to highlight the importance of aviation in life
- *Model Aircraft Flying* – airports provide a resource and space for those engaged in the hobby of model aircraft flying
- *Aerial Application* – airports serve as a base of operations for aircraft spreading pesticides and herbicides for agricultural and public-health purposes
- *Freight/Cargo Activity* – businesses of all sizes throughout Vermont rely on airports in order to ship and receive products and materials to and from all over the world
- *Shipping of Perishable Goods* – certain businesses in Vermont import and/or export perishable goods that need specific cargo facilities
- *Corporate or Business Aircraft Activity* – business executives rely on airports throughout the State in order to attain efficiency as the closer they can get to or from a site of business, the less time they waste in transit
- *Museums* – some airports provide museum space open to the public

In addition to the qualitative benefits explicitly offered in the inventory, the survey also offered space for airport occupants to discuss in an unstructured manner the ways in which the airport enhances community life. A summary of these results is presented below in Exhibit 5.

**Exhibit 5
Airport Qualitative Benefits**

Airport	Recreational Flying and Parachuting	Preservation of Open Space, Wetlands, Woodlands	Search and Rescue	Flight Training	Corporate or Business Aircraft Activity	Emergency Medical Aviation	Aerial Photography and Surveying	Staging Area for Community Events	Promotional Activities
Basin Harbor	x	x			x	x		x	x
John H. Boylan	x	x	x			x			
Burlington International	x	x	x	x	x	x	x	x	x
Caledonia County	x	x	x	x	x	x	x	x	x
Fair Haven	x	x	x					x	
Franklin County	x	x	x	x	x	x	x	x	x
Hartness	x	x	x	x	x	x	x	x	x
Edward F. Knapp	x	x	x	x	x	x	x	x	x
Middlebury	x	x	x	x	x	x	x	x	x
Morrisville-Stowe	x	x	x	x	x	x	x	x	x
William H. Morse	x	x	x		x	x	x		x
Mt. Snow	x	x	x		x	x	x	x	x
Newport	x	x	x	x	x	x	x	x	x
Post Mills	x	x	x	x		x	x	x	x
Rutland	x	x	x	x	x	x	x	x	x
Warren-Sugarbush	x	x		x	x			x	

Exhibit 5 cont'd

Airport	Police and Law Enforcement	Career Training and Education	Environmental Patrol	Gateway for VIP and High Profile Visitors	Aerial Inspections	Model Aircraft Flying	Location for Community Facilities or Utilities	Freight and Cargo Activity	Shipping of Perishable Goods
Basin Harbor				x			x		
John H. Boylan	x		x		x	x			
Burlington International	x	x	x	x	x		x	x	x
Caledonia County	x	x	x	x	x		x	x	
Fair Haven						x	x		
Franklin County	x	x	x	x		x	x		
Hartness	x	x	x		x		x	x	
Edward F. Knapp	x	x	x	x	x			x	x
Middlebury	x	x	x	x	x	x	x		
Morrisville-Stowe	x	x		x					
William H. Morse	x	x	x	x	x		x	x	x
Mt. Snow	x			x	x	x		x	
Newport	x	x	x	x	x				
Post Mills		x	x		x	x			
Rutland	x	x		x				x	x
Warren-Sugarbush		x				x			

Exhibit 5 cont'd

Airport	Public Charters	Ballooning Activity	Aerial Application	Aerial Advertising and Banner Towing	Museum	Traffic and News Reporting	Other
Basin Harbor							Restaurant and Award-Winning Golf Course
John H. Boylan							
Burlington International	x						Military Presence, ACE Camp
Caledonia County			x				
Fair Haven							
Franklin County	x						Experimental Aircraft Activity, ACE Camp
Hartness							
Edward F. Knapp	x						Restaurant, Aircraft Maintenance, Sight-seeing Flights
Middlebury			x				ACE Camp
Morrisville-Stowe							Soaring, Experiment Aircraft
William H. Morse	x	x	x	x			Educational Partnership with Local High School
Mt. Snow							
Newport		x					Fly-in Campground, Restaurant
Post Mills		x			x		International Balloon Festival
Rutland				x			ACE Camp
Warren-Sugarbush				x			Restaurant, Soaring and Youth Soaring Camps, X-Country Ski Center

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