

September 2009

**VTrans**

Vermont Agency of Transportation

# STATEWIDE AIRPORT BUSINESS PLANS

## EDWARD F. KNAPP STATE AIRPORT



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## 1. INTRODUCTION

The Edward F. Knapp State Airport (MPV) is located in central Vermont, situated in the Town of Berlin, roughly equidistant from the cities of Barre and Montpelier. This area is well served by many airports. There are five other airports within 30 miles of Knapp: Warren-Sugarbush Airport; Post Mills Airport; Middlebury State Airport; Dean Memorial Airport; and Morrisville-Stowe State Airport. Burlington International Airport, Vermont's primary commercial service airport is located 35 miles from Knapp. Because of its importance in serving the State capital, the high level of competition in the immediate region, and the desire of the Vermont Agency of Transportation (VTrans) to efficiently manage the State's assets, this business plan has been commissioned. The purpose of this business plan is to recommend potential means of improving the airport's financial performance, identifying means to enhance economic development due to the airport's presence, and to examine methodologies for increasing operational efficiency.

### 1.1 VTrans Mission and Goals

In order to consider Knapp State Airport in light of its environment, one must first consider the goals and mission of its operator, the Vermont Agency of Transportation. The VTrans mission statement is as follows:

"Vermont's airport system will be accessible, safe and secure, meeting the needs of its business and recreational users, including implementing new technologies to support the future system. The airport system will be preserved and enhanced, while meeting Federal and State guidance while promoting responsible environmental stewardship and land use compatibility. Vermont's airports will be operated as business-oriented facilities focusing on creating opportunities for a return on the investment and will provide intermodal linkages to national transportation systems."<sup>1</sup>

VTrans' goals are as follows<sup>2</sup>:

- Provide a system of airports that is accessible for people and goods from both the ground and the air throughout the State.
- Provide intermodal ground access opportunities and/or services such as rental car, taxi, bus, or bike.
- Preserve and enhance Vermont's existing airport system's infrastructure investment through maintenance and rehabilitation to meet future growth and demand as well as providing new infrastructure to meet future needs in support of the national air transportation system when needed.
- Plan for future airport development and protect public investment in airports through promotion of compatible land use in the vicinity of airports.
- Provide a safe and secure system of airports that meets State and Federal guidelines, including routine inspections of airports such as the 5010 Program.

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<sup>1</sup> Source: Executive Summary: Vermont Airport System and Policy Plan, September 2006

<sup>2</sup> IBID

- Seek adequate and stable funding, including FAA assistance, and assure appropriate staffing to support the Agency's mission.
- Make timely, sound infrastructure investments derived from airport master plans and based on priorities that are determined through coordination with Vermont's aviation stakeholders, including use of the Vermont Airport Capital Facilities Program.
- Maintain an up-to-date integrated database of air and landside facilities including capital plans and improvements, leaseholds, contacts, relevant zoning as well as the system's performance measures.
- Strive to generate appropriate revenues from the operation of the State-owned airports in support of their continued operation and expansion utilizing a business-oriented approach.

## **1.2 Airport Classification**

Knapp State Airport is classified within the State of Vermont as a National Service airport. Such airports are primarily targeted to serve the highest levels of general aviation (GA) activity. These airports serve a contributing role in enabling the local, regional, and State economies to have access to and from the national and global economies<sup>3</sup>. Knapp is the only one of three National Service airports in Vermont that does not have scheduled service (such service ceased in 1990). Appendix D of the Vermont Airport System and Policy Plan provides several objectives that a National Service Airport should meet. Those objectives are noted in Table 1, which is located on the following page.

The airport is also included in the *National Plan of Integrated Airport Systems* (NPIAS). The NPIAS is a national airport system plan for the development of public use airports in the United States prepared by the FAA. This plan identifies needed improvements in the national airport system for airports that are eligible for federal funding provided through the Airport Improvement Program (AIP). Expenditure of AIP funds is scheduled through the five-year Airport Capital Improvement Program (ACIP). Knapp was initially classified within the NPIAS as an air carrier and commercial service-other airport. However, this classification was changed in 1990 to that of a general aviation airport after the loss of commercial service.

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<sup>3</sup> Vermont Airport System and Policy Plan, February 2007, Chapter 3, page 3.12.

<b>Table 1: Recommended Standards for Knapp as a National Service Airport</b>		
<b>Objective</b>	<b>Recommended Minimum Standard</b>	<b>Minimum Standard Not Met</b>
<b>Airport Reference Code</b>	C-II	X
<b>Runway Length</b>	5,500'	X
<b>Runway Width</b>	100'	
<b>Runway Strength</b>	60,000 lbs	
<b>Taxiway Requirements</b>	Full Parallel Taxiway	X
<b>Approach</b>	Precision 200 <sup>3</sup> /½ mile	X
<b>NAVAIDs</b>	ILS, ALS, REILs, Rotating Beacon, Lighted Wind Indicator / Segmented Circle	X
<b>Lighting</b>	High Intensity Runway and Medium Intensity Taxiway Lights	X
<b>Weather Reporting</b>	AWOS or ASOS	
<b>Ground Communications</b>	Public Phone, Ground Communication Outlets or Remote Communication Outlets	
<b>Hangar Space</b>	63,000 sq. ft.	X
<b>Apron Space</b>	12,700 sq. ft.	
<b>Terminal/Administration Building Space</b>	2,500 sq. ft.	
<b>Fence Coverage</b>	Entire Airport	X
<b>Automobile Parking</b>	90 spaces	
<b>Fuel Service</b>	Self-Serve AvGas and Jet A	X
<b>FBO Requirements</b>	Full Service	
<b>Aircraft Maintenance</b>	Full Service	
<b>Ground Transportation</b>	Rental Car Available	

ILS – Instrument Landing System  
 ALS – Approach Lighting System  
 REILs- Runway End Indicator Lights  
 AWOS – Automated Weather Observing System  
 ASOS – Automated Surface Observing System

### 1.3 **Desired End Products**

The final report that will result from this analysis includes the following:

- A well-defined mission statement for the airport.
- An evaluation of current airport business operating practices.
- The identification and evaluation of needs, opportunities, and challenges facing the airport.
- A five-year projection of revenues and expenses at the airport for the baseline case and alternative scenarios.
- Strategic planning recommendations for the airport.

- Graphic materials for airport promotion and marketing. These may include color Airport Layout Plans (ALPs), photos, and/or brochures depending upon the airports' needs.
- An economic impact evaluation of the airport, identifying jobs, income, and total output associated with the facility.

This business plan will discuss the role of Knapp State Airport and will also address:

- ***Airport Financial Performance:*** Means to enhance revenue and improve efficiency in order to increase net revenues.
- ***Attraction of Corporate Aviation:*** Means, methods, and needed infrastructure to attract and retain based corporate aviation.
- ***Right-Sized Facility Recommendations:*** Recommended facility developments that are warranted by current and projected aviation demands.
- ***Community Relations:*** The value of an airport in serving its home base must continue to be communicated to the public and their political representatives. Communication of these benefits helps to justify allocation of resources and support airport activity and investment.
- ***Economic Benefits:*** Airport economic benefits are usually stated in terms of jobs, income, and output. In addition intangible benefits that accrue to the airport community may be considered equally important.

## **1.4 Report Outline**

This report has been organized to include the following sections in order to address the issues described above and to produce the desired end products:

***Section 1*** - Introduction

***Section 2*** - Background and Management Structure

***Section 3*** - Existing Airport Characteristics

***Section 4*** - Baseline Financial and Economic Outlook

***Section 5*** - Business Plan Alternatives

***Section 6*** - Recommended Plan

***Section 7*** - Economic Impact Analysis

***Appendix A*** - Lease Agreement Summaries

***Appendix B*** - State Incentives & Programs

***Appendix C*** - IMPLAN Results

## **2. BACKGROUND AND MANAGEMENT STRUCTURE**

Understanding the background and management structure of the airport helps to clarify some of the challenges and opportunities facing the airport. Management and operational structure affect the ability of the airport to reach its potential. A clearly defined, current, and realistic mission statement for the airport provides the overlying framework for the airport to benefit from opportunities as they arise. This analysis is geared toward the future and toward positioning the airport to take the best advantage of its assets and strengths.

### **2.1 Airport Mission and Goals**

As previously mentioned, the airport's assigned NPIAS role is that of a general aviation airport. The airport provides a base for recreational and business air transportation services for the local community, the region and for national and international companies in and around the Airport. The State, however, also views Knapp as a vital cog in connecting the State and region with the National Airport System, possibly because it is the airport located closest to the State capital. Thus, the Mission Statement for the airport may be stated as:

*The Edward F. Knapp State Airport will serve to link the Vermont Capital Region with the National Airport system, while providing airport facilities and services in a safe and secure environment to its based aircraft owners and other users of the airport, as well as providing a base for regional economic development.*

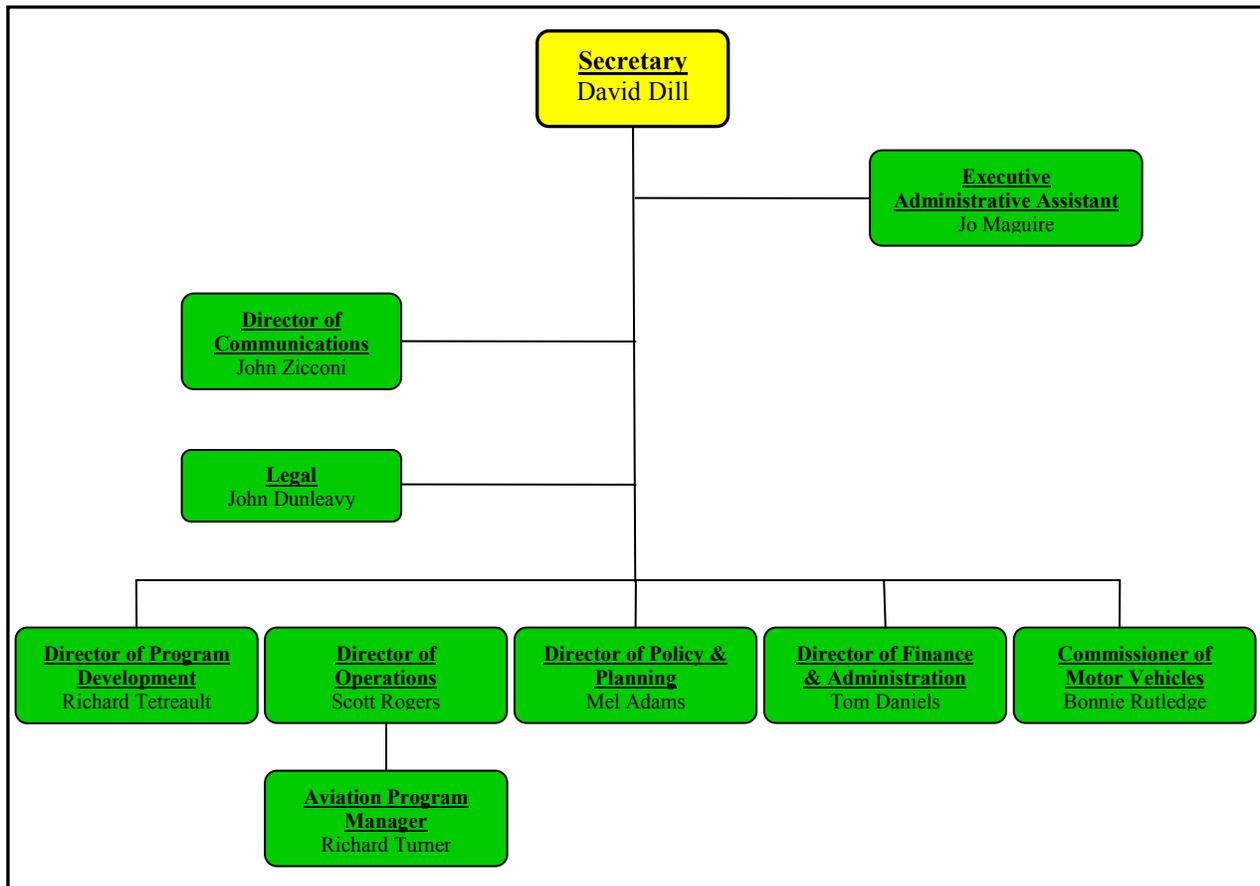
Program goals supporting this mission would include:

- Continue to operate the airport safely and efficiently.
- Strive to manage expenditures and increase revenues at the airport.
- Encourage private sector investment in the utilization and development of the airport's facilities.
- Create an environment which facilitates business activity and access to the region's businesses.
- Pursue funding for implementation of necessary capital improvement projects to improve safety and usability of the airport.
- Supplement economic development goals of VTTrans as opportunities arise at the Airport.
- Encourage compatible public use of airport facilities or property, where possible and appropriate.
- Craft a plan of physical development that corresponds to actual market need and implements the most efficient use of limited airport property.

## 2.2 Airport Management Structure

Edward F. Knapp State Airport is owned by the State of Vermont and managed and operated by the Operations Division of the Vermont Agency of Transportation. The organizational chart for VTrans is shown in Figure 1. The Operations Division is one of five divisions of VTrans; the others being Program Development, Policy and Planning, Finance & Administration, and Motor Vehicles. Within the Operations Division are the Traffic Shop, nine highway maintenance districts, Aeronautics, Rail, and Public Transit. The Operations Division's pavement management, right-of-way, engineering, and environmental needs are met by the Program Development Division. The Operations Division's strategic planning and State/Federal relations needs are met by the Policy & Planning Division. Operation's budget and financial needs are met by the Finance & Administration Division. The Operations Division's enforcement needs are met by the Motor Vehicles Division.

**Figure 1: Vermont Agency of Transportation Organization**

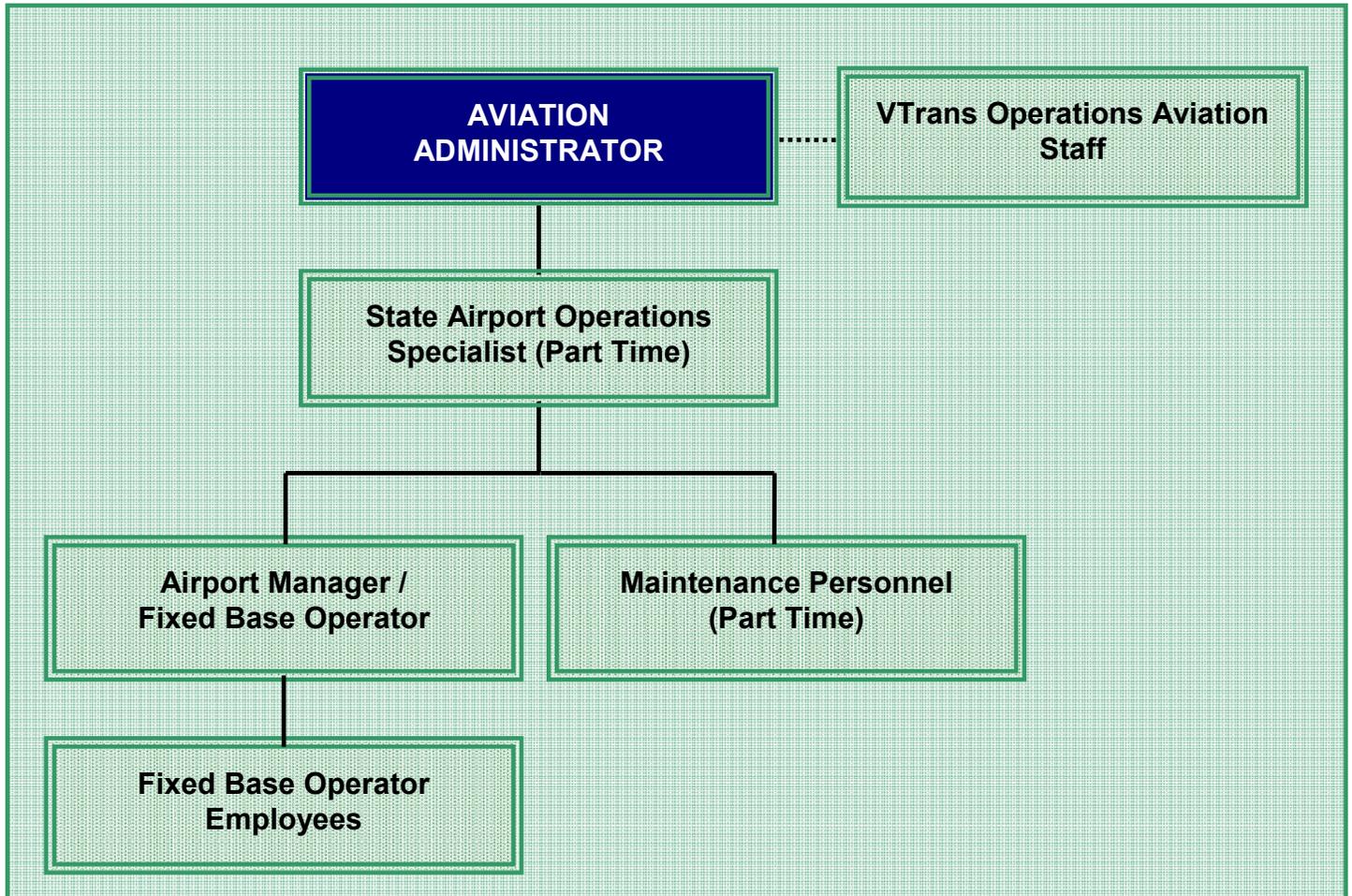


Source: Vermont Agency of Transportation

The Aeronautics program operates and manages the airport, administers airport consultant contracts and construction projects, and prepares capital improvement plans and annual State and Federal budget requests.

The VTrans Aviation Administrator manages all aspects of the aviation program. Also reporting to the VTrans Aviation Administrator are Airport Project Managers, an Airport Operations Specialist, an Airport Leasing Specialist, and a Planning Coordinator. Management at the airport is left to the Fixed Base Operator (FBO), Vermont Flying Service (VFS). VTrans maintenance staff is shared between the airport and highways to complete such tasks as grass mowing and snow plowing. An organizational chart for the airport operation is shown on Figure 2.

**Figure 2: Knapp State Airport Organization**



### 3. EXISTING AIRPORT CHARACTERISTICS

#### 3.1 Introduction

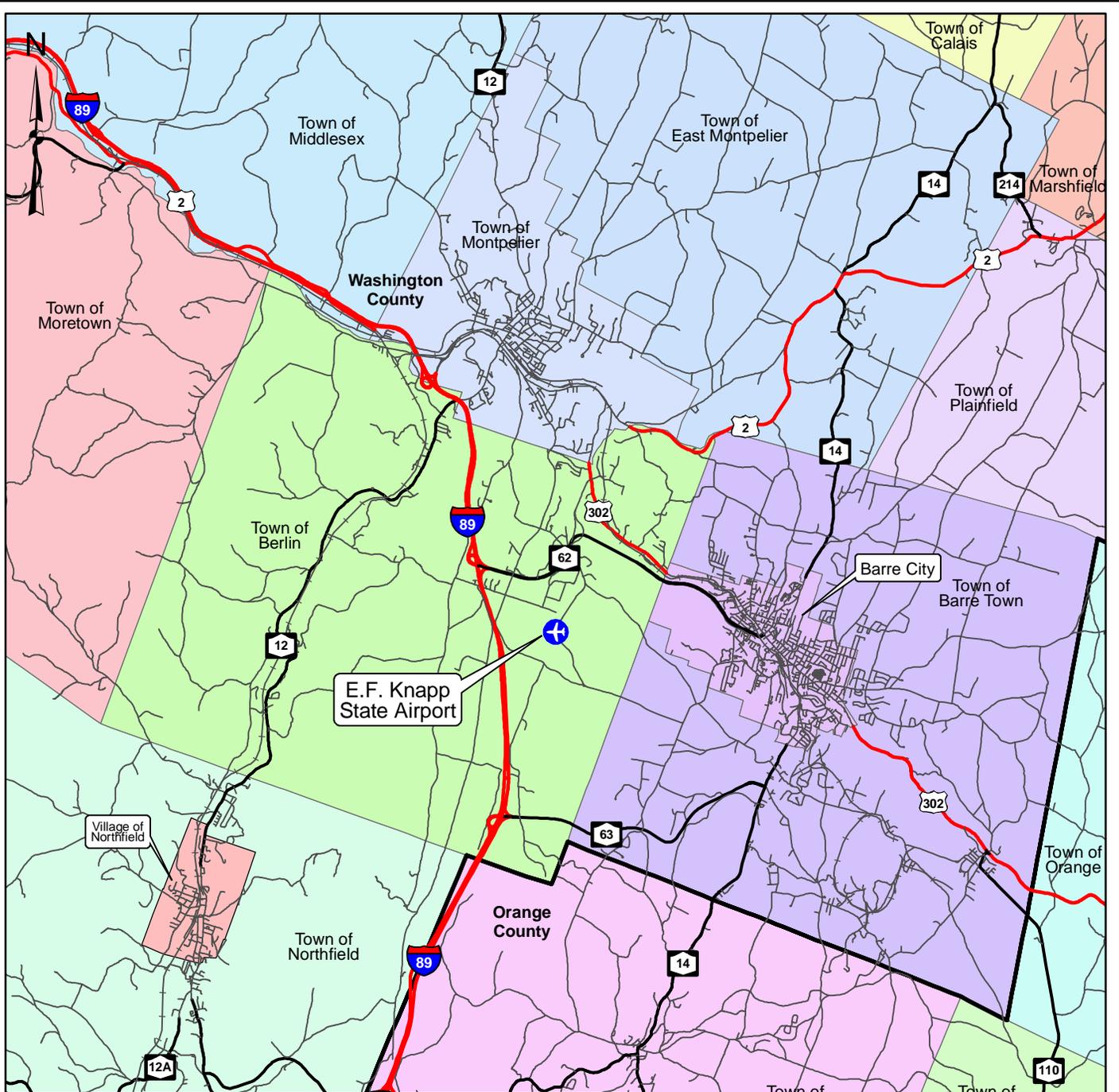
E.F. Knapp State Airport is located in south-central Washington County, west of Barre and south of Montpelier in the Town of Berlin. The Airport is encircled by Airport Road, Scott Hill Road, Dodge Road (State Route 302), and Comstock Road (State Route 62). Nearby Interstate Route 89 carries traffic from Interstate 91 to the southeast and from Burlington to the northwest. Traffic from the northeast can approach Knapp State Airport utilizing Interstate 91 and U.S. Route 2 to Interstate 89. The Airport location is shown in Figure 3.

#### Runways

The Airport has two runways: Runways 5-23 and 17-35. In the winter however, Runway 5-23 is not plowed and is closed when snow-covered. Both a wind indicator and segmented circle are available. Table 2 summarizes the runway characteristics. The current airport layout is shown in Figure 4.

	<b>Table 2: Runway Characteristics</b>			
	<b>Runways</b>			
	5	23	17	35
<b>Airport Reference Code</b>	B-II		B-II	
<b>Length</b>	4,022'		5,002'	
<b>Width</b>	100'		100'	
<b>Pavement Condition</b>	Fair		Good	
<b>NAVAIDS</b>				
<b>ILS</b>	No	No	ILS/LOC	No
<b>VASI</b>	No	No	No	No
<b>REILs</b>	No	No	No	Yes
<b>MALSR</b>	No	No	1400'	No
<b>PAPI</b>	No	No	4-light on left	No
<b>Marking</b>	Visual		Precision	Non-Precision
<b>Lighting</b>	Medium Intensity Runway Lights		Medium Intensity Runway Lights	
<b>Touchdown Point</b>	Yes, no lights		Yes, no lights	
<b>Runway Turn-Around</b>	0'	0'	150'	150'
<b>Gross Weight Limitations</b>	Single Wheel: 30,000 lbs Double Wheel: 46,000 lbs.		Single Wheel: 31,000 lbs. Double Wheel: 70,000 lbs.	

Sources - AirNav, January 2008 (<http://www.airnav.com/airport/mpv>)  
FAA Airport Master Record, as of April 2008



**REGIONAL LOCATION**



**E.F. KNAPP STATE AIRPORT  
WASHINGTON COUNTY, VERMONT**

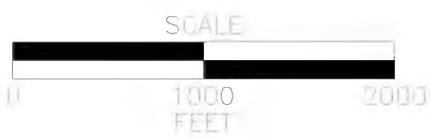
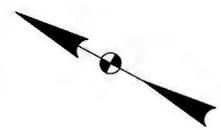
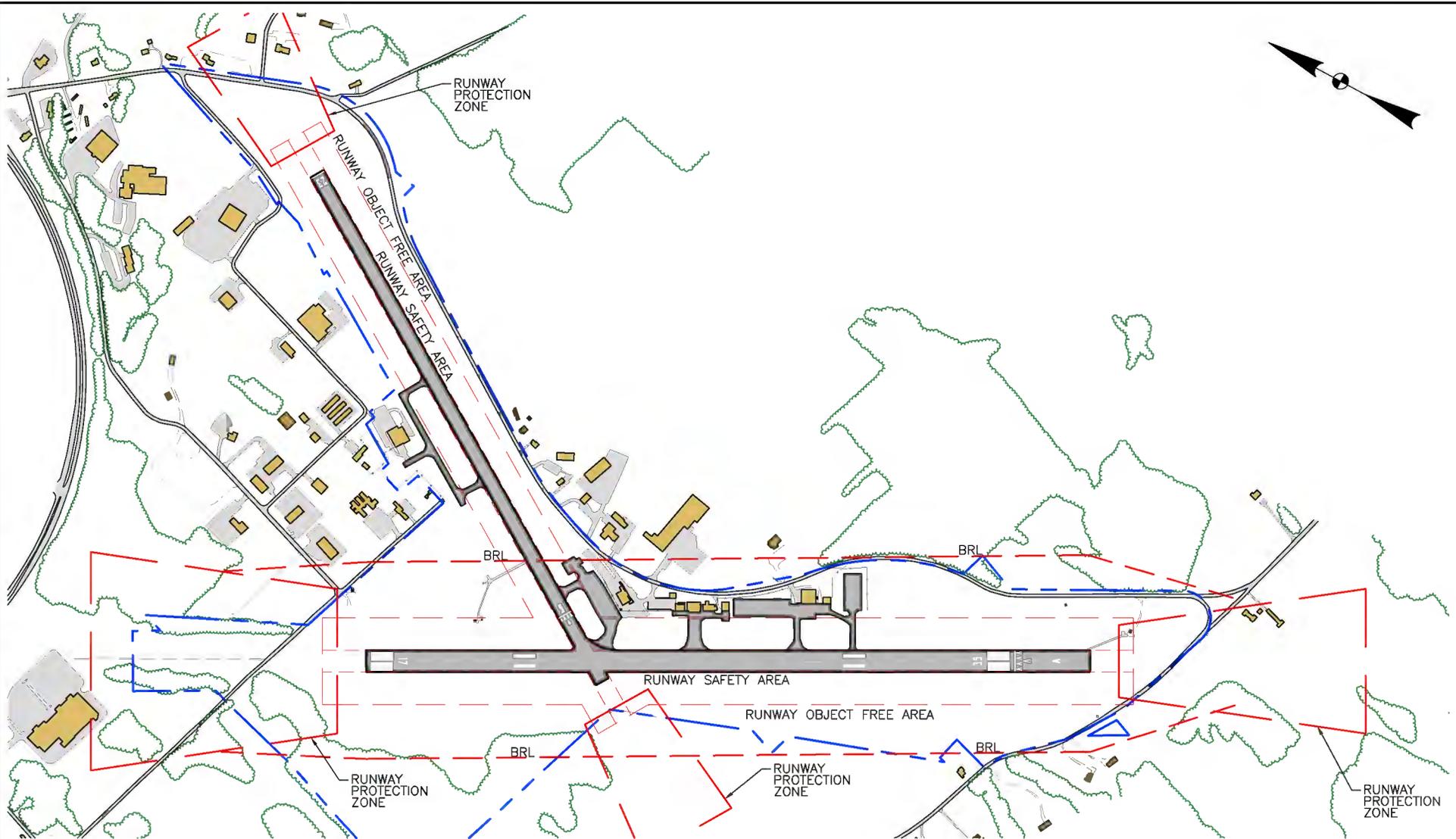
**LOCATION MAP**

SCALE: AS SHOWN	DATE: MARCH 2008	FIGURE: 3
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**McFarland Johnson**  
in association with  
**R.A. Wiedemann & Associates, Inc.**

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E.F. KNAPP STATE AIRPORT WASHINGTON COUNTY, VERMONT		
<b>EXISTING LAYOUT</b>		
SCALE: 1" = 1,000'	DATE: FEBRUARY 2009	FIGURE: 4
 <b>Mfarland Johnson</b> in association with <b>R.A. Wiedemann &amp; Associates, Inc.</b>		

## Taxiways

Knapp State Airport also has an extensive taxiway system. There are presently six taxiways at the airport. Five of the taxiways are stubs, and one is a partial parallel taxiway along Runway 5-23. Table 3 discusses the various taxiway characteristics.

<b>Table 3: Taxiway Characteristics</b>						
<b>Taxiways</b>						
	<b>AA</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>F</b>
<b>Length</b>	210'	210'	210'	220'	150'	1553'
<b>Width</b>	35'	35'	80'	60'	50'	35'
<b>Pavement Condition</b>	Fair	Fair	Good	Fair	Poor	Good
<b>Lighting</b>	None	None	None	None	None	None
<b>Type</b>	Stub	Stub	Stub	Stub	Stub	Partial Parallel
<b>Location / Function</b>	Connects Runway 17-35 to Apron C	Connects Runway 17-35 to Aprons B & C	Connects Runway 17-35 to the FBO Maintenance Hangar	Connects the Runway intersection with the Terminal Apron	Connects Runway 5-23 to the Terminal Apron	Near hangars along Runway 5-23

Source: 2000 Airport Master Plan Update, Page 4, as updated by VTrans.

## Airport Reference Code

Airport design standards are described in AC 150/5300-13, *Airport Design*. This document provides criteria for grouping of aircraft into Airport Reference Codes (ARC). The ARC consists of a letter representing an Aircraft Approach Category (based on the approach speed, or the stall speed multiplied by 1.3), and a number representing an Airplane Design Group (based on wingspan or tail height, whichever is most demanding). These groupings are presented in Table 4.

Airports are designated with a specific ARC based on the critical aircraft that uses the airport for a substantial number of operations (at least 250 takeoffs or 500 operations per year). There are a variety of aircraft types with different ARC's based at Knapp. The major users of the airport include the Cessna Citation I-III; the Gulfstream II-IV; the Beechcraft King Air; and the Beechcraft B-99. Other types of aircraft based at Knapp State Airport and regular users of the field include the Piper Comanche, the Piper Seneca, the Cessna 180, the Cessna 182, the Mooney, and the Beech Bonanza A36<sup>4</sup>.

<sup>4</sup> 2000 Airport Master Plan Update, page 10.

<b>Table 4: Airport Reference Code (ARC)</b>		
<b>Aircraft Approach Category</b>	<b>Approach Speed</b>	
A	Less than 91 knots	
B	91 knots or more but less than 121 knots	
C	121 knots or more but less than 141 knots	
D	141 knots or more but less than 166 knots	
E	166 knots or more	
<b>Airplane Design Group</b>	<b>Wingspan</b>	<b>Tail Height</b>
I	Up to but not including 49 feet	Up to but not including 20 feet
II	49 feet up to but not including 79 feet	20 feet up to but not including 30 feet
III	79 feet up to but not including 118 feet	30 feet up to but not including 45 feet
IV	118 feet up to but not including 171 feet	45 feet up to but not including 60 feet
V	171 feet up to but not including 214 feet	60 feet up to but not including 66 feet
VI	214 feet up to but not including 262 feet	66 feet up to but not including 80 feet

Source: FAA Advisory Circular (AC) 150/5300-13 CHG 12, *Airport Design*, Page 1.

Currently Knapp State Airport has an Airport Reference Code (ARC) of B-II. This is in-line with the Vermont guidelines for a Regional Service Airport<sup>5</sup>. However, it is inadequate for a National Service Airport, the designation currently assigned to Knapp. The appropriate ARC for a National Service Airport is C-II. The Cessna Citation III was designated as Knapp State Airport’s design aircraft in the most recent Master Plan Update<sup>6</sup>. The relevant specifications of the Cessna Citation III are a wingspan of 53.5 feet and an approach speed of 114 knots, which makes it a B-II aircraft for planning purposes. In addition, the most frequent user of the airport is the Beechcraft B-99, also categorized as a B-II aircraft. This reinforces the ARC of B-II for the airport.

### Runway Protection Zones

The Runway Protection Zone (RPZ) is a controlled area that is generally kept clear of concentrated activity and development. The FAA recommends property acquisition and/or lease easements within the RPZ to assure necessary control over these areas. An RPZ is a trapezoidal area that begins 200 feet from each runway end that extends and diverges based on the type of aircraft that the facility expects to serve, and by the approach visibility minima for each runway end. Table 5 describes the RPZ requirements for all runway ends at the Airport. At Knapp State Airport, the Runway 17 RPZ is mainly on airport property and controlled by the airport. However, a section of the RPZ near its outer end contains Shaw’s Supermarket and Staples.

<sup>5</sup> Vermont Airport System and Policy Plan, Appendix D, Table D-1

<sup>6</sup> Airport Master Plan Update, page 14.

Places of gathering, including commercial retail outlets, are not permitted inside the RPZ and pose a threat to employees and consumers at the retail stores.

Runway	Length (feet)	Inner Width (feet)	Outer Width (feet)	RPZ Acres
5	1,000	500	700	13.770
23	1,000	500	700	13.770
17	1,700	1,000	1,510	48.978
35	1,700	500	1,010	29.465

Source: McFarland Johnson, 2008.

### **3.2 Existing Aviation Activity**

At most airports like Knapp, private individuals that utilize the airport for discretionary uses such as recreational flying, flight training, transportation, and non-corporate business flying, generate the majority of aviation activity. The April 2003 report on *The Economic Impact of Vermont's Public-Use Airports* stated that 33% of the operations at Knapp were itinerant<sup>7</sup>.

According to the 2007 Vermont Airport System & Policy Plan Update, there were 60 aircraft based at the airport. This figure included 55 single engine aircraft and 5 multi-engine aircraft. The Airport had 32,000 operations in 2005. Thirty-one thousand (31,000) of these operations were general aviation operations while the remaining 1,000 were military.

The airport manager indicated in a February 2008 interview that the airport saw approximately 20,000 to 25,000 operations per year. This estimation would be lower than the projected operations in the Vermont Airport System & Policy Plan, but higher than those in the Airport Layout Plan Update. An acoustical counter has been placed on the runway to count the number of operations at the airport, however those figures are unavailable.

#### **Capacity**

Knapp State Airport is a non-towered airport, which results in aircraft operations not being recorded. This also severely limits the amount of information available regarding aircraft trips, passengers, and destinations. VTrans uses aviation acoustical counters to track aircraft movement.

According to the 2000 Master Plan Update, the Annual Service Volume (ASV) is 184,000, with 98 hourly visual flight rule (VFR) landings and 59 hourly instrument flight rule (IFR) landings. The FAA recommends planning for additional capacity when an airports capacity reaches 60% of the ASV. With an estimated increase in operations to nearly 37,000 in 2025, the threshold of 60% of the ASV will not be met. Therefore, capacity constraints will not be a factor in the growth of the airport.

<sup>7</sup> The Economic Impact of Vermont's Public Use Airports, April 2003, page 76.

### 3.3 Existing Landside Facilities

Landside and aviation support facilities support the many activities and services involved in storing and maintaining aircraft and in processing aircraft and passengers before and after use of the airside facilities. Typical general aviation landside facilities include aircraft hangars and aprons, terminal buildings, aviation fuel facilities, parking lots, and access roads. Well-maintained and affordable landside facilities are important to an airport's efficient operation and success. Landside facilities and services are discussed in detail on the pages to follow:

#### Automobile Parking

The airport currently has four parking lots with 106 parking spaces. The main lot is centrally located north of the airport terminal building. This lot has 50 paved parking spaces. The second lot is south of the terminal building at the Vermont Flying Service (VFS) Hangar #2. This lot has 18 paved parking spaces. The third lot is at the VFS Hangar #1. There are 10 paved parking spaces in this lot. Access to all three parking lots is provided via the two-lane paved Airport Road. In addition, with access provided by Industrial Lane and Comstock Road, there are 28 parking spaces at the Mac Stevens Hangar. Parking for the individual hangars is also available adjacent to the buildings.

#### Terminal

The terminal building at Knapp State Airport is located east of the intersection of Runways 5-23 and 17-35. The terminal is a one-story brick and granite structure. It has 4,680 square feet of floor space. The building includes space for the airport managers office, Sambel's Restaurant, a maintenance area for the Federal Aviation Administration (FAA), a pilot waiting room, a conference room, and public restrooms. A private tax accountant also leases an office in the terminal. In the past, the terminal housed an FAA Flight Service Station, a public waiting area, and space for an airline, Air New England.



#### Aprons

There is a total of 144,260 square feet of overall apron area located in three aprons at Knapp State Airport. The largest apron is the Terminal Apron, which is 77,500 square feet. The Terminal Apron is considered parking for transients. The second apron is 37,800 square feet and is known as Tie-Down Apron B. This apron is located near Taxiway A and has 16 paved tie-

down spaces. The final apron is 31,400 square feet and is known as Tie-Down Apron C. This apron is located near Taxiway AA and has 12 paved tie-down spaces.

## Hangars

The State of Vermont owns and operates three hangars at Knapp State Airport. The State Hangar is 5,220 square feet and is used for storage of aircraft and maintenance equipment. It is located just east of the Taxiway B end. The second hangar is the State Maintenance Hangar. This hangar is 1,224 square feet and is used to store VTrans Pavement Research Vehicles. The hangar is located southeast of the airport terminal and to the north of VFS Hangar #2. The final hangar is 6,310 square feet and is the administrative offices and garage for Vermont Agency of Transportation District 6. This hangar also houses State aircraft. While the facility is located on airport property, the offices in this hangar and the services provided are not solely for the Airport. This hangar is located off Taxiway F and is accessible from the industrial park to the north of the airport. The hangar is shared with the Mac Stevens Memorial Hangar.



In addition to the State operated hangars, the FBO leases one hangar at the Airport for the storage and maintenance of aircraft.

## Fuel Farm

VTrans owns aircraft fuel storage tanks with a capacity of 10,000 gallons each of Jet A and 100LL Avgas. This relatively large capacity allows the airport to take advantage of bulk fuel purchase discounts. These underground storage tanks were installed at the airport in 1997. While owned by VTrans, the fuel farm is operated by the VFS. Avgas is available 24 hours per day, seven days per week from the self-service fuel pumps located on the aircraft apron west of the Terminal. Jet-A fuel is only available full-service during normal VFS business operations.

## Aircraft Rescue and Fire Fighting (ARFF)

As a general aviation airport with no scheduled passenger traffic, Knapp State Airport does not have Aircraft Rescue & Firefighting crews on airport property. The airport is served by the Town of Berlin Fire Department, which would respond to all emergencies at the airport. The fire department, approximately 2.5 miles from the terminal, consists of all volunteers. Ambulance service to the airport is provided by Barre Town Ambulance, which bases an ambulance at the nearby fire station.

## **Airfield Maintenance**

Maintenance at Knapp State Airport is accomplished by the Vermont Agency of Transportation District 6, whose main office is on Airport property. Tasks undertaken by District 6 personnel include the removal of snow and ice from the runway as well as Airport grounds maintenance.

## **Deicing**

VFS maintains one deicing pump at the airport. However, the airport manager indicates that less than three planes are deiced by VFS annually. Wiggins Airways, an air cargo operator that utilizes the airport, does use the deicing machine regularly; however the agent is paid for by Wiggins and applied by the pilot. VFS provides use of the machine to Wiggins free of charge.

## **Security**

The airport has a partial fence and vehicle access is controlled. However, there are areas where persons and animals could enter airport property through brush. While the manager did not indicate that vandalism has been a problem at the airport, a fully-secure airport would be in the best interests of all users at the airport. In addition to the fencing, Knapp State Airport also has flood lights near the terminal building as well as in the tie-down area.

### **3.4 Existing Tenants & Users**

There are several tenants at the Knapp State Airport. Descriptions of several of these lessees are below. A listing of leases at the Airport is provided in Appendix A.

#### **Vermont Flying Service**

The Fixed Base Operator (FBO) at Knapp is the Vermont Flying Service (VFS). VFS is a full service FBO offering flight instruction, fueling, maintenance, apron and hangar space, as well as air taxi service. The FBO supplies preheating, deicing, and starting equipment. VFS does heavy maintenance such as air frame and power plant repairs. The FBO also provides all fuel services on the airport.

VFS leases one hangar at Knapp from VTrans and owns two other hangars on the Airport. VFS leases the State Hangar at the Airport, which is a 5,220 square foot hangar located south of the terminal. VFS Hangar #1 is a 9,500 square foot hangar south of the terminal and near Taxiway AA and Hangar #2 is a 2,400 square foot hangar just south of the terminal near Taxiway B and adjacent to the State Hangar. The FBO office, in Hangar #2, is open daily from 8:00am until 5:00pm. VFS also operates a classroom for pilot instruction adjacent to Hangar #1.

## Wiggins Airways

United Parcel Service (UPS) maintains cargo operations at the Knapp State Airport. These services are provided under contract by Wiggins Airways, who flies Beechcraft B99 aircraft into the airport once per day Monday through Thursday in the early morning. Cargo is transferred from the aircraft to a truck at a designated space on the terminal apron. According to the Master Plan Update, UPS averages nearly 2,400 pounds of freight per trip. In addition to the regular air cargo operations, UPS operates a land distribution center on a parcel that adjoins the



airport. The company has attributed the ease of moving packages from air to land at the airport as a factor behind its location<sup>8</sup>. The airport manager indicated that FedEx has inquired previously about cargo service to the airport, likely also through Wiggins. However, that service has not come to fruition. FedEx Freight operates a distribution center in the industrial park adjacent to the airport.

## Civil Air Patrol

While the headquarters for the State of Vermont Civil Air Patrol (CAP) can be found at the Burlington International Airport, the CAP does not have hangar space at that airport. Their main hangar space can be found at Knapp State Airport. The Civil Air Patrol provides search and rescue capabilities out of the airport as well as training operations. CAP is also primarily responsible for emergency response for aircraft incidents. Civil Air Patrol has meetings at the airport and holds some programs for local youth in an effort to introduce them to flying.

## Corporate Aviation

A variety of companies utilize Knapp State Airport for business-related travel on a regular basis. Historically, Vermont Castings and Bombardier were major users of the Airport. However, there are no longer any operations by these companies. Currently, National Life maintains a corporate hangar at the airport. Other companies that utilize the airport include Northeast Utilities, Castlerock Properties, Waitsfield Telecom, Progressive Plastics, and Blue Cross Blue Shield.



<sup>8</sup> The Economic Impact of Vermont's Airports, Page 75.

### **3.4 Airport Development Plan**

#### **Development Considerations**

Development considerations at the airport are mainly physical in nature. Descriptions of each consideration follow.

##### ***Runways & Taxiways***

The existing Runway 17-35 is 5,002 feet in length. The present length of the runway is adequate for small aircraft; but not for all larger aircraft, including some medium-sized business jets including the Beech Jet Challenger 300, IAI Galaxy, the Raytheon Hawker 800, and the Dessault Falcon 900C, that might wish to use the facility. The Master Plan Update indicates that only 75% of large planes, at 60% useful capacity, would be able to land at Knapp. These “large planes” include the Cessna Citation III, the airport’s design aircraft. While Citations, as well as other business jets, utilize the airport regularly, the length of the runway results in weight penalties, as the aircraft must either limit the number of passengers, the amount of fuel they carry, or both.

Knapp State Airport also lacks a full parallel taxiway to either runway. There is a partial parallel taxiway (Taxiway F) along the seasonal Runway 5-23 in the vicinity of the Mac Stevens Hangar as well as a partial parallel taxiway along Runway 17-35 between Taxiways A & B. The lack of a full parallel taxiway can be both dangerous, especially in a non-towered airport such as Knapp State Airport, and expensive in both fuel and time, as one aircraft must either wait on the apron or circle the Airport aloft while another clears the runway.

The Airport manager also has indicated that plans are underway for the shortening of Runway 5-23 by 1,000 feet. This will make the total length of the crosswind runway 3,003 feet. The manager indicated that this was being done in an effort to eliminate crossing of runway traffic to limit the possibilities of an accident.

##### ***Aprons, Aircraft Parking and Hangars***

The Airport Master Plan Update called for an additional 72,360 square feet of apron space at Knapp State Airport. This included an immediate 11,700 square foot addition to apron space at the airport to meet present demand. By 2008, another 5,400 square foot addition was recommended, and by 2018, another 7,020 feet would be needed. In addition, it has been noted that there will be a need for new hangars as use continues to rise.

##### ***Land Use***

Land use in the vicinity of any airport will have an effect on the type of development that can occur at an airport. The zoning on airport property and in the near vicinity is Light Industrial. According to the 2005 Town of Berlin Zoning Regulations, there are many different permitted

and conditional types of businesses that can operate in the Light Industrial zone. A list of uses can be found in Table 6<sup>9</sup>.

<b>Table 6: Uses in the Airport District</b>		
<b>Permitted Uses</b>		<b>Conditional Uses</b>
Accessory Dwelling	Indoor & Outdoor Recreation	Hazardous Waste Management Facility
Accessory Use	Light Manufacturing & On-Premises Product Related Retail Sales	Licensed Child Care
Accessory Structure	Machinery & Transportation Equipment Sales, Service, & Repair	Motel
Agricultural & Forest Use	Mine, Quarry, Sand, or Gravel Pit	One Family Dwelling
Airport	Nursing Home	Public Utility
Animal Hospital	Office Building	Religious Institution
Automobile Sales & Service	Research of Laboratory Facility	Restaurant/Bar
Business Services	Retail Store	Solid Waste Management Facility (excluding Transfer Stations)
Contractor's Yard	Service & Repair Facility	Telecommunications Facility
Freight & Trucking Terminal	State or Municipal Building or Facility	Transmission Lines
Gasoline Station	Warehouse or Wholesale Use	Two Family Dwellings

Source: Town of Berlin Zoning Regulations, June 2005, Pg. 13.

Presently, there are many different businesses in the vicinity of the airport. To the northwest of Runway 23 is a large industrial park with over 100 acres of land. One business in the park is the local distribution center for United Parcel Service, which also utilizes the airport with daily cargo deliveries and shipments. Also near the airport are the Berlin Mall; Shaw's Plaza; the Central Vermont Medical Center; two motels; an elementary school; and other shops and businesses along Airport Road. The 2000 Master Plan Update indicated that the area has evolved into Central Vermont's fastest growing industrial and commercial area. To the south of Runway 35, several residential-use properties can be found. These homes are not densely situated. In addition, the airport manager noted that there are plans for a senior citizens community off the Runway 35 end.

### ***Environmental & Terrain Considerations***

Knapp Airport is located in an area with varying terrain. Further development of the airside, landside, and non-aviation related uses will be difficult with the changing slopes. Seven distinct wetland areas were found in a 1998 wetland delineation. The wetlands are found in various parts of the airport including south of Runway 23, south of the hangars, east of Runway 17-35, and south of Runway 35. Other wetlands were found off airport property to the south of Scott Hill Road and to the east of Dodge Road.

<sup>9</sup> Town of Berlin Zoning Regulations, June 2005, Pg. 13.

Several animals on the state and federal endangered species lists have been sighted at Knapp State Airport. These animals include the upland sandpiper, the common loon, the pied billed grebe, bald eagles, peregrine falcons, the bobolink, savannah sparrows, eastern meadowlarks, and killdeer. While these animals have been noted on airport property by the Vermont Non-Game & Natural Heritage program, it is believed that future development on airport property should not be impacted<sup>10</sup>.

## **Development Plan**

The current Master Plan Update identifies several improvements that would need to occur within 20 years of the completion of the report for the airport to keep up with its projected growth. The following improvements were recommended<sup>11</sup> (upgrades that have occurred since the 2000 Master Plan was completed are included in parentheses):

### ***Airside Recommendations***

- Reconstruction of all runways (Runway 17-35 reconstructed in 2001)
- Constructions of a new stub taxiway to the fuel apron (completed), a new parallel taxiway along Runway 35, a new taxiway to Runways 5 & 17, and complete the parallel taxiway to Runway 23
- Acquisition of easements inside the Runway 17 Building Restriction Line
- Acquisition of easements inside the Runway 5 RPZ
- Removal of Ground Obstructions in the primary surface of Runway 35
- Reconstruction of Taxiways A, B, & C (completed)

### ***Landside Recommendations***

- Two-stage apron expansion (18,000 square feet and 40,500 square feet)
- Construction of 2 corporate hangars
- Construct a 9,600 square foot T-hangar north of Runway 5-23
- Reconstruction of the terminal apron
- Purchase of snow removal and mowing equipment
- Install 3,200 square feet of perimeter fencing near Comstock Road and 3,000 square feet near Airport Road (completed)
- Develop an airport campground
- Add high mast lighting in the terminal area
- Acquire 12 acres of land in adjoining industrial park for future airport development

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<sup>10</sup> Master Plan Update, 2000, pages 5-16 – 5-17

<sup>11</sup> Master Plan Update, 2000, pages 8-2 – 8-3.

## Other Developments/Improvements

A number of additional improvements for the Knapp State Airport are recommended in the 2007 Vermont Airport System & Policy Plan:

- Extension of Runway 35 by 498 feet
- Installation of Medium Intensity Taxiway Lights
- Construction of 29,835 square feet of covered storage
- Addition of 51 parking spaces
- Update of the Airport Layout Plan (2010)
- Civil Air Patrol Wing Headquarters

While the previously mentioned projects have been proposed through plans, due to funding availability and priorities, few have yet to be programmed for funding by the Vermont Agency of Transportation. The fiscal-year 2009 to 2013 VTrans Airport Capital Improvement Program indicates seven projects (three for Knapp and four statewide) that are planned to occur or commence at the airport within that timeframe. The projects include:

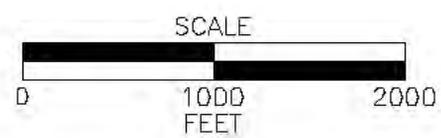
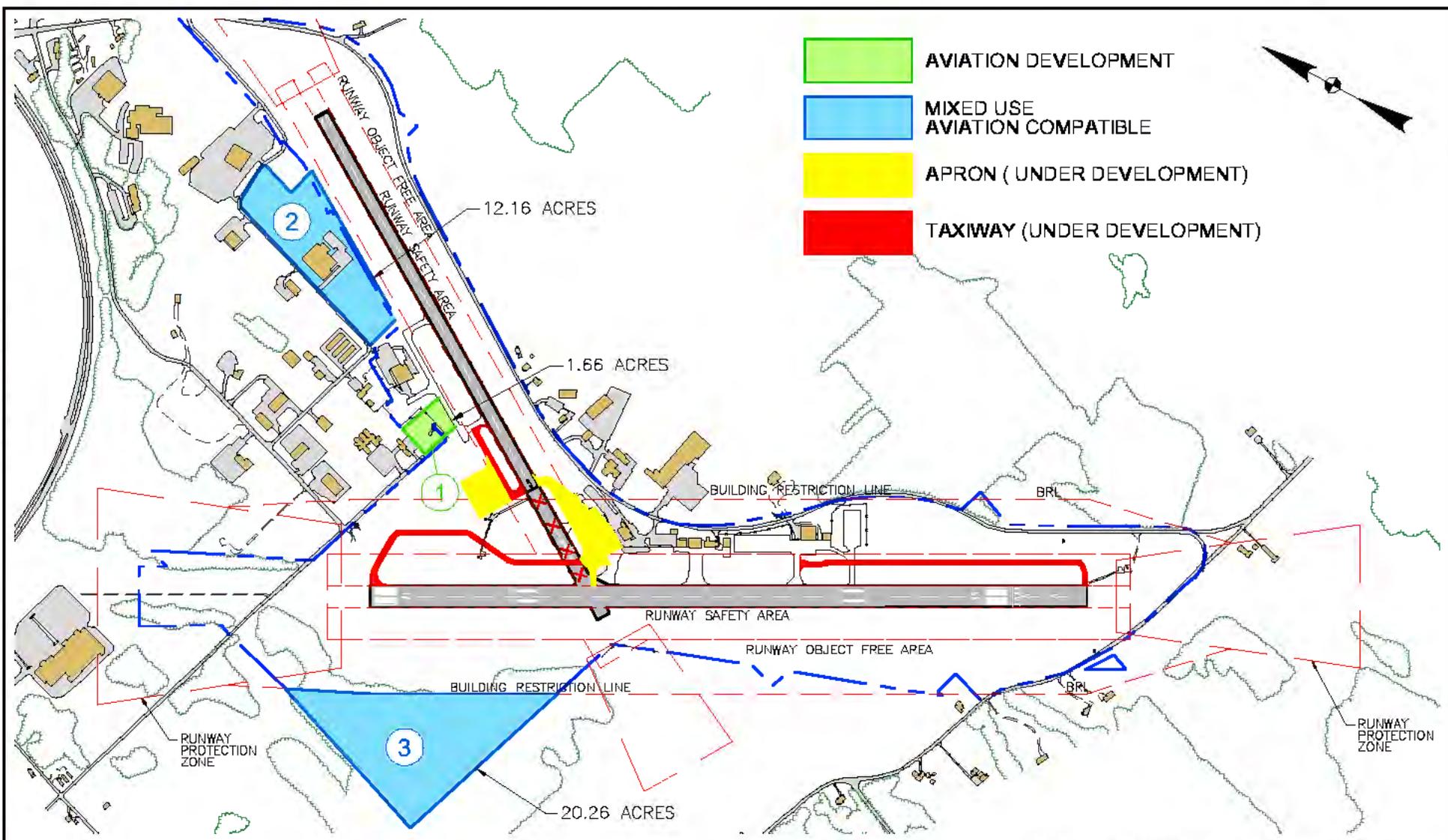
- The reconfiguration of Runway 5-23
- Reconstruction of the terminal apron
- Reconstruction of Runway 5-23
- A statewide pavement maintenance plan.
- The completion of statewide business plans.
- The completion of statewide aviation planning items.
- The statewide introduction of Localizer Performance with Vertical Guidance (LPV) approach patterns.

E.F. Knapp State Airport was awarded funds under the 2009 American Recovery & Reinvestment Act (ARRA) to construct airport improvements. A variety of improvements are scheduled to begin in 2009, including the reduction of Runway 5-23 to 3,000 feet in length and 75 feet in width, the construction of a parallel taxiway adjacent to Runway 17-35, the construction of an additional partial parallel taxiway to Runway 5-23, the reconstruction of the terminal apron, and the construction of a new apron near the new Runway 5 end.

The Development Plan for the airport is illustrated on Figure 5. The Development Plan illustrates a realistic plan of airside and landside improvements, given the current economic condition at Knapp State Airport combined with a lack of available space. This Development Plan illustrates potential locations for airside, landside, and aviation-support facilities and is discussed in terms of two development areas:

**Area 1**, located on-airport property to the south of the Mac Stevens Hangar and west of Runway 23. This area is along the present Taxiway F and is just north of an area proposed in the Master Plan Update for a new apron. This site is accessible from the industrial park and would be suitable for additional apron space or new hangar development.

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E.F. KNAPP STATE AIRPORT WASHINGTON COUNTY, VERMONT		
<b>DEVELOPMENT PLAN</b>		
SCALE: 1" = 1,000'	DATE: FEBRUARY 2010	FIGURE: 5
 <b>McFarland Johnson</b> in association with <b>R.A. Wiedemann &amp; Associates, Inc.</b>		

**Area 2**, located off airport property, northeast of the existing partial parallel taxiway and parallel to Runway 5-23, was proposed in the 2000 Master Plan Update as land for the airport to acquire for future development. A large portion of the property has been developed for non-aviation industrial uses, including a distribution center for Calmont Beverage and a facility for a local lumber company. In the future, if these sites were to become available for purchase, the State should consider acquiring the land for aviation-related development.

**Area 3** is located on airport property and is west of the Runway 17 end. According to the 2000 Master Plan Update, this site is covered with dense trees and has some significant elevation variations. Development in this area would not be conducive to aviation uses due to these elevation variations, as well as the location of the site relative to other airfield operations, including the FBO and the fuel farm. Development on this site, approximately 20.26 acres in size, would require the addition of access roads from either Comstock Road or Scott Hill Road.

### **Airport Capital Improvement Program**

Knapp State Airport, and all public airports in Vermont, is eligible for assistance in funding capital projects through the FAA Airport and Airway Improvement Program (AIP). As an eligible participating airport in the AIP program, the Airport is required to prepare, update annually, and submit to FAA a five-year Airport Capital Improvement Program (ACIP) to apply for federal grants. Airport Improvement Program grants typically fund at least 95 percent of development costs for eligible projects.

AIP eligible projects include the planning, design, and construction of projects associated with public use non-revenue generating facilities and equipment of the Airport. Typical AIP eligible projects include: Airport Master Plans, Airport Layout Plans; land acquisition and site preparation; airfield pavements, e.g. runways, taxiways, and transient aprons; lighting and navigational aids; safety, security, and snow removal equipment; public use passenger terminal facilities that are not leased for exclusive use; and obstruction identification and removal. Items not typically eligible for AIP funding include revenue generating facilities such as hangars (at primary airports), automobile parking facilities, and private-use areas of terminal facilities. Fuel farms and hangars are potentially eligible for funding at non-primary airports<sup>12</sup>. The highest funding priority according to FAA's rating procedure is generally given to those projects that are safety-related such as runway safety area improvements, obstruction removal, and facility improvements to meet current FAA Airport Design Standards. While the State of Vermont has received AIP funds in the recent past for statewide projects that have included some improvements at Knapp State Airport, the airport last received a grant for a specific project in fiscal year 2004.

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<sup>12</sup> Per Vision 100-Century of Aviation Reauthorization Act, "The Secretary may decide that the costs of revenue producing aeronautical support facilities, including fuel farms and hangars, are allowable for an airport development project at a nonprimary airport if the Government's share of such costs is paid only with funds apportioned to the airport sponsor under section 47114 (d)(3)(A) (nonprimary entitlement) and if the Secretary determines that the sponsor has made adequate provision for financing airside needs of the airport."

The current State-wide Airport Capital Improvements Program (ACIP) for FY 2007-2011 shows several projects at Knapp divided into two phases. Phase I is for the construction of the Parallel Taxiway to Runway 17-35 and for the expansion of the terminal apron. Phase II continues construction of the parallel taxiway and includes the reconstruction of Runway 5-23. These projects are considered the 10<sup>th</sup> and 11<sup>th</sup> highest priority for the State.

### **Local/Private Funding**

Local funding of the airport is achieved via a budget determined by the Vermont Agency of Transportation, which is in turn funded by the State of Vermont. Annual budget amounts for the State-operated airports, including Knapp, are determined prior to the beginning of the State's fiscal year on July 1<sup>st</sup>.

Private investors are also a potential source of funds for revenue producing development. Tenants and/or investors may finance the construction of facilities from which they derive income. While direct revenues to the airport are usually limited to the lease charges for the land underlying the facilities, the local sponsor does not need to obtain its own funding for these improvements. Additionally, the increased activity resulting from airport improvements often increases the number of based aircraft or operations, which in turn generates additional revenue associated with fuel sales and other aviation services. Examples of private investment at airports include aviation business buildings for fixed based operators, fuel facilities, and non-aviation commercial development.

In the past, private investment at Knapp State Airport has been limited to construction of small individual hangars. VTrans has adopted the practice of providing ground leases for space upon which the lessee may construct their own structure. This is a strategy that many airports of all sizes have chosen in lieu of constructing hangars to lease themselves. This practice results in the construction of facilities and the growth of the airport, but lessens the control that the airport has over its property and reduces the airport's future flexibility to grow and change as needs and/or technology change. Depending on the amount of control the airport gives itself in the lease, this strategy may result in the construction of facilities that are not attractive or that are not maintained to the level that airport management would prefer.

## **3.4 Market Analysis**

### **Airport Service Area**

Figure 6 illustrates the airport service area (ASA) and other nearby public-use airports. A 30-mile circle is generally assumed to determine the ASA. The Knapp State Airport ASA and several other comparable public use airports are listed in Table 7. In addition to these facilities, there are a number of privately owned, private use airports within the 30-mile market area, as well as a number of heliports and a STOLport, utilized by aircraft designed for landing and taking off from short airstrips<sup>13</sup>.

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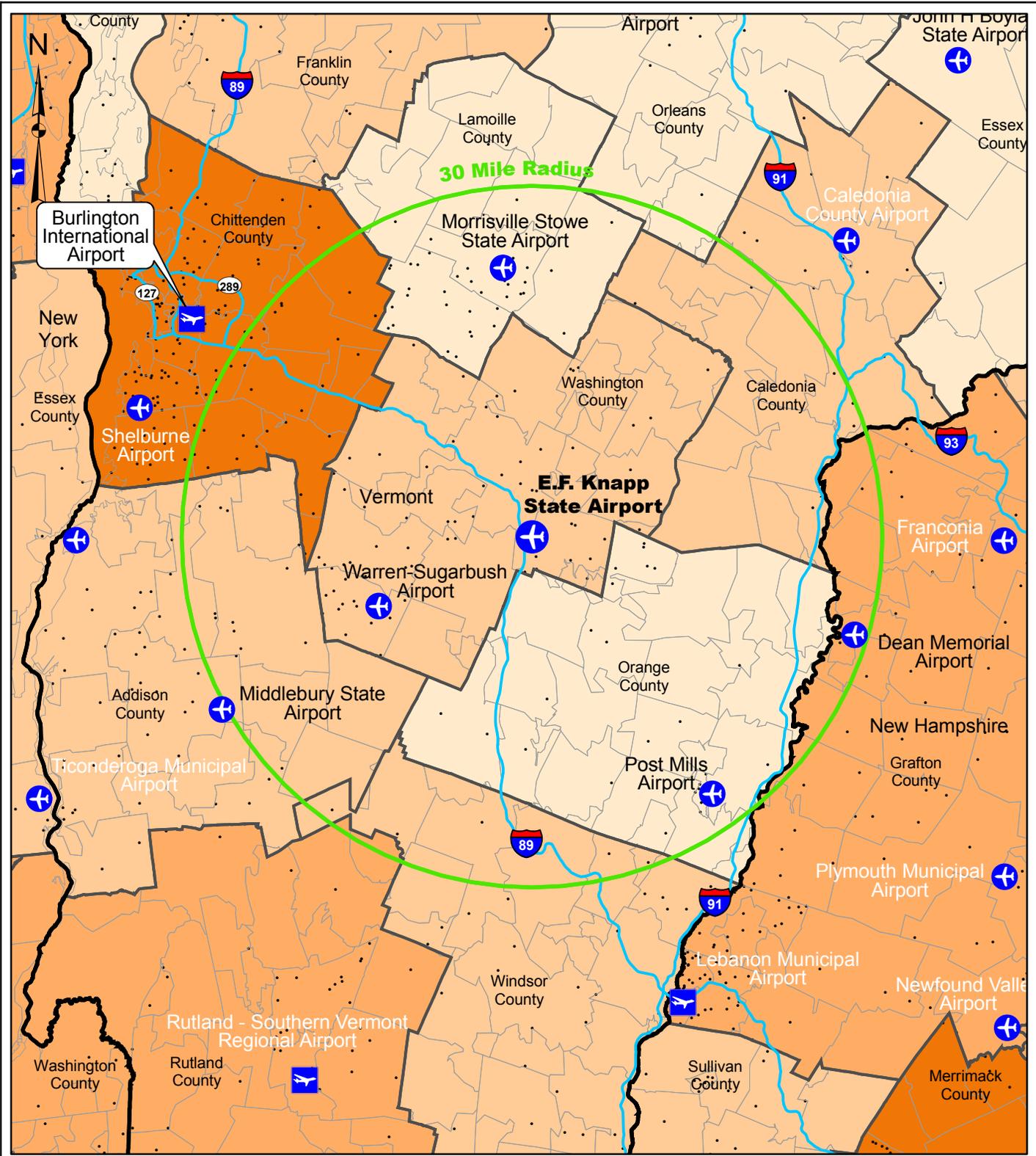
<sup>13</sup> Yourdictionary.com. <<http://www.yourdictionary.com/stol>>.

<b>Table 7: Airport Service Area &amp; Other Comparable Airports</b>						
<b>Airport</b>	<b>City &amp; State</b>	<b>Distance from Knapp</b>	<b>Primary Runway Length</b>	<b>NPIAS Designation</b>	<b>Ownership</b>	<b>Other</b>
<b>Airport Service Area</b>						
E.F. Knapp State	Berlin, VT	N/A	5,002 ft.	General Aviation	Public (State)	Scheduled cargo service provided by Wiggins Airways
Middlebury State	Middlebury, VT	30 miles	2,500 ft.	General Aviation	Public (State)	
Warren - Sugarbush	Warren, VT	14 miles	2,575 ft.	General Aviation	Private	
Morrisville – Stowe State	Morrisville, VT	23 miles	3,701 ft.	General Aviation	Public (State)	
Post Mills	Post Mills, VT	27 miles	2,900 ft.	General Aviation	Private	
Dean Memorial	Haverhill, NH	29 miles	2,511 ft.	General Aviation	Public (Municipal)	
<b>Other Comparable Airports</b>						
Adirondack Regional	Saranac Lake, NY	71 miles	6,573 ft.	Commercial Service – Non Primary	Public (Municipal)	Scheduled EAS passenger service provided by Cape Air
Concord Municipal	Concord, NH	76 miles	6,005 ft.	General Aviation	Public (Municipal)	
Pittsfield Municipal	Pittsfield, MA	111 miles	5,001 ft.	General Aviation	Public (Municipal)	
Waterville – LaFleur	Waterville, ME	125 miles	5,500 ft.	General Aviation	Public (Municipal)	

Source: McFarland Johnson, Inc, 2008

## Facilities

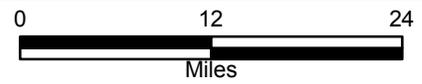
Table 8 provides a comparison of facilities at the airports. Nine of the ten airports have paved asphalt runways while one has turf runways. Of these airports, Adirondack Regional has the longest runway with 6,573 feet. Knapp State Airport has the longest runway in the ASA at 5,002 feet, over 1,300 feet longer than the next longest runway in the ASA at Morrisville-Stowe.



**Population by County**

- 0 - 30000
- 30001 - 60000
- 60001 - 90000
- 90001 - 120000
- 120001 +

- Commercial Service
- General Aviation
- Service Area
- Zip Code Boundaries
- Registered Aircraft



**E.F. KNAPP STATE AIRPORT**  
WASHINGTON COUNTY, VERMONT

**SERVICE AREA**

SCALE: AS SHOWN	DATE: DECEMBER 2008	FIGURE: 6
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## Services

Table 9 presents the availability of various aviation services at each of the airports. Concord and Pittsfield provide a full range of general aviation services. Knapp, Middlebury, Post Mills, Adirondack, and Morrisville-Stowe offer many different services, but all lack in the offering of several services. Minimal services are available at Waterville-LaFleur, Caledonia County, Dean Memorial and Warren-Sugarbush. Table 10 presents the availability of tie-down and hangar space, as well as the price charged for them at the airports. Post Mills, Warren-Sugarbush, and Dean Memorial Airports did not respond to inquiries regarding hangar and tie-down availability and costs. Therefore, figures for those airports in Table 10 are unavailable.

The prices at Knapp State are generally below average when compared to the airports that responded to our inquiries. The cost per night for a tie-down at Knapp is the average in the region, as is the monthly fee. Morrisville-Stowe and Waterville-LaFleur both charge lower rates for both services. For hangar space, the price for conventional hangar space at the airport is one of the lowest in the study, just higher than Waterville-LaFleur. The cost for hangar space at Adirondack Regional is also cheaper, but airport officials indicated that the hangar door is open at all times, therefore causing the lower price. The cost of fuel is also average at Knapp, with the price of both fuel types rating in between those of other airports.

**Table 8: Airport Data**

Airport	Owned	Acres	ARC	Number Of Based Aircraft						Runway		Control Tower		
				Jet	Multi	Single	Heli	Ultra-light / Gliders	Military	Total	First L x W		Second L x W	
E.F. Knapp State, VT	Public	259	B-II	0	2	55	0	0	0	0	57	5,002' x 100' (Asphalt)	4,022' x 100' (Asphalt)	N
Middlebury State, VT	Public	156	B-I	3	3	42	0	1	0	0	49	2,500' x 50' (Asphalt)	N/A	N
Morrisville – Stowe State, VT	Public	112	B-II	0	2	18	0	8	0	0	28	3,701' x 75' (Asphalt)	N/A	N
Post Mills, VT	Private	50	Small	0	0	20	0	9	0	0	29	2,900' x 80' (Turf)	2,300' x 80' (Turf)	N
Warren – Sugarbush, VT	Private	125	Small	0	0	20	0	50	0	0	70	2,575' x 30' (Asphalt)	N/A	N
Dean Memorial, NH	Public	48	B-I	0	0	9	2	0	0	0	11	2,511' x 58' (Asphalt)	N/A	N
TOTAL (Airport Service Area)				3	7	164	2	68	0	0	244			
Waterville – LaFleur, ME	Public	375	C-II	0	2	22	0	0	0	0	24	5,500' x 100' (Asphalt)	2,301' x 150' (Asphalt)	N
Concord Municipal, NH	Public	697	C-II	0	9	58	2	2	10	0	81	6,005' x 100' (Asphalt)	3,200' x 75' (Asphalt)	N
Pittsfield Municipal, MA	Public	321	N/A	7	8	41	0	0	0	0	56	5,001' x 100' (Asphalt)	3,496' x 100' (Asphalt)	N
Adirondack Regional, NY	Public	1,499	C-II	0	1	15	2	1	0	0	19	6,573' x 150' (Asphalt)	3,998' x 100' (Asphalt)	N
TOTAL				10	27	300	6	71	10	0	424			

Sources:  
 Airport Master Records as published January 2008 (<http://www.gcr1.com/5010web/>)  
 Vermont Airport System and Policy Plan, Appendix D, Page D.2.  
 New Hampshire State Airport System Plan Update (<http://www.nh.gov/dot/bureaus/aeronautics/sasp/documents/TR2Inventory.pdf>)  
 Maine Aviation Systems Plan Update (<http://mainegov-images.informe.org/mdot/aviation/pdf/maspu.pdf>)

**Table 9: Service Comparison**

Airport	Frame Repairs	Power Repairs	Flight Instruction	Charter Service	Avionics	Aircraft Sales	Aircraft Rentals	Other
<b>E.F. Knapp State, VT</b>	Major	Major	Y	N	N	Y	Y	
<b>Middlebury State, VT</b>	Major	Major	N	N	N	Y	N	
<b>Morrisville – Stowe State, VT</b>	Major	Major	Y	N	N	Y	Y	
<b>Post Mills, VT</b>	Minor	Minor	Y	Y	N	Y	N	Airport is not plowed when snow covered; only planes with skis are allowed to land
<b>Warren – Sugarbush, VT</b>	N	N	Y	N	N	N	Y	
<b>Dean Memorial, NH</b>	N	N	Y	N	N	N	N	
<b>Waterville – LaFleur, ME</b>	Major	Major	Y	N	Y	Y	Y	
<b>Concord Municipal, NH</b>	Major	Major	Y	Y	N	Y	Y	
<b>Pittsfield Municipal, MA</b>	N	Minor	Y	Y	N	N	Y	Scheduled passenger service, catering available
<b>Adirondack Regional, NY</b>	N	N	Y	Y	N	Y	Y	Air ambulance available, Mogas available

Source: Airport IQ 5010 Airport Master Records as Published February 2008 (<http://www.gcr1.com/5010web/>)

Legend: N=No, Y=Yes

Table 10: Rates and Charges Comparison										
Airport	Tie-Down		Conventional Hangars		T-Hangars		Lowest Fuel Price (\$/gallon)		GA Landing Fee	
	\$/	Available	Type	\$/month	Available	\$/ month	Available	100ll		Jet A
<b>E.F. Knapp State, VT</b>	\$45/month	Y	Paved	\$180 - \$240	N	N/A	N/A	\$5.50 (s/s)	\$5.83 (f/s)	N/C
<b>Middlebury State, VT</b>	\$45 - \$65/month	Y	Paved	\$250 - \$275	N	\$250 - \$275	N	\$4.99 (s/s)	N/A	N/C
<b>Morrisville – Stowe State, VT</b>	\$30 / month	Y	Paved	Single Engine \$300/month Twin Engine \$400/month TurboProp \$700/month	N	N/A	N/A	\$5.29 (f/s)	\$5.69 (f/s)	N/C
<b>Post Mills, VT</b>	No Information Available									
<b>Warren – Sugarbush, VT</b>										
<b>Dean Memorial, NH</b>	No Information Available									
<b>Waterville – LaFleur, ME</b>	\$30 / month	Y	Paved	Wingspan < 37 ft. \$150 - \$180 / month Wingspan > 37 ft. \$500 - \$600 / month	Y	N/A	N/A	\$4.65 (s/s)	N/A	Single – N/C Multi - \$10 - \$20 Jet - \$25
<b>Concord Municipal, NH</b>	\$45 / month	Y	Paved	\$375 - \$2,000 /month	Y	N/A	N/A	\$5.49 (s/s)	\$6.69 (f/s)	Single N/C Multi/Jet \$12 - \$300

**Table 10: Rates and Charges Comparison**

Airport	Tie-Down		Conventional Hangars		T-Hangars		Lowest Fuel Price (\$/gallon)		GA Landing Fee	
	\$/	Available	Type	\$/month	Available	\$/ month	Available	100ll		Jet A
<b>Pittsfield Municipal, MA</b>	\$15.83 / month	Y	Paved	N/A	N/A	\$200 / month	N	\$5.20 (s/s)	\$5.95 (f/s)	Single N/C Twin/Jet \$20 - \$125
<b>Adirondack Regional, NY</b>	\$75 / month	Y	Paved	\$75 / month (partially enclosed)	Y	\$225 / month	N	5.45 (f/s)	\$6.21 (f/s)	Single N/C Twin/Jet \$40 - \$175

Sources: McFarland-Johnson, Inc. Telephone Survey January 2008; Fuel prices obtained from www.airnav.com (June 24, 2008)

Legend: N/C = No Charge, N/A = Not Available, N=No, Y=Yes, s/s = self-service f/s = full serve

Note: Per its 5010, Warren-Sugarbush offers 100ll fuel and has hangars on airport; however, the airport did not respond to queries regarding rates.

#### 4. BASELINE FINANCIAL AND ECONOMIC OUTLOOK

This section identifies historical revenues and expenses attributable to E.F. Knapp State Airport and projects those revenues and expenses to the year 2012. This projection only considers a baseline scenario with no revenue enhancement projects being undertaken. In other words, this section details the financial implications of continuing the airport's operation as it is today. In a later section, alternative projections of financial performance will be developed based upon suggested improvements and marketing pro-formas.

##### 4.1 Baseline Forecast of Revenues

VTrans provided historical revenue information for 2005, with some additional information provided for 2004 and 2006. No explanations for the reasons for any trends were available. This data provides an indication of the growth trends of the revenue base. Table 11 shows those historical revenues, along with estimated tax revenues from the fuel sold at Knapp State Airport. As shown, the revenues from leases and landing fees have increased over the three-year history. Landing fees comprised most of the growth for 2005 and 2006.

<b>Table 11 - Historical Operating Revenues</b>			
Revenues	2004	2005	2006
Leases & Landing Fees	\$10,212	\$13,859	\$17,911
FBO Revenue	\$3,771	\$4,396	\$4,854
Food and Misc	\$8,120	\$10,440	\$8,120
Aviation Fuel Taxes*			
100 LL	\$4,262	\$4,432	\$4,609
Jet A	\$6,668	\$6,935	\$7,212
<b>TOTAL REVENUE</b>	<b>\$33,033</b>	<b>\$40,062</b>	<b>\$42,706</b>

Source: VTrans, 2007

\* Estimated for years 2004 and 2006

It is against this background of recent performance that the baseline forecast of revenues for Knapp State Airport is presented. Assumptions used in developing the projections were based on forecasts from the Vermont State Airport System & Policy Plan, included tying the forecast growth of general aviation operations to the use of fuel and linking the forecast of based aircraft to the need for aircraft storage. Additionally, it was assumed that revenues generated from fuel sales and leases would reflect the rate of inflation (projected at 4 percent through the period). Table 12 presents a conservative forecast of airport operating revenues.

**Table 12 - Baseline Forecast of Airport Operating Revenues**

Revenues	2005	2006	2008	2009	2010	2011	2012
Leases & Landing Fees	\$13,859	\$17,911	\$19,556	\$20,434	\$21,351	\$22,310	\$23,311
FBO Revenue	\$4,396	\$4,854	\$5,250	\$5,460	\$5,678	\$5,906	\$6,142
Food and Misc.	\$10,440	\$8,120	\$8,783	\$9,134	\$9,499	\$9,879	\$10,274
Aviation Fuel Taxes							
100 LL	\$4,432	\$4,609*	\$5,065	\$5,295	\$5,536	\$5,788	\$6,052
Jet A	\$6,935	\$7,212*	\$7,925	\$8,286	\$8,663	\$9,057	\$9,469
<b>TOTAL REVENUE</b>	<b>\$40,062</b>	<b>\$42,706</b>	<b>\$46,578</b>	<b>\$48,609</b>	<b>\$50,728</b>	<b>\$52,940</b>	<b>\$55,248</b>

\* Estimated

Sources: VTrans, McFarland Johnson

As indicated, the baseline forecast of revenues for Knapp State Airport - in a scenario where revenue enhancement strategies are not undertaken - might result in growth of revenues from \$40,062 in 2005 to \$55,248 by the year 2012. Compared to the recent growth reported in Table 11, this growth rate appears reasonable.

#### **4.2 Baseline Forecast of Expenses**

Only one year of complete historical data, 2005, was available and as such, no significant historical trends could be identified. Instead, knowledge of general trends was applied to the various cost categories and projected into the future. Specifically, labor costs were increased at two percent, which is one-half the rate of forecast inflation. Historically at other airports, salaries and wages have increased more slowly than the Consumer Price Index (CPI) due to personnel turnover and part time employee usage. It is also known that insurance costs have been increasing faster than the rate of inflation. For this analysis, a seven percent rate was used. The expense for the WSI Weather Brief, a service offered by VTrans that provides current and forecast weather information, was held constant while the remaining categories were increased at a rate of four percent, the generally accepted rate of inflation for projection purposes. Table 13 presents the results.

<b>Table 13 - Baseline Forecast of Airport Operating Expenses</b>						
Expenses	2005	2008	2009	2010	2011	2012
Salaries and Wages						
Airport Manager	\$6,040	\$6,410	\$6,538	\$6,669	\$6,802	\$6,938
District MX Staff Labor	\$40,000	\$42,448	\$43,297	\$44,163	\$45,046	\$45,947
Total Operating - District	\$117,000	\$131,609	\$136,873	\$142,348	\$148,042	\$153,964
WSI Weather Brief	\$2,040	\$2,040	\$2,040	\$2,040	\$2,040	\$2,040
Insurance (\$100K/ occurrence deductible)	\$1,321	\$1,618	\$1,732	\$1,853	\$1,982	\$2,121
Total Operating Expenses	\$166,401	\$184,125	\$190,480	\$197,073	\$203,912	\$211,010

Source: VTrans

Baseline operating expenses are projected to increase from \$166,401 in 2005 to \$211,010 by the year 2012 - which represents an increase of approximately 27% for the period, at a rate of 3.5% annually.

#### **4.3 Baseline Net Operating Income/ (Deficit)**

The baseline net operating income/(deficit) is displayed in Table 14.

<b>Table 14 - Net Operating Income/(Deficit)</b>			
Year	Operating Expense	Operating Revenues	Net Operating Income/(Deficit)
2008	\$184,100	\$46,600	(\$137,500)
2009	\$190,500	\$48,600	(\$141,900)
2010	\$197,100	\$50,700	(\$146,400)
2011	\$203,900	\$52,900	(\$151,000)
2012	\$211,000	\$55,200	(\$155,800)

As shown, the net operating deficit is anticipated to grow from \$137,500 in 2008 to \$155,800 by the year 2012. Therefore, the State can expect to have to cover this shortfall in operating revenues and the local share of capital development projects at Knapp State Airport for the near future unless substantial revenue enhancement activities are undertaken.

## 5. BUSINESS PLAN ALTERNATIVES

Several business plan alternatives were developed to explore a variety of methods designed to increase revenues at the airport. In order to present these alternatives, this section is organized to include the following:

- Area-wide Factors Supporting Growth and Development of the Airport
- Obstacles to Airport Performance and Goal Attainment
- Revenue Enhancement

### 5.1 Area-wide Factors Supporting Growth and Development of the Airport

There are a number of factors that support the potential growth and development of the Knapp State Airport. These factors are briefly described below.

#### Airport Location

Knapp State Airport is located in the heart of Central Vermont, which includes areas of Chittenden, Washington, and Orange Counties, and more than 20 different municipalities. The region's political center is located in Montpelier, with population and economic activity concentrated in Barre, Montpelier, Waterbury, Berlin, Northfield and Waitsfield. The distance between the airport and several major regional business centers is shown in Table 15.

Nearby Cities	Driving Distance (miles)	Driving Time (hours)
Manchester, NH	127	2.0
Montreal, QC, Canada	134	2.5
Albany, NY	170	3.25
Springfield, MA	171	2.75
Boston, MA	177	3.0
Providence, RI	227	3.75

Knapp State Airport is approximately 40 miles east of Burlington, 40 miles west of St. Johnsbury, and 50 miles northwest of White River Junction and Lebanon (NH). The Central Vermont region is sometimes considered a distant suburb of Burlington.

#### Industrial Development

When considering an airport's development potential, local socioeconomic trends are important factors, as these trends provide insight into the potential future demand for general aviation facilities and services. The Central Vermont region has the second-largest labor force in

the State. Employment in the region is spread between state government, skilled trades, and manufacturing, giving the region a broad-based economy. The expanding industries in the region are captive insurance (an insurance company that insures all or part of the risks of its parent company only); environmental product and process development; high-technology manufacturing, tourism, business and personal services, and plastics. Some of the major employers in the area are listed in Table 16.

<b>Table 16 – Major Employers</b>		
<b>Employer</b>	<b>Product/Service</b>	<b>Employees</b>
National Life Group	Life insurance	1,000
Rock of Ages	Granite manufacturer	980
Central Vermont Medical Center	Healthcare	826
Washington County Mental Health Services	Healthcare	600
Cabot Creamery Co-op	Cheese and dairy products	500
New England Culinary Institute	Cooking school	500
Green Mountain Coffee Roasters	Gourmet coffees	440
Norwich University	Education	344
Blue Cross/Blue Shield of Vermont	Health insurance	400

Source: Central Vermont Economic Development Corporation

Other major companies located in Central Vermont include Ben and Jerry’s Ice Cream, which is also the number one tourist attraction in Vermont, Green Mountain Coffee Roasters, SUSS MicroTech, and Sugarbush Resort. Rock of Ages Corporation, one of the region’s leading employers, is a manufacturer of granite products. They mine their own granite from several quarries, including the world’s largest quarry measuring over 600 feet deep located in Barre Town. Many of these companies fall within industries, such as healthcare, advanced manufacturing, and professional services, which all have a propensity to use general aviation facilities and services.

### **Commercial/Industrial Parks and Properties**

The communities that surround Knapp State Airport have a number of business/industrial

parks, which provide commercial space for companies seeking to start, expand, or relocate in the area. Some of the commercial/industrial parks in the area include:

- **National Life Office Park:** The National Life Office Park contains 200 acres overlooking Montpelier, approximately seven miles from the airport. The current master plan for the Office Park includes space for approximately three additional buildings.
- **Bean Business Park:** Bean Business Park is located in Northfield, approximately 15 miles from the airport. The Park has seven additional lots in Phase I and an eight-acre lot in Phase II. There are a total of 30 acres for commercial or industrial tenants just outside Northfield off US Route 12, ten miles from Montpelier.
- **Progress Park:** Progress Park is located on US Route 2 at State Route 100 in Moretown, approximately 11 miles from the airport. The Park contains approximately four acres of available land. Condominium associations are also permitted at the park.
- **Mad River Park:** Mad River Park is located off Airport Road and State Route 100, roughly midway between Moretown and Waitsfield, and approximately 20 miles from the airport. Several sites remain available for future development.
- **Packard Industrial Park:** Packard Industrial Park is located along US Route 2 in East Montpelier, approximately eight miles from the airport. Currently occupied by a number of tenants, this park has six lots available for development, ranging in size from approximately two to 15 acres. Assembly of adjacent lots for projects is permitted.
- **Pilgrim Park:** Pilgrim Park is located along US Route 2 in Waterbury. Accessible via I-89 Exit #10, this park is a mixed-use development envisioned to consist of industrial, commercial, and office uses, and currently boasts a completely occupied 140,000 square foot office complex. The site is 40 acres in total, with 20 acres currently available; a second 40,000 square foot building is planned.
- **Welch Industrial Park:** Welch Industrial Park is approximately 12 miles from the airport, in Middlesex. Currently occupied by Verizon, the park consists of five commercial building lots, an access road, utilities, and is less than 1/4 mile from I-89.
- **Wilson Industrial Park:** Wilson Industrial Park is located about six miles from the airport, along Websterville Road, which is accessible from State Route 14/South Barre Road. Containing more than 85 acres, Wilson Industrial Park is planned for commercial and industrial uses.

There are also a wide range of individual commercial and/or industrial sites in the area, which range from small facilities of just 2,000 - 3,000 square feet, to medium-sized facilities around 30,000 square feet in size. The following is a representative sample of the larger facilities:

- **Green Mountain Office and Industrial Park:** Approximately 25 miles from the airport. The Park contains 90 acres on two parcels on the west side of the

interchange of I-89 and State Route 66 near Randolph. One parcel is 75 acres and the other is 15 acres.

- **Wilson Park/Thomas Building:** Approximately six miles from airport along Websterville Road in Barre Town. The facility offers 21,600 square feet of rentable square feet, of which 1,600 square feet is office space, with the remaining 20,000 square feet being industrial space with 24-foot clearspan, two loading docks, and a 10-ton crane.
- **Manufacturing Building:** Approximately 16 miles from the airport along Old Freight Road in Northfield. The building offers 28,000 square feet of manufacturing space and is situated on approximately five acres of land.
- **Former TransEd Assembly Building:** Less than four miles from the airport, in Barre City. This 13,000 square foot light manufacturing facility offers two docks and 20-foot clear height.
- **Former Malden Mills Building:** Located approximately four miles from the airport along Quarry Hill Road in Barre Town. The facility offers 17,000 square feet of industrial space, loading dock, ample on-site parking, and 24-foot ceiling height.
- **Former Harry's Store Building:** Approximately five miles from the airport, situated along US Route 302 in Berlin. The 83,500-square foot building, on an improved 4.5-acre site, has up to 12,000 square feet available for lease. The retail facility benefits from its location on a highly traveled corridor, and offers records storage and warehouse space.

In addition to the individual sites mentioned, the current market in and around Berlin for industrial land is strong. The area has evolved into an economic center serving the Central Vermont Region, boasting a hospital, commercial offices, retail shopping, and other service sector establishments. The local commercial real estate community has indicated that industrial property near the I-89/State Route 62 interchange (Exit #7) can be sold for between \$75,000 and \$100,000 per acre. The combination of highway access and the largest concentration of relatively level land around the Airport have made the area very attractive for private investment<sup>14</sup>.

### **Local and State Incentives & Programs**

Review of the local business climate in Montpelier benefits from consideration of local and State incentives and programs available to support the growth and expansion of businesses in the area. Such incentives and programs, in concert with available developable land, create an environment where businesses have the ability to grow. State and local incentive programs that may be appropriate for companies considering locating and/or operating at or near Knapp State Airport include:

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<sup>14</sup> Berlin Town Plan, June 2005

## Local Incentives & Programs

- **SBA/CVEDC 504 Loan Program:** The Central Vermont Economic Development Corporation (CVEDC) is one of three Vermont-based SBA Certified Development Companies offering financing through the SBA 504 Loan Program. The 504 program is designed to enable growing businesses to create and retain jobs with long-term, fixed rate financing, which is generally at or slightly below the current market rate.

## State Incentives & Programs

- **Sales Tax Exemption:** Vermont offers a sales tax exemption on certain building materials in excess of \$1 million.
- **Small Business Investment Tax Credit:** The small business tax credit allows a credit for every dollar of investment, provided the investment exceeds \$150,000. A company may receive a credit in the amount equal to five to 10 percent of its investments within the state of Vermont in plants, facilities, and machinery and equipment. Requirements vary depending upon the number of employees in the business
- **Payroll Tax Credit:** It provides a credit against income tax liability equal to a percentage of increased payroll costs. A company with sales less than \$10 million may receive a credit equal to 10 percent of its increased costs of salaries and wages in the applicable tax year.
- **Research and Development Tax Credit:** It provides a 10 percent tax credit against income tax for qualified research and development expenditures. Qualified R&D expenditures are those included in the IRS code.
- **Workforce Development Tax Credit:** A corporation can receive an income tax credit of 10 percent of its qualified training, education and work force development expenditures.
- **Export Tax Credit:** This provision allows exporting businesses to claim credit against income tax liability. The credit is the difference between income tax calculated under the existing state apportionment formula and the proposed formula, which double weights the sales factor and disregards "throwback" provisions.
- **Tax Increment Financing Districts (TIF):** The Vermont Economic Progress Council can approve applications from municipalities that wish to use the taxes generated on the excess property valuation for interest and principal repayment on bonded debt or prefunding future tax increment financing district debt. The use of TIF districts reduces out of pocket costs for developers whose projects will increase property values. In many cases, project financing by private interests cannot or should not be burdened by poor public infrastructure, which could make a much-needed project unfeasible if private financing is all that is available.

A complete listing of local and state incentives and programs can be found in Appendix B.

## 5.2 Obstacles to Airport Performance and Goal Attainment

In spite of the factors that support growth at the airport, there exist a number of factors that present challenges to the improved financial performance of the airport. Some of these factors are briefly described below.

- **Constraints to Airside and Landside Improvements:** There are a number of constraints to airside and landside improvements at the airport, including natural terrain, available vacant land, and the existing Building Restriction Line, which currently contains the entire airport. The airport manager indicated that there is currently only one area that can readily accommodate the construction of a conventional hangar. Additionally, development on the airport may also require moderate to extreme excavation and/or fill. Much of the land surrounding the airport that is feasible for development has already been developed by private parties.

Another constraint is the alignment of Dodge Road/Airport Road. In the area where the roadway runs roughly parallel to Runway 17-35, it is less than 400 feet from the runway. This close proximity of the roadway to airside facilities such as tie-down and hangar storage may create some difficulty in airside development options in the future.

There are several areas where land acquisition has been proposed by the Airport Master Plan. These areas include north of Runway 5-23 for future aviation development and protection of the Runway 5 end Runway Protection Zone (RPZ), easements out to the Building Restriction line along the east side of Runway 17-35, and removal of obstructions within the Primary Surface of Runway 17-35. The acquisition of these areas outright or through easement will likely compete with other airports in the State system for scarce funding. Additionally, much of the land north of Runway 5-23 has already been developed by other parties.

Another potential obstacle to development is the unknown status of the plan to shorten Runway 5-23. A reduction in the length of this runway has been proposed so that it no longer crosses the main Runway 17-35. This reduction in length will impact many areas of the airport as there will be changes to RPZ, OFA, and other surfaces surrounding the newly shortened runway.

A further obstacle to development lies in the current FAA policy that Airport Improvement Program (AIP) funds will not be made available for construction of revenue producing facilities such as hangars until all issues related to FAA standards have been addressed. As has previously been stated, there are numerous FAA standards issues unresolved at Knapp State Airport. Any usage of FAA funds must include consideration of means to address FAA standards.

It is also important to note that municipal water is not available at the airport.

Currently, the airport has municipal sewer service; however, the lack of municipal water service may be an obstacle for certain types of development.

- ***Socioeconomic Trends:*** As reported by the City of Montpelier in the City's 2005 *Master Plan*, population estimates indicate a steady decline in population in the City since the 2000 Census. However, the *Draft Central Vermont Regional Plan* presents forecasts that indicate growth of the Central Vermont Region through 2020. This situation is not unique, as many small cities throughout New England continue to lose population to suburban areas.

Conversely, the unemployment rate for the City of Montpelier in 2005 was just 2.4 percent, the lowest since 2000. Washington County's unemployment rate was 3.6 percent in 2005. These data suggest a tight labor market, or as has been suggested by local economic officials, that unemployment is at its structural low. This "structural" low level means that there is a mismatch between the remaining job opportunities and the skills of those still unemployed, caused by the changing economy. This creates a hurdle for future improvements, because the skills required by growing companies may not be available in Montpelier or the Central Vermont region, making future growth more reliant on existing business rather than the attraction of new business. Vermont has recognized this as a statewide problem and the State Legislature has created the Next Generation Commission to develop a plan to encourage Vermonters to live and work in Vermont.

- ***Capital Investment Sources:*** The State of Vermont has relied heavily on private investment to fund hangar development at Vermont's airports. Airport management at these facilities has suggested that this approach has delayed facility development while, at the same time, limiting the revenue that is realized by the state from such developments. Attracting based aircraft, including corporate/business aviation, relies on having hangar facilities available; however the private market, especially in tough economic times, is not likely to build unless there is an occupancy commitment.
- ***Public Support:*** It is important for the State to win public support in the long-term for the expansion of Runway 17-35 that was recommended in the State Airport System & Policy Plan. The Plan recognizes that the current runway length is adequate for the planning period; however, an extension in the long-term could allow the Airport to handle operations, without weight penalties, from an increased number of aircraft types. To date, most airport users are in support of the runway extension, as are a number of local businesses. Support from the airport's residential neighbors, and the broader community as a whole, including the regional planning commission, are key for such runway expansion to go forward. Without such community support, the Airport may not reach its potential.

### 5.3 Revenue Enhancement

There are only two ways to improve net revenues for Knapp State Airport: increase income or cut costs. In this section, revenue enhancement strategies are discussed. Elements of these strategies include the following:

- **Attraction of Corporate Aviation:** To increase economic development in the area, VTrans should consider a more aggressive strategy which relies on corporate aviation to locate on the Airport. When successful at other airports, new businesses create significant revenue enhancement for airport sponsors. With 5,002 feet of runway length, in addition to ILS approach capability, the airport is well equipped to meet insurance requirements for corporate jet aircraft. Companies already using the airport include Manchester-Boston Regional Airport-based Wiggins Airways, which provides “feeder” services for UPS using Beechcraft B-99 aircraft. Wiggins Airways also provides charter cargo services with Beech A100 aircraft. Other companies that use the airport include Northeast Utilities, Castlerock Properties, Malone Properties, Waitsfield Telecom, Bond Auto, Progressive Plastics, Coldwell Banker Realty, and Blue Cross Blue Shield. Additional facilities improvements that could be utilized to attract increased corporate aviation users include runway grooving, the installation of high intensity runway lights, reduction of the ILS visibility minimums, and the installation of an LPV approach to Runway 35.
- **Airport Branding:** Branding is the process of developing a unique selling identity for a product or service. In this regard, Knapp State Airport could increase awareness in the market by undertaking a branding project. Such a project would endeavor to identify and market the facility and its unique qualities to the Central Vermont region, taking advantage of its location near the State Capital. A branding project for the airport might first focus on identifying a central mission and vision for the airport, developing consensus, and buy-in from the local community of public and private interests, and concluding with the development of a new logo and website to communicate the role clearly to the market of potential users. Branding contributes significantly to a clear understanding of the airport’s role in the community today, and would provide a protocol for communicating the unique value proposition the airport can offer users in the future.

Another consideration of the branding for Knapp State Airport might include the development of a new name for the facility, which identifies the airport’s geographic location, such as Vermont Capital City Airport or Central Vermont State Airport. The current name does not communicate any information regarding the airport’s location or role. In fact, there are inconsistencies between the airport’s website address (which notes the Town of Barre as the location), the airport’s three-letter identifier (MPV, which refers to its proximity to Montpelier), and the airport’s actual location in the Town of Berlin. Additionally, signage at

the airport refers to Barre-Montpelier Airport, a moniker that harkens back to the very beginning of the airport, when it was opened as a joint venture by leaders in the namesake towns. An airport, like any business, can benefit from a clearer message to the market. A name change and supporting marketing or the change can generate increased awareness, interest, and activity for Knapp State Airport.

- ***New or Improved Terminal Services, Amenities, and Activities:*** Four companies provide car rental services in the Montpelier area: Barre Ford, Capital Chrysler, Enterprise, and Town & Country Honda. However, there are no rental car companies currently located at the Airport. Attracting a rental car agency to the airport would provide new revenue in the form of lease payments for office space and rent on the earned revenue, as well as an improved airport user experience. Although the demand for rental cars from travelers using Knapp State Airport may be small at this point, given its convenient location and ability to serve multiple cities, it may be in the State's best interest to attempt to attract a rental car company to base its non-airport focused car rental services on the airport's property. Both Hertz and Enterprise do significant business in the insurance rental industry segment and have city-based locations. By basing themselves at the airport, they pick up some travel business and still serve their insurance customers. If no rental car company can be attracted to locate on the airport's property, then the State should attempt to negotiate an agreement with one or more rental car firms to place courtesy phones at the airport as a convenience for travelers. While this will generate scant, or no, revenue to the airport, if there is significant business from the airport, it may cause a car rental firm to reconsider relocating its operation.

The availability of ground transportation for general aviation airport users is important. In recognition of this, the State might consider a trial period where the services of a courtesy car are offered to gauge interest and ridership. After the trial period, a better understanding of demand will assist in making the right near and long term decisions regarding ground transportation at the Airport.

Knapp State Airport has food service, Sambel's Restaurant, which is open for lunch and dinner. Publicizing its availability, quality, and reasonable prices to the flying community by promoting it on the Airport website will help to increase revenue to both the operator and the State.

Additionally, there would appear to be opportunities to connect this restaurant to the broader business community in Montpelier and Barre, which could be accomplished through involvement with the Montpelier Downtown Community Association, the Montpelier Business Association, and The Barre Partnership. In-terminal advertising opportunities for businesses in Central Vermont can be designed to be cost effective for advertisers and effective in producing additional customers for businesses and revenue for the Airport.

- **Hangar Development Options:** The State can increase revenues through the development of aircraft hangars. If sufficient demand and developable land exists, the leases for hangar space and land for hangars could provide a stable source of increased revenue over the long term. The development of hangars can proceed in a number of ways, depending upon whether VTrans or the FBO (or other private investor) takes the lead role. Currently, the State owns and operates three hangars and leases one hangar to the FBO at the airport. The Airport Master Plan calls for the development of one, nine-unit T-hangar building, and at least one conventional hangar as activity increases.
- **Aviation and Non-Aviation Property Development:** Given the limitations previously detailed, there is very little property that can be developed for commercial use at Knapp State Airport. Unfortunately, that leaves the State's only option for adding land for development, and hence for revenue enhancement, to be restructuring of the airport's runway system. The possibility of the elimination of Runway 5-23 has been raised, given that it is not easily maintained during severe weather, and provides little utility to the airport in terms of making the airport more serviceable during certain wind conditions. However, a lack of popular support, as well as the potential that VTrans would have to reimburse the FAA for funds that it invested in the construction and development of related facilities pursuant to Grant Assurances, have limited consideration of this option. In the long term, the benefits of the continued utilization of Runway 5-23 must be weighed against the financial benefits of additional developable land at Knapp State Airport.

Some developable space may be made available by the consolidation of existing aviation-related activities on the south side of the property along Dodge Road/Airport Road and the adjacent Runway 17-35. For instance, Aprons B and C are separated by two conventional/storage hangars, which may not make the most effective use of available land. Any additional space limited by these actions will be extremely limited.

- **Rates and Charges/Lease Agreement Structure:** Most of the leases with hangar tenants at Knapp State Airport appear to reflect common industry standards; however, land leases where tenants have constructed hangars could include reversion clauses, which turn over ownership of hangars to the State at the expiration of the lease. A review of the existing lease agreements shows significant variation in lease rates on similar type spaces. Establishing a consistent lease rate for like types of space, be they land or office space within a building, will help the State to stabilize its financial future and avoid potential problems with grant assurances about rate setting. A summary of the current lease agreements, rates, and contract details is shown in Appendix A.

## **6. RECOMMENDED PLAN**

The recommended business plan for Knapp State Airport focuses on two primary strategic initiatives with the first being management and policy actions intended to maximize the future growth opportunities for the Airport. The second strategic initiative is a coordinated and thoughtful action plan of actions for improving the financial performance of the Airport. An operations/management audit was not part of the scope of work for this project; therefore, cost efficiency issues were not addressed. Consequently, the purpose of this Business Plan is the improvement of net operating revenues at Knapp State Airport by finding opportunities to create new and increased revenue streams that provide higher upside potential for economic growth and long-term financial stability.

It must be noted, however, that with virtually no developable land available at the airport, there are very few opportunities to impact revenue. Much of the space adjacent to the airport either has been developed already or is too sharply sloped to be practical for development. This severely limits potential ways in which revenue can be increased. VTrans may need to consider the closure of the crosswind Runway 5-23, which is underutilized and difficult to maintain in the winter, should there be a desire to make Knapp State Airport more self-supporting.

### **6.1 Recommended Management and Policy Actions**

There appears to be a disconnect between the needs and goals of the airport's tenants and users, and the airport owner (VTrans), which has grown over the years as the State's funding level for its aviation system has waxed and waned. This approach has led to minimal incremental improvements in financial performance and has kept the airport in a more reactionary than progressive growth mode.

Proximity to a thriving commercial area and hospital near the Interstate 89 interchange, where land is at a premium<sup>15</sup>, should have translated into growth for the airport. It has not, at least not so far. While revenue increases have outpaced expense growth from 2005 through 2007, there would appear to be greater opportunity at the airport than financial performance indicates. If the airport engages itself in the local economic development community of private and public interests, it will be able to collaborate in highlighting the advantages of doing business in the State of Vermont with a first-class first impression for users of Knapp State Airport. Unlocking this potential should be a top priority for VTrans, as the airport is the front door of the Capital City.

### **6.2 Revenue Enhancement Recommendations**

Revenue enhancement activities recommended for Knapp State Airport focus primarily on efforts to attract business aviation. Given the severe limits on developable space, recommendations that require significantly more land than is currently available are categorically excluded. Other recommendations that should enhance revenues based on an exponential

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<sup>15</sup> Telephone conversation with local commercial real estate professional, January 2008.

increase in visibility and participation with local economic development agencies already engaged in promoting the Montpelier/Berlin/Barre area. Such recommendations include new and/or improved terminal services and amenities, an airport branding project, and a marketing/public relations campaign to recruit and retain new business on the airport. The following sections describe in detail these revenue enhancement recommendations.

### **Attraction of Corporate/Business Aviation**

As the general aviation industry has evolved, most airport owners, sponsors, and operators throughout New England have recognized that corporate/business aviation provides a higher source of revenue to airports than recreational general aviation. This is especially the case given the rising costs of fuel, which for business users can be passed on to their customers as the cost of doing business. For this reason, as well as the numerous spin-off benefits from business aviation such as job creation, the attraction of new corporate/business aviation tenants and transient traffic should be a priority for Knapp State Airport.

Airside facilities, including Runway 17-35 (5,002' x 100'), the published instrument approach (ILS) for Runway end 17 and GPS approach for Runway end 35, are adequate for corporate use. The spin-off benefits offered by corporate users are clear, as UPS operates a land distribution center on an adjoining parcel. In addition, Washington County has many large companies that could be targeted, such as National Life Insurance Company, Union Mutual Insurance Company, Vermont Insurance Management Inc., Concord Group Insurance, USA Risk Group, and Huntington National Bank. Other potential corporate and/or private users of Knapp State Airport may be found via contact with local higher education institutions, such as Woodbury College, Vermont Community College, Union Institute and University/Vermont College, and Norwich University. The attraction of based business aircraft or fractional jet service can provide an additional boost to fuel sales, maintenance, and demand for other services related to increased activity.

As the implementation of this recommendation is pursued, it will be important for VTrans, the FBO, and local officials and interests to join in a coordinated effort to market any opportunities to the local development community. First, VTrans should invite Vermont Flying Service to participate. With the FBO serving as the State's local agent of the airport, VTrans should also engage the Central Vermont Economic Development Corporation (CVEDC) and the Central Vermont Chamber of Commerce to ensure that the development of airport property and marketing of the airport can take advantage of the knowledge and insights of those involved in the community. At this point, the local governments of Berlin, Montpelier, and Barre should be included. Therefore, it is recommended that:

***VTrans should engage local and regional officials, agencies, and private interests in the attraction of corporate aviation to Knapp State Airport.***

The ultimate goal of this process would be the securing multiple funding sources and placing the airport in the commercial real estate market.

## Hangar Development Options

Without the closure of Runway 5-23, there is only a single area of about two acres available for hangar development. VTrans has already acquired this property since the 2000 Master Plan Update, and the best means of development must be contemplated. As discussed, the development of hangars can proceed in a number of ways, depending upon whether the State or the FBO takes the lead role as developer of the land development and construction projects. Ultimately, the best option for hangar development at Knapp State Airport is one where VTrans and the FBO work together toward the development of hangar facilities. The final decision regarding roles and responsibilities would depend on the State's resources and risk tolerance; however, one such scenario would have the State serve as owner, provide funding and managing the construction process for a hangar, and associated apron, parking, and access road facilities. In this scenario, the FBO would serve as the landlord, leasing the space and maintaining the facilities. This development alternative would endeavor to take advantage of both the strengths of VTrans, such as procurement and administration of public grants for construction, and VFS, who is likely more knowledgeable regarding local and regional corporate/business aviation interests, and is a steady presence at the airport.

It is recommended that the State should focus on and support the development of conventional hangar facilities at Knapp State Airport. This recommendation is based on a number of factors, especially the flexibility of conventional hangars to serve as community hangars in the near term, and transition to corporate hangars as demand increases, and the higher rent potential of conventional hangars over T-hangars. Such corporate hangars can accommodate both small business aircraft and/or recreational aircraft, making the utility of such facilities higher, effectively reducing investment risk for the State.

Additionally, the functionality of conventional hangars responds to the expectation that the development of corporate aviation activity at the airport will take time. Conventional hangars can accommodate small aircraft in the near term, and larger aircraft as business/corporate aviation activity increases. The strategy would be to start out housing small aircraft in a community configuration and later convert to only one or two corporate aircraft if that opportunity presents itself.

Following this recommendation for determining the State's role in hangar development, the State should consider the development of the 9-unit T-hangar or single conventional hangar recommended by the Airport Master Plan. Depending upon the State's desired role and a minimal response to the RFP process, it is recommended that:

***VTrans could seek FAA and State grant money to finance all or part of the development of any hangars it constructs without private participation.***

## **New or Improved Terminal Services, Amenities, and Activities**

As stated at the beginning of this section, there is a great opportunity to highlight the best of the State of Vermont, from recreational opportunities to business advantages, by creating a first-class experience for users of Knapp State Airport, a gateway to the State Capital. Unlocking this potential for VTrans may be aided by enhancing the level and types of services offered.

To service existing and prospective corporate/business aviation users, amenities fitted to such clients are needed. Currently, car rental is not available at the airport; however, several car rental outlets, located in and around Barre and Montpelier provide advance reservation service. Additionally, ground transportation located on airport is important for providing ease of transfer for passengers to their local destination. At Knapp, this could be made available in the near term via courtesy car. This would be a noticeable improvement for travelers, and provide some insight to the business case for a year-round rental car outlet or regional transportation/bus service, both of which may not be feasible until the post-2012 period. Additionally, perhaps a local partnership of public and private interests could support seasonal local shuttle service, or encourage seasonal rental service prior to 2012 to accommodate travelers flying in to visit local ski areas. For these reasons, it is recommended that:

***VTrans should provide a courtesy car at Knapp State Airport to accommodate business aviation and public interests, and test the market for a rental car outlet at the Airport by 2012.***

In addition to improvements to ground transportation, increases in airport activities may warrant some improvements to the layout and usage of the main terminal and VFS Hangar #2, a hangar owned by VFS, that houses the FBO's main offices. FBO services are offered in VFS Hangar #2, which means that Airport visitors transferring to their destination and in need of ground transportation would be directed to the FBO offices, not the terminal building where Sambel's Restaurant is located. This does not give the best first impression the State can offer, as VFS Hangar #2 is not in good repair. Therefore, relocating the FBO offices into the Terminal may be a solution worth further consideration. The FBO hangar can continue to be just that, but facilities for passengers and pilots should be developed in the Terminal. It is recommended:

***VTrans should relocate passenger and pilot services into the Terminal at Knapp State Airport.***

If relocating FBO operations to the terminal cannot be accomplished in a reasonable timeframe, consideration should be given by VFS to the renovation of VFS Hangar #2. This area, one where most pilots and passengers visit upon arriving at the Airport, is dated, and fares poorly when compared to facilities at other airports owned by the State. If FBO operations can be relocated to the terminal, renovation of VFS Hangar #2 would no longer be a priority.

## **Airport Branding**

As discussed in a previous section, branding is a valuable process for developing a unique selling identity for a product or service. A successful brand is one that calls to mind a host of positive thoughts and associations in the minds of consumers, compelling them to experience the brand by purchasing. As such, a significant consideration in a branding effort concerns the name of the product or service being offered. Strong brand recognition in the market requires a distinct name that identifies its place in the market as a distinct offering from the competition. The airport was named after the former mayor of Montpelier and State Commissioner of Aeronautics in 1970. While this name may communicate a certain set of admirable qualities to certain people within the Central Vermont region and the State Government, it does very little for visitors who have no historical connection to the area. Therefore, the renaming of Knapp State Airport to better identify the geographic region it serves and its distinct location near the Capital City, should be considered. Potential names for the Airport might include, *Vermont Capital City Airport*, *Central Vermont/Capital City Airport*, *Central Vermont State Airport*, or some variation that could include “Gateway,” all of which allude to the airport’s geographic position and the vision for the airport to serve in a higher profile role for providing access to Central Vermont.

Concurrent with the branding process, a new graphic identity, such as new logos, website, and signage should be developed. A compelling tagline or slogan, supported by mission and values statements, which can be displayed in the terminal area, will effectively communicate the airport’s brand to the market. Therefore, it is recommended that:

***VTrans should consider a branding effort for the Airport, renaming the facility to reflect its geographic location in Central Vermont near the State Capital.***

The branding effort should be followed-up with a marketing campaign to reintroduce Knapp State Airport to the local geographic and general aviation users’ communities. Therefore, it is recommended that:

***Marketing via the Internet and possibly other aviation publications could be used to promote Knapp State Airport as a gateway to destinations in Central Vermont.***

Such marketing could take the form of providing information (or at least a link to the airport’s website) on the websites of the major resort destinations, and in return, providing a similar level of information or linkage to the resort websites. In addition, informational material can be published on aviation websites including AirNav, highlighting services and facilities at the Airport. Joint marketing efforts with the Central Vermont Chamber of Commerce could also be effective.

## Marketing and Promotion

As interest in Knapp State Airport increases, new inquiries from travelers, pilots, and corporations can be anticipated. Responses to these inquiries from VTrans or VFS could include a “Welcome” package, containing information about airport services and facilities. Also, promotional materials available from the Central Vermont Chamber regarding attractions and amenities offered in Central Vermont could be included. What is most important is that interested parties receive a positive response within a reasonable period of time, and enough information to compel further consideration and conversations with VTrans and VFS. The State should also record such inquiries as a prospective list of future aircraft hangar tenants. Such inquiries provide insight into market demand and private capital that may be available for expanding corporate hangar facilities at the Airport.

These and other cross-promotional opportunities are waiting to be realized between the State, the Central Vermont Chamber of Commerce, and other groups already promoting the region, such those who maintain [www.central-vt.com](http://www.central-vt.com), a site dedicated to serving visitors, residents, and businesses. Therefore, it is recommended that:

***VTrans should engage the Central Vermont Chamber of Commerce and other local agencies to partner for marketing and promotional campaigns involving the Airport.***

## Rates and Charges Agreement Structure

Based upon a review of lease agreements at Knapp State Airport, the rate schedule for ramp parking (\$5/day; \$25/week; \$45/month) and hangar storage (conventional hangars from approximately \$0.05 to \$0.10 per square foot) are similar to other State airports. Additionally, current contracts for land leases provide for 5-year renewals with Consumer Price Index adjustments at the time of each renewal.

If the goal of the State is just to increase revenues, then VTrans should consider the true benefit to tenants of finished conventional hangar space, and the costs of providing such space. For example, lease documents between the State and VFS for the Mac Stevens Hangar (on Industrial Road) reveal that 3,262 square feet of space is presently under lease through May 6, 2014 for \$225 per month. This translates into a rate of less than \$0.07 per square foot, in an area where, an acre of land can sell for \$75,000 to \$100,000. Not only is this rate half of that charged at Rutland (\$0.14 per square foot) and Hartness (\$0.13 per square foot), it is in an area where economic development is occurring and the real estate market is healthy. While it is important to offer incentives to keep the FBO active and in business, the potential to raise revenues through increasing rents is very much present. At a rate of \$0.15 per square foot, revenue from the Mac Stevens Hangar would more than double, but the land would still be being offered at a discounted rate relative to its market value. This rate increase, or any substantial rate increase,

should be implemented by VTrans over a period of several years to lessen the financial impact on the tenant. Thus, it is recommended that:

***Land leases at the Airport should be increased to market rates at the termination of current contracts. If the increases are significant, the increases should be phased over a period of time.***

For new leases, rates that are higher than those on older leases and which reflect the prevailing market rates for real estate in the area should be pursued. As mentioned in a previous section, current land lease rates are between \$0.08 and \$0.10 per square foot. An increase to \$0.20 per square foot for new leases is recommended. To provide further support for rate increases, it is advisable to obtain current statewide and regional data from other airports prior to the negotiation of lease terms. Therefore, it is recommended that:

***For new development, land lease rates should be developed based on a documented survey of the prevailing market lease rates for property of similar characteristics in the region and/or at competing airports.***

### **6.3 Impact on Revenues**

#### **Revenue Impacts**

Quantifying the levels of additional potential revenue that might result from implementing the strategies presented above is highly subjective. This is the case because of the numerous variables involved in the operation of the airport. There are a wide variety of complex external economic forces that will impact revenues at Knapp State Airport, not the least of which is the fluctuating cost of fuel. Therefore, in order to project the impact on revenues of the aforementioned actions, it is necessary that a number of assumptions for each strategy be made, along with the resulting impact. From this point, reasonable projections can be made, and, if the assumptions fluctuate, adjustments from the predicted revenue levels can be made.

#### ***Changes in Aviation Activity***

The first step in determining the impacts of revenue enhancement strategies presented in previous sections of this Business Plan is to predict the change in aviation demand that would occur if each strategy were implemented. Table 17 presents one scenario of the potential demand changes in terms of annual operations and based aircraft, along with the assumptions used in estimating demand changes.

<b>Table 17 - Potential Demand Changes by Year 2012</b>			
STRATEGY	DESCRIPTION	OPERATIONS	BASED AIRCRAFT
Aviation Activity	2007 Airport Master Record	32,228	57
Activity	Assumption		
Corporate Aviation	Derived from marketing corporate aviation interests, and attracting corporate offices to local business parks. Develop 2 conventional hangars convertible to corporate hangars as demand warrants.	5%	2
Hangar Development	One 9-unit T-hangar or one conventional hangar capable of holding nine aircraft within 5-year period	10%	9
Additional/Specialty FBOs	New specialty FBOs can attract additional activity - paint shops, avionics, etc.	1%	0
Additional Potential Growth		16%	11
Total Potential Activity		37,385	68

Other action items recommended, such as improving terminal services or renaming the airport will have positive impacts, but not impacts that can be directly related to increases in operations or based aircraft. Table 18 presents an estimate of how the proposed enhancement strategies could impact revenue at Knapp State Airport, if the assumptions for each scenario are met.

<b>Table 18 - Revenue Totals Resulting from Revenue Enhancement Strategies</b>						
Revenue Category	2006	2008	2009	2010	2011	2012
Leases & Landing Fees	\$17,911	\$19,373	\$20,147	\$20,953	\$23,751	\$26,660
FBO Revenue	\$4,854	\$5,250	\$5,460	\$5,678	\$5,906	\$6,142
Food and Misc.	\$8,120	\$8,783	\$9,134	\$9,499	\$9,879	\$10,274
Aviation Fuel Taxes*	\$11,822	\$12,786	\$13,298	\$13,830	\$22,283	\$31,074
100 LL	\$4,609	\$4,985	\$5,185	\$5,392	\$12,608	\$20,112
Jet A	\$7,212	\$7,801	\$8,113	\$8,437	\$9,675	\$10,962
<b>Total Projected Revenue</b>	<b>\$42,707</b>	<b>\$46,192</b>	<b>\$48,039</b>	<b>\$49,961</b>	<b>\$61,819</b>	<b>\$74,151</b>

\* Estimated for 2006

Table 18 indicates a modest rate of growth of 4 percent annually (the rate of inflation) through 2010, and then a significant boost in revenue from leases and landing fees and fuel sales beginning in 2011 based on the assumption that the new hangars will be in place by that year and new based aircraft will be filling those hangars.

### Comparison of Expenses & Revenues

When the enhanced revenue forecast shown in Table 18 is compared to the associated operating expenses from Table 13, an estimate of future net operating expenses can be made. Table 19 illustrates one scenario of future operating revenues for Knapp State Airport. As with revenue and expense projections already mentioned, the net operating revenue/deficit estimate relies on meeting a number of assumptions mentioned in the preceding sections.

Table 19 indicates a continual operating deficit through the five-year forecast period. However, unlike the baseline forecast of revenues, this deficit calculation predicts a decrease over the period, shrinking from a high of \$147,100 in 2010 to \$136,900 by 2012. While not eliminating the operating deficit, implementation of the business plan strategies could reduce projected deficits in 2011 and 2012, with a total projected savings of more than \$26,000 over the baseline projections through the year 2012, with likely continued improvement towards break-even.

<b>Table 19 - Recommended Plan Operating Revenue &amp; Expense Comparison</b>			
Year	Forecast Enhanced Revenues	Baseline Operating Expenses	Forecast Net Operating Costs
2008	\$46,200	\$184,100	(\$137,900)
2009	\$48,000	\$190,500	(\$142,500)
2010	\$50,000	\$197,100	(\$147,100)
2011	\$61,800	\$203,900	(\$142,100)
2012	\$74,200	\$211,000	(\$136,900)

### 6.4 Summary of Business Plan Recommendations

A number of recommendations have been made as a part of this Business Plan, all with the ultimate goal of improving the financial performance of Knapp State Airport. As has been discussed, this can be accomplished through taking specific actions to attract corporate aviation and pursue the development of additional hangar storage options for new users

This Business Plan sets forth a recommended plan of action for the State to follow, which rests conceptually on two primary strategic initiatives:

- 1) **Attraction of Corporate/Business Aviation:** The attraction of new corporate/business aviation users, in the form of tenants and transient business

activity, offers the greatest benefit to Knapp State Airport. As discussed, the attraction effort should be a focused effort involving economic development groups in Central Vermont, taking full advantage of brochures produced in this business planning project, and building upon the recommendation for a new brand identity that creates a unique market position for the airport in the Capital City of Vermont.

- 2) **Hangar Development:** The development of hangars at Knapp State Airport as recommended presents an opportunity to meet demand for storage space identified in the Master Plan Update, while creating additional revenues for the airport through the planning period. Such development, in concert with the attraction of corporate/business aviation activity, raises revenues through rental fees for long term leases, fuel sales, and the need for an expansion of terminal services, which will provide a growth opportunity for VFS, or additional/specialty FBOs at the airport.

Specific recommendations by timeframe are as follows:

#### **Immediate**

- **1<sup>st</sup> Priority - Airport Branding:** VTrans should brand the airport, renaming the facility to reflect its geographic location in Central Vermont near the State Capital.
  - As a part of airport branding, VTrans should initiate the engagement of local economic development interests and area destinations to develop promotional packages, which can be incorporated into airport marketing efforts.
  - The branding project should conclude with a marketing program, including Internet marketing, direct-mail, aviation publications, etc.
- **2<sup>nd</sup> Priority - Airport Layout:** VTrans should pursue a sequenced layout for future aviation and non-aviation development, considering demand for land and the need for efficient movement of aircraft. VTrans should consider the current and future space requirements of current and future FBO and terminal tenants, and pursue the co-location of terminal services at Knapp State Airport.

#### **2008 - 2009**

- **1<sup>st</sup> Priority - Attract Corporate/Business aviation:** VTrans should engage local and regional officials, agencies, and private interests in the attraction of corporate aviation to Knapp State Airport. Marketing via the Internet and possibly other aviation publications could be used to promote Knapp State Airport as a gateway to destinations in Central Vermont.
  - VTrans should work with the FBO and local economic development interests to establish the funding and scope of the marketing program.

- **2<sup>nd</sup> Priority - Hangar Development:** VTrans could seek FAA and State grant money to finance all or part of the development of any hangars it constructs without private participation.

**2010-2012**

- **1<sup>st</sup> Priority - Expand Airport Services:** VTrans should provide a courtesy car at Knapp State Airport to accommodate business aviation and public interests, and test the market for a rental car outlet at the airport by 2012.
  - VTrans should encourage the cross-promotion of Sambel’s Restaurant with Montpelier, Berlin, and Barre business districts and/or downtown business associations.
- **2<sup>nd</sup> Priority - Rates and Charges Adjustment:** Rates for the FBO should be increased at the expiration of the current lease. For new development, land lease rates should be developed based on a documented survey of the prevailing market lease rates for property of similar characteristics in the region and/or at competing airports.
  - No other rate changes to existing lease agreements are recommended. Conduct informal survey of prevailing rental rates at other regional/competing airports for consideration.

**6.5 Timetable and Trigger Points**

Table 20 presents a timetable and listing of trigger points for implementation of the recommended plan, grouped by type of action (administrative, marketing, etc.).

<b>Table 20 - Action Plan Trigger Points</b>			
Action	Description	Trigger Points	Timeframe
<b>Management/Policy</b>			
Hangar Development Method	Examine potential means of hangar development to include developers or State construction	As soon as practical.	2009
<b>Marketing</b>			
Branding	Consider renaming the Airport to recognize its location near the State Capital and the Central Vermont region it serves. Follow-up marketing with new logos, website, etc.	Immediate	Immediate
Market Corporate/Business Aviation	Begin marketing of corporate/business aviation using a combination of State and FBO/local economic development partner resources.	As soon as brochures are available.	2009
Promotion	Engage the Central Vermont Chamber of Commerce as partner in promoting the Airport.	As soon as brochures are available.	2008/2009

<b>Table 20 - Action Plan Trigger Points</b>			
Action	Description	Trigger Points	Timeframe
<b>Terminal Services/Amenities</b>			
Ground Transportation	Provide a courtesy car in the near term with the goal of attracting a car rental outlet or other transportation service as activity increases through 2012.	As soon as practical.	2009/2010
Food Service	Encourage the promotion of Sambel's Restaurant with Montpelier, Berlin, and Barre business districts and/or business associations.	Immediate.	2008
<b>Airport Development</b>			
Hangars	Hangar construction should be pursued through continued land leases or State hangar development.	Once critical mass of tenants is identified.	2009/2010
Fund Development	Seek FAA and State grant money to finance all or part of hangar development accomplished without private participation.	As soon as practical.	2009
<b>Rates and Charges</b>			
Lease Rate Survey	Initiate a survey of prevailing market lease rates for property at State and regional airports.	As soon as practical.	2009/2010
FBO Lease Agreement	Negotiate an increase in rental rates for the current FBO (Vermont Flying Service). Begin discussions with the FBO several months prior to the expiration of current lease,	June 2010	2010

## 7. **ECONOMIC IMPACT ASSESSMENT**

The purpose of this section is to quantify the economic impact and contribution of Knapp State Airport on the local economy for both the existing situation and for the Recommended Plan. By showing the existing and newly created jobs, income, and total economic output, a greater understanding of the true impact the airport has in Washington County and Central Vermont can be realized and support for airport projects may be significantly enhanced. This analysis demonstrates the economic impacts by tracing the movement of expenditures through the various economic sectors until the money is exported incrementally from the County through purchases of outside goods and services.

### 7.1 **Goals and Methods of Analysis**

The goal of this analysis was to quantify the following economic aspects of Knapp State Airport both for existing conditions and for the year 2012 Recommended Plan:

- **Direct Spending:** On-airport spending concerning employment, operations, and capital projects. Direct spending also includes off-airport spending by air travelers for rental cars, hotels, restaurants, etc. associated with the users and provision of airport services.
- **Induced Benefits:** Impacts created by the successive rounds of spending in the local economy until the original direct or indirect impact has been incrementally exported from the local area.
- **Jobs and Income:** Quantify the income generated by aviation and the number of jobs supported by the Airport.
- **Total Output in Dollars:** The combined impacts of direct, indirect, and induced spending.

To conduct the analysis, the study utilized the following simplified process and methodology:

- Collect baseline data from the existing statewide economic impact study<sup>2</sup>. These numbers were adjusted for inflation from the year 2003 to the year 2007 effectively increasing the original impacts by 13 percent.
- Apply regional multipliers to direct recommended plan capital costs and projected employment for 2012.
- Describe non-monetary impacts of Knapp State Airport and local aviation.

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<sup>2</sup> Source: Simat, Helliesen & Eichner, Inc. (SH&E, Inc.), **Economic Impact of Vermont's Public-Use Airports**, April, 2003.

## 7.2 Results of Analysis

In 2003 VTrans completed an analysis of the economic impact of airports and published the Economic Impact of Vermont's Public-Use Airports<sup>3</sup>. According to that study, Knapp State Airport was estimated to have more than \$12.1 million in economic impact in terms of business sales and public sector expenditures.

The economic impact methodology employed here first identified the direct spending and employment at Knapp State Airport (called direct impacts) for the year 2012 recommended plan. Armed with this information, regional re-spending multipliers derived from IMPLAN software were applied to the data to determine the multiplied impacts of direct spending (called induced impacts). Table 21 presents a summary of Knapp State Airport's direct and induced economic impacts for both the baseline case and the year 2012.

Item	Year 2003 Impacts	Year 2007 Impacts**	Recommended Plan Add-on Impacts	Total 2012 Impacts
Direct Impacts				
On-Airport Income*	\$322,285	\$363,170	\$657,600	\$1,020,800
On-Airport Expenditures	\$1,055,333	\$1,189,211	\$1,161,800	\$2,351,000
On-Airport Employment	20	20	10	30
Off-Airport Income*	\$1,553,890	\$1,751,014	N/A	\$1,751,000
Off-Airport Expenditures	\$6,730,918	\$7,584,793	N/A	\$7,584,800
Off-Airport Employment	66	66	N/A	66
Induced Impacts				
Induced Direct and Indirect	\$4,346,634	\$4,898,042	\$619,100	\$5,517,100
Total Induced Employment	32	32	6	38
Grand Total Monetary Impacts	\$12,132,885	\$13,672,046	\$1,780,900	\$15,452,900
Grand Total Income Impacts*	\$3,423,001	\$3,857,238	\$865,000	\$4,722,200
Grand Total Employment Impacts	118	118	16	134

\* Includes indirect incomes from visitor spending and capital development. This is a subset of the total impacts and is already included in the output number.

\*\* Inflated for CPI change - roughly 13 percent over the period. Employment not inflated.

## 7.3 Non-monetary Impacts

There are a number of non-monetary benefits of aviation that have not been mentioned in this analysis. Some of these benefits include:

- **Transportation Benefits:** Defined as the time saved and cost avoided by travelers who use the study airport rather than the next best alternative.
- **Stimulation of Business:** Airports have been shown in other studies to be an important factor in the attraction and siting of new businesses in a community. This is particularly true for businesses with more than 100 employees.
- **Aeromedical Evacuation:** Airports often serve as bases for aeromedical evacuation teams or flight services. This life-saving function has intrinsic value that often cannot be adequately quantified.
- **Recreation:** Roughly 50 percent of commercial airline travel and 60 percent of general aviation travel are for recreational purposes. This includes the valuable tourist trade that brings economic activity to the study region.

All of the above factors point to a value of an airport that is not easily quantified. The financial impacts that were estimated are only one facet of the overall picture. Knapp State Airport enjoys a significance that is much larger than these numbers can estimate. It is part of an increasing scarce system of general aviation facilities that needs support, protection, and appreciation from all the citizens that benefit from its operation, both directly and indirectly.

## Appendix A: Lease Agreement Summaries

Lessee / Tenant Description	Physical Facilities	Amount	Additional Terms	Term Length	Begin/End Date	Renewal Options
Memorandum of lease between State of Vermont And a Private Hangar Owner	Two (2) parcels of land at the Airport each measuring 136 ft. x 50 ft. (6,800 sq. ft.); upon which are owned and occupied two (2) hangars each measuring 126 ft. x 40 ft., and each with three (3) aircraft storage stalls.	\$1,210.00 a month  The Consumer Price Index (CPI-U) is used for changes to rental fees.	Tenant has right to construct, maintain, and utilize paved ramp area.	5 years	2/18/2003 2/19/2008	Four (5) year renewals  Must give written notice at least six months before the expiration of each existing term.
Memorandum of lease for: Hangar Lot 1-A	One (1) parcel of land measuring 52 ft. x 57 ft., known as hangar lot number 1-A (end unit) upon which tenant is to construct, own, and occupy a hangar for personal and private use.		No option to purchase or right of first refusal.	5 years	1/10/2003 1/9/2008	Four (5) year renewals  Must give written notice at least six months before the expiration of each existing term.
Memorandum of lease between the State of Vermont and United States of America	Five (5) rooms containing 741 square feet of floor space located in the Administration Building, Barre-Montpelier Airport; including: AF Office (100 sq. ft.), Telco Room (40 sq. ft.), Equipment Room (414 sq. ft.), Storage and Air Conditioning (70 sq. ft.), and Weather Station (117 sq. ft.).	\$7,411.75 per year, at a rate of \$1,852.93 per quarter	Lessor to furnish energy, utilities, janitorial services, parking. Lessee has right to install and maintain radio antenna, receiver/transmitter facilities housing, weather instruments, ceiling lights, and cables at mutually agreeable locations.  The FAA can renegotiate the rental rate to reflect "no-cost" space if appropriate legislation is repealed during the lease term.	1 year	10/1/2005 9/30/2006	Lease renewal will be deemed exercised each year for one year unless the Lessee gives Lessor 30 days written notice that it will not exercise its lease renewal option. No renewal shall extend beyond 9/30/2010.

Lessee / Tenant Description	Physical Facilities	Amount	Additional Terms	Term Length	Begin/End Date	Renewal Options
Memorandum of Lease between State of Vermont and a terminal occupant	Certain portion of the Airport Terminal Building at Edward F. Knapp State Airport, totaling 782 square feet			10 years	1/12/2007 1/11/2017	One (5) year renewal  Must give written notice at least six months before the expiration of each existing term.
Memorandum of Amendment No. 4 to Lease between State of Vermont and Tenant in Mac Stevens Hangar	Certain portion of the State-owned Mac Stevens Hangar at the Edward F. Knapp State Airport, an additional 1,087 sq. ft., for a total of 3,262 sq. ft. of floor space.	Monthly rent of \$225.00	Lessee agrees to sublet one-fourth (1/4) of the leased area (1,087 sq. ft.) for a term of no less than five (5) years for no more than \$75 monthly rent with no increase in rent for the sublet term.	15 year	5/7/1999 5/6/2014	
Memorandum of lease for: Hangar Lot 1-B	A certain parcel of land at Edward F. Knapp State Airport measuring 57 ft. x 42 ft. (2,394 sq. ft.), known as hangar lot number 1-B (interior unit) upon which Tenant is to construct, own, and occupy a hangar for personal and private use.		No option to purchase or right of first refusal.	5 years	1/17/2003 1/16/2008	Four (5) year renewals  Must give written notice at least six months before the expiration of each existing term.
Lease between the State of Vermont and The Civil Air Patrol, Inc.	A certain parcel of land measuring 60 ft. x 70 ft. (4,200 sq. ft.) upon which the Civil Air Patrol will utilize a hangar measuring 50 ft x 60 ft., the so-called Cecil Percy, Inc. hangar. The tenant shall also have the right to construct, maintain, and use a ramp connecting the leased premises to the public apron.	No fees for the term of Lease due to public benefits resulting from Civil Air Patrol use and activities at the Airport.	Civil Air Patrol shall pay all charges for utilities, taxes, duties, assessments upon aircraft, inventory, buildings, or improvements, and carry insurance.	25 years	2/_ _/2000 2/_ _/2025	Four (5) year renewals  Must give written notice at least six months before the expiration of each existing term.

Lessee / Tenant Description	Physical Facilities	Amount	Additional Terms	Term Length	Begin/End Date	Renewal Options
Memorandum of lease for: Hangar Lot 1-C	A certain parcel of land at Edward F. Knapp State Airport measuring 57 ft. x 42 ft (2,394 sq. ft.), known as hangar lot number 1-C (interior unit) upon which Tenant is to construct, own, and occupy a hangar for personal and private use.		No option to purchase or right of first refusal.	25 years	1/14/2003 1/13/2028	Four (5) year renewals.  Must give written notice at least six months before the expiration of each existing term.
Memorandum of lease for: Hangar Lot 1-D	A certain parcel of land at Edward F. Knapp State Airport measuring 52 ft. x 57 ft (2,964 sq. ft.), known as hangar lot number 1-D (end unit) upon which Tenant is to construct, own, and occupy a hangar for personal and private use.		No option to purchase or right of first refusal.	25 years	1/13/2003 1/12/2028	Four (5) year renewals.  Must give written notice at least six months before the expiration of each existing term.
Memorandum of lease for: a Terminal Occupant	A certain portion of the Airport Terminal Building at the Edward F. Knapp State Airport.	\$1,322.00  The Consumer Price Index (CPI-U) is used for changes to rental fees.		5 years	3/23/3006 2/22/2011	
Amendment No. 2 to Memorandum of Lease between the State of Vermont and Wiggins Airways, Inc.	Lessee shall have the right to park one (1) aircraft on the ramp in a location approved by the Lessor.	Rental fee of \$35 per month for each Lessor-approved aircraft in revenue service at the Airport.			12/21/1994	

Lessee / Tenant Description	Physical Facilities	Amount	Additional Terms	Term Length	Begin/End Date	Renewal Options
Amendment No. 4 to Memorandum of Lease between the State of Vermont and Vermont Flying Service, Inc.	Certain premises at the Edward F. Knapp State Airport. (Shown as 100 ft. x 100 ft. on lease 14)	\$251.00 per month.  The Consumer Price Index (CPI-U) is used for changes to rental fees.		30 years	9/17/1985 9/16/2015	Five (5) year renewals
Amendment No. 4 to Memorandum of Lease between the State of Vermont and Aviation Services of Vermont, Inc.	Certain premises at the Edward F. Knapp State Airport.	\$1,040.00 per month.  The Consumer Price Index (CPI-U) is used for changes to rental fees.		30 years	9/17/1985 9/16/2015	Five (5) year renewals
Amendment No. 1 to Memorandum of Lease for:	Certain premises (land) at the Edward F. Knapp State Airport measuring 100 ft. x 75 ft. (7,500 sq. ft.)	\$791.00 per month.  The Consumer Price Index (CPI-U) is used for changes to rental fees.	Rental amount remains the same through remainder of current term.  Lessee is permitted to sublet, provided 10% of annual gross income received from the sublet is paid to the Lessor	10 years	3/28/2000 3/27/2010	
Amendment No. 5 to Memorandum of Lease for:	Certain premises at the Edward F. Knapp State Airport. Hangar measuring 51 ft. x 42 ft. (2,142 sq. ft.) and hangar measuring 60 ft. x 42 ft. (2,520 sq. ft.) for total of 4,662 sq. ft.	\$264.34 per month.  The Consumer Price Index (CPI-U) is used for changes to rental fees.		20 years	5/31/1985 5/30/2005	

## Appendix B: State Incentives & Programs

## STATE INCENTIVES & PROGRAMS

A more complete listing of State incentives and programs available to businesses in Washington County include:

- **Financial Services Companies Tax Credit:** Vermont offers a tax credit up to 75 percent off the state income tax, based on a formula that combines the company's in-state payroll and out-of-state revenues.
- **Sales Tax Exemption:** Vermont offers a sales tax exemption on certain building materials in excess of \$1 million.
- **Fuel and Electricity Sales Tax Exemption:** This exemption applies to sales of electricity, oil and other fuels used directly or indirectly in manufacturing tangible personal property for sales.
- **Equipment Sales Tax Exemption:** Machinery and equipment used directly or indirectly in manufacturing tangible personal property for sale.
- **Industrial Fuels and Raw Materials Tax Exemption:** Motor fuels, except for railroad and jet fuel; component parts for manufacturing, packaging, and shipping materials; and newspapers and tangible property used as ingredients in the manufacture of newspapers are exempt from sales taxation. An exemption from property taxation is provided for plants and shrubs in commercial nurseries or greenhouses.
- **Pollution Control Equipment Tax Exemption:** Real and personal property used to control air or water pollution is exempt from property taxation.
- **Energy and Fuel Conservation Measures:** Alternative energy sources used to generate electricity or energy not sold or exchanged may be exempted by municipalities from property taxation.
- **Small Business Investment Tax Credit:** The small business tax credit was retroactively amended (effective January 1, 1998) to allow a credit for the first dollar of investment, not only dollars expended over \$150,000, provided the investment exceeds \$150,000. A company may receive a credit in the amount equal to five to 10 percent of its investments within the state of Vermont in plants, facilities, and machinery and equipment. Requirements vary depending upon the number of employees in the business
- **Payroll Tax Credit:** It provides a credit against income tax liability equal to a percentage of increased payroll costs. A company with sales less than \$10 million may receive equal to 10 percent of its increased costs of salaries and wages in the applicable tax year.
- **Research and Development Tax Credit:** It provides a 10 percent tax credit against income tax for qualified research and development expenditures. Qualified R&D expenditures are those included in the IRS code.
- **Workforce Development Tax Credit:** A corporation can receive an income tax credit of 10 percent of its qualified training, education and work force development expenditures.
- **Export Tax Credit:** This provision allows exporting businesses to claim credit against income tax liability. The credit is the difference between income tax

calculated under the existing state apportionment formula and the proposed formula, which double weights the sales factor and disregards "throwback" provisions.

- **Brownfields Property Tax Exemption:** Statewide education property tax exemptions are provided for expenditures incurred by a business for the construction of new, expanded or renovated facilities on contaminated property.
- **Vermont's Downtown Development Act:** Incentives include assistance with rehabilitation of certified historic or older buildings, sprinkler system rebates, reallocation of sales tax on construction materials, downtown transportation, related capital improvement fund, planning grant for qualifying for designation, and others.
- **Tax Increment Financing Districts (TIF):** The Vermont Economic Progress Council can approve applications from municipalities that wish to use the taxes generated on the excess property valuation for interest and principal repayment on bonded debt or prefunding future tax increment financing district debt. The use of TIF districts reduces out of pocket costs for developers whose projects will increase property values. In many cases, project financing by private interests cannot or should not be burdened by poor public infrastructure, which could make a much-needed project unfeasible if private financing is all that is available.
- **SBA/VEDA 504 Loan Program:** The 504 program is designed to enable growing businesses to create and retain jobs with long-term, fixed rate financing, with is generally at or slightly below the current market rate.

## Appendix C: IMPLAN Results

## Montpelier-Knapp Airport Add-On, 2012 Impact

### Employment

<i>NAICS Aggregated Sector</i>	<i>Direct</i>	<i>Indirect</i>	<i>Induced</i>	<i>Total</i>
Ag, Forestry, Fish & Hunting	0.0	0.0	0.0	0.0
Mining	0.0	0.0	0.0	0.0
Utilities	0.0	0.0	0.0	0.0
Construction	1.4	0.0	0.0	1.5
Manufacturing	0.0	0.0	0.1	0.1
Wholesale Trade	0.0	0.0	0.1	0.2
Transportation & Warehousing	6.9	0.2	0.1	7.2
Retail trade	0.3	0.2	0.9	1.4
Information	0.0	0.1	0.1	0.1
Finance & insurance	0.0	0.0	0.2	0.2
Real estate & rental	0.0	0.1	0.2	0.3
Professional- scientific & tech services	0.1	0.5	0.2	0.8
Management of companies	0.0	0.0	0.0	0.0
Administrative & waste services	0.0	0.1	0.1	0.2
Educational services	0.0	0.0	0.3	0.3
Health & social services	0.0	0.0	1.1	1.1
Arts- entertainment & recreation	0.1	0.0	0.2	0.3
Accommodation & food services	1.1	0.1	0.7	1.8
Other services	0.0	0.0	0.4	0.5
Government & non NAICS	0.0	0.1	0.1	0.1
<b>Total</b>	<b>10.1</b>	<b>1.6</b>	<b>4.7</b>	<b>16.4</b>

Multiplier: 1.63

### Income

<i>NAICS Aggregated Sector</i>	<i>Direct</i>	<i>Indirect</i>	<i>Induced</i>	<i>Total</i>
Ag, Forestry, Fish & Hunting	\$0	\$331	\$968	\$1,299
Mining	\$1	\$77	\$43	\$121
Utilities	\$0	\$851	\$2,413	\$3,265
Construction	\$53,502	\$1,234	\$954	\$55,690
Manufacturing	\$2,064	\$2,282	\$2,075	\$6,421
Wholesale Trade	\$1,802	\$2,426	\$5,993	\$10,221
Transportation & Warehousing	\$568,027	\$11,715	\$4,010	\$583,752
Retail trade	\$7,388	\$5,557	\$25,582	\$38,527
Information	\$118	\$3,365	\$2,788	\$6,272
Finance & insurance	\$0	\$2,166	\$9,245	\$11,411
Real estate & rental	\$401	\$2,339	\$3,350	\$6,090
Professional- scientific & tech services	\$3,862	\$19,411	\$6,915	\$30,188
Management of companies	\$0	\$141	\$172	\$313
Administrative & waste services	\$0	\$2,259	\$1,887	\$4,146
Educational services	\$0	\$717	\$7,080	\$7,797
Health & social services	\$0	\$2	\$45,972	\$45,974
Arts- entertainment & recreation	\$3,930	\$162	\$2,533	\$6,625
Accommodation & food services	\$16,436	\$1,211	\$11,498	\$29,146
Other services	\$0	\$1,181	\$8,781	\$9,963
Government & non NAICS	\$69	\$3,707	\$4,037	\$7,813
<b>Total</b>	<b>\$657,599</b>	<b>\$61,136</b>	<b>\$146,296</b>	<b>\$865,032</b>

Multiplier: 1.32

**Output**

<i>NAICS Aggregated Sector</i>	<i>Direct</i>	<i>Indirect</i>	<i>Induced</i>	<i>Total</i>
Ag, Forestry, Fish & Hunting	\$0	\$543	\$1,067	\$1,610
Mining	\$4	\$586	\$546	\$1,135
Utilities	\$0	\$4,063	\$11,508	\$15,571
Construction	\$176,047	\$3,455	\$2,704	\$182,205
Manufacturing	\$9,791	\$8,919	\$12,916	\$31,626
Wholesale Trade	\$4,765	\$6,415	\$15,849	\$27,029
Transportation & Warehousing	\$832,343	\$19,679	\$8,531	\$860,553
Retail trade	\$17,955	\$13,892	\$63,544	\$95,391
Information	\$554	\$14,958	\$14,203	\$29,714
Finance & insurance	\$0	\$7,108	\$32,979	\$40,087
Real estate & rental	\$2,425	\$13,692	\$19,802	\$35,919
Professional- scientific & tech services	\$5,606	\$42,349	\$16,698	\$64,653
Management of companies	\$0	\$336	\$410	\$746
Administrative & waste services	\$0	\$6,863	\$5,583	\$12,445
Educational services	\$0	\$1,435	\$14,029	\$15,463
Health & social services	\$0	\$6	\$87,551	\$87,557
Arts- entertainment & recreation	\$11,345	\$847	\$7,432	\$19,624
Accommodation & food services	\$49,266	\$3,632	\$34,643	\$87,542
Other services	\$0	\$2,895	\$16,916	\$19,811
Government & non NAICS	\$284	\$14,990	\$85,509	\$100,782
<b>Total</b>	<b>\$1,161,799</b>	<b>\$166,662</b>	<b>\$452,418</b>	<b>\$1,780,879</b>

**Multiplier: 1.53**

Tax Impact

	Empl. Comp.	Prop. Income	Household Ex	Enterprises Ind.	Bus Tax	Totals
Enterprises (Corporations)						
Corporate Profits Tax				\$11,633		\$11,633
Indirect Bus Tax: Custom Duty					\$3,982	\$3,982
Indirect Bus Tax: Excise Taxes					\$10,734	\$10,734
Indirect Bus Tax: Fed NonTaxes					\$4,866	\$4,866
Personal Tax: Estate and Gift Tax						\$0
Personal Tax: Income Tax			\$67,919			\$67,919
Personal Tax: NonTaxes (Fines- Fees						\$0
Social Ins Tax- Employee Contribution	\$25,851	\$20,148				\$45,999
Social Ins Tax- Employer Contribution	\$26,234					\$26,234
Federal Government NonDefense						
Total	\$52,085	\$20,148	\$67,919	\$11,633	\$19,581	\$171,366
Corporate Profits Tax				\$2,260		\$2,260
Dividends				\$2,578		\$2,578
Indirect Bus Tax: Motor Vehicle Lic					\$1,972	\$1,972
Indirect Bus Tax: Other Taxes					\$6,606	\$6,606
Indirect Bus Tax: Property Tax					\$87,443	\$87,443
Indirect Bus Tax: S/L NonTaxes					\$7,125	\$7,125
Indirect Bus Tax: Sales Tax					\$39,586	\$39,586
Personal Tax: Estate and Gift Tax						\$0
Personal Tax: Income Tax			\$21,625			\$21,625
Personal Tax: Motor Vehicle License			\$1,701			\$1,701
Personal Tax: NonTaxes (Fines- Fees			\$5,766			\$5,766
Personal Tax: Other Tax (Fish/Hunt)			\$797			\$797
Personal Tax: Property Taxes			\$756			\$756
Social Ins Tax- Employee Contribution	\$218					\$218
Social Ins Tax- Employer Contribution	\$871					\$871
State/Local Govt NonEducation						
Total	\$1,089	\$0	\$30,645	\$4,838	\$142,732	\$179,304
Total	\$53,596	\$20,148	\$98,564	\$16,472	\$162,314	\$351,093