

April 2010

VTrans

Vermont Agency of Transportation

STATEWIDE AIRPORT BUSINESS PLANS

MORRISVILLE-STOWE STATE AIRPORT



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1. INTRODUCTION

The purpose of this business plan is to recommend potential means of improving the financial performance of the Morrisville-Stowe State Airport (MVL) in order to make the facility as self-sustaining as possible. This business plan will recommend means to generate additional revenue while making the Airport a partner in the economic development of Lamoille County.

1.1 Missions & Goals

Knowledge of the missions, goals, and background of the sponsor, the Airport, and the development community, helps to identify the opportunities and challenges that are currently facing the Airport and that could face the Airport in the future. A clearly defined, current, and realistic mission statement provides a framework to support development. This analysis is geared toward the future and toward positioning the Airport to take the best advantage of its strengths and assets.

Vermont Agency of Transportation

Morrisville-Stowe State Airport is owned by the State of Vermont Agency of Transportation (VTrans). VTrans currently owns ten airports across the State. Of these ten airports, three airports are operated by State employees, and the remaining seven, including Morrisville-Stowe, are operated primarily by resident Fixed Base Operators (FBO) who act as contracted airport managers. While the mission of each of the ten airports owned by VTrans varies, the mission of the owner includes many of the overarching themes important at Morrisville-Stowe:

”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 systems¹.”

The 2007 Vermont Airport System and Policy Plan (VASPP) also includes goals for VTrans to continue to maintain or to achieve. Several of these goals are relevant to the Morrisville-Stowe State Airport, including:

- Provide a system of airports that is accessible for people and goods from both the ground and the air throughout the State.
- Preserve and enhance Vermont’s existing airport systems infrastructure investment through maintenance and rehabilitation to meet future growth and demand as well as

¹ Executive Summary, 2007 Vermont Airport System and Policy Plan,

- 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 (Airport Master Record) Program.
 - 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.
 - 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.

Morrisville-Stowe State Airport

Morrisville-Stowe State Airport provides a base for recreational and business air transportation for residents and visitors to Lamoille County. However, the Airport does not have a formal mission statement. If a mission statement were to be adopted for the Airport, it could be stated as:

“The mission of the Morrisville-Stowe State Airport is to provide a safe and fiscally sound airport for pilots, residents, and visitors to Lamoille County and the State of Vermont. The Airport strives to be an important asset to the Morristown, Morrisville & Stowe communities as well as a regional economic driver, an impetus for business growth and retention, and a gateway for the State and region’s thriving tourism industry.”

Program goals to support the mission, as stated above, could 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 development of the Airport’s facilities.
- Create an environment that facilitates business activity and provides access to and for the region’s businesses.
- Pursue funding for implementation of necessary capital improvement projects to improve safety and usability of the Airport.

At present, Morrisville-Stowe is managed by Whitcomb Aviation, the FBO at the Airport. Whitcomb receives a small amount of funding from the State for serving as the airport manager and the State’s representative at the Airport. Whitcomb provides a number of services at the Airport which will be detailed later in this business plan.

1.2 Desired End Products

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

- 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 to support Airport development.
- An economic impact assessment of the Airport, identifying jobs, income, taxes, and total output associated with the facility.

1.3 Report Outline

Several aspects of Morrisville-Stowe State Airport will be considered as part of this project. These aspects include the financial performance of the Airport, the presence and/or capability to attract corporate or business aviation, the size of the current facility, the relationship between the Airport and the community, and the economic impact of the Airport on the community.

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

Section 3 - Airport Characteristics

Section 4 - Development Consideration

Section 5 - Airport Improvement Areas

Section 6 - Recommended Plan

Section 7 - Economic Impact Analysis

Appendix A - State & Local Development Incentive Programs

Appendix B - Lease Summaries

Appendix C - IMPLAN Results

2. BACKGROUND

2.1 Airport Location

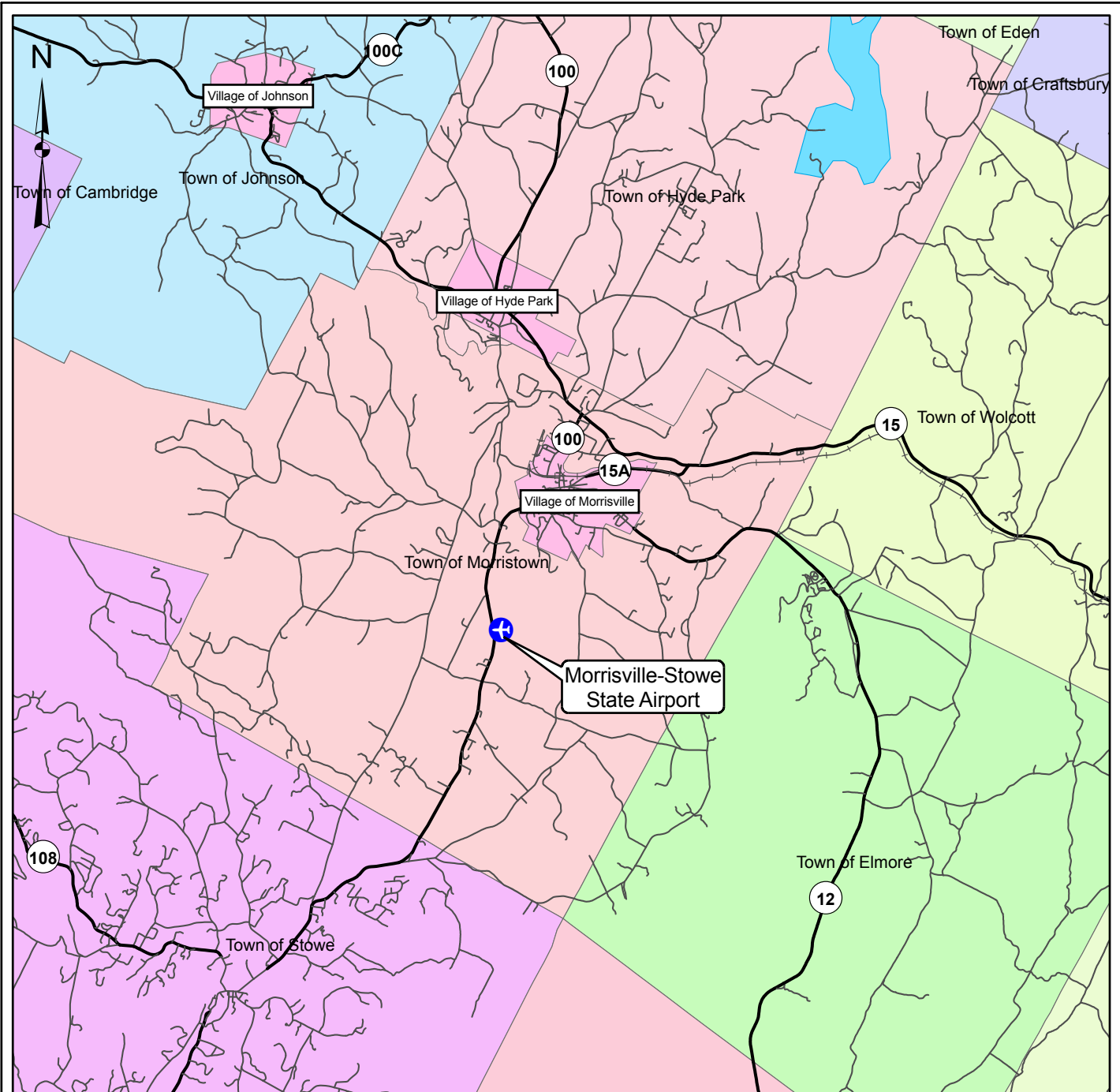
Morrisville-Stowe State Airport is located in southeastern Lamoille County. The Airport is located in the Town of Morrystown, approximately two miles south of the Village of Morrisville and approximately six miles north of the central business district of the Town of Stowe. Vermont's State capital, Montpelier, is approximately 25 miles south of the Airport. The state's largest city, Burlington, is 35 miles to the west. Access to the area is provided from the north, south, east, and west via Interstate 89, a north-south Interstate that crosses Vermont in a northeast-southwest direction near Lamoille County. The northern terminus of Interstate 89 is at the Canadian border in Highgate Springs, Vermont, with the southern terminus in Concord, New Hampshire at Interstate 93. Interstate 89 is located south and west of the Airport. Access to Interstate 89 from Lamoille County is accomplished via State Route 100. Interstate 91 also provides access to the area from the north and south and intersects Interstate 89 outside of White River Junction, Vermont. Interstate 91 is located to the east of the Airport. Additional access from the north and south is provided via State Routes 12 and 108. State Route 15 also provides east-west access to the area, with a western terminus in Winooski, Vermont at U.S. Routes 2 & 7, and an eastern terminus at U.S. Route 2 in West Danville, Vermont, near Joe's Pond. Access to the Airport is gained via LaPorte Road (State Route 100). The Airport location is shown in Figure 1.

State Route 100 is the main route through Lamoille County, connecting Hyde Park, North Hyde Park, Morrystown, Morrisville, and Stowe with Waterbury and Interstate 89 in Washington County. State Route 100 continues to a northern terminus in Newport, Vermont at State Route 105 and a southern terminus in Stamford, Vermont at Massachusetts State Route 8, near Readsboro. The section of State Route 100 where the Airport is located is agricultural, with farms and rural residential housing surrounding the Airport to the south, west, and north, and with mountainous terrain to the east. Houses and barns abut the Airport along the western border between the Airport and LaPorte Road (State Route 100). Flight traffic patterns to the Airport pass over residential neighborhoods in Morrisville.

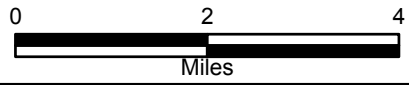
2.2 Regional Profile

While not located in either Morrisville or Stowe, the Morrisville-Stowe State Airport has a major impact on tourism and business activities in the Lamoille County region. Located to the south in Stowe are the Stowe Mountain and Smugglers Notch Ski Resorts. Further south in Waterbury, Washington County, is the Ben & Jerry's Ice Cream Factory, one of the most popular tourist destinations in Vermont, which provides factory tours, a scoop shop, and a gift shop. The Cabot Creamery Annex, Green Mountain Coffee Roasters, and Cold Hollow Cider Mill are other tourist destinations in the region.

Two central business districts dominate the Airport vicinity. Each area serves a different niche. Downtown Stowe is tourist based with small shops, restaurants, hotels, and ski supply shops. Several historic buildings can be found in Stowe, including the Stowe Town Hall and the



REGIONAL LOCATION



MORRISVILLE-STOWE STATE AIRPORT
LAMOILLE COUNTY, VERMONT

LOCATION MAP

SCALE: AS SHOWN	DATE: JANUARY 2009	FIGURE: 1
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Stowe Community Church. Other destinations in Stowe include several general stores and souvenir shops, a Mobil gas station with an upscale convenience store, a library, an art gallery, and several visitors' centers. Downtown Stowe is absent of chain restaurants and shops.

Downtown Morrisville has shops and restaurants, including a small department store and other businesses that cater to local residents. A variety of banks and other offices can also be found in downtown Morrisville. Unlike downtown Stowe, Morrisville contains stores, shops, and services that resemble those provided in rural central business districts. There are some divisions between residents of Morrisville and Morrystown with residents (full and part-time) in Stowe. These divisions appear to be based on the economic differences of the two areas. The animosity is also focused on the Airport, where Morrisville and Morrystown residents have displayed a belief that aviation is for the wealthy, indicating that the Airport was intended only for those visiting and residing in Stowe. Airport management indicated that while most people in Morrisville and Morrystown are non-committal concerning the Airport, when expansion is discussed people begin to voice their concern in masses.

The population of Morrystown, Stowe, and of every town in Lamoille County as a whole, has grown since 1980. Information regarding local population characteristics can be found in Table 1. It is important to note that these population figures include only those who consider themselves full-time residents of these communities. Per Census regulations, part-time residents, including second or third homeowners, as well as some seasonal employees, would not indicate themselves as residents of these communities when filing forms with the United State Census. Therefore, actual populations in these areas are likely higher during peak seasons than the figures gathered by the Census.

Table 1: Population Characteristics			
Total Population			
	1980	2000	2007
Town of Morrystown	4,448	5,139	5,524
Town of Stowe	2,991	4,339	4,886
Lamoille County	16,767	23,233	24,676
State of Vermont	511,456	608,827	621,254

United States Census (<http://factfinder.census.gov>)

State of Vermont Department of Health (<http://healthvermont.gov/research/2007pop/2007pop.aspx>)

The 2000 United States Census also provides other information about the year-round population in each of the communities. The educational attainment of residents in the two towns, while above national figures, displays differences. In Stowe, 94% of the population over the age of 25 has a high school diploma and 54% has a Bachelors Degree. Those figures in Morrystown are significantly lower, as 85% of the population has a high school diploma, and only 24% has obtained a Bachelors Degree, the national average, but significantly lower than Stowe. The median age in both towns is above the national average of 35.3. In Stowe, the median age is 41.4, and in Morrystown the median is 39. The population below the age of 18, with a national average of 25.7%, is below average in both Morrystown (24.2%) and Stowe (21.1%). The most significant difference between Morrystown and Stowe may be in median household income. The national median household income in 2000 was \$41,994. In Stowe, the median household income was \$52,378, nearly 25% above the national average. However, in Morrystown, the

situation is opposite, with a median household income of \$33,359, 20% below the national average.

The figures presented in the previous paragraphs are representative only of the year-round population in Morristown, Stowe, and Lamoille County. Part-time residents are counted by the United States Census in the community where their primary homes are located. The State of Vermont has one of the largest rates of second homeownership in the country. Second homeownership in Stowe appears to be relatively high. According to the 2000 United States Census, only 69.8% of the housing units in Stowe were labeled as occupied, well below the national average of 91%. This could be indicative of two things: a slumping economy or part-time residential uses. The economy of Stowe is strong with minimal properties for sale. Therefore, it is assumed that many of the non-occupied homes are in fact occupied on a part-time basis, which would be unaccounted for in the Census. Occupancy of housing units in Morristown is at 92.5%, above the national average. Another indicator of differences between the two communities is the median value of single-family owner-occupied homes. The national median was \$119,600. The median value in Morristown is below the national average at \$105,100, while the median value in Stowe is significantly above the national median at \$212,700.

2.3 Airport & Regional Economic Climate

The business climate at the Airport and within the region was reviewed to illuminate strengths and weaknesses prior to considering business plan alternatives. Upon review of the business climate, several preliminary alternatives were developed to explore different methods of increasing revenues. These revenues could be used to reduce the projected operating deficit and/or to pay for portions of the local share of capital development projects.

Existing Airport Tenants & Users

There are several tenants at the Morrisville-Stowe State Airport. Descriptions of several of these lessees are below:

Whitcomb Aviation

Whitcomb Aviation is the FBO at Morrisville-Stowe State Airport. The owner of Whitcomb also serves as the airport manager. Whitcomb provides a variety of services to users of the airport including flight training, a pilot lounge, Enterprise Rent-A-Car, U-Haul, 100LL and Jet-A aircraft fuel, and aircraft parking space, both in hangars and on aprons. Whitcomb also serves as the New England Broker for USA Aircraft.

According to Whitcomb, the FBO leases two buildings at the airfield including 218 square feet in the terminal and a large conventional hangar utilized for aircraft storage. The FBO has continued adding services to the Airport, including the recent addition of Enterprise Rent-A-Car, in an effort to provide a better service to its customers and to increase both the State and FBO's revenue at the Airport.

Stowe Soaring

Stowe Soaring is a company operating out of the terminal at the Morrisville-Stowe State Airport. The glider company is owned and operated by the FBO. Stowe Soaring provides a variety of packages to visitors at the airport interested in taking glider rides through the Green Mountains. In addition, Stowe Soaring provides glider flight training at the Airport. According to the company, as well as economic development and tourism officials in Lamoille County, Stowe Soaring is a popular attraction for tourists and part-time residents in the region.

Vermont State Police / Vermont Air National Guard

While not based at the airport, the Vermont State Police and Vermont Air National Guard are occasional users of the Airport. According to Airport management, the two agencies utilize the Airport as a base during their annual marijuana patrols through the area, using the Airport extensively for several weeks each autumn.

Corporate Aviation

There are no corporate hangars at the Morrisville-Stowe State Airport. However, there is limited corporate and business aviation at Morrisville-Stowe. Airport management indicated that Heritage Flight, Burton Snowboards, Bachman Pretzels, House of Troy, and Cabineri Construction are occasional users of the Airport. Local economic development officials and planners indicated that business use of the Airport might be diminished by the area's proximity to Burlington International and E.F. Knapp State Airports, with some larger business aircraft taking advantage of the longer runways and precision approaches available at those airports over the current facilities at Morrisville-Stowe. There is the potential for an increase in business aviation at the Airport in the future after the completion of airside infrastructure improvements.

Regional Economic Profile

The economy of Lamoille County is similar to many other regions of Vermont including the Northeast Kingdom and the Rutland area. While manufacturing and food and agriculture-related businesses are important factors into the economy of the region, recreational-based business and tourism dominate in most aspects. According to the *Regional Profile of Lamoille County, Vermont*, the service industry, which includes positions in recreational-based industries, accounts for approximately 50% of the employment for the 13,400 members of the labor force. In addition, due to the seasonality of many of these positions, unemployment in the region fluctuates, as in 2008; the highest unemployment rate was 6.9% with a low of 4.3%². In 2003, there were 53,820 acres of active farmland in Lamoille County, as well as 240,000 acres of timberland. Major economic centers throughout the Northeast are close enough to Lamoille County for the region to host satellite offices and for the area to serve as a weekend destination for residents in the major cities. Business centers and their proximity to Lamoille County are noted in Table 2.

² Bureau of Labor Statistics (<http://data.bls.gov>).

Table 2: Distance from Morrisville-Stowe State Airport to State & Regional Business Centers		
Nearby Cities	Driving Distance (miles)	Driving Time (hours)
Montpelier, VT	29	.75
St. Johnsbury, VT	40	1.0
Newport, VT	41	1.0
St. Albans, VT	41	1.0
Burlington, VT	43	1.0
Rutland, VT	92	2.0
Montreal, Canada	110	2.5
Manchester, NH	156	2.75
Boston, MA	206	3.5
Hartford, CT	225	3.75
Albany, NY	199	4.0
Quebec City, Canada	225	4.0
Portland, ME	248	4.25
Providence, RI	256	4.25
Ottawa, Canada	229	4.5
New York City, NY	341	6.0

A variety of employers maintain operations in Lamoille County. These companies are in industries ranging from supermarkets to tourism. As indicated previously, nearly 50% of the labor force in Lamoille County is in the service industry. This trend is shown in Table 3, which indicates some of the largest employers in Lamoille County. Service industry examples include Price Chopper, Martin’s Food, Smuggler’s Notch, and Stowe Mountain. As an example, Smuggler’s Notch employs over 1,000 people during the winter, but only 700 in the summer and 300 in the spring and autumn. Not included in the following list, but also important employers in Lamoille County, are several school districts and government agencies.

Table 3: Major Employers in Lamoille County	
Employer	
Baraw Enterprises	Copley Hospital
Lamoille County Mental Health Services	Martin’s Food
Mathieu Enterprises	McKerley Health Care
Manufacturing Solutions Inc.	Concept2
Price Chopper	Smuggler’s Notch
Springer-Miller Systems	Stowe Mountain
Vermont State Colleges	House of Troy
HearthStone Stoves	Burton Snowboard
Trapp Family Lodge	Union Bank

Source: Lamoille County Regional Planning Commission

While the economy of the area rests on the base of a strong service industry, there are a variety of other industries that also employ residents of Lamoille County. Concept2, based in Morrisville, is a leader in the rowing industry, manufacturing indoor rowers as well as oars and

equipment to test the heart rate of rowers. Also in Morrisville is the headquarters for Manufacturing Solutions Inc. (MSI). MSI is responsible for a variety of manufacturing processes requested by clients. Included in services provided by MSI are assembly, quality control, transportation, and storage of products. Clients of MSI include Concept2, NSA Industries, House of Troy, HearthStone Stoves, Butternut Mountain Farms, and Sunrise Developments.

Innovation industries are growing in Lamoille County. Examples of companies in this industry include Hawkeye International, which produces pressure sensitive tape and other products utilized in the defense and aerospace industries; PAR Springer-Miller, which develops software for hospitality and spa management; and, SUSS Microtec, a Germany-based corporation that constructs wafer bonders. Examples of all key industries and examples of local companies can be found in Table 4.

Functional Groups	Employers
Consumer Durables Manufacturing	HearthStone Stoves House of Troy MJ Wood Products
Recreational Equipment	Diamondback Tubbs Snowshoe Concept2
Specialized Textile Products & Services	Turtle Fur Vermont Fleece Johnson Woolen Mills
High Value-added Professional, Scientific, & Technical Services	Springer-Miller Systems Moscow Mills Manufacturing Cushman & Beckstrom Architects
Natural Resource Based Manufacturing	Manchester Lumber George F. Adams North Woods Joinery Manosh Hardwoods
Destination Family Resorts & Recreation	Smuggler's Notch Resort Stowe Mountain Resort Trapp Family Lodge Stoweflake Resort & Spa Top Notch Resort

Source: 2006-2011 Lamoille County Regional Plan, Section 2, Page. 31.

Second-home ownership in Vermont is very high. Even with the slump in the nationwide housing market, national statistics show that Vermont was one of only two states that had an increase in the sales price of homes in the third quarter of 2007 compared the third quarter of 2006. According to a study completed by the University of Vermont Extension, second home visitation added over \$101 million in visitor spending to the economy of Vermont³.

³ "The Travel and Tourism Industry in Vermont", Economic & Policy Resources, Inc. and Portland Research Grp, 2007.

Industrial Parks

One measure of a community's economic growth potential is the extent to which industrial and/or commercial space is available to accommodate business growth. Due to the dominance of tourism and the service industry in Lamoille County, there are only a limited number of industrial or business parks in the county. A business park in Morrisville is currently at capacity and the director of the Chamber of Commerce indicated a need for an expansion or a second park. A small industrial park in Cambridge is currently at capacity. An industrial park in North Hyde Park is the only park with space available in Lamoille County. Seven acres are available for development. All three industrial parks are privately owned and operated.

Local and State Incentives & Programs

Review of the local business climate in Lamoille County 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. A complete listing of local and State development incentives can be found in Appendix A.

3. AIRPORT CHARACTERISTICS

3.1 Existing Airside Facilities

Runway

The Airport has one runway. Runway 1-19 extends in a north-south direction. According to airport management, the runway has not been reconstructed or rehabilitated in nearly 25 years. It was indicated by airport management that the runway is scheduled for reconstruction in the near future. Figure 2 shows the existing layout of the Airport and its facilities. Table 5 summarizes the characteristics of the runway.

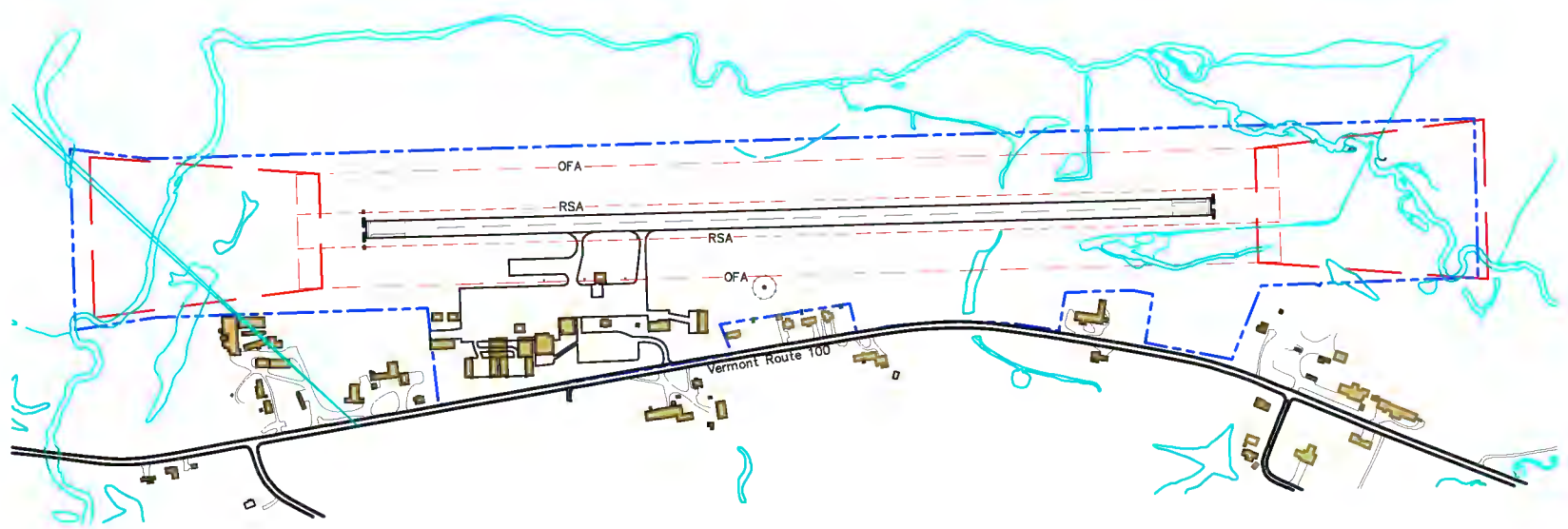
Table 5: Runway Characteristics		
	Runway End	
	1	19
Airport Reference Code	B-II	
Length	3,701'	
Width	75'	
Pavement Condition	Fair	
NAVAIDS	REILs	VASI, REILs
Runway End Elevation	713'	731'
Marking	Non-Precision	
Lighting	Medium Intensity Runway Lights	
Gross Weight Limitations	Single Wheel: 25,000 lbs	
AWOS/ASOS	ASOS	

Source: FAA Airport Master Record, as of April 2010

Taxiways

The Airport currently has two stub taxiways that connect the aprons to the runway. Taxiway Alpha begins at the south end of Apron 2 and connects the apron to the runway, approximately 1,200' from the Runway 19 end. Taxiway Bravo begins at the southern end of Apron 1 and the northern end of Apron 2. Taxiway Bravo passes Apron 3 before terminating at the runway approximately 900' from the Runway 19 end. Each taxiway is 25' in width. With no parallel taxiways to any runway end, aircraft preparing to takeoff must taxi down the active runway and turnaround prior to taking off. Aircraft landing from the Runway 1 end must stop prior to passing Taxiway Bravo or will need to turnaround on the runway and return to Taxiway Bravo. Both taxiways are equipped with Medium Intensity Taxiway Lights (MITLs).

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MORRISVILLE-STOWE STATE AIRPORT
LAMOILLE COUNTY, VERMONT

EXISTING LAYOUT

1" = 800'

AUGUST 2009

2



McFarland Johnson
in association with
R.A. Wiedemann & Associates, Inc.



Airport Reference Code

An Airport Reference Code (ARC) is based on characteristics of the most demanding aircraft, or group of aircraft (generally referred to as the “design aircraft”) that regularly use the airport, with the term “regularly” defined as at least 250 takeoffs annually (500 annual operations). The letter defines the approach category and is based on the approach speed, or 1.3 times the stall speed of the design aircraft. The Roman numeral, which indicates the design group, is based on the wingspan or the tail height of the design aircraft, whichever is more demanding (by way of example, if an airport’s design aircraft had a wingspan of 48 feet, but a tail height of 29 feet, it would be a design group II aircraft). Table 6 indicates the groupings used to determine the ARC.

Table 6: Airport Reference Code (ARC)		
Aircraft Approach Category	Approach Speed	
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	
Airplane Design Group	Wingspan	Tail Height
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 150/5300-13, Change 14.

The 2005 Master Plan Update (MPU) indicated that the largest aircraft to utilize the Airport on a regular basis is the Beech King Air 200, a B-II aircraft, with 800 annual itinerant operations⁴. According to the MPU, 200 annual itinerant operations are completed by the B-II Cessna Citation, 550 by the B-I Beech Bonanza 33C, and 400 by the B-I Beech Baron 55. According to airport management, the largest aircraft that currently utilizes the airport on an occasional basis is a B-II Dassault Falcon 900, which has less than ten operations per year, and must face extreme weight restrictions to land and takeoff at the Airport due to the aircraft’s requirement of a minimum runway length of 4,520’ for the DX model with a takeoff weight of 44,785 pounds (including eight passengers), which would be significantly greater than the current runway length, as well as the gross weight limitations. Per the 2005 MPU, the design

⁴ Master Plan Update, January 2005, Page 4-2.

aircraft is the B-II Beech King Air 200. However the ultimate design aircraft is expected to be a member of the Cessna Citation family, also a B-II aircraft.

Lighting and Instrumentation

The runway at Morrisville-Stowe State Airport is equipped with medium intensity runway lights (MIRLs). In addition, runway end indicator lights (REILs) are available off both runway ends, and a visual approach slope indicator (VASI) is available off the Runway 19 end. A lighted wind cone and segmented circle is located to the south of the main apron.

Several non-precision approaches are available for Runway 1-19 at the Airport. A global positioning system (GPS) approach is available for Runway 19, with a minimum ceiling of 828' and a required visibility of one mile for aircraft in Airport Approach Category A and 1 ¼ miles for aircraft in Category B. A circling-only nondirectional beacon (NDB) or global positioning system (GPS-B) approach is also available with a minimum ceiling of 1,268' and a required visibility of 1 ½ miles for aircraft in Category A and 1 ¼ miles for aircraft in Category B.

Surfaces and Safety Areas

Although this is a business plan and will concentrate on business issues pertaining to the Airport, it is important to note instances where the Airport's facilities are not meeting FAA standards. A failure to meet FAA safety standards limits opportunities for the Airport to access federal funding for any other purpose other than to fix its "safety" issues. Therefore, any plans to use federal funds to construct or improve facilities must be predicated on addressing the issues mentioned in the following sections.

FAR Part 77 Imaginary Surfaces

The specification for airspace surrounding airports has been set forth in Federal Aviation Regulation (FAR) Part 77, Objects Affecting Navigable Airspace. This airspace is defined and delineated by a set of geometric surfaces referred to as "imaginary surfaces," which extend outward and upward from airport runways. Those imaginary surfaces identify the maximum acceptable height of objects beneath and within their boundaries. An object may be considered an obstruction to air navigation if it penetrates an imaginary surface.

The imaginary surfaces consist of five geometric surfaces that surround an airports' runway(s). These surfaces are the primary, approach, transitional, horizontal, and the conical. If a surface is penetrated, the approach or departure minimums at that airport could be impacted. According to airport management, significant obstructions can be found off the Runway 1 end in the Approach Surface. These obstructions are planned for removal, which airport management indicated is important to the future of the Airport.

Runway Protection Zones (RPZ)

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

avigation easements within the RPZ to ensure necessary control over these areas. A RPZ is a trapezoidal area that begins 200 feet from the runway end that extends and diverges based on the type of aircraft that the facility serves, and by the approach visibility minima for each runway end. Table 7 describes the RPZ requirements for the runway ends at the airport. The MPU indicates that under the current runway configuration, VTrans owns virtually all of the land in the RPZs. However, if either runway end were to be extended, the acquisition of land in fee-simple or through avigation easements for the future RPZs would be required⁵.

Runway End	Length (feet)	Inner Width (feet)	Outer Width (feet)	RPZ Acres
1	1,000	500	700	13.77
19	1,000	500	700	13.77

Source: Master Plan Update, January 2005.

Runway Safety Areas (RSA)

The Runway Safety Area surrounding the runway is designed to reduce the risk of damage to airplanes and injuries to their occupants resulting from overshoots, undershoots, or excursions from the runway. At Morrisville-Stowe, the RSA width, pursuant to FAA standards, should be 150 feet, or 75 feet from the runway centerline in each direction. The RSA length should be 300 feet from each runway end. At present, the Runway 1 RSA is in compliance; however, the RSA off of the Runway 19 end is only 200 feet in length, and therefore not in compliance. The MPU indicates that the terrain begins to drop off at this point and that RSA reconstruction would be necessary to make the runway end compliant.

3.2 Airport Classification

The VASPP divided all public-use airports in the State of Vermont into four categories: National Service, Regional Service, Local Service, and Specialty Service, depending on their existing or potential utilization. Morrisville-Stowe was classified by the VASPP as a Regional Service Airport. Such airports primarily cater to general aviation activity with a focus on serving business aviation including some jets and multi-engine aircraft. As opposed to smaller airports, Regional Service Airports have more focus on connecting the local and regional economy to the State and national economy⁶. The VASPP describes recommended minimum standards for a number of characteristics that each type of airport should meet. Those objectives, their minimum standards, and whether the Airport currently meets the standards, are shown in Table 8.

⁵ Master Plan Update, January 2005, page 4-4.

⁶ Vermont Airport System and Policy Plan, February 2007, Chapter 3, page 3.12.

Objective	Recommended Minimum	Minimum Standard Met	Minimum Standard Not Met
Airport Reference Code	B-II	X	
Runway Length	5,000'		X
Runway Width	75'	X	
Runway Strength	30,000 lbs		X
Taxiway Requirements	Full Parallel Taxiway		X
Approach	Non-Precision 400'/1 mile		X
NAVAIDs	Rotating Beacon, Lighted Wind Indicator / Segmented Circle, REILs, VGSI, Appropriate Non-Precision Approach	X	
Lighting	Medium Intensity Runway and Taxiway Lights	X	
Weather Reporting	AWOS or ASOS	X	
Ground Communications	Public Phone, Ground Communication Outlets or Remote Communication Outlets	X	
Hangar Space	29,400 sq. ft.		X
Apron Space	4,400 sq. ft.	X	
Terminal/Administration Building Space	2,500 sq. ft.		X
Fence Coverage	Entire Airport		X
Automobile Parking	42 spaces	X	
Fuel Service	Self-Serve AvGas and Jet A	X	
FBO Requirements	Full Service	X	
Aircraft Maintenance	Full Service	X	
Ground Transportation	Rental Car Available	X	

Source: Vermont Airport System and Policy Plan, February 2007, Appendix D.

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). The Airport's role in the NPIAS is that of a general aviation airport, which is defined as an airport with no or very limited (less than 2,500 annual enplaned passengers) commercial service.

3.3 Existing Aviation Activity

Like many other general aviation airports, Morrisville-Stowe caters to a wide variety of users from individuals using the Airport for recreational flying and flight training to those utilizing the Airport to access nearby attractions and businesses. At present, there is a limited amount of business and corporate related flight activity. However, there is a significant amount

of flight activity related to nearby attractions, including the Smugglers Notch and Stowe Mountain Ski Resorts. The proximity to these attractions and the facilities available at the airfield make Morrisville-Stowe an attractive option for flyers, although the existing runway length of 3,700’ reduces the utility of the facility for many jet and larger turboprop aircraft. The Airport Master Record, as of April 2010, indicates 37 aircraft are based at the Airport, including 25 single engine aircraft and one jet. The Airport Master Record also indicates that there were 11,976 annual operations as of June 5, 2009. Specific figures can be found in Table 9.

Based Aircraft	
Ultralight	8
Single Engine	25
Multi-Engine	3
Jet	1
Helicopter	0
TOTAL	37
Operations	
General Aviation	11,236
Commercial Operations	0
Air Taxi	240
Military Operations	500
TOTAL	11,976

Source: Airport Master Record, April 2010.

There are significant variations in many of the “official” records regarding certain aspects of Airport performance. According to the 2007 VASPP, there were 28 aircraft based at the Airport, which matches the figures the FAA’s Terminal Area Forecast (TAF) for 2007, but is below the TAF report which indicated 37 based aircraft. The 2005 MPU indicated 36 based aircraft at the airport, including 23 single-engine aircraft. The historical information and the forecasts from the VASPP and the MPU can be found in Table 10.

In terms of operations, the Airport had 18,020 according to the VASPP and the TAF in 2007. The 2008 TAF report indicated that operations had declined to 11,976 annual operations. The MPU indicated that 21,100 operations occurred annually at the time of completion of the study in early 2005. The historical and forecast operations data can be found in Table 11.

In a July 2008 meeting with the airport manager, it was indicated that there were 48 aircraft based at the airport including 30 single-engine aircraft, with three multi-engine aircraft, ten gliders, four experimental aircraft, and one jet. The airport manager also indicated that approximately 50 operations occur at the Airport daily, for a total of 18,250 annual operations, significantly more than the number indicated by the Airport Master Record but in line with the figures from the MPU, VASPP, and TAF. According to estimates provided by VTrans, acoustical counters at the Airport counted approximately 10,000 operations in 2008. These variances are common at non-towered general aviation airports where it is difficult to get an accurate count of aircraft operations.

Table 10: Based Aircraft Forecasts				
MPU				
	Existing (2005)	Short-Term (2010)	Long-Term (2020)	
Single	23	25	32	
Multi-Engine	3	4	5	
Turboprop	1	2	3	
Jet	1	1	2	
Helicopter	0	0	1	
Other	8	8	10	
TOTAL	36	40	53	
VASPP				
	Existing (2005)	Short-Term (2010)	Intermediate (2015)	Long-Term (2020)
Ultralight / Sport / Other	8	8	9	10
Single-Engine	18	19	19	20
Multi-Engine	2	2	2	2
Jet	0	0	0	0
Helicopter	0	0	0	0
TOTAL	28	29	30	32
TAF				
	Existing (2008)	Short-Term (2010)	Intermediate (2015)	
TOTAL	37	37	37	

Sources: Master Plan Update, January 2005.
Vermont Airport System & Policy Plan, February 2007.
FAA Terminal Area Forecast, December 2009.

Table 11: Operations Forecasts				
MPU				
	Existing (2005)	Short-Term (2010)	Long-Term (2020)	
Single / Other	18,220	19,800	23,355	
Multi-Engine	1,400	1,800	2,420	
Turboprop	1,100	1,260	1,680	
Jet	320	415	645	
Helicopter	60	75	100	
TOTAL	21,100	23,350	28,200	
VASPP				
	Existing (2005)	Short-Term (2010)	Intermediate (2015)	Long-Term (2020)
General Aviation	17,520	18,100	18,800	20,000
Commercial Operations	0	0	0	0
Military Operations	500	500	500	500
TOTAL	18,020	18,600	19,300	20,500
TAF				
	Existing (2008)	Short-Term (2013)	Intermediate (2018)	Long-Term (2023)
General Aviation	11,476	11,476	11,476	11,476
Commercial Operations	0	0	0	0
Military Operations	500	500	500	500
TOTAL	11,976	11,976	11,976	11,976

Sources: Master Plan Update, January 2005.
Vermont Airport System & Policy Plan, February 2007.
FAA Terminal Area Forecast, December 2009.

3.4 Existing Landside and Aviation-Support Facilities

Landside and aviation-support facilities accommodate the many activities and services involved in storing and maintaining aircraft and in processing aircraft and airport users before and after use of the facilities. Facilities at Morrisville-Stowe include aircraft hangars and aprons, an FBO office/terminal, aviation fuel facilities, and automobile parking lots. Well-maintained and affordable facilities are important to an airport's efficient operation and success.



FBO Office/Terminal

A small terminal is centrally located at the Airport. The building is a single story facility with approximately 1,300 square feet of usable space. The terminal houses the office of Whitcomb Aviation, the FBO, which operates Stowe Soaring, and provides management of the Enterprise Rent-A-Car and U-Haul leasing operations. The terminal is modern in appearance from the outside with some dated tables and chairs located inside the facility. There are no food service facilities (live service or vending) available

in the terminal. The terminal also includes a number of functional areas including restrooms as well as a pilot lounge area and a computer to access the VTrans-provided WSI weather information services. Informational guides for local attractions, restaurants, and hotels can be found inside the terminal as well as information about a shuttle provided to guests of the Stowe Inn. The building is locked after hours; however, a telephone is available outside of the building for pilots arriving when the FBO is closed. The terminal is owned by the State and leased to the FBO.

Apron

There are currently three aprons at the Airport designated for aircraft parking. Apron 1 is located to the north of the terminal and adjacent to several newly constructed hangars. This apron has tie-down space for 32 aircraft spread over 13,333 square yards of apron area. South of Apron 1 is Apron 2, which is utilized as parking for itinerant aircraft and for fueling aircraft. Apron 2 is 4,167 square yards and located directly in front of the terminal building. Apron 3 is 1,667 square yards but cannot be utilized for aircraft storage. Apron 3 was constructed prior to the construction of the current runway and aircraft parked on the apron would be in the aircraft parking offset as designated in FAA Advisory Circular 150/5300-13, *Airport Design*. Future improvements to the airport could include construction of a taxiway through Apron 3. Airport management indicated that apron space is generally sufficient for the size of the Airport, but the aprons do fill to capacity on occasion.

Automobile Access and Parking



Vehicles wishing to access Morrisville-Stowe State Airport utilize LaPorte Road (State Route 100), with a nearby junction at Interstate 89 in Waterbury. The Airport is located between Morrisville and Stowe in the Town of Morristown. Once at the Airport, there is one parking lot for public automobile parking. According to the MPU, the main lot is paved with space for approximately 50 vehicles⁷. Several spaces in the parking lot are occupied by rental vehicles from Enterprise Rent-A-Car and U-Haul. The parking lot is also utilized as a local park &

ride, with a bus stop at the Airport providing access to Morrisville, Stowe, Waterbury, Montpelier, and Barre. In addition to the aforementioned parking lot, each hangar also has several spaces for tenant use. Several hangars to the north of the terminal are accessible via an access road off the parking lot, while the remaining hangars are accessible via the aprons and taxilanes.

Hangars

There are fourteen hangars at the Airport. One conventional hangar, with the capacity to store up to nine aircraft, is owned by the State and leased to Whitcomb Aviation for aircraft storage. As of the 2005 MPU, there were seven private storage hangars with two bays, and one privately owned hangar with storage for a single aircraft. A maintenance hangar is also located at the airport off Apron 1. Four new hangars have been constructed in recent years along Apron 1. There are currently no hangar vacancies at the Airport. A full listing of hangars and the terms of the associated lease agreements can be found in Appendix B.

Security

The airport manager indicated that there are some security issues at Morrisville-Stowe, including incidents of trespassing. However, the completion of a full perimeter fence in the future should eliminate many of these problems. At present, only a partial perimeter fence has been constructed along the boundary with State Route 100, as well as in a few other locations. Regular police patrols are completed by the Morristown Police Department. An access pad and gate to the airfield from the parking lot was recently installed. However, during a July 2008 visit to the Airport, management indicated that the access pad has been removed due to malfunction and the gate remains open at all times.

⁷ Master Plan Update, January 2005. Page 4.13.

Fuel Farm

The underground fuel tanks are located on Apron 2 adjacent to the terminal. The fuel tanks store 12,000 gallons each of 100 Low Lead (100LL) and Jet-A fuel. Both fuel types are available self-serve, 24 hours a day⁸. Fuel at the airport is branded by Shell Aviation. The FBO indicated that a greater amount of Jet-A is sold at the Airport than 100LL. Full service fueling is offered at the self-serve price to any aircraft that requests it during regular business hours. The Vermont Agency of Transportation constructed the fueling system and continues to own the fuel farm, but the facility is operated under a lease to the FBO.



Aircraft Rescue & Firefighting

As a small airfield with no commercial traffic, Morrisville-Stowe does not have Aircraft Rescue & Firefighting (ARFF) services on airport property. The Airport is served by the Morrystown Fire Department, which responds in the event of an emergency. The fire department is an all-volunteer fire department with a station approximately two miles from the Airport. Ambulance service is provided by the Morrystown Rescue Squad, also approximately two miles from the Airport.

Airfield Maintenance

Maintenance of the facilities at the Airport is accomplished by staff from the Vermont Agency of Transportation District 6. VTrans District 6 currently has its headquarters at the E.F. Knapp State Airport in Berlin. A maintenance garage is located in Morrystown. VTrans is responsible for the removal of snow and ice during wintry conditions as well as for lawn maintenance.

3.5 Airport Service Area Analysis

For the purposes of this business plan, a 30-mile radius is assumed to enclose the Airport Service Area (ASA). Table 12 provides details about the public-use airports in the Morrisville-Stowe ASA, as well as several comparable airports in the Northeast. In addition to the facilities mentioned in this section, there are a number of private airports that are not open to the public within the ASA. These are not considered in this analysis because their impact on Morrisville-Stowe State Airport is minimal. Figure 3 illustrates the airport service area and other public-use airports throughout the Northeast.

⁸ Airport Layout Plan Update, January 2005, page 2.18.

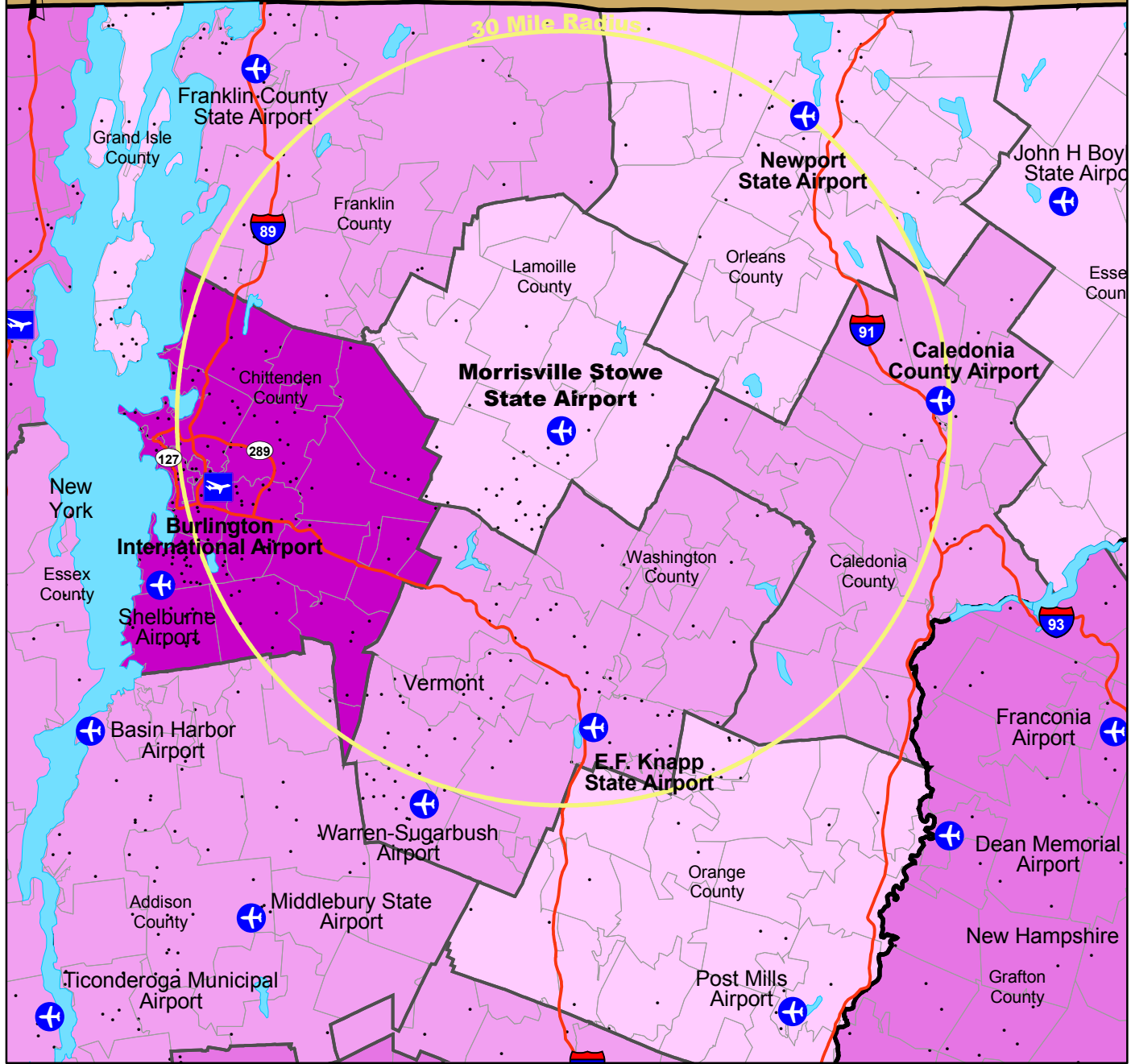
Table 12: Airport Service Area & Other Comparable Airports					
Airport	City & State	Distance from Morrisville-Stowe	Primary Runway Length	NPIAS Designation	Ownership
Airport Service Area					
Morrisville-Stowe State	Morrisville, VT	N/A	3,701'	General Aviation	Public (State)
Edward F. Knapp State	Berlin, VT	23 nautical miles	5,002'	General Aviation	Public (State)
Burlington International	Burlington, VT	27 nautical miles	8,320'	Primary – Small Hub	Public (Municipal)
Caledonia County State	Lyndonville, VT	29 nautical miles	3,300'	General Aviation	Public (State)
Newport State	Newport, VT	30 nautical miles	4,000'	General Aviation	Public (State)
Other Comparable Airports in the Region					
Lake Placid	Lake Placid, NY	60 nautical miles	4,200'	General Aviation	Public (Municipal)
Claremont Municipal	Claremont, NH	71 nautical miles	3,100'	General Aviation	Public (Municipal)
Central Maine Regional	Norridgewock, ME	118 nautical miles	3,999'	General Aviation	Public (Municipal)
Ogdensburg International	Ogdensburg, NY	122 nautical miles	5,200'	General Aviation	Public (Authority)

Source: McFarland Johnson, Inc, 2008

N

Quebec

30 Mile Radius



Population by County

- 0 - 30000
- 30001 - 60000
- 60001 - 90000
- 90001 - 120000
- 120001 +
- No Data Available

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



MORRISVILLE-STOWE STATE AIRPORT
LAMOILLE COUNTY, VERMONT

SERVICE AREA

SCALE: AS SHOWN	DATE: MARCH 2009	FIGURE: 3
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Facilities

Table 13 provides a comparison of facilities at other airports within the Morrisville-Stowe State Airport ASA as well as at the other comparable airports. All five of the airports in the ASA are publicly owned and operated and feature paved runways. Of these airports, Burlington International has the longest runway at 8,320 feet, followed by Edward F. Knapp State Airport in Berlin, with a runway length of 5,002 feet. When considering other regional airports, Ogdensburg International Airport, a general aviation airport with limited commercial service, located in northern New York along the boarder with Canada, has a 5,200' runway. All of the airports considered have a minimum of a non-precision approach; however E.F. Knapp and Burlington, have precision approaches.

Aviation Services

Table 14 presents the availability of various aviation services at each of the airports. Burlington & Lake Placid offer a full range of general aviation services. However, Burlington does not offer aircraft sales and Lake Placid does not offer avionics service. Morrisville-Stowe and E.F. Knapp offer an assortment of services, but neither offers avionics or aircraft charter. The remaining airports utilized in this study have minimal or no services available.

Hangars and Tie-downs

Table 15 presents different aircraft storage space options available at airports in the ASA and their costs as well as landing fees. At present, tie-down parking at Morrisville-Stowe is average when compared to the other airports at \$30 per month. The highest cost for apron parking is \$45 per month at E.F. Knapp State Airport in Montpelier, and the lowest in the ASA is \$25 at Caledonia County State Airport in Lyndon. Central Maine Airport charges \$20 per month for apron space and Lake Placid charges \$65 per month. The cost for hangar space at the Airport is above-average compared to the other airports at \$300 per month for a single-engine aircraft. At other airports, conventional hangar prices for a single-engine aircraft range from \$100 per month at Caledonia County (an unattended airport) to \$180 per month at E.F. Knapp State Airport. For T-hangars, prices range from \$175 per month at Ogdensburg to \$250 per month at Lake Placid.

Fuel

All of the airports listed in Table 15 offer 100LL fuel, and several also offer Jet-A. As of April 19, 2010, 100LL fuel was sold at \$4.90/gallon at Morrisville-Stowe State Airport. Of the nine airports selling 100LL utilized in this study, Claremont had the lowest price at \$4.19/gallon and E.F. Knapp had the highest at \$5.00 per gallon, followed by Burlington at \$4.99 per gallon, Lake Placid at \$4.52 per gallon, and Caledonia County at \$4.50 per gallon. According to AirNav.com, the national average for a gallon of 100LL fuel was \$4.59 per gallon; however, the average price for a gallon of 100LL in Vermont was \$4.84.

The cost of Jet-A fuel on April 19, 2010 at Morrisville-Stowe was \$4.29/gallon. Five airports surveyed sell Jet-A fuel with Ogdensburg the least expensive, offering the fuel for \$2.51/gallon, and Burlington charging the highest at \$4.99 per gallon, followed by E.F. Knapp at

\$4.45 per gallon. According to AirNav.com, the national average for Jet-A fuel was \$4.31 per gallon and the average for the State of Vermont was \$4.47 per gallon, both above the price per gallon at Morrisville-Stowe. It should be noted, however, that fuel prices are highly volatile. Prices cited in this analysis are provided as a point of reference and can fluctuate at a moments notice.

Table 13: Facility Comparisons

Airport	Owned	Acres	ARC	Number Of Based Aircraft							Runway		NAVAIDs		Control Tower
				Jet	Multi	Single	Heli	Ultra-light / Gliders	Military	Total	First L x W	Second L x W	Best Approach		
Morrisville-Stowe State, VT	Public (State)	112	B-II	1	3	25	0	8	0	0	37	3,701' x 75' (Asphalt)	N/A	Non-Precision (GPS)	No
Newport State, VT	Public (State)	540	B-I	0	0	20	0	0	0	0	20	4,000' x 100' (Asphalt)	4,000' x 100' (Asphalt)	Non-Precision (GPS)	No
Caledonia County State, VT	Public (State)	78	B-I	0	0	18	0	0	0	0	18	3,300' x 60' (Asphalt)	N/A	Non-Precision (RNAV/GPS)	No
Edward F. Knapp State, VT	Public (State)	259	B-II	0	2	48	0	0	0	0	50	5,002' x 100' (Asphalt)	4,022' x 100' (Asphalt)	Precision (ILS)	No
Burlington International, VT	Public (Municipal)	942	D-V	8	14	50	1	0	0	28	101	8,320' x 150' (Asphalt)	3,611' x 75' (Asphalt)	Precision (ILS)	Yes
TOTAL (ASA)				9	19	161	1	8	28	226					
Ogdensburg International, NY	Public (Authority)	500	B-II	0	0	7	0	0	0	0	7	5,200' x 150' (Asphalt)	N/A	Non-precision (LOC/RNAV)	No
Central Maine Regional	Public (Municipal)	426	B-II	0	4	45	0	4	0	0	53	3,999' x 90' (Asphalt)	3,999' 90' (Asphalt)	Non-precision (VOR/DME)	No
Lake Placid, NY	Public (Municipal)	35	B-I	0	2	4	0	1	0	0	7	4,200' x 60' (Asphalt)	N/A	Non-precision (RNAV/GPS)	No
Claremont Municipal, NH	Public	120	B-I	0	0	19	0	1	0	0	20	3,100' x 100' (Asphalt)	N/A	Non-precision (NDB/GPS)	No

Sources:
 Airport Master Records as published April 2010 (<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.infoorme.org/mdot/aviation/pdf/maspu.pdf>)

Table 14: Service Comparison

Airport	Frame Repairs	Power Repairs	Flight Instruction	Charter Service	Avionics	Aircraft Sales	Aircraft Rentals	Other
Morrisville-Stowe State, VT	Major	Major	Y	N	N	Y	Y	Glider rides available
Newport State, VT	Major	Minor	Y	N	N	N	Y	
Caledonia County State, VT	N	N	N	N	N	N	N	
Edward F. Knapp State, VT	Major	Major	Y	N	N	N	Y	Scheduled cargo service is available via Wiggins Airways (UPS)
Burlington International, VT	Major	Major	Y	Y	Y	N	Y	Air ambulance service is available. Scheduled passenger service is available via Continental Connection / Express, Delta Connection, JetBlue, United, United Express, and US Airways Express. Scheduled cargo service is available via FedEx and UPS.
Ogdensburg International, NY	N	N	Y	N	N	N	Y	Scheduled passenger service is available via Cape Air.
Central Maine Regional	Major	Major	Y	N	N	N	Y	
Lake Placid, NY	Major	Major	Y	Y	N	N	Y	
Claremont Municipal, NH	Minor	Minor	N	N	Y	N	N	

Source: Airport IQ 5010 Airport Master Records as Published April 2010 (<http://www.gcr1.com/5010web/>) N=No, Y=Yes

Table 15: Rates and Charges Comparison

Airport	Tie-Down		Conventional Hangars		T-Hangars		Lowest Fuel Price (\$/gallon)		GA Landing Fee
	\$/	Available	\$/	Available	\$/	Available	100LL	Jet-A	
Morrisville-Stowe State, VT	\$30/month	Y	Single \$300/month Twin \$400/month Turboprop \$700/month	N	N/A	N/A	\$4.90 (f/s)	\$4.29 (f/s)	N/C
Newport State, VT	\$35/month	Y	\$150/month	N	N/A	N/A	\$4.35 (s/s)	\$4.25 (s/s)	N/C
Caledonia County State, VT	\$25/month	Y	\$100/month	N	N/A	N/A	\$4.50 (s/s)	N/A	N/C
Edward F. Knapp State, VT	\$45/month	Y	\$180 - \$240/month	N	N/A	N/A	\$5.00 (f/s)	\$4.45 (f/s)	N/C
Burlington International, VT	N/A	N/A	N/A	N/A	N/A	N/A	\$4.99 (f/s)	\$4.99 (f/s)	N/A
Ogdensburg International, NY	N/A	N/A	N/A	N/A	N/A	N/A	\$4.25 (s/s)	\$2.51 (f/s)	N/C
Central Maine Regional	\$20/month	Y	N/A	N/A	N/A	N/A	\$4.30 (s/s)	N/A	N/C
Lake Placid, NY	\$65 / month	Y	N/A	N/A	\$250 / month	N	\$4.52 (s/s)	N/A	Single – N/C Multi - \$20 Jet - \$60
Claremont Municipal, NH	\$30 / month	Y	\$200 / month	N	\$200 / month	N	\$4.19 (s/s)	N/A	N/C

Source: McFarland-Johnson, Inc. Telephone Survey; Fuel prices as of April 19, 2010, AirNav.com & 100LL.com
Legend: N/C = No Charge, N/A = Not Available, N=No, Y=Yes, s/s = Self-Serve, f/s = Full-Serve

4. DEVELOPMENT CONSIDERATIONS

4.1 Current Financial Performance

Projecting the future financial performance of Vermont's airports is hampered by a number of factors. First and foremost, the State does not specifically account for performance at each airport, but rather compiles data for airports in general. Disaggregating these figures does not necessarily result in an accurate evaluation of financial performance of any individual facility. Secondly, financial records for both income and expenses are limited, thus providing a small historical base from which to extrapolate future financial performance. Third, some of the most significant expenses faced by Vermont's airports, those for district labor and maintenance, are allocated expenses, not actual expenses. While it is not suggested that these allocations are purposefully inaccurate, by not tying direct and exact expenses to performance, it has the potential to reduce the value of these figures as measures of past performance. Further, with two airports in VTrans Maintenance District 6, there is no direct differentiation between costs incurred at Morrisville-Stowe State Airport and E.F. Knapp State Airport in Berlin. These factors must be considered both in evaluating past performance and projecting future financial achievement.

It should be noted that this section of the business plan does not include an analysis of capital expenses. While in many cases, the federal government covers up to 95% of capital expenses, because Vermont owns and operates its airports, it is responsible for both the 2.5% State share and the 2.5% local share of capital development projects. Therefore, when considering operating revenues and deficits, it should also be considered that, for any airport development projects that are undertaken, the State will also be responsible for paying for a 5% share of the total cost of the project. If the airport is incurring an operating loss, these development funds must come from somewhere other than airport-generated revenue.

4.1.1 Baseline Forecast of Revenues

Information concerning historical revenues was available for three years, 2005, 2006, and 2007. This data gives an indication of the direction of growth of the revenue base. Table 16 shows the historical revenues from taxes on the fuel sold at Morrisville-Stowe State Airport, as well as from land leases. As shown, fuel sales on 100LL, as indicated by tax revenue collected, decreased between 2005, 2006, and 2007, however Jet-A fuel sales have risen steadily since 2005.

It is based on this historical background that the baseline forecast of revenues for Morrisville-Stowe State Airport is presented. Table 16 presents the baseline forecast of Airport operating revenues, which is a conservative view of the Airport's financial future if no recommended changes are undertaken. Lease fees were projected to increase at the Consumer Price Index (CPI) of 4% over the study period to account for gains experienced during renewal periods for current leases. The recent volatility in fuel prices and its impact on airport use and fuel sales will also have an impact on fuel tax revenues. Fluctuating prices and an extended economic recession are expected to dampen sales of aircraft fuel, and since fuel taxes are collected on a per-gallon basis, revenues are expected to suffer. Based on the projected cost of

fuel provided by the Energy Information Administration as of December 2008, the revenue from sales tax collection on Jet-A fuel was expected to peak in 2008 and decline significantly for 2009. Income collected from sales and excise taxes on fuel at the Airport will rise slightly again in 2010 and revenues will remain similar if not slightly higher than those collected in 2007. Due to the minimal use of 100LL fuel nationwide, projections were not available for the increase in price for 100LL fuel. Several other fuel types, including ethanol, jet fuel, and motor fuel, were considered to determine an annual percent increase for 100LL fuel. Motor fuel had the median increase, and therefore was utilized as a proxy for 100LL.

Table 16 - Baseline Forecast of Airport Operating Revenues

	Actual			Forecast					
	FY2005	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013
Lease Fees	\$5,800	\$5,800	\$5,800	\$6,213	\$6,650	\$7,111	\$7,599	\$8,115	\$8,660
Fuel Taxes – 100LL	\$4,300	\$3,400	\$2,750	\$2,904	\$2,532	\$2,681	\$2,830	\$2,830	\$2,904
Fuel Taxes – Jet A	\$3,600	\$4,300	\$5,200	\$7,119	\$4,725	\$4,870	\$5,401	\$5,874	\$5,874
Total Operating Revenues	\$13,700	\$13,500	\$13,750	\$16,236	\$13,906	\$14,662	\$15,830	\$16,818	\$17,438

As shown, the baseline forecast indicates that revenue will to grow from \$13,750 in 2007 to \$17,438 by the year 2013. This minimal increase reflects the challenging current economic situation facing airports in Vermont.

4.1.2 Baseline Forecast of Expenses

Utilizing the three years of expense data available, there are no evident trends. A significant increase in expenses occurs between 2006 and 2007, followed by a decrease for 2008. This is likely indicative of an increase in maintenance work at the Airport in 2007. According to the website for the National Oceanic and Atmospheric Administration (NOAA), 2007 experienced a higher level of winter weather activity which would require a greater level of effort from VTrans in order to allow the Airport to remain operational. In order to determine a proper point to begin projecting expenses into the future, the mean of the expenses for the years 2006 through 2008 was determined and utilized. As most airfield maintenance at the Airport is performed by VTrans District 6, labor costs for those employees are utilized in this study and have been projected to increase annually at two percent, half the rate of forecast inflation. Materials utilized in maintenance operations, including fuel costs for vehicles, were increased by four percent, the projected rate of inflation. As costs associated with airport maintenance are reported by District, the expenses associated with District 6 included two airports, Morrisville-Stowe and E.F. Knapp. According to VTrans, approximately 33% of the District costs are associated with work at Morrisville-Stowe, and therefore, 33% of the expenses incurred by District 6 for maintenance work and labor at the airports was utilized for Morrisville-Stowe. While insurance costs are increasing at most airports across the country, VTrans indicated that insurance rates at Morrisville-Stowe have remained relatively steady. The WSI Weather Brief

expense line was held constant, as was the airport management fee. Projected operating expenses at the Morrisville-Stowe State Airport are detailed in Table 17.

Table 17 - Baseline Forecast of Airport Operating Expenses								
	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013
	Actual			Forecast				
Airport Management Fee	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000	\$12,480	\$12,480
District 6 Labor	\$9,139*	\$16,558*	\$13,926*	\$13,472	\$13,741	\$14,016	\$14,296	\$14,582
District 6 Materials	\$42,842*	\$57,694*	\$54,260*	\$53,663	\$55,809	\$58,041	\$60,363	\$62,778
WSI Weather Brief	\$1,680	\$1,680	\$1,680	\$1,680	\$1,680	\$1,680	\$1,680	\$1,680
Insurance (\$100,000 / Occurrence Deductible)	\$3,800	\$3,800	\$3,800	\$3,800	\$3,800	\$3,800	\$3,800	\$3,800
Total Operating Expenses	\$69,461	\$91,732	\$85,666	\$84,614	\$87,030	\$89,538	\$92,620	\$95,320

- Estimated

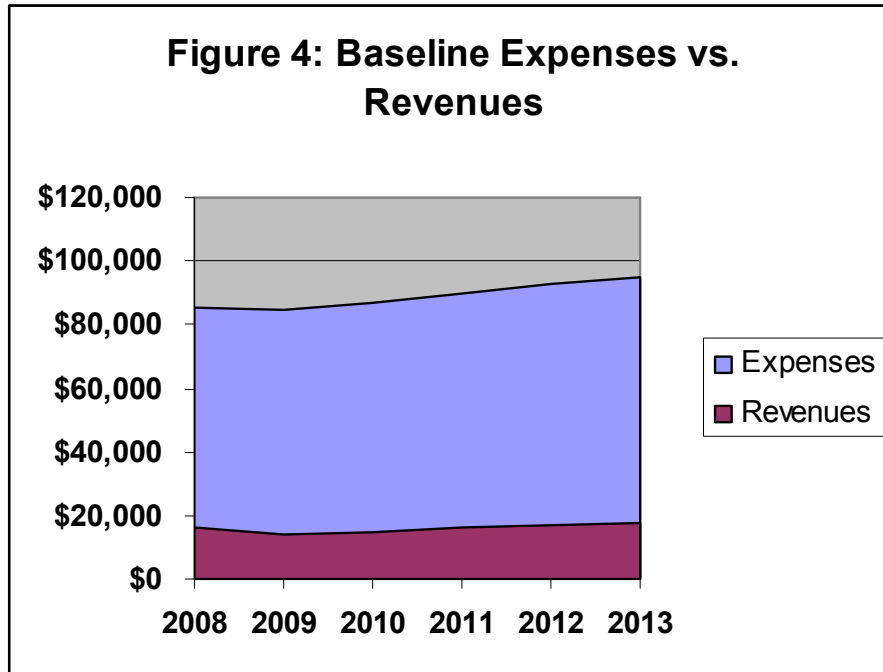
Baseline operating expenses were predicted to increase from \$85,666 in 2008 to \$95,320 by the year 2013, amounting to an 11 percent increase.

4.1.3 Baseline Net Operating Income/Deficit

When the baseline operational costs are compared with the baseline forecasts of operational revenues, the net operating costs for the airport can be predicted as follows in Table 18:

Table 18 - Baseline Net Operating Income/(Deficit)			
Year	Operating Expense	Operating Revenues	Net Operating Income/(Deficit)
2008	\$85,666	\$16,236	(\$69,430)
2009	\$84,614	\$13,906	(\$70,708)
2010	\$87,030	\$14,661	(\$72,369)
2011	\$89,538	\$15,830	(\$73,708)
2012	\$92,620	\$16,818	(\$75,802)
2013	\$95,320	\$17,438	(\$77,882)

As shown, the net operating deficit is anticipated to grow from \$69,430 in 2008 to \$77,882 by the year 2013. Hence, the results of the baseline forecast indicate that if no additional revenue generating measures are taken, the State will have to cover this shortfall in operating revenues plus any local share of capital development projects. The difference between expenses and revenues is shown in Figure 4 below.



4.2 Development Constraints

There are several potential constraints to development at the Morrisville-Stowe State Airport. Constraints that should be considered include the following:

- Runway Length
- Environmental Issues
- Limited FBO Services
- Zoning
- Taxiway Availability
- Community Opposition
- Terminal Building
- Lack of State Owned Developable Space

Runway Length

While some airports in Vermont would not consider a 3,700-foot runway to be a constraint, the runway is not suitable for many of the aircraft that currently utilize the Airport or which would use the Airport if adequate facilities were available. According to the *Alternatives Analysis for Runway Extension* completed in 2000 for the Lamoille County Regional Planning Commission, it was determined that the current runway length was insufficient for many of the aircraft then utilizing the Airport. The study indicated several aircraft utilized the Airport in spite of the fact that less runway length than specified by the FAA was available (FAA recommended runway lengths are shown in parenthesis):

- Beech King Air 200 (4,230 ft.),
- Cessna 421 (4,230 ft.),
- Cessna Citation II (4,860 ft.)
- Lear 35A (6,200 ft.)

In addition, owners of other aircraft, including the Beech 1900D (6,110 ft. recommended runway length) and the Beech C99 (4,230 ft. recommended runway length), have contacted the Airport and expressed an interest in using the Airport for charter flights. All of the aircraft listed above, including the existing and ultimate design aircraft, as discussed in Section 3.1 of this report, have FAA runway length requirements greater than the current runway length (for full weight operations) at the Airport. Furthermore, if utilized for charter operations, these aircraft experience increased requirements for runway length. Several options were discussed in the 2000 study, including no extension, and extensions varying from 400 feet to 3,000 feet. A 900-foot extension was recommended after significant investigation. While this would still provide insufficient runway length for some aircraft, including the Beech 1900D and the Lear 35A, to utilize the Airport without weight penalties, many other aircraft types would be accommodated with the recommended extension.

The 2005 MPU indicated the need for the 900-foot extension, but only recommended a 500-foot extension due to significant financial and potential environmental costs that would be incurred to move, culvert, and/or remediate Ryder Brook, which would be required for an extension of longer than 500 feet. Airport management indicated that the need for the runway extension is pivotal to the future of the Airport. At present, many of the aircraft mentioned previously incur significant weight penalties or take significant safety risks by landing at the Airport and are in some instances violating insurance requirements. A runway extension will allow for these aircraft to continue utilizing the Airport while providing an added degree of safety.

Environmental Issues

The pristine environment of Vermont is ideal for tourists and provides an excellent quality of life. However, many aspects of these beautiful surroundings are not ideal for aviation. Morrisville-Stowe State Airport has some significant limitations in terms of future growth. To the east of the Airport is the base of Elmore Mountain, limiting any development on the eastern edge of the Airport as the land slopes significantly in close proximity to the facility. In addition to development limitations, Elmore Mountain also poses a threat to aircraft completing operations at the Airport as the mountain can pose an obstacle to pilots unfamiliar with the facility.

However, the major environmental factor that impacts development at Morrisville-Stowe State Airport is Ryder Brook, a perennial tributary to the Lamoille River and a cold-water fish habitat. Ryder Brook partially encircles the airport on the northern, southern, and eastern sides of the runway. The brook was considered a major reason behind recommending a minimal runway extension in the MPU instead of a longer extension as proposed in the 2000 *Alternative Analysis for Runway Extension*. Movement of the brook is considered cost prohibitive and the benefits of the runway extension do not outweigh the costs of moving the brook or creating a bridge over

the brook at this time. The 500-foot extension (300 feet at the Runway 1 end of the runway and 200 feet on the Runway 19 end) proposed in the MPU is likely the longest extension that can be completed without creating significant changes to the brook.

In addition to concerns regarding movement of the brook or construction of a bridge over the brook, the Runway 1 end has also been included as a part of the 100-year floodplain by the Federal Emergency Management Agency (FEMA). Potential impacts to this floodplain based on activities associated with an extension to Runway 1 must be considered. However, the Lamoille County Planning Commission has indicated that the area has not flooded during recent 100-year flood events, and has requested that a formal study be completed by FEMA to determine the correct boundaries of the 100-year floodplain.

A Phase 1A investigation of archeological remnants on the property was completed in 2000 as part of the *Alternative Analysis for Runway Extension*. The results indicated that there is a high potential for undiscovered archaeological resources off both runway ends due to the proximity of Ryder Brook. This finding could have an impact on future runway extension plans and will require additional studies, and likely significantly greater costs to expand the facilities.

FBO Services

The FBO at Morrisville-Stowe State Airport, Whitcomb Aviation, provides a variety of important services to users of the Airport. At present, Whitcomb provides rental car/truck service through Enterprise and U-Haul, as well as fuel (100LL and Jet-A), aircraft parking (apron and hangar), aircraft sales, and glider rides. However, Whitcomb does not provide maintenance service at the Airport. Maintenance service is provided by JB Aero & Son based in Richmond, Vermont. For service, aircraft operators must call the technician who will come to the Airport when necessary. With maintenance services available at other nearby airports, including Newport State Airport, E.F. Knapp State Airport, and Burlington International Airport, there are several options for aircraft owners who prefer to have regular maintenance services available. According to the FBO, Phil's Aircraft Service previously provided regular maintenance service at the Airport. However, the owner of that company is preparing for retirement and is now only servicing a minimal number of previous customers. The lack of full-time maintenance services at Morrisville-Stowe may be a factor for aircraft owners when considering where to base their aircraft.

Zoning

Zoning in the vicinity of an airport can have a major impact on land acquisition and development at the facility. According to the Town of Morristown Zoning Department, the area surrounding the property of the Morrisville-Stowe State Airport is zoned *Rural Residential with Agriculture*. However, a clause added to the zoning ordinance indicates that all properties owned by the State of Vermont for the Morrisville-Stowe State Airport will be zoned as *Commercial*. Furthermore, the zoning administrator indicated that any future land acquisitions completed by the State for the Airport would immediately change the zoning of the newly acquired lands from *Rural Residential with Agriculture* to *Commercial*. Nearly all uses of land in *Commercial* zones

are conditional uses and require approval by the Town. A listing of some of these uses can be found in Table 19.

Table 19: Uses in the Commercial District		
Permitted Uses	Conditional Uses	
Accessory Structures under 500 ft.	Retail & Wholesale Delivery of Goods and Services	Gas Station
Fences	Business Service	Restaurant
	Community Facility	Public Facility
	Recreation/Indoor	Motor Vehicle Sales & Repair
	Business & Professional Offices	Transient Lodging Facilities
	Communication Facilities	Other Commercial Uses
	Essential Services	

Source: Town of Morristown Zoning & Subdivision Bylaws, February 2006.

In addition, an *Airport Hazard Areas* (AHA) classification was developed in the Town Zoning & Subdivision Bylaws. These areas impose stricter restrictions on the height of structures in order to reduce obstructions in the FAR Part 77 Surfaces.

Taxiway Availability

The minimal taxiway network at Morrisville-Stowe State Airport can be a deterrent to pilots considering which airport to utilize in this highly competitive area. There are two stub taxiways at the Airport, both located closer to the Runway 19 end. At present, pilots are forced to land on the runway and turn around and then return to the stub taxiways to access the aprons. Small aircraft landing from the Runway 1 end can reduce to taxiing speeds prior to reaching the final stub taxiway, eliminating the need to turn around at the runway end. However, some larger aircraft may need the entire runway length, which would require the aircraft to turn around. Aircraft taking off are forced to taxi down the active runway to turn around. At a non-towered airport, this is a potentially dangerous condition as a miscommunication between a landing pilot and a pilot taxiing down the runway to takeoff could result in serious consequences for both pilots. Furthermore, an airport with no parallel taxiways is not ideal for some business jets and large twin-engine planes due to the safety risk and time required to turn around and return to the apron. While some large aircraft do currently utilize the Airport despite the lack of a parallel taxiway, it is possible that some aircraft avoid the Airport due to the need to back-taxi. The most recent MPU includes the construction of a partial parallel taxiway, which will begin at both runway ends and will experience a small interruption near the fuel farm.

Community Opposition

The presence of community opposition to an airport is not abnormal in many communities. According to airport management and local economic development officials, the relationship between the Airport, its neighbors, and residents in the Village of Morrisville, has historically been good. Airport management even indicated that neighboring residents, who live in the small area of land between Airport property and LaPorte Road (State Route 100), do not

complain about noise related to Airport operations. However, when talk of a runway extension began in 2000, several vocal opponents to the Airport began to emerge and oppose the Airport and future development proposed there. These residents, mainly in the Village of Morrisville, indicated that an approach to the Airport provided a significant amount of noise in their neighborhoods and negatively affected their quality of life. It was indicated that there is a fear among some residents that an extension to the Airport's runway will bring traffic levels similar to those at a major commercial service airport.

In addition to a fear of more traffic at the Airport, there is also concern about the clientele that utilize the Airport. Residents of Morristown and Morrisville have indicated that aviation is "for the wealthy," and that their quality of life is negatively affected for visitors to enjoy the sights of another town. While efforts have been made to educate local residents about the importance of the Airport, a continued effort will be required to ensure that local residents understand the importance of the Airport to the local economy and not simply to view the facility as a "playground for the rich."

Terminal

The terminal at Morrisville-Stowe State Airport was constructed in 1984. The 1,300 square foot building is generally suitable in size for the operations completed at the Airport; however it is 1,200 square feet smaller than the recommended terminal size at a Regional Service Airport according to the VASPP. In addition, the interior décor and layout is outdated and in need of improvement. With a significant amount of chartered aircraft traffic at the Airport (and the potential for more in the future), the terminal should provide comfortable accommodations for travelers and pilots who might be waiting for others or for rental cars or to utilize the services of Stowe Soaring. At present, the institutional feel of the terminal is unwelcoming, despite the hospitality of the FBO staff. An upgrade to the terminal, including updated furniture and paint, will provide an attractive place for airport users and community members to wait for their glider ride, rental car, or public transit.

Lack of State-Owned Developable Space

One factor that will severely limit the potential of the State to increase its revenue from Morrisville-Stowe State Airport is the lack of developable land available at the facility. Bordered on three sides by Ryder Brook and further on one of those sides by mountains, and on the fourth side by the only major access road in the area, the natural and man-made boundaries are significant. This issue is exacerbated by the fact that the Airport was developed on a very small plot of land and is surrounded by both occupied residential units and active farms. With one exception, as noted in Chapter 5, the State will have to purchase land in order to develop facilities at the Airport, thus making expansion a far more costly endeavor.

4.3 Recommended Improvements

The MPU for Morrisville-Stowe State Airport was completed in January 2005. The MPU provides the most up-to-date mapping for the airside, landside, and aviation support facilities available at the Airport. The MPU provides recommendations for further improvements at the

Airport to meet the needs of current as well as potential future users. The recommendations can be found in Table 20. The construction of full perimeter fencing is expected to occur throughout the planning period and is listed during each of the planning terms. Those recommendations highlighted in gray have been completed.

Table 20 – Master Plan Improvement Recommendations		
Short Term	Intermediate Term	Long Term
Environmental Assessment	Runway 19 Partial Parallel Taxiway	Runway 1 Partial Parallel Taxiway
Runway 1 Extension, Safety Area, & Easements	10 Unit T-Hangar	Master Plan Update
Runway 19 Extension & Safety Area	5,000 SF Conventional Hangar	15,000 SF Conventional Hangar
Runway 1 Taxiway Turn-Around	Overlay Apron & Taxiways	Security Fencing & Gate
Overlay Runway 1-19	Security Fencing & Gate	
Security Fencing & Gate		
Hangar Expansions		

Source: 2005 Master Plan Update

A number of additional recommended improvements for the Airport are listed in the 2007 VASPP. A list of these improvements can be found in Table 21. A runway extension to bring the Airport in compliance with the State-established standards for a Regional Service Airport was also proposed as a part of the VASPP.

Table 21 – VASPP Improvement Recommendations
Extend Runway 1-19 by 1,299 feet
Strengthen Runway by 5,000 lbs; Runway Overlay/Reconstruction
Construct Full Parallel Taxiway
Environmental Assessment
Construct 8,600 sq. ft. of Covered Storage
Expand Terminal by 1,200 sq. ft.
Extend Fencing Around Entire Airport
Airport Layout Plan Update (2015 & 2025)
Obstruction Removal
Easement Acquisition

Source: 2007 Vermont Airport System and Policy Plan

Several improvements for the airport are listed in the 2009-2014 Airport Capital Improvement Plan (ACIP). A list of these improvements can be found in Table 22.

Table 22: Airport Capital Improvement Plan (ACIP)				
Year	Project Description	FAA	State	Total
2010	Easement Acquisition – Right of Way	\$225,000	\$25,000	\$250,000
2011	Obstruction Removal (Construction)	\$382,500	\$42,500	\$425,000
2011	Reconstruct Runway & RSA (Design)	\$67,500	\$7,500	\$75,000
2014	Reconstruct Runway & RSA (Construction)	\$2,700,000	\$300,000	\$3,000,000
TOTAL		\$3,683,750	\$391,250	\$4,075,000

Source: Vermont Agency of Transportation

5. AIRPORT IMPROVEMENT AREAS

5.1 Airport Development Plan

As part of the business plan, a general development plan for the Airport has been created. The development plan details locations where future facility development could be considered. The locations detailed are numbered in order of preference. As mentioned previously, Ryder Brook, Elmore Mountain, and LaPorte Road (State Route 100) surround the Airport, and severely limit development opportunities. The MPU proposal to develop a partial parallel taxiway at the Airport further limits developable space at the Airport (although this partial parallel taxiway is highly desirable). While there may be numerous other potential locations available for development at the Airport, only locations that are deemed most immediately developable will be discussed as part of this business plan. The development plan is detailed below and shown in Figure 5. It should be noted that only Area 1 is currently owned by the State and that any other developments will require the acquisition of property that is currently held by private interests. This severely limits the potential for facility development at this Airport.

Area 1

Area 1 was proposed for development in the 2005 Master Plan Update. This area is located south of the terminal and is currently utilized for the storage of U-Haul vehicles. This site would be suitable for a large conventional hangar and an apron. While the construction of the proposed parallel taxiway would facilitate access and use of this area, this space could be connected to the apron and Taxiways A & B via a temporary taxilane until the parallel taxiway is constructed.

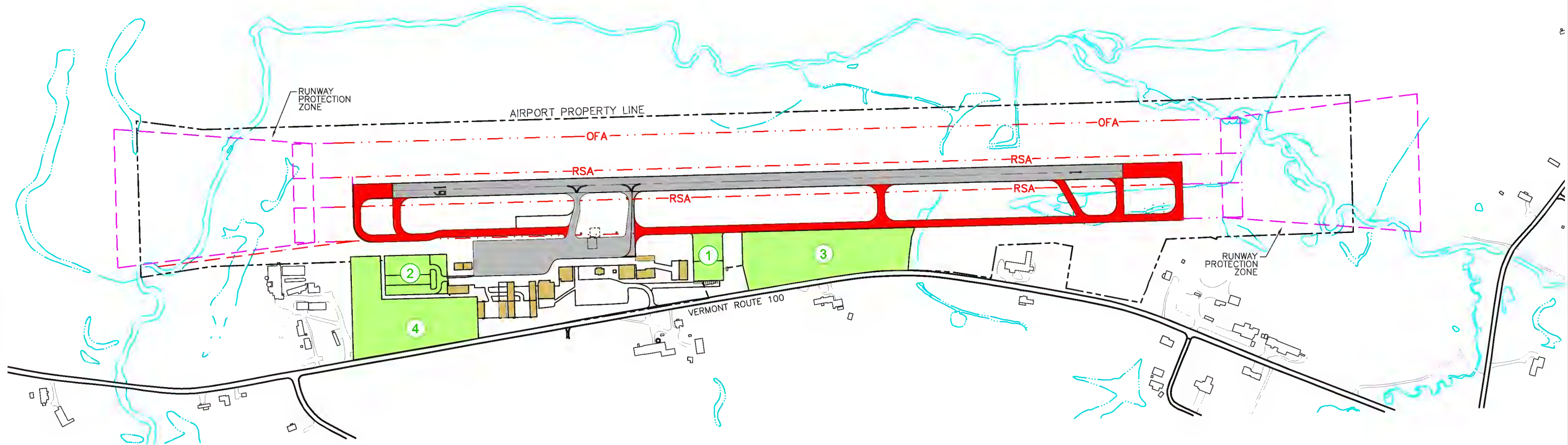
Area 2

This site is located north of the terminal and the existing T-hangars. As with Area 1, this site was also recommended as a developable space in the MPU. This site is large enough for development of multiple T-hangars, a large conventional hangar, or an additional apron, if necessary. The construction of the parallel taxiway will eventually reduce the distance required for aircraft from this Area to access the runway. With minimal developable space available at the Airport, this site is an ideal location for near-term development. A significant drawback with this site, however, is that it is currently not owned by the State and would need to be acquired by VTrans prior to development.

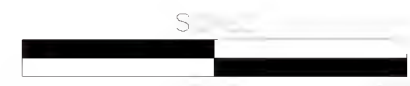
Area 3

Area 3 is located adjacent to Area 1 and is currently partially vacant (on-airport), with the remaining space occupied by several housing units (off-airport). The developed portion of this area would have to be acquired by VTrans prior to development for Airport use. Although there is a benign relationship between the Airport and the residents of these dwellings at present, removal of these homes will reduce the potential for future problems. This area would be ideal

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- AVIATION DEVELOPMENT
- EXISTING RUNWAY, TAXIWAYS, & APRONS
- PROPOSED RUNWAY & TAXIWAY EXTENSION



MORRISVILLE-STOWE STATE AIRPORT LAMOILLE COUNTY, VERMONT		
DEVELOPMENT PLAN		
AS SHOWN	JANUARY 2010	4
McFarland Johnson <small>in association with</small> R.A. Wiedemann & Associates, Inc.		

for small, privately developed conventional hangars. Proximity to the proposed parallel taxiway would be convenient to hangar occupants in this Area. Without development of the parallel taxiway, the usefulness for this site will diminish.

Area 4

Area 4 partially encircles Area 2. Area 4 would require an additional purchase of neighboring properties. This site, while moving further away from the runway and taxiways, would be ideal for large conventional hangars if Areas 1 and 2 were developed. This site is relatively flat with some minimal variations in elevation. If acquired, with sufficient road access, this site could be utilized for an aviation-related business use, or for storage of larger aircraft, which could become necessary if the proposed runway extension is completed.

6. RECOMMENDED PLAN

There are several methods that VTrans could utilize at Morrisville-Stowe State Airport to increase revenue. A worst-case scenario from a revenue development perspective would be to maintain the status quo at the Airport. However, the Airport also affords many opportunities for changes that can, to one degree or another, either directly impact the revenue generating possibilities at the Airport, or make the Airport more hospitable, more serviceable, or more convenient, which might also increase revenue. The recommended plan that will be detailed in this business plan will consist of three separate focus areas: revenue enhancement actions, policy actions, and community partnership.

6.1 Recommended Revenue Enhancement Actions

- **Revenue Enhancement Action #1: VTrans should extend Runway 1-19 and construct the proposed partial parallel taxiway.**

In order to improve safety at the facility and to make the Airport more attractive to larger aircraft (twin engine and small/medium jets), a runway extension should be considered a priority. As mentioned previously, the 2005 MPU recommended a minimum extension of 500 feet (while longer extensions were discussed in many planning documents, due to the economic or environmental costs, these are not considered feasible in the present economic conditions and are not further considered). In terms of this business plan, the 500-foot extension is ideal and important to the future operations at the Airport. Given likely funding constraints, VTrans should explore extending the runway in two phases, with a 300 foot extension to the Runway 1 end completed first, and then a 200-foot extension to the opposite end completed subsequently. While neither the 300 foot extension nor the 500 foot total extension will enable a new group of aircraft to utilize the Airport, as noted in the 2005 MPU, weight restrictions will be reduced as the length of the runway is increased, increasing the efficiency of aircraft at the Airport. A runway length of 4,000 feet is an ideal first step towards reaching the final goal of 4,200 feet, which would enable aircraft such as the Beech King Air 200 (the Airport's design aircraft) and the Cessna 421 to fully utilize the Airport at maximum payloads. Even this minimal runway extension will benefit a variety of Airport users from based recreational fliers to business/charter fliers who are only occasional users of the Airport.

The Airport, and the proposed runway extension, is backed by local officials as well as the two major tourist destinations in the area, Stowe Mountain and Smugglers Notch. Smugglers Notch has recently been involved in housing developments on their property which has increased the number of part-time residents visiting the area. A longer runway may benefit these new developments by allowing potential residents to land their personal or chartered twin-engine or jet aircraft at Morrisville-Stowe State Airport rather than at E.F. Knapp State Airport or Burlington International. While there has, as yet, been no organized effort to solicit private contributions for Airport facility development, these groups may be willing to contribute to the cost of the runway extension, as there is both a demonstrated need and a tangible benefit to the resort owners. The estimated cost for the 500-foot runway extension, in 2004 dollars, is approximately \$2.16 million.

Increased revenue resulting from a runway extension and associated infrastructure improvements will be attained through additional use of the Airport. As Airport use rises, both in terms of based and itinerant traffic, fuel sales and car rental revenues will also rise, as VTrans receives a portion of gross income received through services offered by Whitcomb Aviation. In addition, greater use could lead to a greater demand for privately owned hangars at the Airport. Owners of hangars at State airports pay a ground lease fee to the State for the land where the hangars are constructed.

- **Revenue Enhancement Action #2: VTrans should explore the development of a Localizer Performance with Vertical guidance (LPV) approach to the Airport to assist aircraft with landing due to the difficulties presented by the mountainous terrain.**

While the Airport currently has a straight-in GPS approach to Runway 19 and a circling NDB approach, the 2005 Master Plan Update recommended the development of an approach with vertical guidance. With a runway greater than 3,200 feet in length, an LPV approach should be investigated for the Morrisville-Stowe State Airport. This approach will provide vertical guidance in order to lower visibility minimums for aircraft utilizing the Airport. This will allow for an increase in operations during meteorological events, including rain, snow, and fog conditions which significantly reduce visibility and may previously have caused aircraft to divert to nearby airports with precision approaches, including Burlington International and E.F. Knapp State Airport. With a significant level of tourism, and airport use, tied to the ski resorts in Lamoille County, maintaining approaches requiring less visibility for landing during inclement weather is important in attempting to attract chartered aircraft to the Airport.

- **Revenue Enhancement Action #3: VTrans should work with Whitcomb Aviation and local economic development agencies to develop a marketing program for the Airport.**

For any business entity, marketing is an important tool in attracting new clients and creating an increased revenue stream. In the current economic recession, recreational aviation is experiencing a slowdown and business aviation is taking a beating from a public relations standpoint. However, the high level of tourism and the continued growth of the resorts in the Stowe area can help to maintain the viability of the Airport. Developments at the Stowe and Smugglers Notch ski resorts include the construction of new housing units, expected to serve as part-time residences for their owners, as well as other improvements to the resorts to attract visitors year-round. A marketing program should be instituted to attract these new part-time residents to Morrisville-Stowe State Airport and to promote the benefits of flying into the Airport rather than to more distant facilities.

In addition to developing a marketing program to the new residents and visitors to the ski resorts, a marketing program should also be developed to increase business aviation at the Airport. Business traffic at the Airport, while moderate, has the potential to increase after the completion of a runway extension that will allow larger business jets to safely land at the airfield. A marketing program should be instituted to inform current businesses in the area about new developments at the Airport and provide reasons why that business would benefit by utilizing the Airport. In addition, new businesses looking to locate in the area should receive information about the Airport and the benefits to these businesses of using the Airport.

VTrans, in coordination with Whitcomb Aviation, should develop a website to supplement the current VTrans website and augment the existing Whitcomb Aviation and Stowe Soaring websites. Aspects of the website should include airfield information, services provided by the FBO, regional information such as a listing of hotels, restaurants, and real estate agents as well as information about local attractions, including the ski resorts and local factory tours. A link to local education institutions, including school districts, the Community College of Vermont, and Johnson State University, should also be included. The ideal website would likely be created and updated regularly by an independent marketing firm specializing in website creation and management. This would allow the website to be regularly updated and to utilize up-to-date technologies and innovations that would make the website, and therefore the Airport, more attractive to potential visitors.

While creating a website to highlight the airport and the FBO is important, receiving recognition from other sources as a viable option for transportation in the region is also important. Websites for the ski resorts neglect to mention the presence of the Airport as an option for guests. Smugglers Notch indicates that Burlington International Airport is available for commercial service passengers, and provides a free shuttle with 48-hours notice. Stowe Mountain also refers visitors to the Burlington International Airport. The website for the Stowe Area Association does note that the “Stowe-Morrisville Airport” is available to smaller aircraft. The Lamoille Economic Development Corporation does not currently provide information about the Airport on its website or in informational pamphlets, but indicated that it will in the future. It is important for the development of the Airport that its existence and services be promoted by community-based organizations when listing methods and modes to travel to the region.

- **Revenue Enhancement Action #4: VTrans should explore options for attracting a specialty FBO to handle maintenance and avionics at the airport on a full-time basis.**

As mentioned previously, JB Aero & Son provides on-call maintenance services to aircraft at Morrisville-Stowe, and Phil’s Aircraft Service, which according to the FBO, has a contract with the State to provide aircraft maintenance at the Airport, has decreased the number of customers being served to prepare for retirement. Therefore, with Phil’s only servicing a limited number of customers, and JB Aero & Son only available on-call (and not under contract to the State and therefore not providing any revenue to the State), there is no full time maintenance operation at the Airport. Attracting a replacement for Phil’s Aircraft Service, particularly one with a variety of skills including jet and turboprop aircraft experience and avionics, could increase utilization of the Airport by making it a better place at which to base an aircraft. Avionics service is in high demand in Vermont and providing such services to customers may attract aircraft users from around the State and potentially from around the region.

- **Revenue Enhancement Action #5: VTrans should consider renovation or replacement of the terminal.**

When compared to other terminals throughout the State, the terminal at Morrisville-Stowe State Airport ranks average to below average in terms of available space and interior

appearance. The terminal is outfitted with outdated furniture that is in need of replacement, as well as minimal other amenities including no vending machines. A small office space is available for the FBO, as well as a small pilot's lounge. While the 2005 MPU indicated that no additional space would be necessary in the terminal at Morrisville-Stowe, renovations to improve the interior of the structure should be considered. Changes to the terminal should include increased counter space for the FBO, Stowe Soaring, U-Haul, and Enterprise Rent-A-Car (rather than the current arrangement where they are all serviced on a counter that is approximately 4 feet in length). While each counter may be accessible from the office to all employees, this differentiation of services will provide more order for those utilizing the Airport, and will provide a more professional appearance to the terminal.

In addition to realigning counter activities, new furniture should be incorporated into the public areas of the terminal building. Present furniture resembles that found in college dormitories or hospital waiting rooms and is uncomfortable and unwelcoming. For customers to Stowe Soaring, a major tourist attraction in the region, a comfortable surrounding should be presented prior to takeoff. In addition to furniture upgrades, space for vending machines should also be included in future renovations to the terminal building. While these upgrades may not bring significant revenue to the airport or the FBO, terminal improvements will bring a more favorable experience to all users of the Airport and could lead to return visits by transient pilots.

- **Revenue Enhancement Action #6: VTrans should work with the FBO and private developers to construct additional hangar space at the airport.**

With the Airport's aircraft storage spaces all occupied, there is a demand for hangar space at Morrisville-Stowe State Airport. With a moderate number of transient users at Morrisville-Stowe, a conventional hangar geared towards transient users could be a successful option for VTrans, particularly in the winter months when aircraft owners, particularly of expensive jets and multi-engine aircraft, prefer to protect their investments from harsh weather. The State of Vermont recently purchased an 80 ft. by 80 ft. hangar on the Airport for aircraft storage. However, that is the only State-owned aircraft storage hangar at the Airport.

If VTrans considers constructing new aircraft storage space, it is recommended that the State construct a new conventional hangar rather than multiple T-Hangars. The cost to build a 5,000 square foot conventional hangar could exceed \$500,000. However, the cost to construct a 10-unit T-Hangar development is approximately \$1.18 million (\$118,000 per unit)⁹. Even if VTrans could earn \$500 per month for each T-Hangar unit, a price significantly above the current "market price" for such space, it would take nearly 20 years for the State to recoup the cost of construction. In addition, conventional hangars offer significant flexibility to house a variety of different aircraft types and sizes, which makes them both more useful and more marketable.

As previously mentioned, the FAA will fund certain revenue-producing facilities at non-primary airports if all safety standards are met at the facility. However, as the Runway 19 RSA is not currently compliant with the established standards, it is unlikely that funding assistance will

⁹ Airport Master Plan Update, January 2005, Page 7-14.

be available to Morrisville-Stowe State Airport until and unless the RSA deficiency is corrected. Additionally, there are also significant obstructions in the Runway 1 FAR Part 77 Approach Surface, which also pose a safety hazard. VTrans is currently designing a runway reconstruction which will make the RSA areas compliant as well as correct all Part 77 obstructions. VTrans expected construction to be completed by 2014. In the event that VTrans wishes to apply for FAA assistance in the construction of hangars, the State will need to correct these safety hazards. If the FAA approves funding for a hangar after the correction of the deficiencies, the State would pay for a small portion (5%) of the cost of construction of the hangar, and would be able to lease the space to based and transient aircraft, likely receiving significantly greater revenue streams than it would if the State just did a land lease with a private developer. With a smaller proportion of money for the cost of construction being expended by the State, the State will be able to recoup its investment and earn a profit towards covering its operating expenses in a much shorter time. However, if this were to occur, it would likely be outside of the planning period of this business plan.

Another option could be for the State to put hangar development opportunities on the open market for private developers. The request-for-proposal (RFP) process would identify the potential for hangar construction by third party developers. Based upon the number and quality of responses, the State will be able gauge private interests, and determine the extent to which incentives for hangar development may be needed to attract private developers. Based on conversations with VTrans administration, this option is less likely to succeed at most airports in Vermont with the low demand for hangar space combined with the lower price for hangar space rental that the market would handle, indicating a longer time period required for a private developer to recoup their investment. However, Morrisville-Stowe State Airport, which currently has conventional hangar space starting at \$300 per month for single engine-aircraft, is an anomaly in Vermont as aircraft users appear to be more willing to pay higher amounts for protected aircraft storage than aircraft users at other VTrans airports.

Given the limited development space at Morrisville-Stowe State Airport, it is imperative that VTrans decide whether it wishes to pursue either FAA (or other outside) funding to construct one or more hangars that it would own, or to engage in a public solicitation process, prior to offering additional leases directly to individuals wishing to construct their own hangar spaces. Priority should be given to those development means that will net the greatest return to VTrans and the Airport. Land-leases to persons wishing to construct their own hangars tend to produce the lowest return to the State. While such development is better than no growth at all, revenue will be most positively impacted if the State follows a different model for growth.

6.2 Recommended Policy Actions

- **Policy Action #1: VTrans should reconsider the methods utilized when creating land leases for private hangar development at the airport by creating a standard price per square-foot, including a rent-rate elevator clause, and incorporating a reversion clause.**

Analysis of the current land-leases at Morrisville-Stowe State Airport shows a variety of lease rates per square foot with an average rate of \$0.104 per square foot per year. However, these rates vary significantly in each lease. Future land leases at the Airport should include a

common rate per square foot, based on current market conditions, or fair market value. In addition, “elevator clauses,” that increase the rental rates based on inflation of the Consumer Price Index (CPI) should be included as the value of the land leased tends to increase over time and there is no reason why the land-owner should not benefit from these increases. At present, VTrans adjusts Airport land leases every five years based on the CPI. It is recommended that this frequency be changed to an annual update, as is common in many airport leases for both land and other airport space.

Current land leases at the airport are silent on the ownership of the improvements constructed on State-owned property at the conclusion of the lease. At most airports, such leases contain “reversion clauses” that turn the title to improvements over to the land owner at lease end. It is recommended that reversion clauses that provide the State with legal ownership of facilities constructed on land owned by the State at the completion of the initial lease term (and extensions), or if the owner defaults on his lease, should be included in all new leases. After completion of the lease, the State can then lease the site out with the existing hangar and other facilities (generating larger rental payments) or can re-lease the land for another purpose without having to purchase the existing improvements from the former leaseholder.

- **Policy Action #2: VTrans should consider the effects on tenants when determining the timeframe for reconstruction or extension of the runway.**

In concert with the runway extension, a full reconstruction of Runway 1-19 is also being planned. According to the FBO, the runway has not been reconstructed in several decades and is in need of repair. However, there is a concern that the reconstruction of the sole runway at the Airport could take an extensive amount of time, which in turn would significantly affect his businesses (Whitcomb Aviation and Stowe Soaring) which could lead to their closure. It is important for VTrans, the contractor they select for the reconstruction, and the FBO to work together to determine a timeframe and phasing program for these activities to occur. Runway reconstruction should not occur during peak times. If an extension is to occur in the near future, the runway reconstruction should occur simultaneously with the runway extension, even if the runway extension is phased as recommended in this Business Plan. It is also imperative that an aggressive schedule be developed and followed for any runway-related construction. If a project runs over its allotted schedule, the contractor should be held accountable for losses incurred by the FBO and the State due to the prolonged closure of the airport. If the reconstruction of the runway is not accomplished in a timely manner, and as a result, the FBO is forced to close both the FBO and Stowe Soaring, the impact could be devastating to the financial well-being and future viability of the Airport.

6.3 Recommended Community Partnership Actions

- **Community Partnership Action #1: VTrans and the FBO should provide opportunities for the community to learn about and experience the Airport.**

In a community where there is varying support for its Airport by residents, VTrans, Whitcomb Aviation, and Stowe Soaring should increase community support by providing opportunities for community residents to come to the Airport to see the facilities and to

experience aviation. At present, the only interaction a community member may have with the Airport is renting a U-Haul or an Enterprise Rent-A-Car, or utilizing the park & ride. Opportunities for increased community activity could include hosting a breakfast and fly-in outside of the peak tourism seasons, resurrecting a soaring competition that was previously held at the Airport, starting an air show, or sponsoring school trips to the Airport to take a tour and sit inside a plane. Each of these ideas would provide an opportunity for the community to come to the airport and see the facilities and activities at the Airport. While an air show has the potential to be expensive and complex to organize, a fly-in may be more appropriate for Morrisville-Stowe State Airport. Aircraft from across the northeast would fly-in to the Airport and park their planes on the apron while enjoying the company of fellow pilots as well as community members. Community members would be able to get an up-close view of a variety of aircraft and would have the unique opportunity of being on-Airport to watch operations. Hopefully, this would also give members of the community the chance to see that recreational flyers are regular folks, not only the wealthy.

6.4 Impact on Operating Income

Revenue Impacts

Quantifying the levels of additional potential revenue that might result from implementing the strategies presented above is highly subjective and due to a number of outside variables, speculative in nature. There are a wide variety of complex external economic forces that will impact revenues at the Airport, many of which are beyond the control of VTrans, the FBOs, or anyone in Vermont. Therefore, in order to project the impact on revenues of the aforementioned actions, it is necessary that a number of assumptions be made for each strategy and its resulting impact. From this point, reasonable projections can be made, and, if the assumptions fluctuate, deviation from the predicted revenue levels would be understandable.

The bulk of growth and development of Morrisville-Stowe State Airport is reliant on the completion of a runway extension. With several other airports in Vermont in need of runway extensions, several with less terrain or space constraints, it may be difficult for VTrans to fund this extension in the short-term, particularly with the runway reconstruction planned in 2013 and 2014 which will remove all Part 77 obstructions and will create standard RSAs. Environmental constraints will make this extension extremely difficult, and will increase the cost, due to the close proximity of Ryder Brook as well as wetlands located off both runway ends. In 2005, the 300-foot extension of the Runway 1 end, including all aspects from design to completion, was estimated to cost \$795,000. If a runway turnaround was constructed as an aspect of that project, the cost would increase by an additional \$590,000. An additional 300 feet of runway would bring the total length to 4,002', an important number for some aircraft operators for insurance considerations when choosing an Airport. It is expected that the use of the Airport by all types of large twin-engine aircraft, as well as Very Light Jets and other small and medium-sized business jets will increase with the extension of the runway, which will decrease, but not eliminate, weight restrictions for many types of aircraft. It is expected that a runway extension, combined with the continued increases in tourism and part-time homeownership in Stowe, will lead to an increase in operations completed by the Cessna Citation and the Beech King Air, listed by the FBO as regular users of the Airport. Operations could increase by as much as 10% as a result of

a runway extension. The implementation of an improved approach, particularly an LPV approach, could further increase operations at the Airport, particularly during inclement weather. Based aircraft could also increase, with a potential for two new aircraft. The aircraft could include members of the Beech King Air or Cessna Citation families as the ease of utilizing the Airport increases.

The attraction of a full-time, resident aircraft mechanic at the Airport will also provide an increase in revenues for VTrans through a variety of means. VTrans will earn revenue for hangar space leased to the mechanic on Airport, or, should the firm desire to build its own maintenance hangar, from the value of the land-lease. Secondly, there is the potential that the number of based aircraft at the Airport may increase as a result of full-time maintenance availability, as this is a factor for some aircraft owners. Third, operations could increase at the Airport as a result of aircraft users utilizing the Airport for their maintenance needs. It is likely that transient users bringing their aircraft to Morrisville-Stowe for maintenance will increase operations at the airfield at a rate of approximately 4%. It is unlikely that those aircraft owners who visit the Airport for maintenance services will purchase fuel at Morrisville-Stowe State Airport, as the FBO prices fuel towards the affluent based aircraft-owners and frequent transient visitors. According to the FBO at Morrisville-Stowe, there is no consideration in maintaining a competitive price for fuel at the Airport as many of the transient users at Morrisville-Stowe will pay the higher prices for the convenience of utilizing the airfield. Further, due to the distance from a major highway, and the condition of access roads leading to the Airport, including narrow stretches through several villages, the cost for fuel to the FBO is higher than at other nearby airports. Therefore, fueling by aircraft that are visiting the Airport for maintenance needs will likely not occur.

The development of hangars to house transient visitors to the facility also has the potential to increase based aircraft at the Airport as well as increase operations. There is currently no transient hangar space at the Airport (the State-owned hangar is currently fully occupied by based aircraft). The construction of a transient hangar for jets and multi-engine airplanes could result in a significant revenue boost for VTrans. While not increasing the number of based aircraft at the Airport, the presence of a transient hangar could lead to at least a three percent increase in operations at the Airport.

Additionally, recent changes to the management structure at the nearby Caledonia County State Airport could also bring new based aircraft to Morrisville-Stowe. The airport manager position at the airport was eliminated, leaving no full-time staff and no FBO. This could cause some of the aircraft based at that airport to consider relocating to Morrisville-Stowe. Due to uncertainties regarding this situation, as well as the lower, competitive prices for fuel and aircraft parking at other nearby airports, assumptions regarding new based aircraft from Caledonia County were not included in the revenue projections, but could impact the Airport's financial productivity if such aircraft were to relocate.

Other action items recommended, such as improving the terminal or increasing community involvement will have positive impacts, but not impacts that can be directly related to increases in operations or based aircraft, and therefore, no estimate is made for the economic impact of such actions.

Table 23 presents an estimate of how the proposed enhancement strategies could impact revenue at Morrisville-Stowe State Airport, if the assumptions for each scenario are met. An explanation regarding how these figures are determined follows the table.

	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013
Lease Fees	\$6,213	\$7,150	\$38,486	\$38,974	\$39,490	\$40,035
Fuel Taxes – 100LL	\$2,904	\$2,532	\$2,681	\$2,830	\$2,830	\$2,904
Fuel Taxes – Jet A	\$7,119	\$4,725	\$4,870	\$7,113	\$9,299	\$9,299
Total Operating Revenues	\$16,236	\$14,406	\$46,037	\$48,917	\$51,619	\$52,238

Fiscal Year 2008 in Table 23 is the baseline data provided in Table 16 and is utilized as a base in this projection. Fiscal Year 2009 follows the baseline for fuel sales but shows an increase as a result of the opening of a full-time maintenance facility at the Airport. It is expected that annual lease revenues to the State will likely be approximately \$500 annually, particularly if the tenant uses a currently constructed, non-State owned hangar. In Fiscal Year 2010, it is expected that a hangar dedicated to transient aircraft will open. While a runway extension or an improved approach will not be available for that year, it is still expected that the hangar will experience 100% occupancy, particularly with the current lack of available hangar space at the Airport. Based on the current rent structure at the Airport, with single-engine aircraft operators paying \$300 per month for space in the long-term conventional hangar, it would be expected that this hangar could charge a minimum of \$125 per week for hangar space to a single-engine aircraft. During peak seasons, that rate could be increased to account for increased demand. Larger aircraft would pay a proportionally higher rent so that the gross rent per week for the hangar is estimated at \$625, or \$2,500 per month. If demand warrants, a second conventional hangar could be constructed, however that construction, and associated revenues, would occur outside of the planning period.

By mid-2011, it is hoped that an improved approach to Morrisville-Stowe, potentially an LPV approach, can be developed. This approach will reduce minimums required for landings at the Airport and would be particularly beneficial to multi-engine and jet aircraft. It is expected that larger aircraft operations, including those from the King Air family and the Cessna Citation family will increase as a result of this development. It was assumed that this development will lead to an increase of 50 takeoffs for both the Cessna Citation I and the King Air 200 each year. An increase in revenues to the State would be associated with the purchase of fuel at the Airport. Based on the high cost of fuel, as well as weight restrictions placed on both aircraft types, it was assumed that only 136 gallons of Jet-A fuel would be purchased at Morrisville-Stowe by King Air 200 operators, 118 gallons by Cessna Citation I operators and 182 gallons by Cessna Citation IIs. These figures represent approximately 25% of the aircrafts maximum fuel capacity. The total increase projected in terms of fuel tax collection is over \$3,500 per year, and will first be experienced during the first full year of deployment in 2012.

A revenue increase is expected as a result of the completion of Phase I of the proposed runway extension. However, completion of this extension is unlikely in the planning period for

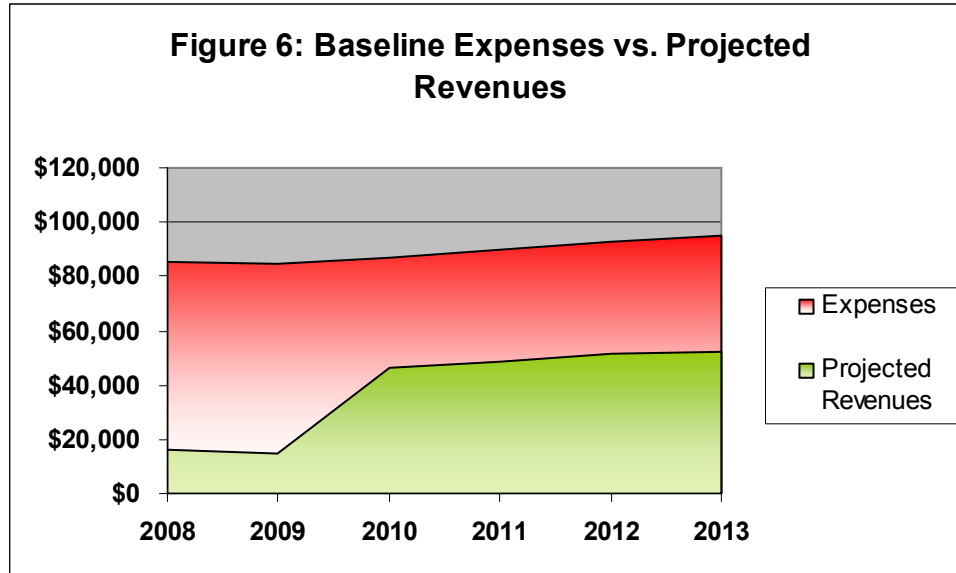
this business plan. It is expected that an extension to 4,002' will cause an increase in the number of takeoffs at the Airport by larger aircraft at a rate of approximately 100 per year for the King Air 200 family and 50 per year for the Cessna Citation I and Cessna Citation II. While the increased runway length will reduce some weight restrictions for these aircraft types, they will not be entirely addressed by the initial runway extension. Therefore, fuel purchases at the Airport are expected to remain at only 25% of the aircraft's maximum fuel capacity, but for a significantly larger number of aircraft. In total, this should increase Airport revenue by over \$10,000 per year. In the longer term, particularly with the completion of Phase II of the runway extension, this figure is likely to increase and produce a greater revenue flow for the Airport.

Comparison of Expenses & Revenues

When the enhanced revenue forecast shown in Table 23 is compared to the associated operating expenses from Table 17, an estimate of future net operating expenses can be made. Table 24 illustrates one scenario of future operating revenues for Morrisville-Stowe 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 24 - Recommended Plan Operating Revenue & Expense Comparison			
Year	Forecast Enhanced Revenues	Baseline Operating Expenses	Forecast Net Operating Income
2008	\$16,236	\$85,666	(\$69,430)
2009	\$14,406	\$84,614	(\$70,208)
2010	\$46,037	\$87,030	(\$40,994)
2011	\$48,917	\$89,538	(\$40,620)
2012	\$51,619	\$92,620	(\$41,000)
2013	\$52,238	\$95,320	(\$43,082)

Table 24 indicates an increased operating loss between 2008 and 2009, and decreased operating losses thereafter until the completion of a runway extension significantly increases use at the Airport and leads to an overall decrease in net annual losses. Enhanced revenues in 2013 are projected to remain relatively steady due to the projected runway reconstruction. The completion of the planned runway reconstruction and the proposed runway extension will increase airport revenues outside of the planning period of this business plan. If the completion of any tasks recommended in this business plan do not occur as scheduled, the Airport is far less likely to achieve the net operating income shown. Figure 6 displays the projected revenues versus baseline expenses.



The annual increase in revenues as a result of recommendations in this business plan is shown in Table 25.

Year	Baseline Operating Income/Deficit	Recommended Plan Operating Income/Deficit	Change
2008	(\$69,430)	(\$69,430)	\$0
2009	(\$70,708)	(\$70,208)	\$500
2010	(\$72,369)	(\$40,994)	\$31,375
2011	(\$73,708)	(\$40,620)	\$33,088
2012	(\$75,801)	(\$41,000)	\$34,801
2013	(\$77,882)	(\$43,082)	\$34,800

6.5 Implementation of Business Plan Recommendations

A number of recommendations have been made as a part of this Business Plan. Each recommendation is intended to have a role in improving the financial performance of the Morrisville-Stowe State Airport.

Specific recommendations by timeframe are as follows:

Immediate

- 1st Priority - Attract Specialty FBO to Perform Aircraft Maintenance at the Airport
- 2nd Priority - Airport Marketing
- 3rd Priority - Update Land-Leases for Private Hangar Development
- 4th Priority - Community Outreach

2010 - 2011

- *1st Priority - Develop Improved Approach Procedures*
- *2nd Priority - Construct a State-owned Conventional Hangar for Transient Aircraft Storage*

2012-2013

- *1st Priority - Runway Reconstruction & Extension*
- *2nd Priority - Rehabilitate Terminal Building*

7. ECONOMIC IMPACT ASSESSMENT

The purpose of this section is to quantify the economic impact and contribution of Morrisville Stowe State Airport to 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 Lamoille County and Northern Vermont can be realized. This analysis demonstrates the economic impacts of Airport and aviation use within Lamoille County 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 Morrisville Stowe State Airport both for existing conditions and for the year 2013 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 study¹⁰. These numbers were adjusted for inflation from the year 2003 to the year 2008 effectively increasing the original impacts by 17 percent.
- Apply regional multipliers to direct recommended plan capital costs and projected employment for 2013.
- Describe non-monetary impacts of Morrisville Stowe State Airport and local aviation.
- Year 2013 add-on impacts were developed using the following inputs:
 - Assume capital development of 500-foot runway extension (\$2.53 million) along with 15,000 square feet of new hangar space (\$1.5 million). A new FBO was estimated to employ 3 full time personnel. Estimated annual spending associated with these items over the five year period is \$873,100.

¹⁰ Source: Simat, Helliesen & Eichner, Inc. (SH&E, Inc.), **Economic Impact of Vermont's Public-Use Airports**, April, 2003.

Both Mount Mansfield's Stowe Mountain Resort and Smugglers' Notch Resort in Jeffersonville are major skiing and snowboarding havens. Stowe Mountain Resort is in the middle of massive expansion to offer more condominiums, restaurants, and an anticipated five-star hotel, as well as a brand new 18-hole private golf course. Smugglers' Notch, Vermont, America's Family Resort consistently ranks as the number one family resort in the Northeast.

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. According to that study, Morrisville Stowe State Airport was estimated to have \$11,982,500 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 Morrisville Stowe State Airport (called direct impacts) for the year 2013 recommended plan. This spending was in the form of capital development for a runway extension and hangar development. Using 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 26 presents a summary of Morrisville Stowe State Airport's direct and induced economic impacts for both the baseline case and the year 2013.

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 airports rather than the next best alternative. Morrisville Stowe State Airport provides access to the National Air Transportation System.
- **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:** The Airport's location near Stowe Mountain and Smuggler's Notch Resorts creates access for general aviation visitors.

All of the above factors point to a value of an airport that is not easily quantified. The impacts that were estimated within the body of this report are only one facet of the overall picture. Morrisville Stowe State Airport enjoys a significance that is 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.

Table 26 - Direct and Induced Economic Impacts				
Item	Year 2003 Impacts	Year 2008 Impacts**	Recommended Plan Add-on Impacts	Total 2013 Impacts
Direct Impacts				
On-Airport Income*	\$167,800	\$196,300	\$366,900	\$563,200
On-Airport Expenditures	\$442,700	\$518,000	\$873,100	\$1,391,100
On-Airport Employment	9	9	10	19
Off-Airport Income*	\$1,709,500	\$2,000,100	N/A	\$2,000,100
Off-Airport Expenditures	\$6,540,100	\$7,651,900	N/A	\$7,651,900
Off-Airport Employment	70	70	N/A	70
Induced Impacts				
Induced Direct and Indirect	\$4,999,700	\$5,849,600	\$353,100	\$6,202,700
Total Induced Employment	97	97	4	101
Grand Total Monetary Impacts	\$11,982,500	\$14,019,500	\$1,226,200	\$15,245,700
Grand Total Income Impacts*	\$3,742,400	\$4,378,600	\$477,500	\$4,856,100
Grand Total Employment Impacts	176	176	14	190

* 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 17 percent over the period. Employment not inflated.

Table 26 - Direct and Induced Economic Impacts				
Item	Year 2003 Impacts	Year 2008 Impacts**	Recommended Plan Add-on Impacts	Total 2013 Impacts
Direct Impacts				
On-Airport Income*	\$167,800	\$196,300	\$366,900	\$563,200
On-Airport Expenditures	\$442,700	\$518,000	\$873,100	\$1,391,100
On-Airport Employment	9	9	10	19
Off-Airport Income*	\$1,709,500	\$2,000,100	N/A	\$2,000,100
Off-Airport Expenditures	\$6,540,100	\$7,651,900	N/A	\$7,651,900
Off-Airport Employment	70	70	N/A	70
Induced Impacts				
Induced Direct and Indirect	\$4,999,700	\$5,849,600	\$353,100	\$6,202,700
Total Induced Employment	97	97	4	101
Grand Total Monetary Impacts	\$11,982,500	\$14,019,500	\$1,226,200	\$15,245,700
Grand Total Income Impacts*	\$3,742,400	\$4,378,600	\$477,500	\$4,856,100
Grand Total Employment Impacts	176	176	14	190

* 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 17 percent over the period. Employment not inflated.

Appendix A: Incentives & Programs

Local & State Incentives & Programs

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

Local Incentives & Programs

- ***Economic Development Fund of Northern Vermont:*** The Economic Development Council of Northern Vermont (EDCNV) offers financial assistance to companies wishing to increase employment, improve wage scales, and to provide stability in cyclical industries. EDCNV works with several quasi-public and private lenders to loan the capital necessary for companies to complete the previous projects.
- ***Micro Business Loan Program:*** This microloan program was established by the EDCNV to assist small businesses with obtaining necessary funding. This program is intended to assist businesses with the financing of machinery, equipment, and working capital. Funding cannot be utilized for real estate purchase or existing debt. The lender also provides business planning, financial analysis, marketing, and advertising assistance to recipients, free of charge. A minimum of \$500 to a maximum total financing package of \$105,000 is available through the program.
- ***Northern Vermont Lending Partners:*** This microloan program was established by the EDCNV to assist small businesses with obtaining necessary funding. Similar to the Micro Business Loan Program, this program is intended to assist businesses with the financing of machinery, equipment, and working capital. Funding cannot be utilized for real estate purchase or existing debt. The lender also provides business planning, financial analysis, marketing, and advertising assistance to recipients, free of charge. The program is subsidized by the United States Small Business Development Association. A minimum of \$500 to a maximum total financing package of \$105,000 is available through the program. Requests for greater than \$15,000 in financing must be accompanied by a written documentation explaining why financing cannot be received from another source.
- ***Business Plan Development:*** The Vermont Small Business Development Center provides no-cost assistance in the development of a business plan. A business specialist is housed at the Lamoille Economic Development Corporation in Morristown.

State Incentives & Programs

- ***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 August 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 August 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 August 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.

Appendix B: Lease Agreement Summaries

Lessee / Tenant Description	Physical Facilities	Amount	Additional Terms	Term Length	Begin/End Date	Renewal Options
Amendment No. 1 to Lease between the State of Vermont and a Private Hangar Owner	One (1) parcel of land measuring 69 ft. x 50 ft., upon which tenant owns and occupies a 64 ft. x 40 ft. hangar for personal and private use.	\$281.34 per year. The Consumer Price Index (CPI-U) is used for changes to rental fees.	Lessee August not sublease the premises without written consent of the Lessor. Lessee August not sublease the premises without written consent of the Lessor.	5 years	7/29/1998 7/28/2003	One (1) renewal of a five (5) year period remains. Must give written notice six (6) months prior to the expiration of each existing term if Lessee desires to renew.
Amendment No. 1 to Lease between the State of Vermont and a Private Hangar Owner	One (1) parcel of land measuring 51 ft. x 50 ft. upon which tenant owns and occupies a 46 ft. x 40 ft. hangar for personal and private use.	\$281.34 per year The Consumer Price Index (CPI-U) is used for changes to rental fees.	No option to purchase or right of first refusal. Lessee August not sublease the premises without written consent of the Lessor.	5 years	7/29/1998 7/28/2003	One (1) renewal of a five (5) year period remains. Must give written notice six (6) months prior to the expiration of each existing term if Lessee desires to renew.
Lease between the State of Vermont and a Private Hangar Owner	One (1) parcel of land measuring 51 ft. x 50 ft. upon which tenant owns and occupies a 40 ft. x 40 ft. hangar for personal and private use.	\$250.00 per year The Consumer Price Index (CPI-U) is used for changes to rental fees.	No option to purchase or right of first refusal. Lessee August not sublease the premises without written consent of the Lessor.	5 years	7/29/1998 7/28/2003	One (1) renewal of a five (5) year period remains. Must give written notice six (6) months prior to the expiration of each existing term if Lessee desires to renew.
Amendment No. 4 to Lease between the State of Vermont and a Private Hangar Owner	One (1) parcel of land measuring 40 ft. x 50 ft. upon which tenant owns and occupies a 30 ft. x 40 ft. hangar for personal and private use.	\$281.34 per year The Consumer Price Index (CPI-U) is used for changes to rental fees.	No option to purchase or right of first refusal. Lessee August not sublease the premises without written consent of the Lessor.	5 years	1/24/2000 7/28/2005	One (1) renewal of a five (5) year period remains. Must give written notice six (6) months prior to the expiration of each existing term if Lessee desires to renew.

Lessee / Tenant Description	Physical Facilities	Amount	Additional Terms	Term Length	Begin/End Date	Renewal Options
Amendment No. 3 to Lease between the State of Vermont and a Private Hangar Owner	Four (4) parcels of land, of which measure 90 ft. x 42 ft. each upon which tenant owns and occupies four two-unit 89 ft. x 32 ft. hangars for use as a condominium association	\$1,453.00 per year The Consumer Price Index (CPI-U) is used for changes to rental fees.	No option to purchase or right of first refusal. Lessor receives 10% of annual gross income received from activities association with the hangar units	5 years	8/25/2007 8/24/2012	No renewal periods remain.
Amendment No. 1 to Lease between the State of Vermont and a Private Hangar Owner	One (1) parcel of land measuring 45 ft. x 50 ft. upon which tenant owns and occupies a 40 ft. x 40 ft. hangar for personal and private use.	\$281.34 per year The Consumer Price Index (CPI-U) is used for changes to rental fees.	No option to purchase or right of first refusal. Lessee August not sublease the premises without written consent of the Lessor.	5 years	7/29/1998 7/28/2003	One (1) renewal of a five (5) year period remains. Must give written notice six (6) months prior to the expiration of each existing term if Lessee desires to renew.
Lease between the State of Vermont and a Private Hangar Owner	Unavailable	\$281.34 per year	Unavailable	Unavailable	Unavailable	Unavailable
Amendment No. 1 to Lease between the State of Vermont and a Private Hangar Owner	One (1) parcel of land measuring 80 ft. x 50 ft. upon which tenant owns and occupies a hangar for personal and private use.	\$410.00 per year The Consumer Price Index (CPI-U) is used for changes to rental fees.	No option to purchase or right of first refusal. Lessee August not sublease the premises without written consent of the Lessor.	5 years	1/27/2005 1/26/2010	Three (3) renewals of five (5) year periods remain. Must give written notice six (6) months prior to the expiration of each existing term if Lessee desires to renew.

Lessee / Tenant Description	Physical Facilities	Amount	Additional Terms	Term Length	Begin/End Date	Renewal Options
Memorandum of Lease between the State of Vermont and a Private Hangar Owner	One (1) parcel of land measuring 97 ft. x 89 ft. upon which tenant is to own and occupy a hangar for personal and private use.	\$863.00 per year The Consumer Price Index (CPI-U) is used for changes to rental fees.	No option to purchase or right of first refusal. Lessee August not sublease the premises without written consent of the Lessor.	5 years	12/11/2002 12/10/2007	Four (4) renewals of five (5) year periods remain. Must give written notice six (6) months before the expiration of each existing term if Lessee desires to renew.
Memorandum of Lease between the State of Vermont and Whitcomb Aviation	Two (2) parcels of land, the first measuring 400 ft. x 30 ft., known as Apron 1, upon which tenant is to lease 31 tie down parking spaces, the second measuring 218 square feet in the airport terminal building and occupied as office space.	Unavailable	No option to purchase or right of first refusal. Lessee August not sublease the premises without written consent of the Lessor.	5 years	9/14/2006 9/13/2011	Four (4) renewals of five (5) year periods remain. Must give written notice six (6) months before the expiration of each existing term if Lessee desires to renew.
Memorandum of Amended Lease between the State of Vermont and a Private Hangar Owner	One (1) parcel of land measuring 50 ft. x 102 ft. upon which tenant is to own and occupy a hangar for personal and private use.	\$402.90 per year The Consumer Price Index (CPI-U) is used for changes to rental fees.	No option to purchase or right of first refusal. Lessee August not sublease the premises without written consent of the Lessor.	5 years	11/3/1999 11/2/2004	Four (4) renewals of five (5) year periods remain. Must give written notice six (6) months before the expiration of each existing term if Lessee desires to renew.
Memorandum of Lease between the State of Vermont and a Private Hangar Owner	One (1) parcel of land measuring 65 ft. x 55 ft. upon which tenant is to own and occupy a hangar for personal and private use.	Unavailable	No option to purchase or right of first refusal. Lessee August not sublease the premises without written consent of the Lessor.	5 years	9/30/2005 9/29/2010	Four (4) renewals of five (5) year periods remain. Must give written notice six (6) months before the expiration of each existing term if Lessee desires to renew.

Appendix C: IMPLAN Results

Morrisville Stowe, VT

Employment

	Sector Description	Direct	Indirect	Induced	TOTAL
1	11 Ag, Forestry, Fish & Hunting	0.0	0.0	0.1	0.1
19	21 Mining	0.0	0.0	0.0	0.0
30	22 Utilities	0.0	0.0	0.1	0.1
33	23 Construction	44.5	0.1	0.1	44.7
46	31-33 Manufacturing	0.0	0.2	0.4	0.5
390	42 Wholesale Trade	0.0	0.2	0.1	0.3
391	48-49 Transportation & Warehousing	3.0	0.6	0.2	3.8
401	44-45 Retail trade	0.0	0.6	2.2	2.9
413	51 Information	0.0	0.1	0.1	0.2
425	52 Finance & insurance	0.0	0.2	0.3	0.4
431	53 Real estate & rental	0.0	0.6	0.6	1.2
437	54 Professional- scientific & tech sv	0.0	2.3	0.5	2.8
451	55 Management of companies	0.0	0.0	0.0	0.0
452	56 Administrative & waste services	0.0	0.5	0.3	0.9
461	61 Educational svcs	0.0	0.0	0.4	0.4
464	62 Health & social services	0.0	0.0	3.5	3.5
475	71 Arts- entertainment & recreation	0.0	0.1	0.4	0.5
479	72 Accommodation & food services	0.0	0.3	1.8	2.1
482	81 Other services	0.0	0.5	1.1	1.5
495	92 Government & non NAICs	0.0	0.1	0.2	0.2
	Total	47.5	6.2	12.4	66.2

Multiplier: 1.39

Income (\$)

	Sector Description	Direct	Indirect	Induced	TOTAL
1	11 Ag, Forestry, Fish & Hunting	\$0	\$1,596	\$4,771	\$6,366
19	21 Mining	\$0	\$67	\$0	\$67
30	22 Utilities	\$0	\$2,157	\$5,962	\$8,119
33	23 Construction	\$1,729,982	\$3,145	\$3,201	\$1,736,327
46	31-33 Manufacturing	\$0	\$15,528	\$7,849	\$23,377
390	42 Wholesale Trade	\$0	\$7,658	\$6,743	\$14,401
391	48-49 Transportation & Warehousing	\$104,465	\$31,934	\$7,604	\$144,003
401	44-45 Retail trade	\$0	\$16,477	\$56,043	\$72,520
413	51 Information	\$0	\$2,709	\$3,443	\$6,153
425	52 Finance & insurance	\$0	\$7,032	\$11,120	\$18,151
431	53 Real estate & rental	\$0	\$8,402	\$11,614	\$20,016
437	54 Professional- scientific & tech sv	\$0	\$70,257	\$16,052	\$86,310
451	55 Management of companies	\$0	\$0	\$0	\$0
452	56 Administrative & waste services	\$0	\$11,248	\$6,717	\$17,965
461	61 Educational svcs	\$0	\$67	\$6,554	\$6,621
464	62 Health & social services	\$0	\$46	\$136,962	\$137,008
475	71 Arts- entertainment & recreation	\$0	\$564	\$3,790	\$4,354
479	72 Accommodation & food services	\$0	\$6,890	\$33,163	\$40,053
482	81 Other services	\$0	\$11,614	\$22,055	\$33,669
495	92 Government & non NAICs	\$0	\$3,455	\$8,714	\$12,169
	Total	\$1,834,446	\$200,845	\$352,359	\$2,387,649

Multiplier: 1.27

Output (\$)					
	Sector Description	Direct	Indirect	Induced	TOTAL
1	11 Ag, Forestry, Fish & Hunting	\$0	\$3,328	\$5,016	\$8,344
19	21 Mining	\$0	\$221	\$1	\$222
30	22 Utilities	\$0	\$9,710	\$26,745	\$36,455
33	23 Construction	\$4,030,000	\$8,748	\$8,321	\$4,047,069
46	31-33 Manufacturing	\$0	\$58,436	\$46,804	\$105,240
390	42 Wholesale Trade	\$0	\$20,259	\$17,837	\$38,096
391	48-49 Transportation & Warehousing	\$335,710	\$75,384	\$16,628	\$427,722
401	44-45 Retail trade	\$0	\$42,457	\$144,236	\$186,694
413	51 Information	\$0	\$12,691	\$17,425	\$30,115
425	52 Finance & insurance	\$0	\$28,377	\$50,134	\$78,511
431	53 Real estate & rental	\$0	\$70,792	\$71,255	\$142,047
437	54 Professional- scientific & tech sv	\$0	\$196,765	\$43,437	\$240,201
451	55 Management of companies	\$0	\$0	\$0	\$0
452	56 Administrative & waste services	\$0	\$25,901	\$17,645	\$43,545
461	61 Educational svcs	\$0	\$164	\$14,615	\$14,779
464	62 Health & social services	\$0	\$151	\$263,988	\$264,140
475	71 Arts- entertainment & recreation	\$0	\$2,742	\$12,357	\$15,099
479	72 Accommodation & food services	\$0	\$19,638	\$99,321	\$118,959
482	81 Other services	\$0	\$35,934	\$48,427	\$84,362
495	92 Government & non NAICs	\$0	\$14,694	\$234,954	\$249,648
	Total	\$4,365,710	\$626,392	\$1,139,146	\$6,131,248

Multiplier: 1.40

Tax Impact

Enterprises (Corporations)	Total	Total	Empl. Comp.	Prop. Income	Household Ex	Enterprises Ind.	Bus Tax
Corporate Profits Tax					\$55,131		\$55,131
Indirect Bus Tax: Custom Duty						\$3,055	\$3,055
Indirect Bus Tax: Excise Taxes						\$8,236	\$8,236
Indirect Bus Tax: Fed NonTaxes						\$3,734	\$3,734
Personal Tax: Estate and Gift Tax							\$0
Personal Tax: Income Tax				\$182,548			\$182,548
Personal Tax: NonTaxes (Fines- Fees							\$0
Social Ins Tax- Employee Contribution		\$110,158	\$26,515				\$136,672
Social Ins Tax- Employer Contribution		\$111,789					\$111,789
Federal Government NonDefense	Total	\$221,946	\$26,515	\$182,548	\$55,131	\$15,024	\$501,164
Corporate Profits Tax					\$10,710		\$10,710
Dividends					\$12,219		\$12,219
Indirect Bus Tax: Motor Vehicle Lic						\$1,438	\$1,438
Indirect Bus Tax: Other Taxes						\$4,819	\$4,819
Indirect Bus Tax: Property Tax						\$63,783	\$63,783
Indirect Bus Tax: S/L NonTaxes						\$5,197	\$5,197
Indirect Bus Tax: Sales Tax						\$28,875	\$28,875
Personal Tax: Estate and Gift Tax							\$0
Personal Tax: Income Tax				\$58,133			\$58,133
Personal Tax: Motor Vehicle License				\$4,700			\$4,700
Personal Tax: NonTaxes (Fines- Fees				\$15,804			\$15,804
Personal Tax: Other Tax (Fish/Hunt)				\$2,186			\$2,186
Personal Tax: Property Taxes				\$2,109			\$2,109
Social Ins Tax- Employee Contribution		\$480					\$480
Social Ins Tax- Employer Contribution		\$1,920					\$1,920
State/Local Govt NonEducation	Total	\$2,400	\$0	\$82,931	\$22,929	\$104,113	\$212,373
Total		\$226,161	\$26,515	\$265,480	\$78,060	\$119,138	\$715,352