



Vermont Comprehensive Economic Development Strategy

Competitive Assessment

VERMONT COMPREHENSIVE ECONOMIC DEVELOPMENT STRATEGY

APPENDIX C

COMPETITIVE ASSESSMENT

Table of Contents

Executive Summary	1
Introduction	3
Current Competitive Realities in Economic Development	4
Location and Access to Markets	6
Location and Access to Market Strengths	7
Location and Access to Market Weaknesses	7
Transportation	8
Transportation Strengths	8
Transportation Weaknesses	12
Utilities: Water, Sewer, Natural Gas, Electric Power	13
Utilities Strengths	13
Utilities Weaknesses	16
Utilities: Telecommunications	16
Telecommunications Strengths	16
Telecommunications Weaknesses	17
Workforce	18
Workforce Strengths	19
Workforce Weaknesses	21
Education	24
Education Strengths	24
Education Weaknesses	31
Business Climate	34
Business Climate Strengths	38
Business Climate Weaknesses	38
Taxes	39
Taxes Strengths	45
Taxes Weaknesses	45

Support Services.....	46
Support Services Strengths.....	46
Support Services Weaknesses	47
Available Sites and Buildings	47
Available Sites and Buildings Strengths.....	48
Available Sites and Buildings Weaknesses	48
Financing and Incentives	49
Financing and Incentives Strengths.....	49
Financing and Incentive Weaknesses	51
Public Facilities and Services	52
Public Facilities and Services Strengths	53
Public Facilities and Services Weaknesses.....	53
Quality of Life	54
Quality of Life Strengths.....	55
Quality of Life Weaknesses	56
Workforce Housing	56
Workforce Housing Strengths	59
Workforce Housing Weaknesses.....	59
Vermont’s Image, Visibility and Brand	60
Vermont’s Image, Visibility and Brand Strengths	60
Vermont’s Image, Visibility and Brand Weaknesses.....	62
Innovation and Entrepreneurship	63
Innovation and Entrepreneurship Strengths	81
Innovation and Entrepreneurship Weaknesses	83
Summary of Competitive Strengths and Weaknesses.....	84
Summary of Strengths.....	84
Summary of Weaknesses	95
Appendix A: Current Competitive Realities in Economic Development	104
Appendix B: Economic and Business Development Incentives in Vermont	112

Executive Summary

This Competitive Assessment portion (frequently called a SWOT Analysis) of the Vermont Comprehensive Economic Development Strategy (CEDS) provides an overview of the state as a “product” in the economic development marketplace. There are four primary purposes for this Assessment:

1. It is a requirement of the funding source – the U.S. Economic Development Administration – as an element of the CEDS.
2. It provides the consulting team and other readers with an understanding of how businesses will perceive Vermont as a possible location.
3. It contributes to the process of identifying the most important marketable strengths and deficiencies in need of attention; these can be used later in the CEDS process for identifying important Initiatives around which to focus the economic development action Agenda.
4. It provides important background information related to understanding why certain sectors and clusters of businesses operate in the state and why and how additional sectors and clusters may be developed.

The topics considered are those most frequently included in a locational comparison and evaluation prepared by a business seeking a new location or comparing their current location with alternatives. Therefore, the analysis topics are equally applicable to all facets of business development – start-ups, retention and expansion, and recruitment. Those topics are:

- Location and Access to Markets
- Transportation
- Utilities and Telecommunications
- Workforce
- Education
- Business Climate
- Taxes
- Support Services
- Available Sites and Buildings
- Financing and Incentives
- Public Facilities and Services
- Quality of Life
- Workforce Housing
- Vermont’s Image, Visibility and Brand
- Innovation and Entrepreneurship

Vermont is a state that relies heavily on smaller projects. Data provided in this report show that Vermont’s activity for larger projects during the 2000 – 2012 timeframe represented only 0.07% of the national total. Certainly, large projects are not the only measure of economic activity, and as with most states, the preponderance of projects are of smaller size.

This infers that Vermont’s economic future is likely to be similar to the past where a focus on smaller projects will bear more results than chasing larger projects.

On the other hand, Vermont’s intent to capitalize on the advantages of the Investor Immigrant EB-5 visa program may result in additional projects of larger scale. This positions the state as being able to accommodate a range of project sizes as long as other important factors such as adequate labor and infrastructure are available.

Each topic section that follows in this report provides what the consultant team considers to be the most germane information and then lists primary strengths and weaknesses of Vermont as a location for business for those topics. The analysis was based on research from multiple sources:

- A detailed review of more than 40 existing plans, studies and reports (see Appendix A for summary findings from these documents)
- A data profile of Vermont prepared by the consulting team (see Appendix B for the entire data profile)
- Input from eight regional meetings held during the project
- Several meetings with ACCD staff
- Input from the CEDS Committee and other interested parties
- Extensive website research
- The consultant team's familiarity with Vermont from both prior work in the state and Vermont residency of two team members

A summary compilation of the primary strengths and weaknesses of Vermont as a location for business is provided beginning on page 83.

This analysis was a key factor in identifying existing and possible target sectors and clusters, and primary initiatives that should be the heart of the State's economic development action agenda; both of these topics are covered in other sections of this CEDS.

Introduction

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In many instances, this evaluation is undertaken by the company itself, while in some cases – particularly larger projects, the evaluation is prepared by a site selection consultant. The research methodology used includes an approach very similar to that used by businesses and site location consultants, with a heavy reliance on information available from websites or other Internet research. Wherever possible, the assessment relies on factual information available from published reports, websites, or other sources. It also takes advantage of less data driven opinions that are nonetheless broadly shared. Given that “dialog with industry peers” consistently ranks in the top two sources for companies seeking information on local business climate (source: Development Counsellors International), this type of information, such as the opinions expressed during the eight regional meetings conducted as part of this project, can be very valuable in understanding how companies perceive various aspects of the state’s economic development climate.

These evaluation factors do not prioritize in any specific fashion. Different elements are of greater or lesser importance to different industry sectors, and there can be significant variation among companies within the same industry sector.

During an actual site search, the actual factors considered may be much more detailed than the major topics discussed herein. The most detailed listing of these factors can be found [here](#). This set of 25 spreadsheets and more than 1,200 data elements was prepared a number of years ago by a team of site selection consultants and economic developers in a collaborative project of the American Economic Development Council and the Council for Urban Economic Development, who subsequently

merged to become the International Economic Development Council (IEDC). Consulting team members Garnet Consulting Services, Inc. and Wadley-Donovan were both part of the group that created these standards.

It is challenging to create a competitive assessment of a state. Most have great variations among disparate regions, so that what is a strength in one part of the state may be a weakness in others. This assessment concentrates on Vermont as a whole, but where appropriate, also notes significant regional differences from the norm. Also where appropriate and comparative data is available, the assessment compares Vermont with other states. More detailed comparative information on Vermont, New England, and the United States is also provided in the Economic Data Analysis section of the CEDS.

A Competitive Assessment such as this serves multiple purposes by providing the research leading to an understanding of:

- Competitive strengths and opportunities that can be capitalized upon
- Competitive weaknesses that should be the focus of corrective actions
- Competitive obstacles that are not likely to be corrected, and therefore must be acknowledged and compensations made
- Issues shaping future economic development efforts
- Needs that can be address projects and initiatives that are developed as part of Vermont's Economic Development Action Agenda

Current Competitive Realities in Economic Development

For many years, Garnet Consulting Services has maintained a discussion of "Current Competitive Realities in Economic Development." This document is provided as a summary of important factors related to economic development in general for readers of this CEDS who may have a limited familiarity with the economic development business. The most recent version of this report, with a focus on Vermont where appropriate, is provided in Appendix A of this report. It is important for the reader to understand that Appendix A is not intended to be about Vermont – it is intended to be about the economic development business.

Of particular note is the data on major project announcements in the United States and Vermont between 2000 and 2012 as reported by Conway Data, publisher of *Site Selection* magazine. Major projects are defined as new locations or expansions for manufacturing, office or headquarters, distribution, R&D, or some mix of those uses that meet any of three tests:

- \$1 million or more of capital investment; or
- 50 or more new jobs; or
- 20,000 square feet or more of building occupancy.

During the 13 year period for which Garnet has evaluated this information, there were a total of 83,863 projects nation-wide. Table 1 provides the data for Vermont.

Table 1
Conway Data Vermont Project Activity; 2000 - 2012

Year	Manufacturing		Other	Total
	New	Expanded		
2000	0	1	0	1
2001	1	0	1	2
2002	0	9	0	9
2003	0	2	1	3
2004	1	0	2	3
2005	0	0	0	0
2006	1	2	1	4
2007	0	4	0	4
2008	1	0	0	1
2009	6	5	1	12
2010	5	4	3	12
2011	1	1	1	3
2012	2	6	0	8
Total	18	34	10	62

Vermont's activity for larger projects during this time represented only 0.07% of the national total. Table 1 shows an upturn in the number of larger projects between 2009 and 2012, which mirrors a similar upturn nationally. However, the 2012 number of larger projects in the U.S. is still 55% below its level in 2000, and there no way of knowing at this time whether the number will continue to increase or plateau at a level far below historical highs.

Certainly, large projects are not the only measure of economic activity, and as with most states, the preponderance of projects are of smaller size.

This infers that Vermont's economic future is likely to be similar to the past where a focus on smaller projects will bear more results than chasing larger projects.

On the other hand, Vermont's intent to capitalize on the advantages of the Investor Immigrant EB-5 visa program may result in additional projects of larger scale. This positions the state as being able to accommodate a range of project sizes as long as other important factors such as adequate labor and infrastructure are available.

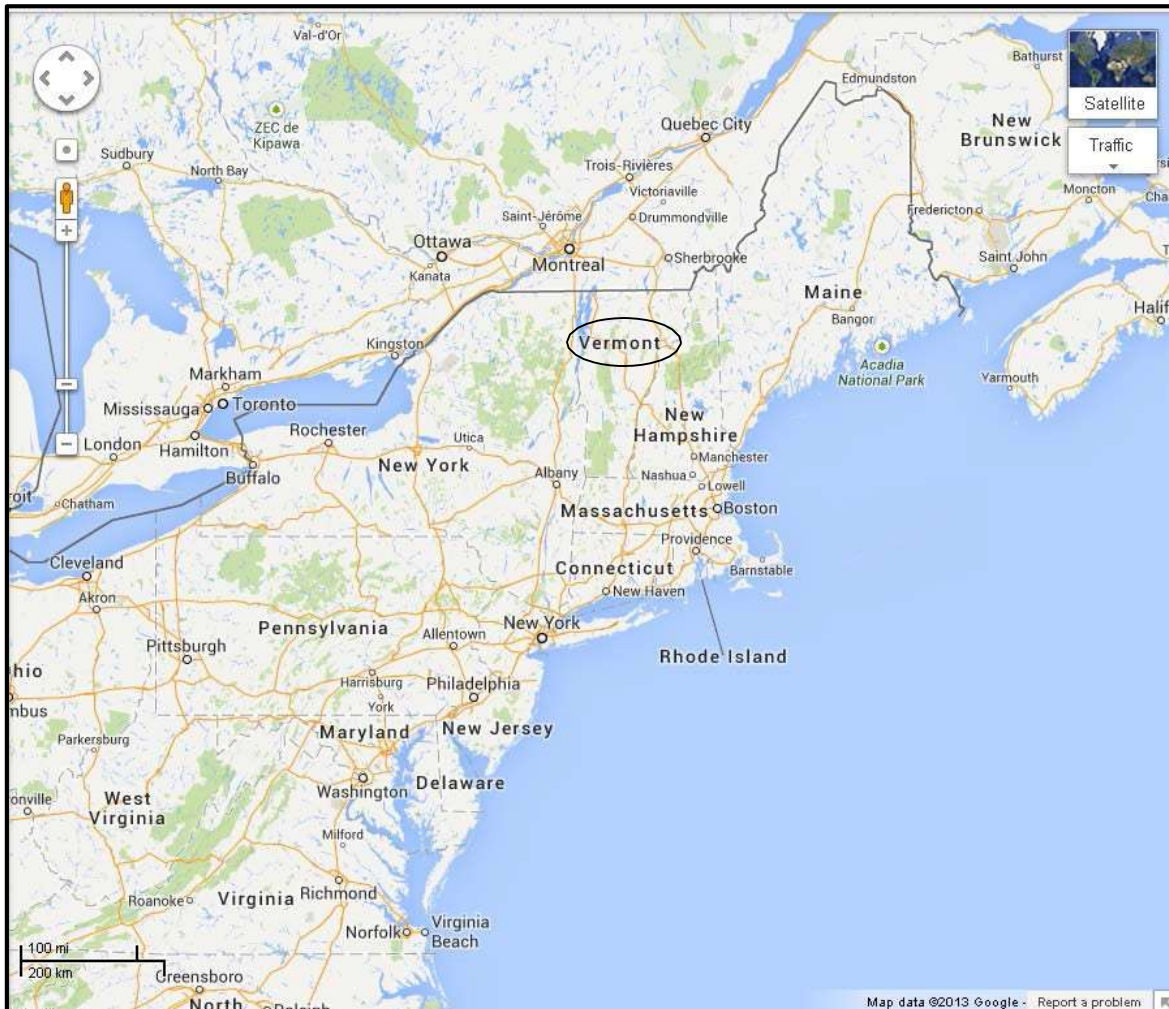
Many additional Competitive Reality topics are also covered in Appendix A.

Location and Access to Markets

Vermont's location in the northeastern-most portion of the United States creates both advantages and disadvantages in terms of access to markets for businesses operating in the state. Figure 1 provides a location map showing Vermont's relationship to other major metropolitan areas in both the United States and Canada.

Figure 1 – Vermont Location Map

Source: GoogleMaps



For most businesses, market access is a function of highway travel by car or truck. The importance of market accessibility as a function of proximity to a highway is underscored by findings from the most recent (2012) survey of business executives and site selection consultants published by Site Selection Magazine. Highway Accessibility was ranked as the #1 site selection factor (of 26 possibilities) by site selection consultants and the #2 factor by business executives. For a lesser number, such access is a reflection of air or rail travel. Accessibility to a major airport was ranked #13 by site selection consultants and #21 by corporate executives in the survey, while railroad service was ranked #25 by the consultants and #24 by the executives.

Table 2 shows distances and drive times to other cities from three locations in Vermont: Burlington in the north; Rutland in the center; and Brattleboro in the south. Obviously, other locations in the state will have longer or shorter drive times to these markets depending on their location and access to high speed roadways.

Table 2: Distance and Drive Time from Selected Vermont Locations to Other Destinations

Source: MapQuest

Destination	Distance From (Miles)			s: Minutes)		
	Burlington	Rutland	Bennington	Burlington	Rutland	Bennington
Albany, NY	150	106	39	3 Hrs:9 Min	1 Hr:59 Min	57 Min
Baltimore, MD	489	435	363	8 Hrs:57 Min	7 Hrs:43 Min	6 Hrs:42 Min
Boston, MA	217	171	170	3 Hrs:43 Min	3 Hrs:19 Min	3 Hrs:19 Min
Buffalo, NY	401	357	322	7 Hrs:26 Min	6 Hrs:17 Min	5 Hrs:34 Min
Hartford, CT	236	157	114	3 Hrs:55 Min	2 Hrs:59 Min	2 Hrs:26 Min
Montreal, QC	96	163	231	2 Hrs:25 Min	3 Hrs:59 Min	4 Hrs:49 Min
New York City, NY	298	254	188	5 Hrs:50 Min	4 Hrs:42 Min	3 Hrs:41 Min
Ottawa, ON	216	282	288	4 Hrs:40 Min	6 Hrs:4 Min	6 Hrs:38 Min
Philadelphia, PA	381	337	271	7 Hrs:16 Min	6 Hrs:7 Min	5 Hrs:6 Min
Pittsburgh, PA	611	568	498	10 Hrs:53 Min	9 Hrs:44 Min	8 Hrs:52 Min
Quebec City, QC	263	306	379	5 Hrs:20 Min	6 Hrs:27 Min	7 Hrs:16 Min
Syracuse, NY	257	213	178	5 Hrs:7 Min	3 Hrs:57 Min	3 Hrs:14 Min
Toronto, ON	404	452	417	8 Hrs:7 Min	8 Hrs:28 Min	7 Hrs:45 Min
Washington, DC	577	476	404	10 Hrs:41 Min	8 Hrs:32 Min	7 Hrs:30 Min

All of these driving times fall below the maximum a truck driver is allowed to drive in a day (11 cumulative hours per day), making most of Vermont a reasonable location for truck shipment of goods to much of the northeastern United States and major cities in eastern Canada.

More detailed information on transportation capabilities is provided in the next section.

Location and Access to Market Strengths

- Proximity to major Boston – Vermont – Washington, DC economic corridor that contains a major portion of the country's population, businesses, and capital
- Proximity to many of the major Canadian markets
- One-day highway shipping to many U.S. and Canadian metropolitan areas
- Short-line and regional railroads that connect to Class I railroads in the northeast.
- Reasonable access to European or other international markets through airports in New York City or Boston or various ports along the Northeast coast of the U.S. and in Canada
- Access to international markets through seaports through Montreal, Quebec City, and Boston.

Location and Access to Market Weaknesses

- Lack of passenger air service to Boston
- Distance from much of the country including the major growth areas in the south and west

- “Can’t get there from here” perception can make business attraction difficult.
- Some targeted industries (such as food product manufacturing and agribusiness) may find parts of the state too far away from major markets to be profitable when considering shelf life and transportation time.

Transportation

Transportation is an important factor in economic development because of its multiple impacts:

- The ability to service customers with products or services in a timely fashion;
- Receipt of input materials necessary for production; and
- Access to an adequate labor shed
- Access to tourism markets

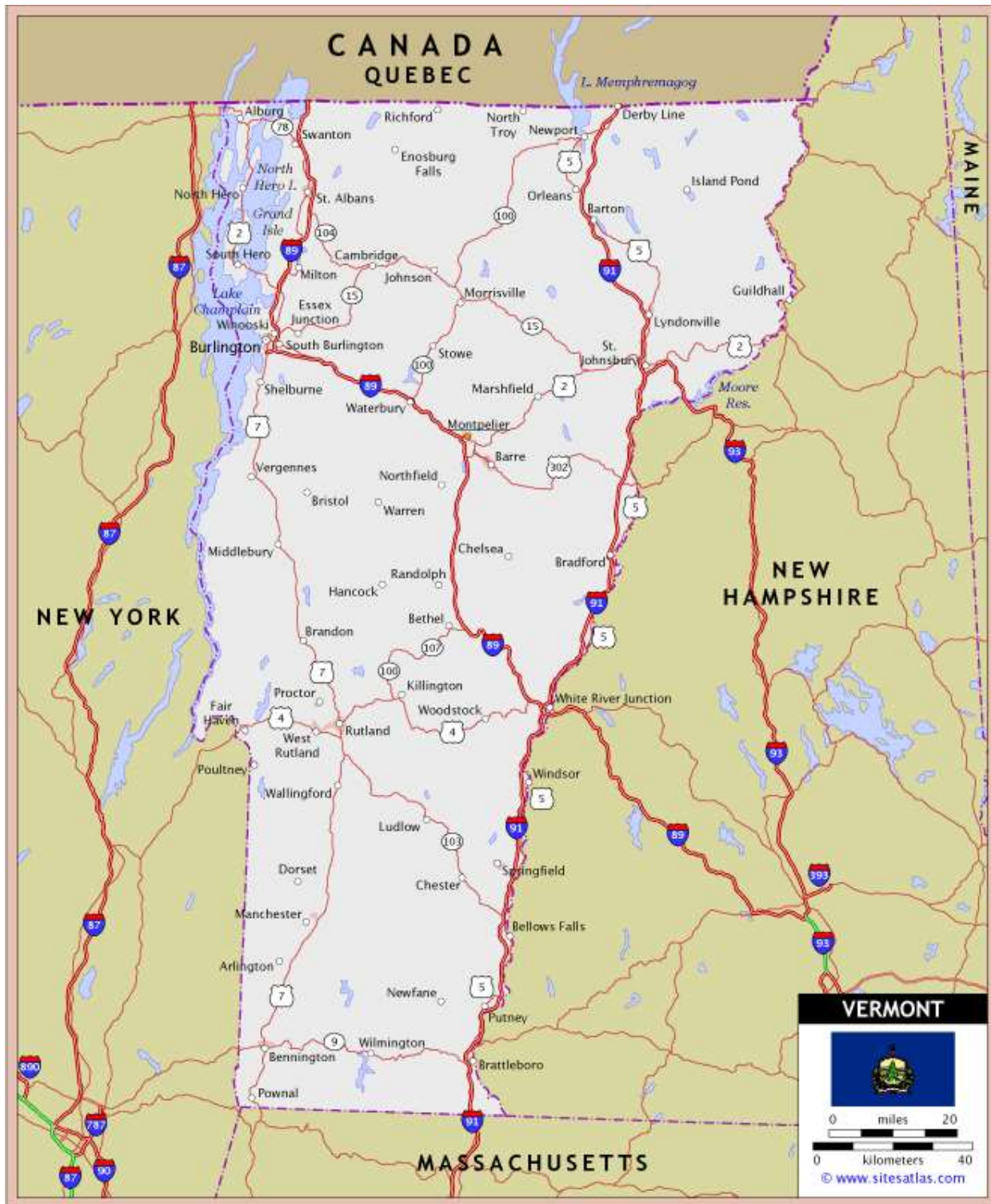
Vermont’s transportation rests on three modes: highway, air, and rail. Although located on the Connecticut River and Lake Champlain, there is no waterborne freight activity in the state. There are some ferries that support Northern Vermont’s economic development efforts by enlarging the labor shed that would otherwise be cut off to the west by the lake; these also support cross-lake tourism. Some companies are reported to use the Port of Montreal for waterborne shipping, which is a transportation asset for Northern Vermont.

Transportation Strengths

- Four major interstates run throughout the state facilitating product movement, distribution access, and workforce commutation
 - I-91 provides access from the Canadian border to New Haven, Connecticut connecting Vermont to Quebec, Springfield, MA; Hartford, CT; and New Haven, CT.
 - I-89 provides north-south access to Quebec, New Hampshire, and connecting to I-93 in Massachusetts.
 - I-93 runs for a short distance near St. Johnsbury and connects Vermont with New Hampshire.
 - I-189 provides access to Burlington from Route 7 along the western side of the state.
- There is also a network of U.S. highways, state, and local roads that facilitate reasonably convenient travel throughout the state, New England and the wider northeast, as well as providing linkages to Canada.
- There is also a network of U.S. highways, state, and county roads that facilitate reasonably convenient travel throughout the state and northeast, as well as providing linkages to eastern Canada.
- Figure 2 provides a map of Vermont’s primary roadway network.

Figure 2: Vermont Highway Map - 2013

Source: www.sitesatlas.com



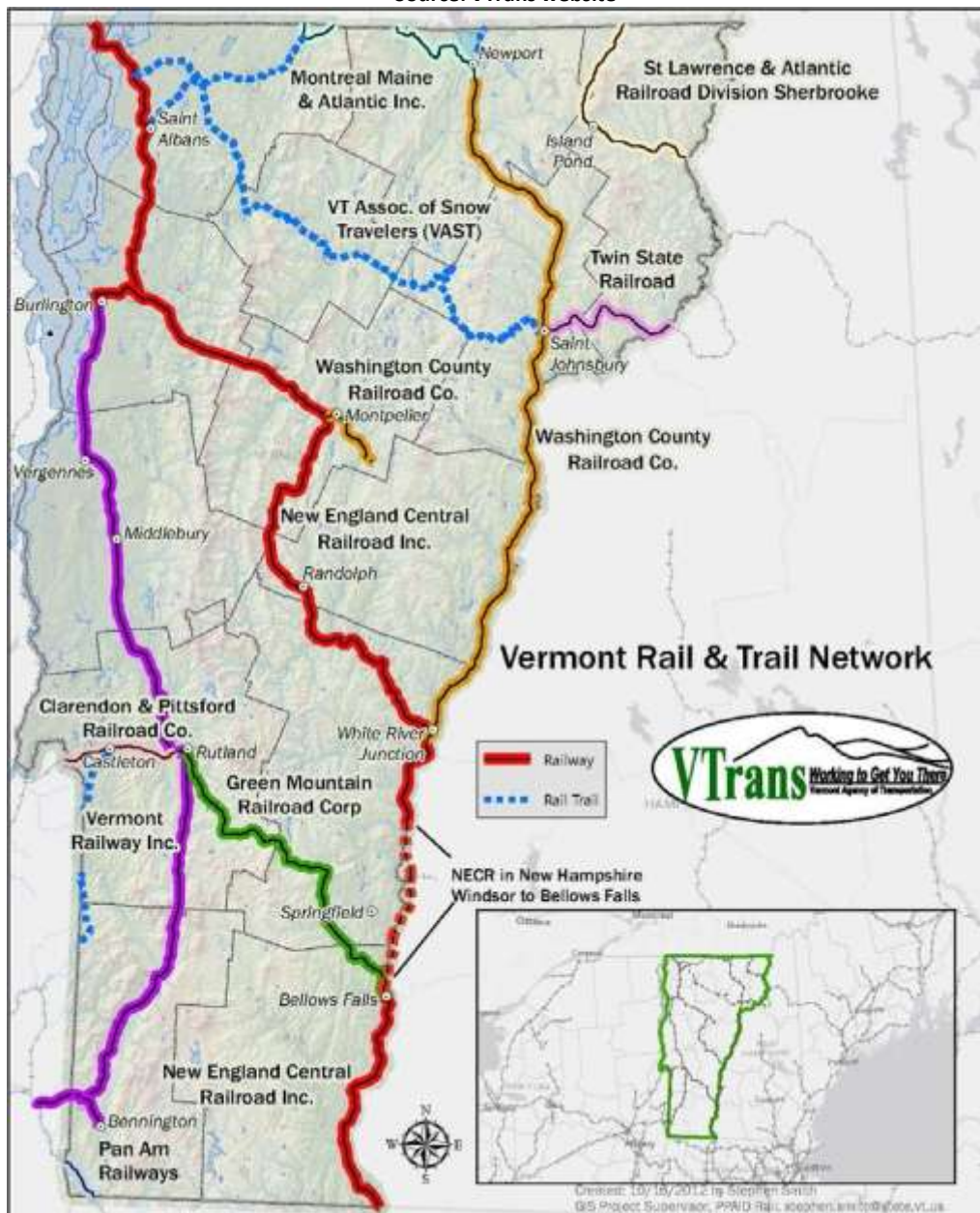
- There are 16 airports throughout Vermont. Facilities range from the Burlington International Airport to smaller private and municipal general aviation facilities.
- Burlington International Airport (BTV) is served by Allegiant Air, Delta, JetBlue, Porter (providing service to Toronto City), United and US Airways. Primarily providing service to major hubs such as Chicago, Philadelphia, NYC, and DC. Burlington International Airport is currently served by six airlines (Continental, Delta, Jet Blue, Porter, United and USAirways) with direct flights to 12 destinations (Atlanta, Chicago, Cleveland, Detroit, Newark, New York-JFK, New York-LGA, Orlando, Philadelphia, Toronto (seasonally by Porter Airlines), Washington-DCA and Washington-IAD). Depending on the day of the week, there are between 27 and 40 daily departures and arrivals, with all weekdays having 40. Current carrying capacity is approximately 2,500 seats per day, down from a high of about 3,400 seats per day in 2004-2006. This cutback included two very popular flights a day to Atlanta because the flight segments were judged too long by the airline (Delta).
- Both major commercial parcel carriers (UPS Airlines and FedEx Express) fly into BTV, providing service for much of northern Vermont. UPS uses Wiggins Airlines to ferry packages between Burlington and larger cargo hubs. FedEx Express in fact operates the largest aircraft to frequently utilize Burlington International Airport. Cargo is flown in from the company's "Super-hub" in Memphis, Tennessee aboard medium ranged Boeing 757-200 aircraft. Upon arriving from Memphis some of the cargo is unloaded from the 757 and distributed to smaller propeller driven Cessna 208Bs operated by Wiggins Airways and flown to closer destinations such as Portland, ME and Syracuse, NY. Royal Air Freight mainly flies small turbo-prop King Air and Embraer type aircraft to and from Burlington, Vermont and Pontiac, Michigan, and the cargo carrier's HQ at Newark Liberty International Airport. UPS flies exclusive connection flights with aircraft from Wiggins Airways to airports in the Northeast with Cessna 208s and small jet aircraft.
- Portions of Vermont are also easily accessible to Bradley International Airport in Connecticut via I-91; Manchester-Boston Regional Airport via I-89 or I-93; NS Logan International Airport via I-89/I-93; and Albany International Airport via US 7/New York Route 7.
- The Vermonter Amtrak service runs from St. Albans to NYC and on to D.C. with 10 stops in Vermont. The Ethan Allan Amtrak service runs from Rutland to Albany, NY and on to New York City's Penn Station.
- There are several rail freight lines operating in Vermont.
 - The Green Mountain Railroad is a short line railway that runs 52 miles from Rutland to Bellows Falls.
 - The Montreal, Maine & Atlantic Railway consists of 510 route miles of track in Maine, Vermont and Quebec with operation conducted daily between Millinocket and Searsport, Maine, and from Brownville Junction, Maine to Montreal, Quebec. Service is also provided between Farnham, Quebec and Newport, Vermont to connect with the Northeastern U.S.
 - The New England Central Railroad runs 366 miles from New London, CT to Alburgh, VT. The railroad's traffic consists largely of general freight, including lumber products, metals, chemicals and stone products.

- The Saint Lawrence Railroad is a 157-mile short line railroad that interchanges with its sister railroad, the Saint Lawrence & Atlantic Railroad (Quebec) (SLQ), and Canadian National, New Hampshire & Vermont Railroad, New Hampshire Central Railroad, and Pan Am Railways.
- The Vermont Railway runs from Burlington to Bennington. This track moves a wide variety of freight as well as the passenger trains on the Ethan Allen Express.
- The Washington County Railroad Montpelier & Barre Division and Connecticut River Division.

Figure 3 provides a VTrans map of Vermont Rail Lines.

Figure 3: Vermont Rail Lines - 2013

Source: VTrans website



- Scenic byways exist throughout the state to attract tourists and support the image of Vermont.
- Ten public transit providers throughout the state provide alternatives to personal automobile transportation. Bus and train ridership in Vermont has increased in recent years.

Transportation Weaknesses

- There has been significant deferred maintenance on aging transportation infrastructure, resulting in structural deficiencies throughout the transportation system can increase wear and tear on vehicles and create cost for companies.
 - According to the American Society of Civil Engineers' *2013 Report Card for America's Infrastructure* (see: <http://www.infrastructurereportcard.org/> and <http://www.infrastructurereportcard.org/a/#p/state-facts/vermont>), Vermont grades slightly better (C-) than the nation as a whole (D+) in terms of infrastructure in general, although the analysis for Vermont does not include many of the factors assessed for the country.
 - For roads, Vermont grades as a D+ compared to the nation's D. The report finds 45% of the state's roads are in poor or mediocre condition, costing travelers \$230 million per year, or \$424 per motorist.
 - For bridges, Vermont grades C- compared to the nation's C+ grade. The report says the state has 288 structurally deficient bridges (10.6% of the total).
- Another report found that In April 2011, 13 interstate bridges, 78 state, and 161 local bridges (a total of 252) were listed as structurally deficient. However, this is an improvement from 2006. The difference may reflect some of the impacts of Tropical Storm Irene.
- Some parts of the state are far removed from transportation infrastructure, thereby limiting business attraction and expansion efforts.
- Other than I-89 between White River Junction and Burlington, Vermont lacks and high-speed east-west highways.
- The majority of US 7 between population centers in Burlington and Bennington is not high-speed for the purposes of supporting economic development purposes.
- Access to airports meeting standards for nighttime flying is critical for "just in time" delivery but it is not available at all airport locations in the state.
- Climate change and extreme weather can have an impact on transportation services and reliability throughout the state. There was significant impact of Tropical Storm Irene on transportation infrastructure including damage to 500 miles of state highways and 200 bridges (substantially all

repaired within two months). New England Central Railroad reported over 65 stretches of track as badly damaged (but they were reopened within three weeks).

- The lack of, or limited availability of public transportation in the more rural parts of the state can limit workforce participation. The high cost of gasoline and car ownership can also limit employment for residents in rural parts of the state who have to travel long distances, especially for employees with low-wage jobs.

Utilities: Water, Sewer, Natural Gas, Electric Power

There is wide variation in the availability and quality of utility services throughout Vermont. As would be expected, more populated areas have better services than more rural areas. This has a direct impact on economic competitiveness as many companies prefer locations with a full complement of utility and telecommunications services. On the other hand, the small nature of many of the businesses that may develop in Vermont are more suitable for on-site water and wastewater services than larger businesses. Vermont's leadership in alternative energy methods and deployment will also support development of "off-the-grid" businesses.

Electric power services are provided by approximately twenty different municipal, private or coop energy companies. A topic of concern related to electric power in Vermont is the possible impact on rates the pending closure of the Vermont Yankee Nuclear Power Plant in 2014 will have. Green Mountain Power officials consider this to be "a non-event" and have done a comparative cost analysis showing that there will be little or no cost impact. This is in part because the company has already negotiated contracts with Hydro-Quebec and Public Service of New Hampshire's Seabrook Nuclear Power Plant.

Water and wastewater services, on the other hand, are largely locally provided, although some major providers (for instance, the Champlain Water District) serve broad geographic areas.

Vermont Gas Systems is the only natural gas company authorized to operate in Vermont. The company provides service in Chittenden and Franklin Counties in the northwest corner of the state.

Utilities Strengths

- Supported by a \$69 million Smart Grid Investment Grant by the U.S. Department of Energy, Vermont's electric utilities are making substantial capital investments in smart grid infrastructure that leverage and are leveraged by investments in broadband infrastructure. Smart grid is where electricity meets telecommunications and has enormous potential benefits for Vermont businesses and residents through "smart meters", which allow users to see their detailed energy use, the timing of that use, how much they are consuming, and its cost. It also provides outage information to the utilities. The smart grid was funded through a combination of federal grants and matching utility funds.
- Vermont has numerous authorized municipal and co-op generation and distribution utilities and transmission companies, and one, Green Mountain Power Company that is a publicly traded

company. This diversity of companies offers electric power users the potential opportunity to select locations for their operations that best meet their electric power needs. Table 3 lists the state’s authorized companies.

Table 3: Electric Companies Authorized to Operate in Vermont

Source: Vermont Public Service Board *

- BARTON VILLAGE, INC. ELECTRIC DEPARTMENT (D & G)
- BURLINGTON ELECTRIC DEPARTMENT, CITY OF (D & G)
- CENTRAL VERMONT PUBLIC SERVICE CORPORATION (D, G & T)
- ENOSBURG FALLS WATER & LIGHT DEPARTMENT, INC., VILLAGE OF
- ENTERGY NUCLEAR VERMONT YANKEE, LLC (T)
- GREEN MOUNTAIN POWER CORPORATION (D, G & T)
- HARDWICK ELECTRIC DEPARTMENT, TOWN OF (D & G)
- HYDE PARK ELECTRIC DEPARTMENT, VILLAGE OF (D)
- JACKSONVILLE ELECTRIC COMPANY, VILLAGE OF (D)
- JOHNSON WATER & LIGHT DEPARTMENT, VILLAGE OF (D)
- LUDLOW ELECTRIC LIGHT DEPARTMENT, VILLAGE OF (D)
- LYNDONVILLE ELECTRIC DEPARTMENT, VILLAGE OF (D & G)
- MORRISVILLE WATER & LIGHT DEPARTMENT, VILLAGE OF (D&G)
- NEW ENGLAND POWER COMPANY (T)
- NORTHFIELD ELECTRIC DEPARTMENT, VILLAGE OF (D)
- OMYA, INC. (D & G)
- ORLEANS ELECTRIC DEPARTMENT, VILLAGE OF (D)
- PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE (T)
- READSBORO ELECTRIC LIGHT DEPARTMENT, TOWN OF (D)
- STOWE ELECTRIC DEPARTMENT, TOWN OF (D)
- SWANTON VILLAGE, INC. ELECTRIC DEPARTMENT (D & G)
- US GEN NEW ENGLAND, INC. (WHOLESALE ONLY) (G)
- VERMONT ELECTRIC COOPERATIVE, INC. (D)
- VERMONT ELECTRIC POWER COMPANY, INC. (T)
- VERMONT ELECTRIC TRANSMISSION COMPANY, INC. (T)
- VERMONT PUBLIC POWER SUPPLY AUTHORITY (MEMBER ORGANIZATION)
- VERMONT TRANSCO LLC

- VERMONT YANKEE NUCLEAR POWER CORPORATION
- WASHINGTON ELECTRIC COOPERATIVE, INC. (D)

*Key

Distribution – D

Generation – G

Transmission – T

- Vermont has the lowest average industrial electric rate among public investor utilities in New England, as shown in the following table.

Table 4: Average Total Electric Rates (Cents/kWh) *

Source: Edison Electric Institute

State/Utility	Average Rates*	
	Commercial	Industrial
Vermont	14.05	9.65
Green Mountain Power	14.05	-
Green Mountain (CVPS Zone)	14.33**	-
Green Mountain Power Corporation	13.29 **	-
All utilities (IOUs, munis, coops, etc)	-	9.90
Connecticut	14.62	11.79
Maine	13.36	10.12
Massachusetts	13.69	12.52
New Hampshire	13.71	12.55
Rhode Island	11.97	11.76
New England	13.90	11.51
U.S.	10.29	6.73

* 12 months ending 6/30/13

** 2012

- Vermont's lone natural gas company announced a price reduction of 2.1% in February 2014 for business and residential customers. The cut is a result of lower Canadian tolls from TransCanada. This is the 17th rate reduction the company has implemented since 2008.
- The Public Service Board (PSB) in December approved Vermont Gas Systems' proposal to build a 43-mile, \$86.6 million natural gas pipeline that would connect Colchester to Middlebury and Vergennes in Addison County. Vermont Gas has applied to the PSB for a second phase of the pipeline expansion, which would connect Middlebury to the International Paper mill in Ticonderoga, N.Y. This second phase, planned for 2015, would move the utility closer to completing its final proposed extension to service Rutland.

Utilities Weaknesses

- There has been significant deferred maintenance on the state's aging water and wastewater systems
 - According to the American Society of Civil Engineers' *2013 Report Card for America's Infrastructure* (see: <http://www.infrastructurereportcard.org/> and <http://www.infrastructurereportcard.org/a/#p/state-facts/vermont>, Vermont grades as a C- compared to the nation's D for drinking water with \$453 million needed over the next 20 years to improve the state's water supply.
 - For wastewater, Vermont grades D+ compared to the nation's D grade, with \$218 million needed over the next 20 years to improve the state's wastewater treatment capabilities.
- There currently is one natural gas company authorized to operate in Vermont -- Vermont Gas Systems, Inc. Service is provided in the following locations in Chittenden and Franklin Counties, in the northwest corner of the state.

Table 5: Vermont Gas Systems Service Area

Source: Public Service Board, State of Vermont

Burlington	Shelburne
Colchester	Sheldon
Essex	South Burlington
Georgia	St. Albans
Highgate	Swanton
Hinesburg	Underhill
Jericho	Williston
Milton	Winooski
Richmond	

- Vermont's average commercial and industrial electric rates among public utilities are significantly higher than the national average, as shown in Table 4 above.

Utilities: Telecommunications

Telecommunication services are provided by a wide range of companies, with some portions of the state better served than others. Providing telecommunication services in most of the state is difficult, and expensive, because of the rural nature of the state, with low population densities and mountainous terrain. However, the state established a goal to provide broadband and cellular service throughout the state by the end of 2013. The goal was narrowly missed, with only 1% of the state not receiving coverage.

In general, Vermont is at somewhat competitive disadvantage compared to more urbanized areas, but its situation is similar to many other rural areas across the country.

Telecommunications Strengths

- The state is advancing its technology infrastructure and usage.

- The Vermont Telecommunications Authority has a number of dark fiber projects in progress. They are designed to support infrastructure needed by both cellular carriers and broadband Internet service providers in some of the most rural areas of Vermont.
- Projects are currently focused in parts of five counties. Two are under construction: a route from Newport to Hardwick in Orleans and Caledonia counties, and a route in Orange and Windsor Counties. The VTA is also engaged in projects in Essex County. These comprise two projects commonly known as the Orange County Fiber Connector (OCFC) and the Northeast Kingdom (NEK) Fiber Network.
- In January 2011, Governor Peter Shumlin launched a specific initiative to achieve statewide connectivity called ConnectVT by the end of 2013. Completion of this initiative will strengthen the state's economic viability with enhanced technological competitiveness, and greater efficiency and effectiveness in the delivery of services including education, healthcare and energy.
- At the end of 2013 99% of the state had broadband service. Only 3,000 homes still lacked high-speed Internet service at that time. However, solutions had been identified for most of these homes, although connections dates are not set.
- Vermont's broadband strategy is focused on three points:
 - Concentrating high-speed service to "anchor" institutions, such as hospitals, libraries, public offices and major businesses
 - Have a "wireless" canopy that helps reach rural areas of the state by circumventing phone, cable and fiber optic networks
 - Coordinating broadband technology with a "smart-grid" infrastructure
- The state website BroadbandVT.org provides users with an interactive map, allowing them to find service options, a "speed test" of their broadband service, and an online form to report a non-served address.
- Burlington is reported to have city-wide access to internet speeds 100 times faster than the national average.

Telecommunications Weaknesses

- The state's definition of "high-speed" Internet service needs to conform to the FCC's definition of 4 Mbps upload and 1 Mbps download. Some portions of the state may have service based on an older Federal broadband definition of 768 Kbps upload and 200 Kbps download.
- The state's 2011 Broadband Telecommunications Plan established a goal of broadband pricing that is on par with national urban areas at the end of 2013. No clear information is available indicating whether this goal was achieved.
- The *Vermont Telecommunications Plan 2011: Broadband identified the following weaknesses:*
 - There are overarching economic challenges to the business case for sustainable broadband infrastructure in Vermont and strategies are necessary to overcome these challenges. On the demand side, sparse population and slow adoption in newly served areas provide lower incentive for private investment. On the supply side, Vermont's topography and the high costs of backhaul and tower construction are impediments to service deployment.

- Because the mobile communications industry is lightly regulated, the types of technologies deployed remain largely up to the vendors. Insofar as the state supports tower construction and affordable fiber connectivity, it will be empowered to identify new locations for service and to work with vendors to achieve agreeable terms.
- In the past, overarching economic challenges to the business case for sustainable broadband infrastructure in Vermont left many Vermont organizations with little or no choice of providers for enterprise-level broadband and pricing was prohibitive. In fact, pricing models historically encouraged network managers to ‘slim down’ applications and network use in order to afford minimal bandwidth from providers that operated within a model of scarcity. However, in the near future, where large-capacity fiber connections are available and priced so as not to discourage additional use of that abundant capacity, there will be a qualitative difference in the kinds of applications developed.
- As increasing types of devices connect and users find new means of connecting to one another, demand for upload speed increases.

Workforce

Unless a business is entirely self-employed, workforce is a critical issue. Finding an adequate number of workers with the right skills is a primary determinate in picking or remaining in a location. Vermont’s small population results in a limited labor pool. While peripheral areas can draw from Massachusetts, New Hampshire, Vermont, and Canada, interior portions of the state have more limited opportunities.

According to the Vermont Department of Labor, Economic & Labor Market Information, Vermont’s labor force in 2013 ranged from a high of 355,350 in January to 348,165 in December. Throughout the year, the unemployment rate has ranged from 3.7% to 5.2%, indicating that there is not a large pool of available workers, although the number of underemployed is not known.

Growth in the civilian labor force was very modest over the 2003-2013 time frame, at 1.3%. The gain in employment was also very modest at 1.5%. Table 6 shows the state’s labor force and seasonally adjusted average annual employment and unemployment for the years 2003 through 2013.

Table 6: Monthly Vermont Workforce and Unemployment Rate 2013

Source: U.S. Department of Labor, Bureau of Labor Statistics

Year	Labor Force	Employment	Unemployment	Unemployment Rate
2003	346,770	331,292	15,478	4.5
2004	347,068	334,188	12,880	3.7
2005	348,818	336,583	12,235	3.5
2006	356,427	343,149	13,278	3.7
2007	355,293	341,282	14,011	3.9
2008	357,869	341,692	16,177	4.5
2009	359,840	335,132	24,708	6.9
2010	360,029	337,049	22,980	6.4
2011	358,637	338,632	20,005	5.6

2012	356,329	338,552	17,777	5.0
2013	351,550	336,242	15,308	4.4

Future growth in the state's workforce will be dependent in part on population growth, which in turn will be dependent on employment opportunities and quality of life factors.

Workforce Strengths

- The state's employment grew between 2000 and 2012, but not as rapidly as the nation.

Table 7: Vermont and United States Average Annual Employment Growth; 2000 & 2012; October 2013

Source: U.S. Bureau of Labor Statistics, Wadley-Donovan GrowthTech, LLC

Employment (Average Annual)	U.S.	Vermont
2000	136,901,000	326,742
2012	142,469,000	338,552
Oct. 2013	144,144,000	336,885
% Change 2000 - 2012	4.1%	3.6%

- The state has a higher percentage of residents with at least a bachelors degree.

Table 8: Vermont Educational Attainment 2013

Source: Nielson-Claritas, Wadley-Donovan GrowthTech, LLC

Level	U.S.	Vermont
No High School Diploma	14.6%	9.0%
High School Diploma Only	28.4%	31.8%
1 to 3 Years College	21.3%	17.5%
Associate Degree	7.6%	8.4%
Bachelors Degree	17.7%	20.2%
Graduate Degree	10.4%	13.2%
12 to 15 years of education	57.3%	57.6%
16 or more years of education	28.1%	33.4%

- The state is forecast to see an increase in its population aged 18-34 years old over the next five years that almost matches the national average. This age cohort is the core of an area's young workforce.

Table 9: Vermont Age Cohorts 2013

Source: Nielson-Claritas, Wadley-Donovan GrowthTech, LLC

Age Group	U.S.	Vermont
0-17	2.0%	-3.4%
18-34	0.9%	0.8%
35-54	-2.5%	-10.4%
55-64	8.5%	6.4%
65-74	21.9%	21.5%
75 and over	9.0%	8.2%

- The state is working to address the issues that adversely affect the difficulties in talent recruitment from other states, including promotion of the state's assets.
- Between 2002 and 2012 there was an increase of 28.4%, or 5,772 jobs, in the professional and business services sector, and a 22.8% (10,668) gain in the number of education and health services jobs in Vermont, according to the Bureau of Labor Statistics.
- In 2012 Vermont was the eighth highest state adding new residents, at 4.2% of the base population, as reported by governing.com.
- Vermont ranked second in 2012 in the level of educational attainment of new residents, with 56.2% having a bachelor's degree. Interestingly, other New England states ranked high, Massachusetts ranked 1st with 56.3%, New Hampshire ranked 9th at 50.2%, and Maine ranked 10th at 49.7%.
- Vermont ranked first in 2012 among all states for the percentage of new residents with graduate and professional degrees.
- The state's attractive physical and social environments are an attraction for new residents.
- The median age of the state's in-migrants in 2012 was the lowest of all the states, at 23.4 years.
- A new website (<http://vermont.Internships.com/join>) has been created to help match state employers with college students looking for internships in an effort to keep students in the state after graduation, especially those that are tech-educated.
 - The website was created by the Vermont Technology Council (VTC).
 - The site lists all the internships in the state
 - The site is linked to the national website Internships.com
 - The website lists jobs in fields other than technology
 - More students are interested in internships than are available
 - VTC reports that 70% of students that successfully complete internships are offered full time positions
 - The site attracts residents attending out-of-state schools
 - Internships are becoming the primary gateway into the workforce; an estimated 70 percent of the new jobs for people coming out of higher education are found through internships
- The tech internship program, created in 2010, helped place more than 60 college students with Vermont tech companies. Internships make students aware of the great employment opportunities in Vermont, and provide employers the chance to recruit their future workforce.
- The average wage at a software company in VT is \$65,000 annually, compared to \$51,841 for the median household income in VT in 2012.

- For every software developer hired, tech companies add an additional six nontechnical supporting positions in fields such as sales, marketing, support, administration and accounting.
- The Vermont Tech Jam, an annual job fair and tech expo created in 2008. The Tech Jam is an annual career fair/tech expo showcasing the state's most innovative tech and bioscience companies. More than 1,500 job seekers, students and tech professionals from Vermont and elsewhere came to the 2013 event held on October 18th and 19th in Burlington. 82 companies and organizations exhibiting at the Jam. The Vermont Tech Jam was started in 2008 by Seven Days, the Vermont Technology Alliance (formerly the Vermont Software Developers' Alliance) and a coalition of public and private sector partners that wanted to increase the visibility of the state's technology sector.
- Vermont's STEM (Science, Technology, Engineering and Mathematics) incentive program is working successfully and should be continued and expanded to promote competitive hiring in science-related and IT-related fields, according to the state's Committee on Enhancing Vermont's Software and Information Technology Economy. The current STEM incentive is scheduled to sunset, requiring a new appropriation to continue.
 - Research published in the Institute of Electrical and Electronic Engineers' *IEEE Spectrum*, STEM education in the elementary, middle and high school is important for the development of STEM literacy within the future workforce for use in jobs that cut across the occupational spectrum, including those occupations classified as STEM and non-STEM. Most jobs of the future will require a knowledge base in the STEM disciplines.

Workforce Weaknesses

- Vermont is a rural state with a small population. The population density is 67.16 residents per square mile, ranking the state as the 30th most densely populated state.
- The state's average unemployment rate is very low, compared to the national average, which may deter site selectors from choosing the state in favor of areas with higher rates, on the premise that the state's labor market is saturated.

Table 10: Average Annual Vermont and United States Unemployment Rates 2000 & 2012; Oct 2013

Source: U.S. Bureau of Labor Statistics, Wadley-Donovan GrowthTech, LLC

Unemployment Rate (Average Annual)	U.S.	Vermont
2000	3.9%	2.7%
2012	8.0%	5.0%
Oct. 2013	7.0%	3.7%

- As reported in many of the regional meetings held as part of the data gathering for this assessment, many employers in the state report difficulty recruiting individuals from outside the state because of a shortage of alternative employment opportunities and satisfactory employment opportunities for spouses, i.e. "second jobs". This shortage is due in part to the state's relatively small population and employer base. A small population results in a small labor force.

- The state's civilian labor force grew between 2000 and 2012, but at a slower rate than the national average, as shown in Table 10.

Table 11: Average Annual Vermont and United States Civilian Labor Force 2000 & 2012; Oct 2013

Source: U.S. Bureau of Labor Statistics, Wadley-Donovan GrowthTech, LLC

Civilian Labor Force	U.S.	Vermont
2000	142,586,000	335,798
2012	154,966,000	356,329
Oct. 2013	154,918,000	349,832
% Change 2000 - 2012	8.7%	6.1%

- The state's population is growing well below the national average, which may negatively impact future workforce availability.

Table 12: Vermont and United States Population Growth 2000, 2013, 2018

Source: Nielson-Claritas, Wadley-Donovan GrowthTech, LLC

	U.S.	Vermont
2000	281,421,942	608,819
2013	314,861,807	626,978
2018	325,322,277	627,903
Change 2000 - 2013	11.9%	3.0%
Change 2013 - 2018	3.3%	0.1%

- The state has an older population than the national average, as measured by the median age, indicating an aging workforce.

Table 13: Vermont and United States Median Age 2000, 2013, 2018

Source: Nielson-Claritas, Wadley-Donovan GrowthTech, LLC

Year	U.S.	Vermont
2000	35.3	37.5
2013	37.5	42.0
2018	38.3	42.9

- There has been a 21.6% (8,803) decline in the number of manufacturing jobs between 2002 and 2012, according to the U.S. Bureau of Labor Statistics. This decline is important because of the high ripple affect generated by manufacturing. This decline matches the decline in manufacturing employment nationwide. U.S. manufacturing employment fell by 21.6% between 2002 and 2012, according to the U.S. Bureau of Labor Statistics.
- According to *Governing.com*, using U.S. Census Bureau's American Community Survey data, the state's 2012 in-migrants registered the lowest median income in 2012 at \$12,679, possibly explained by a high percentage of college-aged individuals among the new residents.

- Many of the new economic/social opportunities require much higher levels of education, consequently many people who do not possess the necessary skills are left behind. (regional meeting compilation)
- Interviews with educators and employers, and regional meeting participants, many graduates from Vermont colleges are attracted to job opportunities in other states and move to those states after graduation. They are attracted by the allure of:
 - Working for bigger companies than those in the state;
 - More numbers and diversity of job and career opportunities;
 - Affordable housing;
 - Higher salaries; and
 - Opportunities for urban living.
- Many of the graduating students are originally from out-of-state and are returning to their home state or region. (WDG interviews)
- The state has a relatively high cost of living which is an obstacle for attracting new residents and keeping graduating students.
- Input from regional meetings held during the research for this project indicate that housing availability and affordability are a problem for most regions in the state, affecting the ability for employers to recruit and keep talent. This shortage affects low-income individuals and young professionals.
- Table 14 shows that the largest occupational sectors in Vermont are generally low to modest paying, and many require only a short term on-the-job training.

Table 14: Largest Employment Sectors and Related Wages in Vermont 2013

Source: Economic Base Report Prepared as Part of this Project

Occupation	2013 Jobs	Average Annual Wage	Education Level
Retail Salespersons	9,910	\$26,666	Short-term on-the-job training
Cashiers	9,454	\$21,445	Short-term on-the-job training
Personal Care Aides	8,231	\$22,443	Short-term on-the-job training
Secretaries and Admin Assistants, Except Legal, Medical, and Executive	7,698	\$31,346	Short-term on-the-job training
Registered Nurses	6,716	\$63,294	Associate's degree
Teacher Assistants	6,051	\$27,144	Short-term on-the-job training
Bookkeeping, Accounting, and Auditing Clerks	5,839	\$35,214	Moderate-term on-the-job training
Combined Food Preparation and Serving Workers, Including Fast Food	5,453	\$21,403	Short-term on-the-job training
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	5,428	\$25,626	Short-term on-the-job training
Maids and Housekeeping Cleaners	4,888	\$20,883	Short-term on-the-job training

- As shown in Table 15, the occupations with the greatest forecasted numeric growth require a range of educational preparation from modest to an Associate’s Degree.

Table 15: Vermont Employment Sectors with Largest Projected Growth, 2013 – 2023

Source: QCEW Employees, Non-QCEW Employees & Self-Employed-EMSI 2013. 3Class of Worker, Camoin Associates

Description	2013 Jobs	2023 Jobs	# Change	% Change
Personal Care Aides	8,231	11,827	3,596	44%
Retail Salespersons	9,910	11,125	1,215	12%
Registered Nurses	6,716	7,717	1,001	15%
Home Health Aides	766	1,626	860	112%
Automotive Service Technicians and Mechanics	2,695	3,428	733	27%
Office Clerks, General	3,495	4,164	669	19%
Maids and Housekeeping Cleaners	4,888	5,380	492	10%
Postsecondary Teachers	4,306	4,775	469	11%
Cashiers	9,454	9,910	456	5%
Childcare Workers	3,966	4,413	447	11%

Education

Education is an important factor for two reasons:

- It is a critical component for providing an adequate workforce to meet both current and future needs.
- It is a primary quality of life factor in attracting or keeping residents.

Data from the U.S. Department of Education shows Vermont has 294 local school districts with 324 schools and 96,858 students. There are no charter schools in the state. The state average per pupil expenditure is \$15,634 compared to the national average of \$11,184, and the pupil/teacher ratio is 11.6 vs. a national average of 16 (2010-2011 data).

The U.S Department of Education’s National Assessment of Educational Progress (NAEP) provides data on Vermont’s and every other state’s performance in mathematics, reading and science. The data is from NAEP’s Common Core of Data (CCD), a comprehensive, annual, national statistical database of information on all public elementary and secondary schools and local education agencies. More information can be obtained from the CCD homepage (<http://nces.ed.gov/ccd/>).

Education Strengths

- The U.S. Department of Education’s National Assessment of Educational Progress (NAEP) shows Vermont’s 4th and 8th graders are performing better than the national average in the three subject areas for which test data are available: mathematics, reading and science. NAEP indicates the percentage of students at each grade level that perform at a basic, above proficient and advanced levels in these subject areas. The National Assessment of Educational Progress (NAEP) is the largest

nationally representative and continuing assessment of what the nation's students know and can do in the three subject areas.

- Basic level denotes partial mastery of prerequisite knowledge and skills that are fundamental for proficient work at each grade assessed.
- Proficient level indicates competency over challenging subject matter, including subject-matter knowledge, application of such knowledge to real-world situations, and analytical skills appropriate to the subject matter.
- Advanced level denotes superior performance at each grade assessed.

➤ **NAEP 4th Grade Mathematics Performance:** Between 2003 and 2013, 85% to 87% of Vermont's 4th graders performed at or above the basic level in mathematics, and since 2007 an average of 50% of students performed at the "above proficient" level, all of which were above the U.S. average. In 2013, 11% of Vermont's students performed at an advanced level, also above the national average. See Table 16-A.

Table 16-A: Summary of National Assessment of Educational Progress Results for Vermont Mathematics, Grade 4: 2000-2013:

Source: U.S Dept of Education-National Center for Education Statistics/Institute of Education Science

Year	Achievement Level*		
	At or Above Basic %	Above Proficient %	At Advanced %
2013	87	52	11
2011	89	49	8
2009	89	51	9
2007	89	49	7
2005	87	44	6
2003	85	42	5
2000	73	29	4

*Color key

	Higher than national public average
	Not significantly different from national public average

➤ **NAEP 8th Grade Mathematics Performance:** Between 2007 and 2013, 81% to 84% of Vermont's 8th graders performed at or above the basic level in mathematics, and since 2000 an increasing percentage of students have been performing at the "above proficient" level. Since 2003 the state's 8th graders have scored better than the national average at the basic, above proficient and advanced levels. See Table 16-B.

Table 16-B: Summary of National Assessment of Educational Progress Results for Vermont 2000-2013:
Mathematics, Grade 8

Source: U.S Dept of Education-National Center for Education Statistics/Institute of Education Science

Year	Achievement Level*		
	At or Above Basic %	Above Proficient %	At Advanced %
2013	84	47	14
2011	82	46	13
2009	81	43	13
2007	81	41	10
2005	78	38	9
2003	77	35	7
2000	73	31	6

*Color key

	Higher than national public average
	Not significantly different from national public average

- **NAEP 4th Grade Reading Performance:** Between 2002 and 2013, 73% to 75% of Vermont's 4th graders performed at or above the basic level in reading. In 2009 and 2013 75% of students performed at the basic level. Since 2005 the state's 4th graders have achieved better than the national average at the basic, above proficient and advanced levels. See Table 16-C.

Table 16-C: Summary of National Assessment of Educational Progress Results for Vermont 2000-2013: Reading, Grade 4

Source: U.S Dept of Education-National Center for Education Statistics/Institute of Education Science

Year	Achievement Level*		
	At or Above Basic %	Above Proficient %	At Advanced %
2013	75	42	12
2011	73	41	11
2009	75	41	12
2007	74	41	11
2005	72	39	10
2003	73	37	8
2002	73	39	9

*Color key

	Higher than national public average
	Not significantly different from national public average

- **NAEP 8th Grade Reading Performance:** Between 2002 and 2013, 79% to 84% of Vermont's 8th graders performed at or above the basic level in reading, and since 2011 44%-45% of the state's students scored above the proficient level. Since 2002 the state's 8th graders scored above the national average. See Table 16-D.

**Table 16-D: Summary of National Assessment of Educational Progress Results for Vermont
2000-2013: Reading, Grade 8**

Source: U.S Dept of Education-National Center for Education Statistics/Institute of Education Science

Year	Achievement Level*		
	At or Above Basic %	Above Proficient %	At Advanced %
2013	84	45	6
2011	82	44	6
2009	84	41	3
2007	84	42	4
2005	79	37	4
2003	81	39	4
2002	82	40	4

*Color key

	Higher than national public average
	Not significantly different from national public average

- **NAEP 8th Grade Science Performance:** Achievement scores are only available for 2011 for the 8th grade. In that year, 80% of 8th grade students scored at or above the basic level, while 43% scored above proficient. Both achievement levels were above the national average. See Table 16-E.

**Table 16-E: Summary of National Assessment of Educational Progress Results for Vermont
2011: Science, Grade 8**

Source: U.S Dept of Education-National Center for Education Statistics/Institute of Education Science

Achievement Level		
At or Above Basic %	Above Proficient %	At Advanced %
80	43	2

*Color key

	Higher than national public average
	Not significantly different from national public average

- *Education Week* (edweek.org) has issued annual Quality Counts Reports since 1996 that track key education indicators for each of the 50 states and grades the states on their performance and

outcomes, using the research gathered by its Research Center, against each other and a national average. Table 17 shows summarizing the findings presented in the 2014 Quality Counts report. The report shows the state performed better than the national average in three tracked categories: Chance for Success, K-12 Achievement, and School Finance Analysis, ranking nationally 7th, 5th and 6th respectively. The indicators showing strengths are grouped into the following categories.

- The *Chance for Success Index* was developed by Education Week to better understand the role of education across an individual's lifetime. This index combines information from 13 indicators that span a person's life. These indicators are grouped into three categories: Early Foundations, School Years, and Adult Outcomes that measure preparation in early childhood, the performance of the public schools, and educational and economic outcomes in adulthood. This assessment framework allows states to identify strong and weak links in their residents' educational life course from childhood through adulthood. The index also provides information that could be used by public education systems to serve their students.
- The *K-12 Achievement Index* examines 18 distinct state achievement measures related to reading and math performance, high school graduation rates, and the results of Advanced Placement exams. It also places an emphasis on equity, by examining both poverty-based achievement gaps and progress in closing those gaps. Aspects of student achievement are measured in three ways: current levels of performance (status), improvements over time (change), and achievement gaps between poor and non-poor students (equity). The nation as a whole earns 70.2 points, on a 100-point scale, for a grade of C-. The leading state, Massachusetts, earned 83.7 points and a B. Vermont earned a C+ and ranks 5th highest in the nation. Data from NAEP is used in this index, among other data sources.
 - The analysis shows Vermont ranks 1st in the nation in the high school graduation rate among public schools (class of 2010)
- The *School Finance Analysis* uses eight indicators separated into two categories:
 - Equity
 - Wealth-Neutrality Score – Relationship between district funding and local property wealth
 - McLoone Index – Actual spending as percent of amount needed to bring all students to median level
 - Coefficient of Variation – Amount of disparity in spending across districts within a state
 - Restricted Range – Difference in per-pupil spending levels at the 95th and 5th percentiles
 - Spending
 - Adjusted per-pupil expenditures (PPE) – Analysis accounts for regional cost differences
 - Students funded at or above national average – Percent of students in districts with PPE at or above U.S. average
 - Spending Index – Per-pupil spending levels weighted by the degree to which districts meet or approach the national average for expenditures
 - Spending on education – State expenditures on K-12 schooling as a percent of state taxable resources

- Vermont ranks 6th higher in the nation, with a state average grade of B, compared to a national average of C.

Table 17

Quality Counts 2014 Grading Summary

Source: Education Week Research Center, Vermont State Highlights 2014



Factor	Grade	Rank	Average U.S. State Grade
Chance for Success (2014)	B	7	C+
K-12 Achievement (2014)	C+	5	C-
School Finance Analysis (2014)	B	6	C
Transitions and Alignment (2013)	C-	42	B-
Standards, Assessments and Accountability (2013)	B	30	B
The Teaching Profession (2013)	C-	30	C

- There are 23 colleges and universities in Vermont, including one research university, five master's universities, an art school, a culinary school, a law school, and 14 undergraduate associates and baccalaureate colleges.
 - The University of Vermont is the state's largest school and its flagship public university. The other five public institutions are organized as the Vermont State Colleges system.
 - Table 18 summarizes these higher education institutions

Table18: Vermont Colleges and Universities 2011

Source: U.S. Department of Education, IPEDS; ACCD;

School	Location(s)	Public or Private	Institutional Type	FT Under-Graduate Enrollment (2011)	FT Graduate Enrollment (2011)
Bennington College	Bennington	Private	Baccalaureate college	683	117
Burlington College	Burlington	Private	Baccalaureate college	146	
Castleton State College	Castleton	Public	Baccalaureate college	1,843	
Champlain College	Burlington	Private	Baccalaureate college	2,165	328
College of St. Joseph	Rutland	Private (Catholic)	Master's university	164	
Community College of Vermont	12 locations	Public	Associate's college	1,146	
Goddard College	Plainfield	Private	Master's university	250	501
Green Mountain College	Poultney	Private (Methodist)	Baccalaureate college	614	116
Johnson State College	Johnson	Public	Master's university	1,081	
Landmark College	Putney	Private	Associate's college	488	
Lyndon State College	Lyndonville	Public	Baccalaureate college	1,216	
Marlboro College	Marlboro	Private	Baccalaureate college	236	
Middlebury College	Middlebury	Private	Baccalaureate college	2,480	
New England Culinary Institute	Montpelier, Essex Junction	Private (for-profit)	Culinary school	419	
Norwich University	Northfield	Private	Master's university	2,231	1,048
Saint Michael's College	Colchester	Private (Catholic)	Baccalaureate college	1,970	68
Southern Vermont College	Bennington	Private	Baccalaureate college	469	
Sterling College	Craftsbury Common	Private	Baccalaureate college	93	
University of Vermont	Burlington	Public	Research university	10,258	1,254
Vermont College of Fine Arts	Montpelier	Private	Art school		319
Vermont Law School	South Royalton	Private	Law school		689
Vermont Technical College	Randolph Center	Public	Baccalaureate/associates college	1,168	
Total				29,120	4,471

- There are four institutions chartered in other states that also offer degree programs at locations in Vermont:
- Albany College of Pharmacy and Health Sciences offers a Doctor of Pharmacy program in Colchester
 - Southern New Hampshire University offers graduate programs at a center in Colchester
 - Springfield College School of Human Services offers a degree program in St. Johnsbury
 - Union Institute & University in Ohio has facilities in Brattleboro and Montpelier

Education Weaknesses

- *Education Week* (edweek.org) has issued annual Quality Counts Reports since 1996 that track key education indicators for each of the 50 states and grades the states on their performance and outcomes, using the research gathered by its Research Center, against each other and a national average. Table 17 shows summarizing the findings presented in the 2014 Quality Counts report. The report shows the state performed worse than the national average in three categories: Transitions and Alignment; Standards, Assessment, and Accountability; and Efforts to Improve Teaching.
- *Transitions and Alignment* examines state efforts to connect the K-12 education system with early learning, higher education, and the world of work. Fourteen key transitions and alignment policies are included in the assessment.
 - Vermont ranks 42nd among the states in this measurement.
 - The state received a grade of C- compared to a national average of B-
- *Standards, Assessment, and Accountability* follows showing 23 state policy indicators collected into three categories:
 - Academic Standards
 - Assessment (three sub-categories)
 - Test items used to measure student performance
 - Alignment of assessments to academic standards
 - Assessment systems
 - School Accountability
 - Vermont ranks 30th in this assessment nationally, receiving a grade of B, equal to the national average.
- *Efforts to Improve Teaching* assesses efforts being taken in the state to improve teaching using 44 measurements collected into three categories:
 - Accountability for Quality
 - Requirements for initial licensure (2011-12)
 - Substantial coursework in subject area(s) taught
 - Test of basic skills
 - Test of subject-specific knowledge
 - Test of subject-specific pedagogy
 - Student-teaching during teacher training
 - Other clinical experiences during teacher training
 - Discouraging out-of-field teaching (2011-12)
 - Direct parental notification of out-of-field teachers
 - Ban or cap on the number of out-of-field teachers
 - Evaluating teacher performance (2011-12)
 - Formal evaluations of all teachers' performance required
 - Student achievement is tied to teacher evaluations
 - Annual basis for teacher evaluations
 - All evaluators of teachers receive formal training
 - Teacher education programs (2011-12)

- Rankings/results published for teacher-preparation institutions
 - Programs accountable for graduates' classroom performance
- Data systems to monitor quality (2011)
 - State links teachers to student-growth data
 - State links teachers and their performance data back to teacher education programs
- Incentives and Allocation
 - Reduction of entry and transfer barriers
 - Alternative-route program for teacher preparation
 - Teacher-license reciprocity or portability arrangement with other state(s)
 - Teacher-pension portability across state lines
 - Salaries and incentives
 - Teacher-pay parity – Teacher salaries at least equal to comparable occupations (2010)
 - Districts report school-level salaries for teachers (2011-12)
 - Pay-for-performance program or pilot rewards teachers for raising student achievement (2011-12)
 - Differentiated roles for teachers formally recognized by state (2011-12)
 - Incentives for teachers taking on differentiated roles (2011-12)
 - Financial incentives for teachers to earn national-board certification (2011-12)
 - Managing and allocating teaching talent (2011-12)
 - Incentives to teachers working in targeted schools
 - Incentives to teachers working in hard-to-staff teaching-assignment areas
 - Incentives to board-certified teachers working in targeted schools
 - Incentives to principals working in targeted schools
- Building and Supporting Capacity
 - Supports for beginning teachers (2011-12)
 - Induction program for all new teachers funded by state
 - Mentoring program for all new teachers funded by state
 - Mentoring-program standards for selecting, training, and/or matching mentors
 - Reduced workload for all first-year teachers
 - Professional development (2011-12)
 - Formal professional-development standards
 - Professional development financed by state for all districts
 - Districts/schools required to set aside time for professional development
 - Professional development aligned with local priorities
 - School leadership (2011-12)
 - Standards for licensure of school administrators
 - Required internship for aspiring principals
 - Induction or mentoring program for aspiring principals
 - School working conditions
 - Program to reduce or limit class size implemented by state (2011-12)
 - Student-to-teacher ratio median in elementary schools is 15:1 or less (2009-10)

- State tracks condition of school facilities (2011-12)
 - State posts school-level teacher-survey data on climate, working conditions (2011-12)
- Vermont Ranks 30th highest among the 50 states.
- One report reviewed for this project, *The Green Economy and Environmental Enterprises in VT: Opportunities for the 21st Century*, by Glenn McRae, Heidi Klein, Snelling Center for Government, reports a disconnect between the skills of graduates from Vermont high schools and the needs of companies. Some specialized training is needed for key positions needed by industry. Specifically, there is a need to retool the curricula at many high schools to address the needs of green employers.
- The Committee on Enhancing Vermont's Software and Information Technology Economy, in its January 2013 report, indicated Vermont's K–12 education system does not provide adequate opportunities for students to learn critical skills that are prerequisites for college level study and career preparation in the fields of computer science and hardware/software engineering.
- The Vermont Technology Alliance (VTTA), Vermont Technology Council (VTC), and Vermont Bioscience Alliance report technology companies need a continuous supply of educated employees. The VTTA and the VTC see a need for increased communication between Vermont's tech companies and its high schools and colleges to assure skill needs of employers are met. The state's new science, technology, engineering and math initiative, which offers a financial incentive for recent graduates who accept STEM related jobs at Vermont companies is a step in the right direction.
 - The VTC and VTTA members want to see an increased focus, not just on science and math, but on graduating students who can write and reason, and work collaboratively to solve problems. There also is a need for employees to be curious and communicative problem solvers.
- The Vermont Technology Council reports a need to:
 - Increase the number and diversity of students who will pursue STEM -related careers and advance beyond K-12 to higher education.
 - Create a mechanism for graduates already in or who have left the workforce to re-train in STEM disciplines.
 - Maximize the opportunities for STEM students to complete internships and /or cooperative programs with technology-based companies; career path guidance increases the probability of working in Vermont
 - Promote the availability of funding to support early-stage science and technology-based companies including, but not limited to, expansion of support for VEDA and the Vermont Seed Capital fund
- The Vermont Advanced Manufacturing Partnership, in its 2013 report identified a need to:
 - Develop and implement an education model (K-16) to adopt competency-based math standards for students and teachers that can support advanced manufacturing skills development based on models developed by Boston University and the University of Michigan no later than 2014.

- Develop and implement entrepreneurship curricula in Vermont schools and state colleges such as Champlain College’s “BYOBiz” program. Support and build on the successes and investments of the Vermont Manufacturing Extension Center (VMEC) and its federal partner NIST MEP, to teach and encourage the use of “Innovation Engineering” as a proven system to accelerate the creation and commercialization of meaningfully unique ideas while working with higher education in Vermont to develop a post-secondary curriculum modeled after the Innovation Engineering degree program at the University of Maine.
- Restore full funding to the Vermont Training Program in the Agency of Commerce and Community Development and create a special fund targeted to upgrading the math skills of Vermont workers.
- Create an “Innovation Ecosystem” to sustain a culture of ongoing practical research and development by developing a non-profit Vermont Advanced Manufacturing Innovation Center modeled after the Nanotech Center in Vermont and the Dartmouth Regional Technical Center (DRTC) leveraging the resources of the University of Vermont, Vermont Technical College and the other Vermont state colleges, Norwich University and others as appropriate.

Business Climate

Business climate is a frequently mentioned concept in economic development. It is also a concept which means many different things to many different people. This makes measurement of business climate complex. In order to shed light on this issue we have examined data indexes frequently used in economic development analysis. They fall into two categories representing very different approaches: those that are cost centric (focusing on costs of taxes, regulations, and doing business), and those that are broader and focus on cost-related measures and factors related to capacity for economic development and wealth creation (including housing, environment, and education). Other facets of what some considerations of business climate – taxes, adequacy of support services and financing and incentive programs, available real estate for business use, etc – have been considered in other portions of this Competitive Assessment. It is important to again note that there is no one best method to considering competitiveness of the business climate in a state. The answer is in the eye of the beholder, in this case businesses, workers, investors, and developers. These indexes assessed below do however influence the general perception of the business climate and are therefore important to understand.

Key Findings

Cost-centric Approaches

The Tax Foundation State Business Tax Climate¹ - Overall in 2013 Vermont ranks 45th on this index (a rank of 1 is more favorable for business than a rank of 50). This index ranks states based on the component parts of taxes on business including: individual income tax, sales tax, corporate tax, property tax, and unemployment insurance tax. Within this index Vermont ranks 45th or higher for Corporate Tax, Individual Income Tax, and Property Tax. Detailed rankings by state and for each component of this index are included in the section on Taxes in this Competitive Assessment report.

Small Business Entrepreneurship Council Small Business Survival Index² - Overall in 2011, Vermont ranked 48th on this index (a rank of 1 is more favorable for business than a rank of 50). This index ranks states based on 44 specific indicators designed to measure government imposed and related costs and regulatory policies affecting investment, entrepreneurship, and business including taxes, health care, utilities, labor, and government spending. The index is heavily influenced by specific taxes imposed. Additionally certain items that may be viewed according some persons as positive for the overall well-being of the state are viewed by the Index as negative because they impose costs on businesses. An example of this is Paid Family Leave. The report containing the Index results reports the following highlights for Vermont that drives it overall ranking³:

- High personal income, individual capital gains, corporate income, and corporate capital gains taxes
- High property taxes
- Imposes a state death tax
- High electric utility costs
- High workers' compensation costs
- High level of state and local government employees
- High level of state and local government spending
- High five-year rate of increase in state and local government spending
- Poor private property protections
- High state minimum wage
- No individual or corporate alternative minimum tax
- Low crime rate

Broad Approaches

Beacon Hill Institute State Competitiveness Report⁴— Vermont Ranks 19th (with 1 being best) nationally on this index in 2012, which measures state economic competitiveness with indicators in eight broad

¹<http://taxfoundation.org/article/2014-state-business-tax-climate-index>

²www.sbecouncil.org/resources/publications/survivalindex2011/

³ Ibid

⁴ www.beaconhill.org/Compete12/Compete12.pdf

categories: Government and Fiscal Policies, Security, Infrastructure, Human Resources, Technology, Business Incubation, Openness, and Environmental Policy.

Vermont ranks high on:

- Bond rating
- Crime index, per 100,000 inhabitants
- Murder index, per 100,000 inhabitants
- Average travel time to work
- % of population without health insurance
- % of population aged 25 and over that graduated from high school
- Unemployment rate
- % of population enrolled in degree-granting institutions
- % of adults who are in the labor force
- Infant mortality rate, deaths per 1000 live births
- Rate of active physicians per 100,000 inhabitants
- % of students at or above proficient in mathematics, grade 4 - public schools
- Academic Science and Engineering R&D per \$1,000 GSP
- NIH support to institutions per capita
- Patents per 100,000 inhabitants
- S&E degrees awarded per 100,000 inhabitants
- Scientists and engineers as % of labor force
- Employer firm births per 100,000 inhabitant
- Exports per capita, dollars
- Toxic release inventory, pounds per sq. miles
- Carbon emission per 1000 sq. miles
- Air Quality Index

Vermont ranks low on:

- State and local taxes per capita /income per capita
- Workers' compensation premium rates
- Budget deficit, % of GSP
- Full-time-equivalent state and local government employees per 100 residents
- Crime index change 2010-2011
- The BGA Integrity Index
- Mobile Phones per 1000
- High-speed lines per 1000
- Air passengers per capita
- Electricity Prices per kWh
- Average rent of 2 bedroom apartment
- Science & Engineering grad. students 100,000 inhabitants
- Employment in high-tech industry as % of total employment
- Total deposits (Commercial banks and Savings institutions) per capita
- Venture capital per capita
- Minimum wage
- Pacific Research Institute Tort Index
- % of population born abroad

The Corporation for Enterprise Development Assets & Opportunity Scorecard⁵ – Vermont ranks first (best in the country) on this index in 2013, which measures the opportunity and ability of states to create financial security and economic opportunity using indicators in five broad categories: Financial Assets & Income, Businesses & Jobs, Housing & Homeownership, Health Care, and Education.

Vermont ranks high on

- Income Poverty Rate
- Unbanked Households
- Underbanked Households
- Households with Savings Accounts
- Consumers with Subprime Credit
- Borrowers 90+ Days Overdue
- Bankruptcy Rate (per 1,000 people)
- Microenterprise Ownership Rate
- Small Business Ownership Rate
- Business Ownership by Race
- Business Value by Race
- Business Creation Rate (per 1,000 workers)
- Unemployment Rate
- Underemployment Rate
- Low-Wage Jobs
- Retirement Plan Participation
- Employers Offering Health Insurance
- Homeownership Rate
- Homeownership by Income
- Homeownership by Family Structure
- Delinquent Mortgage Loans
- Uninsured Rate
- Uninsured by Race
- Uninsured by Income
- Uninsured Low-Income Children
- Uninsured Low-Income Parents
- Early Childhood Education Enrollment
- Math Proficiency - 8th Grade
- Reading Proficiency - 8th Grade
- High School Graduation Rate
- High School Degree
- Two-Year College Degree
- Four-Year College Degree
- Four-Year Degree by Race
- Four-Year Degree by Income
- Student Loan Default Rate

⁵ <http://assetsandopportunity.org/scorecard/>

Vermont ranks low on:

- Private Loans to Small Business
- Average Annual Pay
- Business Ownership by Gender
- Homeownership by Race
- Foreclosure Rate
- Affordability of Homes (value/income)
- Housing Cost Burden - Homeowners
- Housing Cost Burden - Renters
- Uninsured by Gender
- Average College Graduate Debt
- College Graduates with Debt

Act 250

In addition to providing index and measurement data on business climate it is also important to note a related factor that was consistently mentioned in regional workshops conducted for this project – the impacts of Act 250. Passed initially in 1970 by the Vermont Legislature, Act 250 – the Land Use and Development Act– created nine District Environmental Commissions to review large-scale development projects using 10 criteria that are designed to safeguard the environment, community life, and aesthetic character of the state⁶. In every workshop conducted for this project, Act 250 was mentioned as being restrictive to business and economic development and while there were mixed opinions on the overall benefit or impact, most comments suggested the need for revisions to make it less restrictive including less costly to developers and less impact on the time it takes for review and approval. We are aware that there have been several efforts in the past to deal with this issue with little or no modification to the Act and its application. Nonetheless, it remains an issue of concern for the state’s economic development future.

Business Climate Strengths

- Vermont ranks very well nationally on business climate indices that are broad and go beyond taxes and regulations, including the Beacon Hill Institute State Competitiveness Report where it ranked 19th best in the nation in 2012 and the Corporation for Enterprise Development Assets & Opportunity Scorecard where it ranked best in the nation for 2013. Vermont’s high rankings are driven by a variety of factors related to the safety, health, and well being of residents and the environment.

Business Climate Weaknesses

- Vermont ranks poorly nationally on business climate indices that focus solely on direct costs of taxes and regulation including the Tax Foundation State Business Tax Climate index where it ranks 45th

⁶http://www.anr.state.vt.us/dec/permit_hb/sheet47.pdf and [http://en.wikipedia.org/wiki/Act_250_\(Vermont_law\)](http://en.wikipedia.org/wiki/Act_250_(Vermont_law))

best in the nation in 2013 and the Small Business Entrepreneurship Council Small Business Survival Index where it ranks 48th best in the nation for 2013.

- Vermont's Act 250 is perceived by the economic development community to be overly restrictive, time-consuming, and costly, and therefore impeding economic growth.

Taxes

Economic development can be impacted by taxes. Private investment decisions to support business location, growth, and development are made within the context of return on investment. Costs including cost of taxes reduce return. Surveys conducted by *Area Development Magazine* of corporate executives and site selectors reveal that taxes are important factors in investment and location decisions (see Table 19). In Area Development's 2012 survey 79.3% of corporate executives and site consultants considered the corporate tax rate to be a very important or important site location factor. This factor ranked 7th highest out of 26 total factors. This is down in terms of importance from 2011 where the corporate tax rate was indicated by 86.0% of corporate executives and site consultants to be a very important or important site location factor and it ranked 4th among 26 total factors.

Tax cost and burden are functions of local, state, and federal taxes paid. Federal taxes are typically similar regardless of location and therefore location and investment decisions can be influenced by state and local tax levels and burdens. There is no one way to measure and compare taxes and burdens across jurisdictions, so we have provided a few measures for which data is readily available and typically cited in economic development benchmarks. While tax cost and burden levels are relatively high in Vermont compared to other states, when measured by rates on specific industry types and ages the data is mixed. Furthermore, it should be pointed out that there is little evidence that suggests low taxes burdens equate to high economic performance. In fact, many regions and states with relatively high or above average tax burdens have high employment growth rates and levels of gross domestic product. However, these burden measures are commonly cited by business organizations and economic developers and therefore are important to understand as they do impact perception.

Data is available from the Tax Foundation (www.taxfoundation.org) that measures tax burden on residents for state and local taxes combined. Their tax burden measure expresses total state and local taxes as a percent of total statewide income. 2010 results by state are listed in Table 20. Using this measure, the state and local tax burden in Vermont is 10.10% ranking the state 13th highest in the country. Nationally the burden is 9.9%.

Table 19 – Results of Area Development 2012 Survey

Source: Area Development - 27th Annual Corporate Survey & 9th Annual Consultants Survey; Winter 2013 *

Combined Ratings* of 2012 Factors		
FIGURE 30	Corporate Survey 2012	
Site selection factors	2012	2011
Ranking		
1. Labor costs	90.8	88.4 (2)**
2. Highway accessibility	90.1	93.8 (1)
3. Availability of skilled labor	89.4	88.4 (27)
4. Availability of advanced ICT services	85.1	76.6 (13)
5. Occupancy or construction costs	82.8	65.9 (5)
6. Energy availability and costs	81.3	84.8 (7)
7. Corporate tax rate	79.3	86.0 (4)
8. Available buildings	78.4	76.3 (15)
9. Tax exemptions	75.4	83.6 (6)
10. Low union profile	73.5	81.0 (10)
11. Right-to-work state	72.6	77.5 (12)
12. Proximity to major markets	72.2	83.0 (9)
13. State and local incentives	71.1	85.9 (57)
13T. Environmental regulations	71.1	76.4 (14)
15. Expedited or "fast-track" permitting	67.2	72.4 (17)
16. Inbound/outbound shipping costs	63.7	79.2 (11)
17. Availability of long-term financing	63.1	70.0 (18)
18. Available land	59.0	73.9 (16)
19. Proximity to suppliers	54.9	67.8 (19)
20. Training programs	54.7	50.6 (23)
21. Accessibility to major airport	52.9	55.7 (21)
22. Proximity to technical colleges/training	50.3	40.2 (24)
23. Raw materials availability	49.7	52.8 (22)
24. Railroad service	43.6	33.6 (25)
25. Availability of unskilled labor	42.9	58.9 (20)
26. Waterway or oceanport accessibility	19.9	24.5 (26)
Quality-of-life factors		
Ranking		
1. Low crime rate	79.3	82.0 (1)
2. Healthcare facilities	69.8	71.0 (2)
2T. Housing availability	69.8	64.1 (5)
4. Housing costs	66.9	69.9 (3)
5. Ratings of public schools	63.3	68.8 (4)
6. Colleges and universities in area	61.6	56.6 (6)
7. Climate	55.0	52.2 (8)
8. Recreational opportunities	52.9	53.2 (7)
9. Cultural opportunities	48.9	42.8 (9)
*All figures are percentages and are the total of "very important" and "important" ratings of the Area Development Corporate Survey and are rounded to the nearest tenth of a percent. **2011 ranking		

* <http://www.areadevelopment.com/Corporate-Consultants-Survey-Results/Q1-2013/27th-Corporate-Executive-RE-survey-results-37376241.shtml#>

The Federation of Tax Administrators also measures state tax burden and their measure expresses taxes collected by governments from residents and non-residents divided by residents' income. 2010 Results by state are also listed in Table 20. Using this measure, the state and local tax burden in Vermont is 12.10%, ranking the state 6th highest in the country. Nationally the burden is 10.50%.

Table 20: State Tax Burden Comparison FY 2010

Source: The Tax Foundation and Federation of Tax Administrators

Comparing Tax Burden Measures: Tax Foundation and the Federation of Tax Administrators - Fiscal Year 2010				
State	Tax Foundation's Tax Burden Measure		FTA's "Tax Burden" Method	
	Taxes Paid by Residents Divided by Their Income	Rank	Taxes Collected by Governments from Residents and Non-Residents Divided by Residents' Income	Rank
U.S. Average	9.90%		10.50%	
Alabama	8.20%	43	8.30%	50
Alaska	7.00%	50	20.20%	1
Arizona	8.40%	40	9.20%	41
Arkansas	10.00%	15	10.20%	26
California	11.20%	4	11.30%	13
Colorado	9.10%	32	10.00%	29
Connecticut	12.30%	3	11.60%	10
Delaware	9.20%	31	10.30%	24
Florida	9.30%	27	9.70%	35
Georgia	9.00%	33	9.30%	40
Hawaii	10.10%	14	12.00%	7
Idaho	9.40%	25	9.10%	43
Illinois	10.20%	11	10.40%	22
Indiana	9.60%	23	10.70%	17
Iowa	9.60%	24	10.70%	18
Kansas	9.70%	22	10.70%	16
Kentucky	9.40%	26	9.70%	33
Louisiana	7.80%	47	9.90%	30
Maine	10.30%	9	12.40%	5
Maryland	10.20%	12	9.60%	36
Massachusetts	10.40%	8	10.40%	21
Michigan	9.80%	18	10.80%	15
Minnesota	10.80%	7	11.40%	11
Mississippi	8.70%	37	10.10%	28

Vermont Comprehensive Economic Development Strategy

Comparing Tax Burden Measures: Tax Foundation and the Federation of Tax Administrators - Fiscal Year 2010				
State	Tax Foundation's Tax Burden Measure		FTA's "Tax Burden" Method	
	Taxes Paid by Residents Divided by Their Income	Rank	Taxes Collected by Governments from Residents and Non-Residents Divided by Residents' Income	Rank
Missouri	9.00%	34	8.70%	47
Montana	8.60%	38	9.90%	31
Nebraska	9.70%	21	10.60%	19
Nevada	8.20%	42	10.30%	23
New Hampshire	8.10%	44	9.20%	42
New Jersey	12.40%	2	11.90%	8
New Mexico	8.40%	39	9.80%	32
New York	12.80%	1	14.80%	2
North Carolina	9.90%	17	10.10%	27
North Dakota	8.90%	35	13.20%	4
Ohio	9.70%	20	10.40%	20
Oklahoma	8.70%	36	9.00%	46
Oregon	10.00%	16	9.70%	34
Pennsylvania	10.20%	10	10.20%	25
Rhode Island	10.90%	6	11.40%	12
South Carolina	8.40%	41	9.00%	44
South Dakota	7.60%	49	8.50%	49
Tennessee	7.70%	48	8.60%	48
Texas	7.90%	45	9.50%	38
Utah	9.30%	29	9.60%	37
Vermont	10.10%	13	12.10%	6
Virginia	9.30%	30	9.00%	45
Washington	9.30%	28	9.50%	39
West Virginia	9.70%	19	11.10%	14
Wisconsin	11.10%	5	11.80%	9
Wyoming	7.80%	46	14.50%	3
Notes: The local portions of tax collection figures for fiscal year 2010 rely on projections of local government tax revenue. The figures presented here as the "FTA Method" are calculations by the Tax Foundation using 2010 data or projections thereof, replicating the methodology that the Federation of Tax Administrators uses each year to calculate each state's tax burden.				
Sources: Tax Foundation calculations using data from multiple sources, primarily Census Bureau, Rockefeller Institute, Bureau of Economic Analysis, Council on State Taxation, and Travel Industry Association.				

The Tax Foundation also reports data on State Business Tax Climates. Through the Index they rank states based on the component parts of taxes on business including: individual income tax, sales tax, corporate tax, property tax, and unemployment insurance tax. Results for all states for fiscal year 2013-14 are included in Table 21. Overall Vermont ranks 45th (a rank of 1 is more favorable for business than a rank of 50). Vermont ranks 45th or higher for Corporate Tax, Individual Income Tax, and Property Tax.

Table 21: Business Tax Climate Index 2014

Source: The Tax Foundation

2014 State Business Tax Climate Index Ranks and Component Ranks						
State	Overall	Corporate Tax	Individual Income Tax	Sales Tax	Unemployment Insurance Tax	Property Tax
Alabama	21	19	22	37	15	10
Alaska	4	28	1	5	29	25
Arizona	22	26	18	49	1	6
Arkansas	35	39	26	42	11	19
California	48	31	50	41	16	14
Colorado	19	21	15	44	28	22
Connecticut	42	35	33	32	23	49
Delaware	13	50	28	2	2	13
Florida	5	13	1	18	6	16
Georgia	32	8	41	12	24	31
Hawaii	30	4	35	16	38	12
Idaho	18	18	23	23	47	3
Illinois	31	47	11	33	43	44
Indiana	10	24	10	11	13	5
Iowa	40	49	32	24	36	38
Kansas	20	37	17	31	12	29
Kentucky	27	27	29	10	48	17
Louisiana	33	17	25	50	4	24
Maine	29	45	21	9	33	40
Maryland	41	15	46	8	40	41
Massachusetts	25	34	13	17	49	47
Michigan	14	9	14	7	44	28
Minnesota	47	44	47	35	41	33
Mississippi	17	11	20	28	5	32
Missouri	16	7	27	26	9	7
Montana	7	16	19	3	21	8
Nebraska	34	36	30	29	8	39
Nevada	3	1	1	40	42	9
New Hampshire	8	48	9	1	46	42

Vermont Comprehensive Economic Development Strategy

2014 State Business Tax Climate Index Ranks and Component Ranks						
State	Overall	Corporate Tax	Individual Income Tax	Sales Tax	Unemployment Insurance Tax	Property Tax
New Jersey	49	41	48	46	32	50
New Mexico	38	40	34	45	17	1
Vermont	50	25	49	38	45	45
North Carolina	44	29	42	47	7	30
North Dakota	28	22	38	21	19	2
Ohio	39	23	44	30	10	20
Oklahoma	36	12	39	39	3	11
Oregon	12	32	31	4	34	15
Pennsylvania	24	46	16	19	39	43
Rhode Island	46	43	36	27	50	46
South Carolina	37	10	40	22	30	21
South Dakota	2	1	1	34	37	18
Tennessee	15	14	8	43	27	37
Texas	11	38	7	36	14	35
Utah	9	5	12	20	18	4
Vermont	45	42	45	13	22	48
Virginia	26	6	37	6	35	26
Washington	6	30	1	48	20	23
West Virginia	23	20	24	25	26	27
Wisconsin	43	33	43	15	25	36
Wyoming	1	1	1	14	31	34
Note: A rank of 1 is more favorable for business than a rank of 50. Rankings do not average to total. States without a tax rank equally as 1. D.C. score and rank do not affect other states. Report shows tax systems as of July 1, 2013 (the beginning of Fiscal Year 2014). The Index deals with such questions by comparing the states on over 100 different variables in the five important areas of taxation (major business taxes, individual income taxes, sales taxes, unemployment insurance taxes, and property taxes) and then adding the results up to a final, overall ranking. This approach rewards states on particularly strong aspects of their tax systems (or penalizing them on particularly weak aspects) while also measuring the general competitiveness of their overall tax systems. The result is a score that can be compared to other states' scores.						
Source: Tax Foundation, http://taxfoundation.org/article/2014-state-business-tax-climate-index						

Tax Costs by Industry Type and Maturity

The Tax Foundation does provide some data that is useful for considering tax difference by state by industry sector. Table 22 presents data from a special study completed by the Tax Foundation in collaboration with KMPG. It compares total effective tax rates and their rankings by state for new vs. mature businesses and for different types of industry sectors. Vermont is often compared to New Hampshire to assess tax levels and burdens and as the data above suggest New Hampshire is often

viewed as having lower taxes. However, when examining representative tax rates by business type and age Vermont has lower tax rates compared to New Hampshire for five of the eight categories.

Table 22: Tax Costs by Industry Type and Maturity 2012

Source: The Tax Foundation

Representative Tax Rates on Business				
	New Hampshire		Vermont	
	Total Effective Tax Rate	Rank	Total Effective Tax Rate	Rank
New Business				
Call Center	29.7%	33	13.8%	9
Distribution Center	36.1%	30	24.2%	8
Capital-Intensive Manufacturing	7.7%	16	10.7%	32
Labor-Intensive Manufacturing	12.8%	36	11.3%	25
Mature Business				
Call Center	24.6%	39	18.4%	20
Distribution Center	31.0%	31	28.8%	25
Capital-Intensive Manufacturing	12.9%	29	16.4%	41
Labor-Intensive Manufacturing	12.6%	33	13.3%	35
Notes: based on data for mid-size city in the state, generally with a population of less than 500,000. state, generally with a population of less than 500,000; for ranking 1=lowest and 50 equals highest rates				
Source: Location Matters, A Comparative Analysis of State Tax Costs on Business; Tax Foundation in Collaboration with KPMG LLP, 2012; http://taxfoundation.org/files/location%20matters.pdf				

Taxes Strengths

- Low to moderate tax rates for new call and distribution centers
- Low sales tax burden – 13th lowest nationally according to Tax Foundation

Taxes Weaknesses

- High overall state and local tax burden - 10.10% according to the Tax Foundation, ranking the state 13th highest in the country. Nationally the burden is 9.9%.
- High burdens on major tax categories - Vermont ranks 45th or higher for Corporate Tax, Individual Income Tax, and Property Tax based on Tax Foundations' Business Climate Measures. (A rank of 1 is more favorable for business than a rank of 50).

While it has been asserted that very few businesses have left Vermont due to its taxes, it is impossible to know how many may have avoided a Vermont location because of the actual or perceived tax burden.

Support Services

No business is completely free-standing; all have need for some level of support from other sources, but what these support services are varies from company to company. In evaluating this category, it is more important to look for what types of common services may be missing than at what is available. This section draws from the following resources:

- Vermont Small Business Development Center: <http://www.vtsbdc.org>
- Vermont Manufacturing Extension Center: <http://www.vmec.org>
- Vermont Digital Economy Project: <http://vtrural.org/programs/digital-economy>
- ThinkVermont.com: <http://accd.vermont.gov/business/#>
- Vermont Technology Council: <http://www.vttechcouncil.org>
- Vermont Technology Alliance: <http://www.vermonttechnologyalliance.org>
- Peer to Peer Collaborative: <http://www.vsjf.org/what-we-do/peer-to-peer>
- Vermont Farm Viability Program: <http://www.vhcb.org/viability.html>
- Vermont Food Venture Center: <http://www.hardwickagriculture.org/vermont-food-venture-center>
- Lyndon State College incubator program: <http://lyndonstate.edu/academics/center-for-rural-entrepreneurship/incubator-without-walls/>
- Micro Business Development Program: <http://dcf.vermont.gov/oeo/mbdp>
- Vermont Women's Business Center: <http://vwbc.org>
- Burlington Community & Economic Development Office (CEDO): <http://www.burlingtonvt.gov/CEDO/Business-Assistance-Overview/>
- Vermont Businesses for Social Responsibility: <http://vbsr.org>
- Senator Patrick J. Leahy business resources page: <http://www.leahy.senate.gov/issues/jobs-and-the-economy>
- Vermont Farm to Plate Network: <http://www.vsjf.org/project-details/20/farm-to-plate-network>
- Ewing Marion Kauffman Foundation Index of Entrepreneurial Activity: <http://www.kauffman.org/what-we-do/research/kauffman-index-of-entrepreneurial-activity>

Support Services Strengths

- Well-integrated network of entrepreneurship assistance providers, including some specialized for technology, e-commerce, manufacturing, agribusiness, women's business, and support for low-income entrepreneurs
- Many organizations dedicated to helping businesses grow with a variety of non-financial services such as sector organizations (eg. AIV), RDCs, chambers, and others
- Direct involvement in business support by Vermont's Congressional delegation
- State ED website (www.thinkvermont.com) serves as a one-stop portal to most entrepreneurial support services
- Regional business support providers are frequently co-located for user convenience

- Active peer support networks such as Vermont Technology Council, Peer to Peer Collaborative, and Vermont Businesses for Social Responsibility
- Targeted support programs available statewide through Community Action Agencies for low-income/disadvantaged entrepreneurs starting income-substitution businesses
- Vermont continues to excel as an entrepreneurial "ecosystem," now ranking behind only Montana in the 2013 Kauffman Index of Entrepreneurial Activity (up from 8th)

Support Services Weaknesses

- While Vermont has a plethora of organizations, agencies and programs devoted to providing technical assistance for businesses and other organizations, it lacks a comprehensive and organized system for delivering such assistance
- Potential confusion of names, regions served and specific roles among plethora of economic development players (referred to by some as the "alphabet soup agencies")
- Uneven availability of services and expertise in different parts of state
- Publicly funded entities seeing shrinking allocations
- Forestry and forest products sector (a major component of VT economy) is under-resourced for technical assistance and peer support

Available Sites and Buildings

Businesses require places from which to operate. After labor skills, finding a good location can often be the next most important factor. In the current marketplace, most companies (80±%) are looking for an existing building, due to lower cost, time to occupancy, and the inventory of good quality space that is currently on the market.

The primary source of information for this section of the Competitive Assessment is the Vermont Agency of Commerce and Community Development's (ACCD) Commercial/Industrial Site Locator portion of ACCD's website (<http://accd.vermont.gov/business/relocate/vtsitelocator/>). This method was used because it reflects a primary research method by companies and site selection consultants who may be considering Vermont as a location.

The ACCD listings currently include 277 properties of which 268 are buildings and 9 are land. These listings in clued properties categorized as commercial, industrial, mixed, office or retail. Table 23 summarizes the listings by region.

Table 23: ACCD Property Listings – December 2013

Source: ACCD Commercial/Industrial Site Locator compiled by Garnet Consulting Services, Inc.

Region	Available Buildings	Available Sites
Addison County Economic Development Corporation	14	1
Bennington County Industrial Corporation	0	0
Brattleboro Development Credit Corporation	2	0
Central Vermont Economic Development Corporation	9	3
Franklin County Industrial Development Corporation	30	1

Vermont Comprehensive Economic Development Strategy

Greater Burlington Industrial Corporation	92	0
Green Mountain Economic Development Corporation	28	3
Lake Champlain Islands Economic Development Corporation	2	0
Lamoille Economic Development Corporation	9	0
Northeastern Vermont Development Association	10	0
Rutland Economic Development Corporation	30	0
Springfield Regional Development Corporation	42	1
Totals	268	9

Listings on this site are voluntary and ACCD recognizes that there are additional available properties that are not included. For some reason, many real estate brokers consider the site to be competition with their listings and choose not to include properties they are marketing. Continued efforts to make the listings as fully inclusive and up-to-date as possible are necessary.

Only five of the regions have available sites listed. Of the nine available sites, size information was only provided for four and they totaled only 17 acres. Of particular note is the lack of sites shown in Chittenden County. While working there two years ago, the consultant team found 15 business parks with 77 available lots totaling 312 acres, as well as more than 300 acres of greenfield sites.

The 268 available buildings are of a wide variety of sizes, although most are small to medium size. Only six properties are shown as 50,000 or larger. The Bennington, Brattleboro, and Lake Champlain Islands areas are particularly underserved by available buildings. Consideration could be given to the establishment of a state-wide speculative building program.

Properties for sale only total 141; properties for lease only total 107; properties for either sale or lease total 29.

Available buildings are of a variety of age, construction type, floors, and condition. Information on the status of utilities is not included in the listings.

Available Sites and Buildings Strengths

- ACCD Commercial/Industrial Site Locator easy to find and navigate
- Good supply of available buildings, particularly for small and mid-size businesses
- Good mix of properties for sale and lease
- Active Brownfields Revitalization Fund (BRF) Loan Program administered by ACCD with loans made by VEDA (see Appendix B for additional details of this program)

Available Sites and Buildings Weaknesses

- ACCD Commercial/Industrial Site Locator does not include many available properties
- ACCD property listings lack information on available utilities
- Small supply of available sites
- Lack of buildings for larger users (50,000 square feet or more)
- Some regions with very limited property availability
- Some property owners, particularly of brownfield sites, reported to place too high a value on their property

Financing and Incentives

To help offset costs and tax burdens, localities, regions, and states typically utilize business incentive programs to encourage investment, expansion, and location decisions. In general incentives that directly reduce costs or provide immediate non-loan revenues to businesses are viewed to be more valuable for spurring investment and site location than loan programs, tax credits, or technical assistance.

For information on Vermont's venture capital situation, the reader is directed to the section of this report on Innovation and Entrepreneurship.

Surveys conducted by *Area Development* magazine of corporate executives and site selectors reveal that tax incentives are important factors in investment and location decisions ⁷ (see Table 16 presented earlier in this report). In Area Development's 2012 survey 71.1% of corporate executives and site consultants considered the availability of state and local tax incentives to be a very important or important site location factors. This factor ranked 13th highest out of 26 total factors for executives and 7th most important for site selection consultants. This is down in terms of importance from 2011 where state and local tax incentives were indicated by 86.9% of corporate executives and site consultants to be a very important or important site location factor and it ranked 5th among 26 total factors.

Incentives typically are not a primary selection factor in the early stages of a site search, but move toward the top of the list when the decision on a small list of "finalist communities" is near. Additionally, incentives are not only used to attract businesses but also to help existing businesses grow.

Camoin Associates compiled a comprehensive list business and economic development incentives in Vermont which is provided in Appendix B. Findings based on that table are presented here. This assessment goes beyond typical incentive programs for business attraction and includes financing, technical services, and support programs for business start-ups, expansion, retention and attraction.

Financing and Incentives Strengths

- Vermont has a wide-array of entities and programs that provide incentives and support for business start-ups, retention, attraction, and expansion. These include: Alternative Fuel and Advanced Vehicle R&D Tax Credit; Angel Venture Investment Capital Gain Deferral; Research and Development Tax Credit/Sustainable Technology R&D Tax Credit; Science, Technology, Engineering and Mathematics (STEM) Incentive; Technology Loan Program (TLP); Vermont Center for Emerging Technologies; Vermont Procurement Technical Assistance Center; Vermont's Early Stage Venture Capital Fund; Vermont Manufacturing Extension Center; Peer to Peer Collaborative; Vermont Ag Development Program. Among the entities managing these

⁷ Area Development - 27th Annual Corporate Survey & 9th Annual Consultants Survey; Winter 2013;
<http://www.areadevelopment.com/Corporate-Consultants-Survey-Results/Q1-2013/27th-Corporate-Executive-RE-survey-results-37376241.shtml#>

projects specifically for economic and business development are the Vermont Agency of Commerce & Community Development and the Vermont Economic Development Authority.

- The Vermont Employment Growth Incentive (VEGI) provides a direct cash payment, based on the revenue return generated to the State through investment in jobs and/or capital. VEGI was recognized by Good Jobs First as the best incentive program in the country in 2011⁸ due to its performance standards and requirements related to wages and health benefits.
- Vermont has programs with strong alignment with Working Lands Initiatives and support for farms and food systems – These include:
 - Working Lands Enterprise Initiative
 - Vermont Ag Development Program
 - Vermont Sustainable Jobs Fund
 - Vermont Farm Viability Program
 - Vermont Agricultural Credit Corporation
- Vermont has programs aimed specifically at workforce development– Workforce development is a major issue for existing and potential business. Vermont has versatile programs through its Vermont Training Program and a targeted program to directly help workers through the Science, Technology, Engineering and Mathematics Incentive.
- Vermont has programs to support entrepreneurship and start-ups – Vermont has a multiple programs to assist entrepreneurs and start-ups across multiple sectors.
 - Vermont Center for Emerging Technologies - Incubation facilities, services, and mentoring for technology start-ups in partnership with universities and colleges
 - Vermont Manufacturing Extension Center - Innovation Engineering Management System
 - Vermont Seed Capital Fund – early stage capital for technology companies
 - Angel Venture Investment Capital Gain Deferral – tax incentive for angel investment
 - Vermont Small Business Development Center – technical support for small business
 - Peer to Peer Collaborative – peer advice
 - Clean Energy Development Fund – funds for renewable energy projects and ventures
 - Vermont Sustainable Jobs Fund – early stage funding to support initiatives related to sustainability
- Vermont has programs to support renewable energy initiatives – Renewable energy is a targeted cluster in Vermont and the State has several funding programs to support businesses and initiatives within the cluster, most notably the Clean Energy Development Fund. This Fund is designed to increase development and deployment of cost-effective and environmentally sustainable electric power resources. Other programs include the Alternative Fuel and

⁸ www.goodjobsfirst.org/moneyforsomething

Advanced Vehicle R&D Tax Credit, Commercial Energy Loan Program, and Energy Loan Guarantee Program, and small Business Energy Loan Program.

- EB-5 Program⁹ - Vermont has become a national leader in the use of the EB-5 program to increase investment. This program was successfully used by Jay Peak and is being used by others including Sugarbush. The Vermont EB5 Regional Center's Unique Advantage is best summarized by the following from the Regional Center's Website:

"The Vermont EB5 Regional Center is the only USCIS Designated Regional Center in the United States owned, controlled and supervised directly by a state government. As the only state run, statewide EB-5 regional center, Vermont offers businesses unique advantages. The Vermont EB5 Regional Center provides the oversight and infrastructure required by USCIS allowing businesses located in Vermont to access the EB-5 program without added cost or administrative burden. The Vermont EB5 Regional Center is operated by Vermont's Agency of Commerce and Community Development (ACCD). Businesses who are approved for an EB-5 project under the Vermont EB5 Regional Center benefit from the added credibility that a state run EB-5 regional center provides. Investors are ensured that Vermont EB5 Regional Center projects are managed by an independent and qualified authority. In addition, nearly the entire state qualifies under the EB-5 regional center program, which grants investors the same visa green card benefit as the standard EB-5 program, but requires only half the minimum investment and has lesser job creation requirements.¹⁰"

Financing and Incentive Weaknesses

- While Vermont has several programs to support Innovation, R&D, commercialization, start-ups and acceleration (see above), it could benefit from additional programs to provide immediate grant funding for innovation, R&D and commercialization in its technology-intensive sectors that increase partnerships between tech-intensive industries and research institutions. Examples in other states of such programs include programs offered through the [Maine Technology Institute](#), [Start-up NY](#), [Ben Franklin Partnership](#) (PA), [Utah Science Technology and Research Initiative \(USTAR\)](#), [Ohio Third Frontier](#), and [Innovate Rhode Island Fund](#). These programs provide funding for activities that are typically in early stages of development and precede readiness for capital and venture funding. They also help build capacity for industry-driven R&D at research institutions including colleges and universities.

⁹ The EB-5 visa for Immigrant Investors is a United States visa created by the Immigration Act of 1990. This visa provides a method of obtaining a green card for foreign nationals who invest money in the United States. To obtain the visa, individuals must invest \$1,000,000 (or at least \$500,000 in a "Targeted Employment Area" - high unemployment or rural area), creating or preserving at least 10 jobs for U.S. workers excluding the investor and their immediate family.

¹⁰ http://accd.vermont.gov/business/relocate_expand/eb5

- There is a need for additional programs targeted specifically to some of the identified target sectors and clusters – The State has targeted incentives for working lands, agriculture, clean energy, and small technology businesses but none specifically for statewide initiatives in aerospace, IT, and tech-intensive clusters. While businesses in these clusters can take advantage of the array of programs offered to all businesses in the state, additional programs can be used to support the growth of the industries within these targeted cluster areas.
- While as mentioned above, Vermont provides financial support for workforce training through its Vermont Training Program, workforce is such a significant issue for the stability and growth of Vermont industry and businesses, additional programs are needed to support industry-wide, systematic training efforts that include industry, workforce, and education partnerships.

Public Facilities and Services

Most businesses are willing to pay a dollars worth of taxes if they believe they are receiving a dollars worth of services or access to public facilities. The following summarizes salient factors related to this topic.

Sources used for this section include:

- Vermont as "safe" state: *U.S. Peace Index, 2012*
<http://www.visionofhumanity.org/#/page/indexes/us-peace-index>
- Vermont crime trends overall: Center for Social Science Research at St. Michael's College, *Vermont in Transition: A Summary of Social Economic and Environmental Trends, Chapter 13, Crime and Corrections*:
http://vtrural.org/sites/default/files/library/files/futureofvermont/documents/VTTTransitions_Ch13.pdf
Vermont crime rates: *Vermont Law Enforcement Agency Uniform Crime Reports 2004-2012*
- Vermont police forces: Public Safety Strategies Group, *State of Vermont Independent Evaluation of Law Enforcement Services, 2009*,
<http://www.leg.state.vt.us/reports/2009ExternalReports/243826.pdf>
VT Emergency Response Volunteers program, VT Department of Health:
<https://verv.vermont.gov>
- VT Small Business Compliance Assistance Program:
<http://www.anr.state.vt.us/dec/ead/sbcap/index.htm>
- Solid waste disposal facilities: <http://www.anr.state.vt.us/WMID/SolidWaste.aspx>
- VT Act 148 reduction/reuse/recycling requirements:
- Maps of Health Care Shortage Areas (HCSA) in Vermont:
<http://healthvermont.gov/rural/documents/HPSA.pdf>

Public Facilities and Services Strengths

- Vermont in 2012 was the 2nd safest state in the nation in terms of homicides and other violent crimes.
- Vermont's overall crime rate continues to be substantially lower than the nation's average rate.
- While most of Vermont's 235 municipal fire departments are volunteer-staffed, the majority of Vermont residents are served by professional, paid fire departments.
- VT has a network of emergency response volunteers (VERV) which includes medical professionals and regular citizens.
- Vermont fire death rates since 2000 are lower than national average.
- All but 18 towns are served by a Solid Waste Management District (SWMD) which has a comprehensive plan to manage all aspects of solid waste.
- Vermont has a specific program to help small businesses comply with solid waste disposal requirements.
- Vermont's Act 148 "Universal Recycling" requirements may provide 'green business' opportunities.
- Vermont has two Level I trauma centers within reach of a majority of its population (one is in NH just across the state border.)
- Vermont's commitment to primary health care has resulted in there being a very small number of towns (12 of 251) designated as Primary Care Health Professional Shortage Areas (HPSAs).

Public Facilities and Services Weaknesses

- Most Vermont towns do not have their own police forces and rely on the State Police Force, which has only 327 officers.
- Nonviolent property crimes (burglary, larceny) are on an increase as of 2011-12 after two decades of decline.
- Vermont has seen drastic increases in its incarceration rates and in the need for additional Corrections staffing and funding.
- Vermont has only one major and two small landfills active and open.
- Many Vermont municipal sewage treatment systems are aging and subject to leak and overflow, with limited funding for repairs and replacement.
- Vermont has a significant number of rural towns classified as Medically Underserved Areas, particularly near Canadian border and in isolated rural pockets.

Quality of Life

It should be noted that the definition of quality of life is different for everyone and primarily is determined by the ability to enjoy life with meaning and purpose and all it has to offer with choices.

First there is the quality of life for the individual and how he or she perceives it personally; second is how quality of life is perceived by others from those outside the state's borders.

Depending on the person, the definitions vary. For instance economists and political leaders use the term for livability of a city or nation. Several measures are attributed to the livability of an area and include a combination of subjective life-satisfaction surveys and objective determinants of quality of life such as divorce rates, safety, and infrastructure. Such measures relate more broadly to the population of a city, state, or country, not to individual quality of life.

CNBC performs an annual survey that ranks America's Top States for Business and scored all 50 states on measures of competitiveness developed with input from business groups including the National Association of Manufacturers and the Council on Competitiveness as well as the states themselves. States received points based on their rankings in each metric. The number of measures of competitiveness ranged from 40 in 2009 to 55 in 2013. Quality of Life was one of the ten broad categories included in the overall measure of competitiveness, which also included:

- Cost of Doing Business
- Workforce
- Economy
- Infrastructure and transportation
- Technology and innovation
- Education
- Business friendliness
- Access to capital
- Cost of living

Table 24: Ranking of Top State and the New England States in Competitiveness 2009-2013

Source: CNBC Survey tabulated by Cosgrove Development Services

State	2013		2012		2011		2010		2009	
Selected Ranking of States	Overall Ranking	Quality of Life	Overall Ranking	Quality of Life	Overall Ranking	Quality of Life	Overall Ranking	Quality of Life	Overall Ranking	Quality of Life
Top State #1 Overall	South Dakota		Texas		Virginia		Texas		Virginia	
Top State Ranking	1	7	1	35	1	29	1	26	1	18
Connecticut	45	17	46	12	5	6	39	11	47	2
Maine	38	5	35	4	35	9	40	6	40	8
Massachusetts	16	13	49	11	39	6	6	10	8	6
New Hampshire	27	9	19	1	19	4	17	2	21	1
Rhode Island	49	20	45	23	49	33	50	24	48	24
Vermont	32	2	39	3	37	3	44	3	30	2

Although Vermont has had a ranking from a high of 30 in 2009 to a low of 44 in 2011, it consistently ranks in the top three in terms of quality of life. The CNBC quality of life category includes factors such as the crime rate, health care, local attractions, parks and recreation, and environmental quality. It should be noted that some of these factors are very subjective; for instance categories are weighed based on how frequently they are cited in state economic development marketing materials.

Since 1990, a survey has been conducted every five years to measure Vermonters' opinions regarding their quality of life. The "Pulse of Vermont Quality of Life Study" is conducted by Dr. Vince Bolduc and Dr. Herb Kessell who believe Vermonters' concerns are greatly shaped by what is happening at the time. The most recent study was conducted in spring 2010 indicating that economic issues were paramount. The 2000 survey reflected the Civil Unions debate that was taking place then.

Vermont Ratings

- Vermont Ranked Healthiest State in the Nation for Fifth Straight Year - Reuters Dec 2011
- Vermont ranked as the 2nd most peaceful state in the nation according to the United States Peace Index 2012.
- In 2010 Vermont Ranked Greenest State in the Nation on a Survey of Pollution, Energy Use and Policy in all 50 States conducted by 24/7 Wall Street website.

The report *Imagining Vermont: Values and Vision for the Future* notes that in Vermont there is a strong tie between the individual and the community. The individual respects the needs of the state, yet desires their own independence. The state's motto, "Freedom and Unity" still holds true today and represents how Vermonters work together. We consider this to be a strong element of the state's quality of life.

Quality of Life Strengths

- Vermont ranks high in quality of life issues in many studies and surveys
- Vermonters take public participation seriously which has been a tradition for many years. They take an active role in looking ahead with others in conversations and dialogues about the direction of the state recognizing the limits, but willing to address regional, national and global changes that impact quality of life.
- An excellent description of the perception of the collective quality of life for the people of Vermont was articulated in the Council of the Future of Vermont 2009 report *Imagining Vermont: Values and Vision for the Future*. The collective quality of life is stated in values of community, environment, hard work, independence, privacy, small scale and their state.
- Vermonters are committed to the "Vermont way" and practice of the state's motto, "Freedom and Unity."
- Vermonters have a strong sense of identification with their state.
- Accessibility to nature and the connection to the land is an identifying element for Vermonters with stewardship of natural, cultural, and historical resources.
- The public good is advanced by the common purpose Vermonters share.

- Vermonters are active in preserving and enhancing the natural resources of clean water and air, its mix of forest and open land, and the availability of abundant areas of public and private land open to public access.
- A special strength for Vermont that relates to quality of life and an important economic sector is its national leadership in Farm to Plate (F2P) initiatives and working landscape programs. The results to date from F2P initiatives indicate it is a process that is yielding positive results for building a healthy food system and impacting Vermont's economy. According to data the F2P team has been tracking, there have been 2,162 net new jobs and 199 net new establishments created in the food system since F2P started in 2010 (many in manufacturing).

Quality of Life Weaknesses

- The fragility of the state that can be harmed by energy, economic, or ecological problems that originate far beyond the borders of the state.
- Others moving into the state do not necessarily share the same values which causes conflict.
- There is a continuing tension between Vermonters' desire for a thriving economy with good jobs and modern amenities and their desire for the preservation of Vermont's traditional working landscape and small towns.
- The costs of housing, health care, energy, transportation, and education are central challenges affecting many Vermont families and have an impact on the quality of life.
- Although Vermont is one of the healthiest states, there are a complex array of social, medical, and wellness issues that are difficult to provide uniformly in a rural state and the costs and availability of health care are major concerns.
- People at or below the poverty level and having difficulty do not have the "same quality of life" as others earning a better wage.

Workforce Housing

This section provides information on this topic drawn from the following resources:

Vermont Housing Finance Agency:

- *2010 Housing Needs Assessment*:
- <http://accd.vermont.gov/sites/accd/files/Documents/strongcommunities/housing/complete%20final%20report.pdf>
- *2012 Annual Report*: http://www.vhfa.org/documents/VHFA009AnnualReport_10-31-12.pdf
- *Housing Needs in East Central Vermont*: <http://www.vhfa.org/documents/HousingNeedsinEastCentralVermont2013.pdf>
- *Between a Rock and a Hard Place: Housing and Wages in Vermont, 2011 update*: <http://www.vhfa.org/documents/housing-wages-2011.pdf>
- *Housing and the Vermont Economy*, http://www.vhfa.org/documents/housing_economy.pdf

Chittenden County Housing Task Force:

- *Unlocking Housing Opportunities: Strategies for Increasing the Supply of Housing in Chittenden County, 2002*, <http://www.vhfa.org/documents/cchtf-report.pdf>

The interrelationship between economic development and housing is unmistakable. Workers must have affordable housing near their jobs. This has increased in importance as the cost of transportation has risen. It is also important in a state like Vermont that is trying to increase the percentage of college graduates who settle in the state.

This is a complex issue where perceptions may override reality, where regional differences are notable, and where, when comparing income and cost of living data, it is easy to conclude “we are no worse than anybody else.”

The executive summary of the *2010 Vermont Housing Needs Assessment* (the latest version of this document) conducted by the Vermont Housing Finance Agency states:

The supply of housing in Vermont is uniquely constrained in comparison to other states. The vacancy rate among owner homes was 1.6% in 2008 — fourth lowest in the country. Although the vacancy rate among Vermont’s rental homes was the lowest in the country in 2008, it has increased recently according to quarterly data for 2009.

The traditional metric for evaluating housing related costs (rent or mortgage, utilities, insurance, taxes) is whether those costs exceed 30% of family income. Research prepared by the Federal Reserve Bank of Boston and published in their Winter 2013 issue of *Communities and Banking* shows that for rental units, all counties in Vermont far exceeded this metric just for rent (utilities may be included in some rents) – see Table 25.

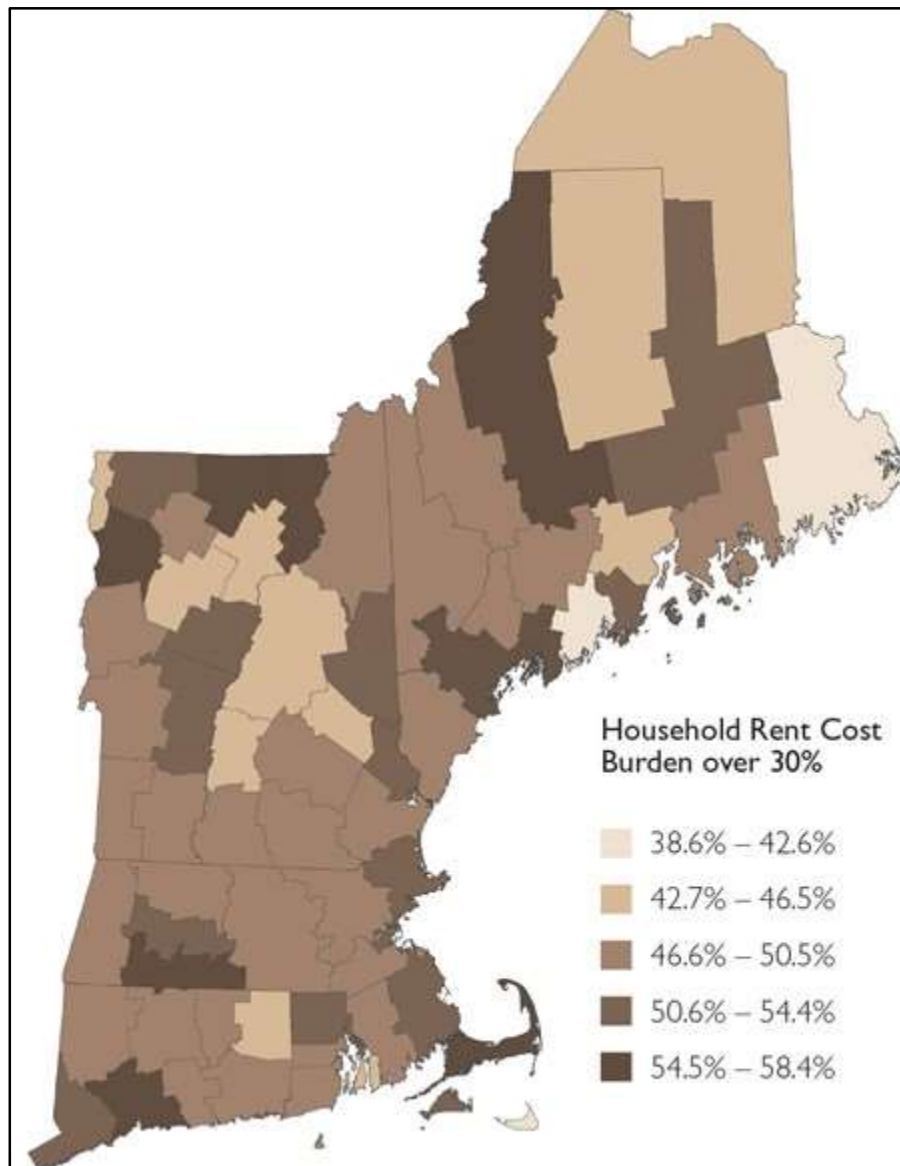
Table 25: Rent as a Percentage of Household Income, Vermont Counties, 2006 – 2010
Source: Federal Reserve Bank of Boston and published in the Winter 2013 issue of *Communities and Banking*

	Rental Units as a Percentage of All Housing Units	Households with Gross Rent Exceeding 30 Percent of Total Income as a Percentage of All Households
Bennington	19.0	50.3
Caledonia	21.2	46.4
Chittenden	31.1	57.9
Essex	7.5	54.8
Franklin	19.9	51.6
Grand Isle	9.4	44.6
Lamoille	22.9	47.2
Orange	13.7	51.4
Orleans	13.8	56.3
Rutland	21.9	47.0
Washington	21.6	45.0
Windham	18.6	47.1
Windsor	18.4	54.4

Figure 5 shows portion of Vermont households in each County that pay more than 30% of their income for rent based on 2006 – 2010 estimates from the Census Bureau’s American Community Survey .

Figure 5: Household Rent Cost Burden over 30% by County, 2006-2010

Source: Federal Reserve Bank of Boston and published in the Winter 2013 issue of *Communities and Banking*



Note: Nantucket and Barnstable counties have low shares of renter households (8 percent and 11 percent respectively).

Source: U.S. Census Bureau, American Community Survey, five-year estimates, 2006 to 2010.

Workforce Housing Strengths

- Vermont has a policy commitment to affordable housing development at the state level via the Vermont Housing & Conservation Board, Vermont Housing Finance Agency, Housing VT, and others.
- The state has a network of experienced housing development/management nonprofits committed to affordable housing.
- Use of New Market Tax Credits is creating some new housing units in mixed-use developments in existing community centers.
- Every 25 modest single-family homes constructed in VT could add or support 61 jobs, \$2 million in wages/salaries and \$6.3 million in business income.

Workforce Housing Weaknesses

- Vermont's housing stock is dominated by older, owner-occupied homes, many built before the era of high energy costs and therefore costly to heat; most Vermont housing relies on increasingly costly fuel oil.
- The Median price of newly constructed homes in Vermont requires income at 150% or more of the Vermont median household income.
- The rate of home construction in Vermont is among the lowest in the nation due in part to high costs and regulatory constraints; affordable/workforce housing development typically faces particularly heavy permitting opposition, which adds costs and discourages private developers
- There is a severe shortage of both rental and owner-occupied housing affordable to workers in typical VT wage ranges: a deficit of 21,000 rental and 12,300 ownership units as of 2005 is projected to continue to grow.
- Particularly in southern and east central Vermont, a high proportion of second homeowners drives up prices and outcompetes affordable units for builders.
- Rental subsidies for lower-income households and HUD funds for housing development are shrinking while demand and need are increasing.
- Vermont's reliance on property tax for municipal and educational revenues creates a burden because they are among highest in nation and add to affordability problems.
- All of the above are barriers to retention of Vermont households in prime working age groups (25-40) and the ability of employers to find workers; households in this age range are projected to decline in the state.
- Based on New Hampshire research, there is a negative impact on employment from a lack of modestly priced housing; this may be in the range of 1,500-3,000 jobs per year.

Vermont's Image, Visibility and Brand

There is no single definition of the Vermont brand. Prior research by the consultant team and additional research for this project on this topic identified the following key descriptors of the Vermont brand:

- | | | | |
|-------------------------|-----------------------------|-------------------------|--------------------------|
| ▪ A little rebellious | ▪ Environmentally conscious | ▪ Peaceful | ▪ Thrifty |
| ▪ Accessible government | ▪ Friendly | ▪ Practical | ▪ Unhurried |
| ▪ Authentic | ▪ Hard working | ▪ Productive | ▪ Unpretentious |
| ▪ Beautiful | ▪ Interconnected | ▪ Pure | ▪ Unspoiled |
| ▪ Clean | ▪ Locally focused | ▪ Safe | ▪ Value and values |
| ▪ Community-minded | ▪ Natural | ▪ Skilled professionals | ▪ Year-round outdoor fun |
| ▪ Creative | ▪ Outdoorsy | ▪ Sporty | |

These descriptors look through different lenses. Some are from the viewpoint of a resident; some from the viewpoint of a tourist; and some from the viewpoint of a business. Those that have most relevance to the business development process are hard working, productive, creative, value and values, and environmentally conscious.

In 1997, the Governor's Travel & Recreational Council called for a re-examination of the Vermont brand to identify and build a strong brand identity for Vermont that will provide differentiation and competitive advantage for the future. Since then the State of Vermont has undertaken two major branding initiatives:

- 1998 Tourism Brand Review (Vermont's brand identity as a place to visit)
- 2000 Business Brand Review (Vermont's brand identity as a place to do business)

The Vermont Brand Final Report prepared by O'Neal Strategy Group in May 2003 was initiated by the agencies and departments making up the state's Marketing And Promotion Team (M.A.P.). The review was initiated to develop a brand identity strategy that could be used by all state agencies and departments to promote Vermont. The report recognized that a unified brand identity is the key to better coordination of marketing efforts, which, in turn, is the key to competing more effectively with larger, better-funded marketing efforts of other states.

Vermont's Image, Visibility and Brand Strengths

Government Support

State government at various levels has focused on the Vermont Brand and devoted resources to it on an ongoing basis:

- In 1997, the Governor's Travel & Recreational Council called for a re-examination of the Vermont brand to identify and build a strong brand identity for Vermont to provide differentiation and competitive advantage for the future.
- In 1998 a Tourism Brand Review was conducted relevant to Vermont's brand identity as a place to visit.

- In 2000, the State of Vermont released a study citing that the name "Vermont" is recognized nationwide as a brand which included a Business Brand Review (Vermont's brand identity as a place to do business).
- In 2003 a brand identity strategy was developed that could be used by all state agencies and departments to promote Vermont and included both brand personality and attributes.
- The 2005 legislative session authorized the creation of the position of Chief Marketing Officer for the State of Vermont to ensure consistency and efficiency in the use of state funds for marketing and promotional activities conducted by state agencies.
- In 2007 the Brand Standards and Guidelines were distributed for the state
- In 2008 the Agency of Administration in its guiding document (Bulletin 3.5) for state contracting policies and procedures required that the Chief Marketing Officer approve all contracts for marketing services over \$15,000.
- In 2009 the Brand Standards and Guidelines were amended to include state graphics and approved logos available online.
- The Chief Marketing Officer's office has embarked on a new campaign to assure that the current identity of the Vermont Brand is on target through a forthcoming consumer sentiment study.

Brand Characteristics

- There were common words identified among residents, visitors and purchasers of Vermont products (Vermont Stakeholders) in 2003;*these words and message are still relevant.*
- The brand personality and brand attributes contain words that realistically match the message that is to be conveyed.
- Additional words have been added to target specific workers with a skill set (creative, skilled professionals)
- Additional words have been added to target families - Vermont is a good place to raise a family.
- The number and characteristics of the words are descriptive enough to allow flexibility for the various agencies in their marketing efforts, yet few enough so that the message is not being diluted.
- There is a good balance between people characteristics and the physical location.
- The homes, farms and historic sites in Vermont appear to be more intact than in other areas giving the impression of authenticity and being genuine. There appears to be less vinyl siding which is made from a petroleum product –less sustainability.

Brand Image

- The perceptions of the image of Vermont are generally positive.
- The Vermont Brand lines up with the citizens' view of themselves.
- The Vermont Brand provides for a distinct sense of place.
- The Vermont Brand is unique.

Physical Image

- Beauty of the natural landscape including mountains, lakes, streams and forests
- Variety of the built landscape including the state's historic architecture and community centers
- Lack of billboards
- Vermont has a unique identity that has been defined by centuries of traditions shared by young and old
- Vermont has small-scale downtowns.

Advantages

- The Vermont Brand is established.
- There is more recognition for it each year.
- Legislation creating the position of Chief Marketing Officer with specific charges has encouraged the Vermont State agencies work together more closely.
- The Vermont Brand brings tourists and new residents.
- The Vermont Brand provides advantages to Vermont businesses.

Competitive Advantages

- State government has continually reflected and reinforced the Vermont brand resulting in differentiating itself from any other state
- Vermont has both in-state and out-of-state recognition for its products.
- The Vermont logos are highly recognizable.
- The population of Vermont is small enough to have had nearly complete exposure to the Vermont Brand.
- It appears that locals, visitors and purchasers of Vermont products will continue to have a sustained sense of continuity with the Vermont Brand.

Vermont's Image, Visibility and Brand Weaknesses

- A unified brand identity should allow for better coordination of marketing efforts and the State of Vermont should be able to compete more effectively with larger, better-funded marketing efforts of other states. However, this does not appear to be happening at the present time.
- It has taken too much time to gain cooperation among state agencies that had their own identity, *and* when asked that their individual department attributes and messages be integrated into the common brand architecture.
- There is an unrealistic expectation of a Vermont utopia by some citizens already living in the state or those who have recently moved there in the last few years.
- There is an unwarranted expectation that Vermont does not have issues that appear to conflict with the image of the Vermont Brand.
- The Attorney General's office has to invest time and money in its pursuit of companies with products falling afoul of Vermont Brand guidelines.

- There is some complaint about a lack of diversity in marketing images that represents the cross-section of the population.
- The overuse of bucolic images may convey the image of a backwater place lacking in economic opportunity; the images and words (beautiful, peaceful and natural) are not synonymous with rural and backward.

Weakness about Other Issues of Images

- There is the possibility of a distortion of the brand by a commercialized definition of the special place if the people of Vermont do not remain authentic.
- There are concerns about the threats to agriculture and the subdivision and loss of arable and forested lands due to residential sprawl.
- A dairy economy, which is the cornerstone of agriculture in state, is highly susceptible to national and global price fluctuations, and changes in markets and increasing costs of production. This can impact the brand.
- Vermont's forest products industry is cited as being at a dangerously critical point with the number of mills and other working forest enterprises at risk of closing. This can impact the brand.
- Despite an image that Vermont is one of the healthiest states, there is a complex array of social, medical, and wellness issues that are difficult to address uniformly in a rural state and the costs and availability of health care are major concerns.
- There is an image of two Vermonts, one for Chittenden County and one for the rest of Vermont.

Innovation and Entrepreneurship

Innovation and entrepreneurship are important drivers of economic wealth and growth. They lead to business formations, expansions, higher wages, and exports. In this section key indicators of innovation and entrepreneurship in Vermont are examined then summarized in terms of strengths and weaknesses.

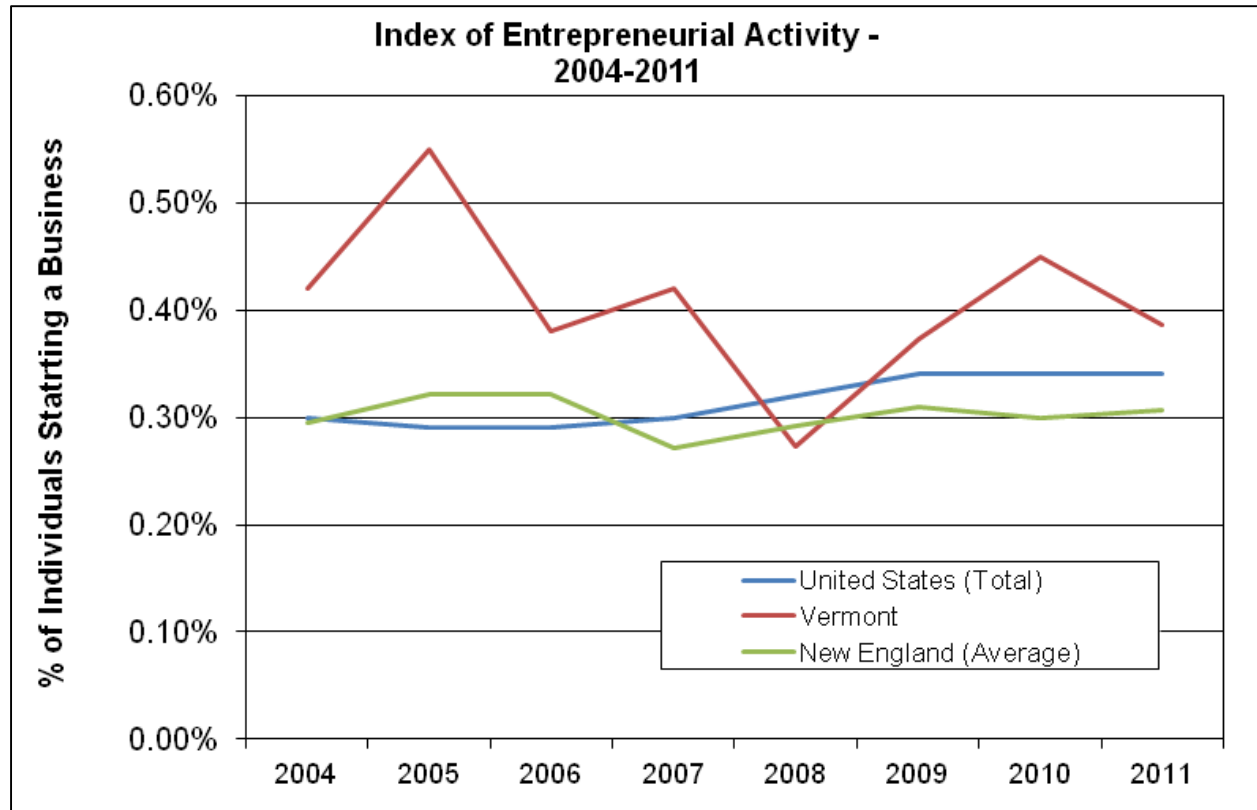
Key Indicators

Entrepreneurial Climate –While from 2004 to 2011, Vermont decreased its Index of Entrepreneurial Activity from 0.42% to 0.39%; since 2004 Vermont has consistently ranked better on this measure than the U.S. or New England and in 2008 Vermont ranked 8th best among all states¹¹. This Index measures new business formation.

¹¹Kauffman Foundation: www.kauffman.org/researchandpolicy/entrepreneurship-data.aspx - The index is of the percent of individuals (ages 20–64) who do not own a business in the first survey month but who start a business in the following month with fifteen or more hours worked per week.

Figure 6

Source: Kauffman Foundation



Entrepreneurial Climate - State Entrepreneurship Index –The University of Nebraska also measures entrepreneurial climate through its State Entrepreneurship Index¹². The index is composed of 5 components that consider the income of entrepreneurs, business formation rates, technological innovation, and growth in the number of entrepreneurs. In 2012 Vermont ranked 16th best in the nation on this index with high component scores in technological innovation (patents) and business formation rate.

¹²Prepared by The University of Nebraska - Lincoln Bureau of Business Research
http://bbr.unl.edu/documents/September_2012_BIN.pdf

Table 26

**The University of Nebraska - Lincoln Bureau of Business Research 2011 State Entrepreneurship Index
Rank and Index Values for Each Subcomponent Index**

State	Growth in Establishments	Growth in Establishments Per Capita	Business Formation Rate	Patents Per Thousand Residents	Average Proprietor Income	Average Index Value	Rank
Alabama	0.534	0.848	-0.087	0.158	0.275	0.346	44
Alaska	1.101	0.809	1.140	-0.026	2.039	1.013	28
Arizona	0.524	0.323	0.779	1.291	0.867	0.757	39
Arkansas	1.192	1.360	1.113	0.060	0.565	0.858	33
California	2.866	2.741	0.879	3.332	2.121	2.388	3
Colorado	-0.201	-0.598	2.698	1.821	1.581	1.060	24
Connecticut	0.395	0.866	0.341	2.360	3.215	1.435	12
Delaware	0.008	0.000	1.955	1.974	1.525	1.093	21
Florida	0.564	0.305	3.001	0.659	-0.267	0.852	35
Georgia	0.343	0.158	1.290	0.760	0.254	0.561	41
Hawaii	0.391	0.363	0.330	0.187	0.424	0.339	45
Idaho	-0.546	-0.598	2.138	2.772	0.409	0.835	36
Illinois	2.007	2.428	0.839	1.335	1.320	1.586	9
Indiana	1.057	1.339	0.315	0.872	0.190	0.755	40
Iowa	-0.015	0.275	0.289	0.998	0.891	0.488	42
Kansas	1.577	1.844	1.068	1.002	1.067	1.312	15
Kentucky	0.597	0.805	-0.157	0.330	-0.065	0.302	46
Louisiana	-0.933	-0.818	0.388	0.132	1.360	0.026	50
Maine	1.069	1.602	1.674	0.443	0.267	1.011	29
Maryland	1.542	1.581	1.057	1.005	1.111	1.259	17
Massachusetts	4.028	4.238	0.874	3.433	2.483	3.011	1
Michigan	-1.150	-0.569	0.186	1.719	0.293	0.096	49
Minnesota	1.651	1.756	1.525	3.224	0.788	1.789	5
Mississippi	0.286	0.657	-0.174	0.033	0.664	0.293	47
Missouri	1.103	1.498	0.370	0.508	1.797	1.055	25
Montana	0.471	0.520	2.971	0.279	0.026	0.853	34
Nebraska	1.115	1.195	1.121	0.365	1.146	0.988	32
Nevada	-0.785	-0.709	1.789	0.859	0.665	0.364	43
New Hampshire	0.388	0.888	2.317	2.440	1.729	1.553	10
New Jersey	0.510	0.909	1.862	1.892	3.224	1.679	7
New Mexico	1.685	1.684	0.790	0.643	0.277	1.016	27
New York	1.723	2.036	1.829	1.535	4.030	2.230	4
North Carolina	1.477	1.321	0.943	1.081	0.321	1.029	26
North Dakota	3.695	3.243	4.067	0.386	1.183	2.515	2
Ohio	1.321	1.854	-0.072	1.253	1.088	1.089	22
Oklahoma	1.028	1.000	0.577	0.389	2.026	1.004	30
Oregon	2.068	2.004	1.728	2.447	0.562	1.762	6
Pennsylvania	1.791	2.223	0.338	1.029	2.333	1.543	11
Rhode Island	0.495	1.156	2.000	1.235	1.067	1.191	19
South Carolina	0.288	0.212	0.433	0.519	-0.508	0.189	48
South Dakota	1.088	1.000	1.628	0.341	0.933	0.998	31
Tennessee	0.331	0.387	-0.055	0.516	2.702	0.776	38
Texas	1.957	1.319	0.443	1.145	3.178	1.608	8
Utah	0.763	0.259	2.515	1.659	0.149	1.069	23
Vermont	0.464	0.980	1.791	3.506	-0.220	1.304	16
Virginia	1.407	1.324	1.737	0.715	0.588	1.154	20
Washington	0.972	0.616	0.912	3.137	1.272	1.382	13
West Virginia	1.095	1.633	0.036	0.037	1.199	0.800	37
Wisconsin	1.715	2.033	-0.114	1.423	0.909	1.193	18
Wyoming	0.916	1.029	3.242	0.348	1.281	1.363	14

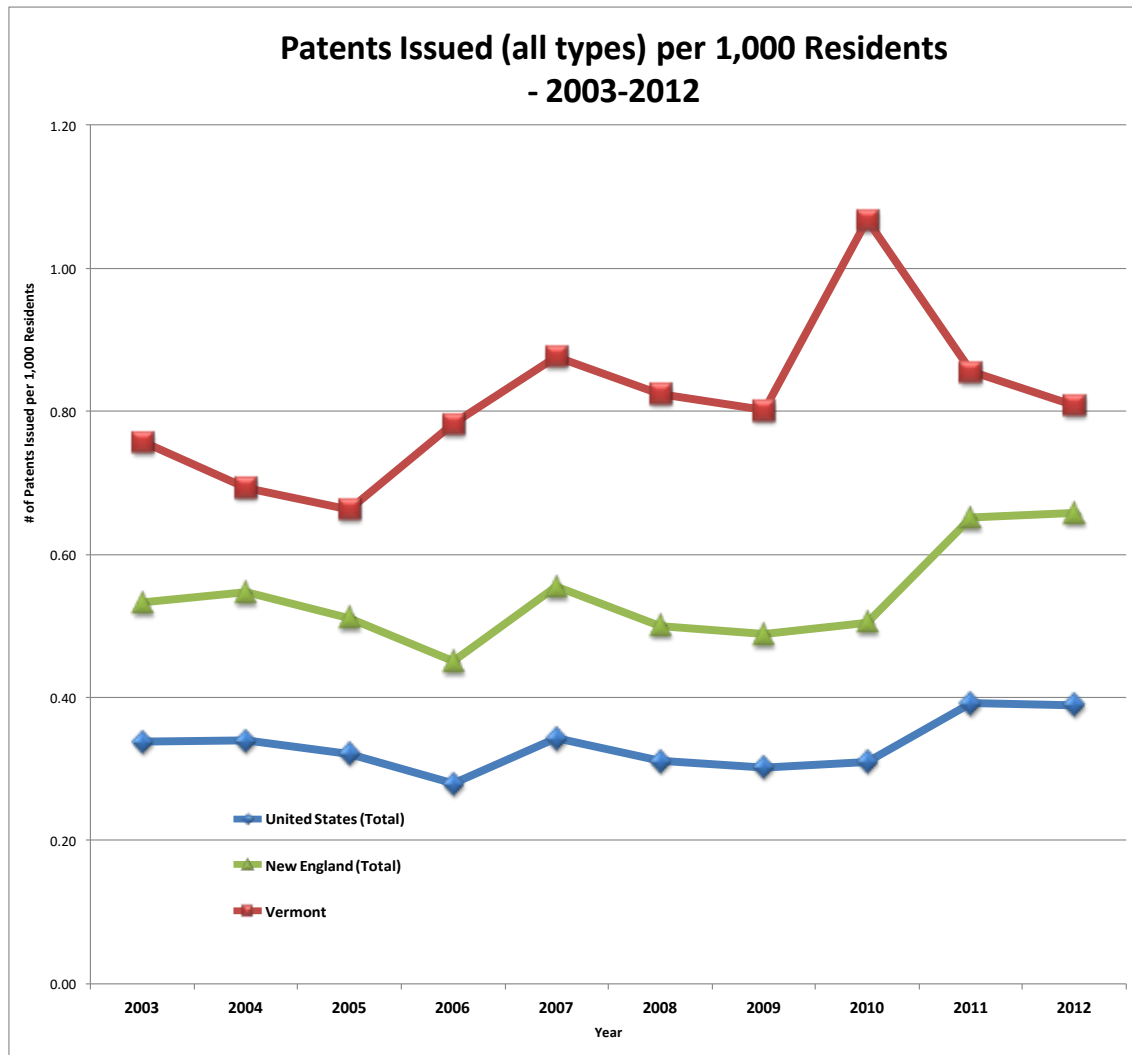
Sources: U.S. Department of Labor and U.S. Department of Commerce and U.S. Patent and Trademark Office

Patents - Patents are another way to look at the amount of innovation and commercialization that is occurring. In general, inventors that take the time and cost to pursue patents for their innovations do so because they are interested in pursuing commercialization.

When controlling for population, compared to the United States and New England, Vermont produces a higher number of patents per 1,000 residents. In 2012, on this indicator, Vermont ranked 4th highest in the nation¹³.

Figure 7

Source: Camoin Associates



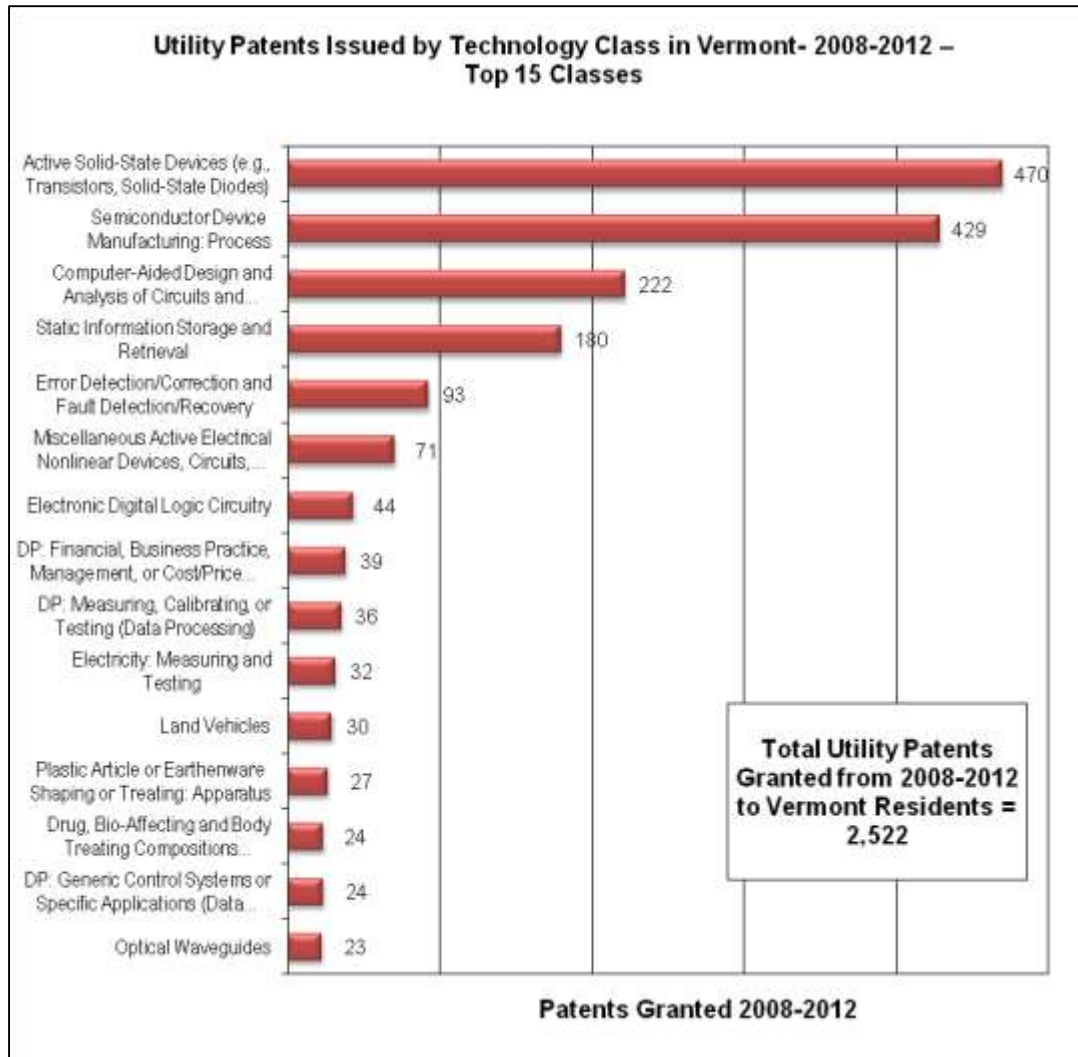
Data on utility use provides insights into the types of industries for which patent activity is occurring. The largest number of patents awarded between 2008 and 2012 in Vermont were for computer and semiconductor related technologies¹⁴. This is related to the IBM plan in Chittenden County and related technology companies.

¹³ Patent Counts by Country/State and Year, All Patents, All Types, January 1, 1977-December 31, 2012; by Calendar Year; U.S. Patent and Trade Mark Office; <http://www.uspto.gov/>. Population from Annual Estimates of the Population for the United States, Regions, States, and Puerto Rico; Population Division, U.S. Census Bureau; www.census.gov/popest/

¹⁴ "Patenting by Geographic Region (State and Country), Breakout by Technology Class, 2008 - 2012 Utility Patent Grants by Calendar Year of Grant, U.S. Patent and Trademark Office; www.uspto.gov; Data includes only utility

Figure 8

Source: U.S. Patent and Trademark Office



Venture Capital – Access to venture capital can provide an important source of funding for growth for start-up and early-stage companies that are growth oriented. Understanding the existing venture capital networks and investment in a community is important to be able to understand where innovation is occurring and what types of businesses are expanding.

From 2001 to 2011, 46 companies received venture capital funding in Vermont representing 61 deals and \$195 million¹⁵.

patents (patents for inventions) and excludes design patents, plant patents, reissues, defensive publications, and statutory inventions registrations.

¹⁵MoneyTree Venture Capital Profiles by State; based on PricewaterhouseCoopers/Venture Economics/National Venture Capital Association Surveys; <http://www.venturexpert.com/VxComponent/static/stats/>

The following tables and charts showcase the venture capital investment in Vermont-based companies since 2001.

Table 27

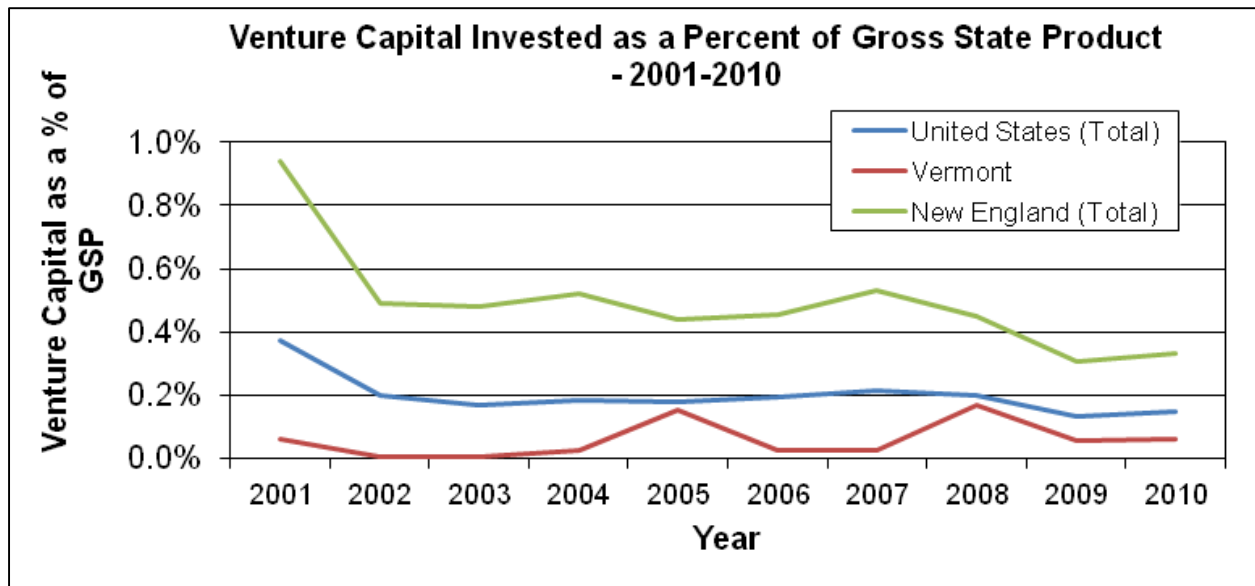
Source: MoneyTree Venture Capital Profiles by State

Venture Capital in Vermont As of 9/30/2011			
Year	Companies	Deals	Investment(\$M)
2001	3	3	11.6
2002	2	5	1.5
2003	2	5	1.2
2004	4	4	5.1
2005	4	5	35.2
2006	4	7	6.3
2007	5	5	6.6
2008	7	7	41.8
2009	6	6	29.1
2010	4	7	33.1
2011	5	7	24.2
Total	46	61	195.7

On average Vermont lagged the rest of the U.S. and New England in terms of venture funding as a percent of the GSP between 2001 and 2010, but in 2010 on this indicator Vermont ranked 19th nationally, better than half the other states¹⁶.

Figure 9

Source: MoneyTree Venture Capital Profiles by State



¹⁶ Ibid and Gross State Product from Bureau of Economic Analysis, U.S. Department of Commerce, www.bea.gov/regional/gsp/

Data on venture capital is available by company and industry from 2005 through 2010 in Vermont. During this period, 30 venture capital transactions occurred in Vermont totaling \$118.38 million¹⁷. The Alternative Energy industry received the largest investment followed by E-commerce.

Table 28

Source: InnovationEconomy360

Venture Capital By Company (2005-2010)			
Year	Company	Industry	Amount (\$M)
2005	EatingWell	Media	\$0.83
2006	EatingWell	Media	\$2.90
2006	Mophie	Electronics	\$1.00
2006	Mophie	Electronics	\$0.50
2007	Mophie	Electronics	\$0.15
2007	NEHP	Semiconductors	\$0.50
2007	Mobile Medical International	Healthcare Services	\$4.10
2007	GroSolar	Alternative Energy	\$10.00
2008	Kluster	Internet	\$0.15
2008	Northern Power Systems	Alternative Energy	\$37.00
2008	EatingWell	Media	\$0.50
2008	Northern Power Systems	Alternative Energy	\$37.00
2009	Vermedx	Healthcare	\$0.50
2009	NEHP	Semiconductors	\$0.25
2009	MyWebGrocer	ECOMMERCE	\$13.00
2010	Dealer.com	Internet	\$5.00
2010	Dealer.com	Internet	\$5.00
Total			\$ 118.38
Venture Capital by Industry (2005-2010)			
Total Media			\$4.23
Total Electronics			\$1.65
Total Semiconductors			\$0.75
Total Healthcare Services			\$4.60
Total Alternative Energy			\$84.00
Total Internet			\$0.15
Total ECOMMERCE			\$13.00

FreshTracks Capital is a Venture Capital entity that manages \$25 million in venture capital and is focused on Vermont companies¹⁸.

Venture capital is one small way in which companies obtain growth capital. Other financing resources include:

¹⁷InnovationEconomy360

¹⁸www.freshtrackscap.com/

North County Angels¹⁹ - North Country Angels is a network of experienced entrepreneurs who consider and make investments in early-stage projects and companies located in the northeastern United States. Vermont has several financing related programs designed to support investment in innovation, start-ups, and growth companies. Details are provided in the “Incentives” section of this report. These include:

- Vermont Seed Capital Fund – early stage capital for technology companies
- Angel Venture Investment Capital Gain Deferral – tax incentive for angel investment
- Clean Energy Development Fund – funds for renewable energy projects and ventures
- Vermont Sustainable Jobs Fund – early stage funding to support initiatives related to sustainability
- Vermont Ag Development Program - venture coaching to businesses to help them obtain growth capital
- Working Lands Enterprise Initiative - makes essential, catalytic investments in critical leverage points of the Vermont farm and forest economy, from individual enterprises to industry sectors

Beyond financing there are also entities that provided resources and support for entrepreneurs including:

- Vermont Center for Emerging Technologies²⁰ - Technology focused business incubator with client firms from most all sectors. VCET offers a targeted business incubator program designed to foster the success of high opportunity technology firms by providing firms with substantive business mentoring along with traditional incubator services such as low cost, flexible office space, shared resources, capital, networking, training, etc . VCET is an independent 501 c (3) public benefit corporation in affiliation with the University of Vermont and partners with Norwich University, Middlebury College, Champlain College and the five Vermont State Colleges.
- The Vermont Venture Network²¹ provides networking and education, and information sharing events to support Vermont’s entrepreneurs.
- Incubator without Walls²² at Lyndon State College provides a wide array of programs and services designed to prepare individual students and businesses for success in the workplace and the regional economy.

Small Business Innovation Research and Small Business Technology Transfer) Funding – The federal government provides grants to small businesses performing R&D through its Small Business Innovation Research (SBIR) program and Small Business Technology Transfer (STTR) program. SBIR and STTR awards are made competitively by federal agencies using peer review. Criteria include scientific and technical quality and potential for commercialization. Venture capitalists often use SBIR and STTR awards as a proxy for high technical quality when considering new investments.

¹⁹ www.northcountryangels.com/

²⁰ <http://vermonttechnologies.com/>

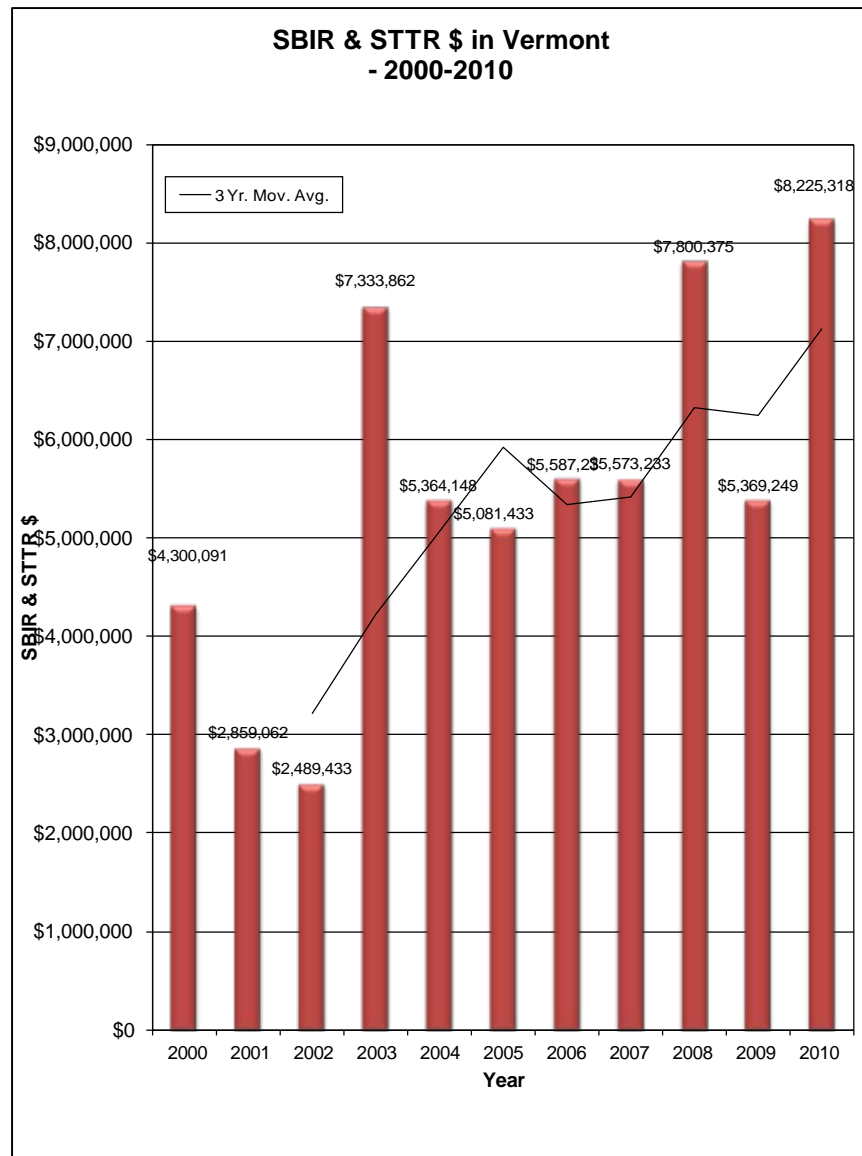
²¹ <http://vermontventurenetwork.org/>

²² <http://campus.lyndonstate.edu/iwow/aboutiwow.html>

Overall, since 2002 Vermont has experienced increases in funding for the SBIR/STTR programs from a level of \$2.5 million in 2002 to \$8.2 million in 2010²³. The 2010 amount represented 17 individual awards.

Figure 10

Source: U.S. Small Business Administration

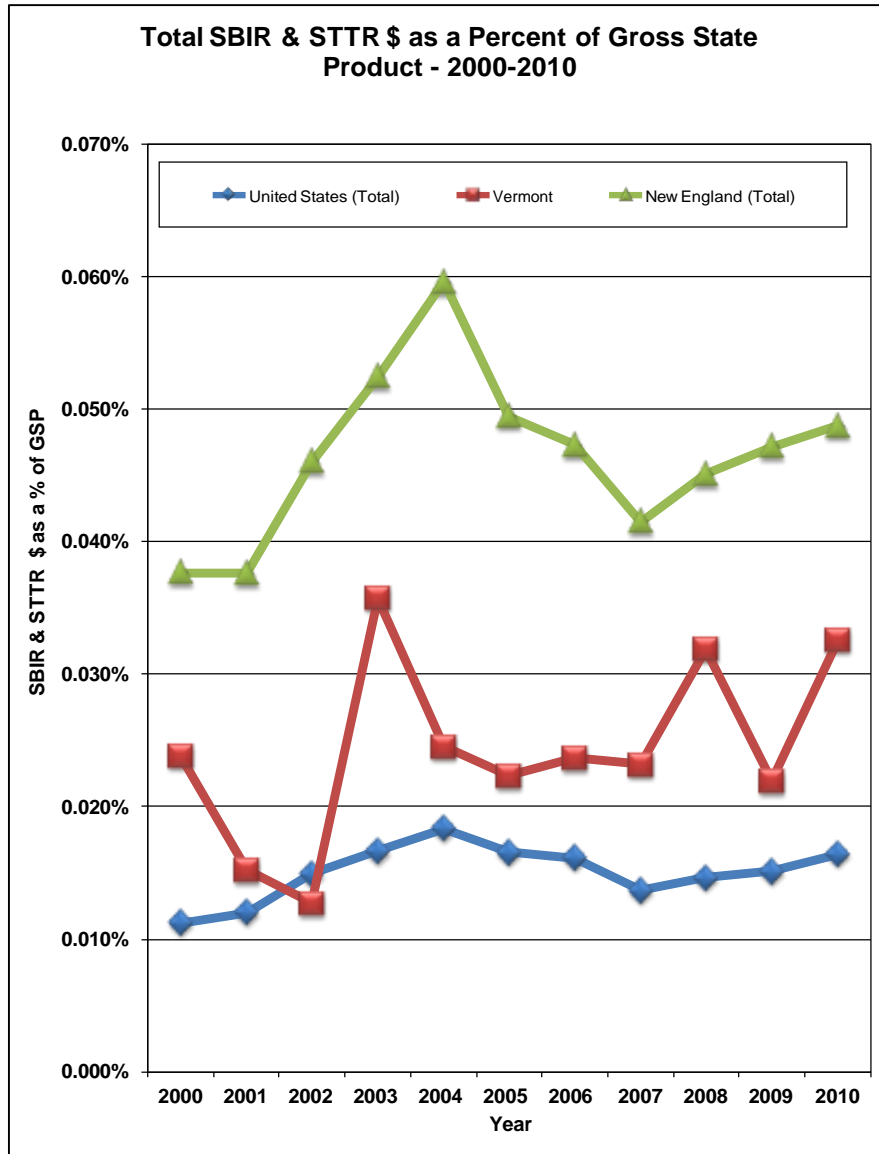


²³U.S. Small Business Administration; http://web.sba.gov/tech-net/public/dsp_search.cfm

When SBIR/STTR is expressed as a percent of gross state product, between 2003 and 2010 Vermont has outperformed the U.S. on this measure and in 2010 ranked 6th highest nationally²⁴.

Figure 11

Source: U.S. Small Business Administration



Total Research and Development (R&D)

An innovation economy requires investments in research and development to generate knowledge that leads to new commercial products and services. R&D is conducted by industry, universities and colleges,

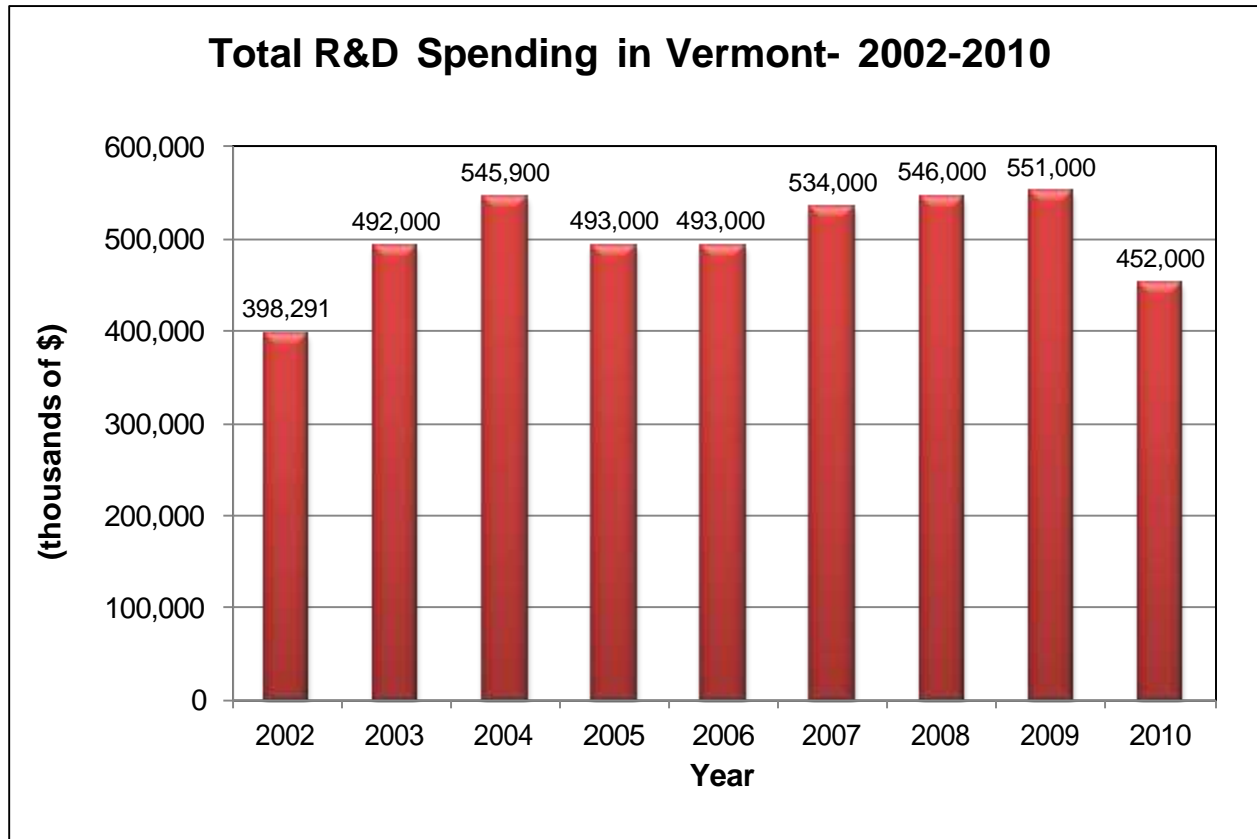
²⁴ Ibid and Gross State Product from Bureau of Economic Analysis, U.S. Department of Commerce, www.bea.gov/regional/gsp/

government, and not-for-profit labs. R&D that leads to commercialization is likely to generate exports thus bringing new wealth into a state.

R&D performed in Vermont, as measured by spending on R&D, by all performance sectors (industry, universities and colleges, not-for-profit labs, and government) totaled \$452 million in 2010²⁵. This is down from the 2009 level of \$551 million and the second lowest annual level since 2002.

Figure 12

Source: National Science Foundation/Division of Science Resources Statistics

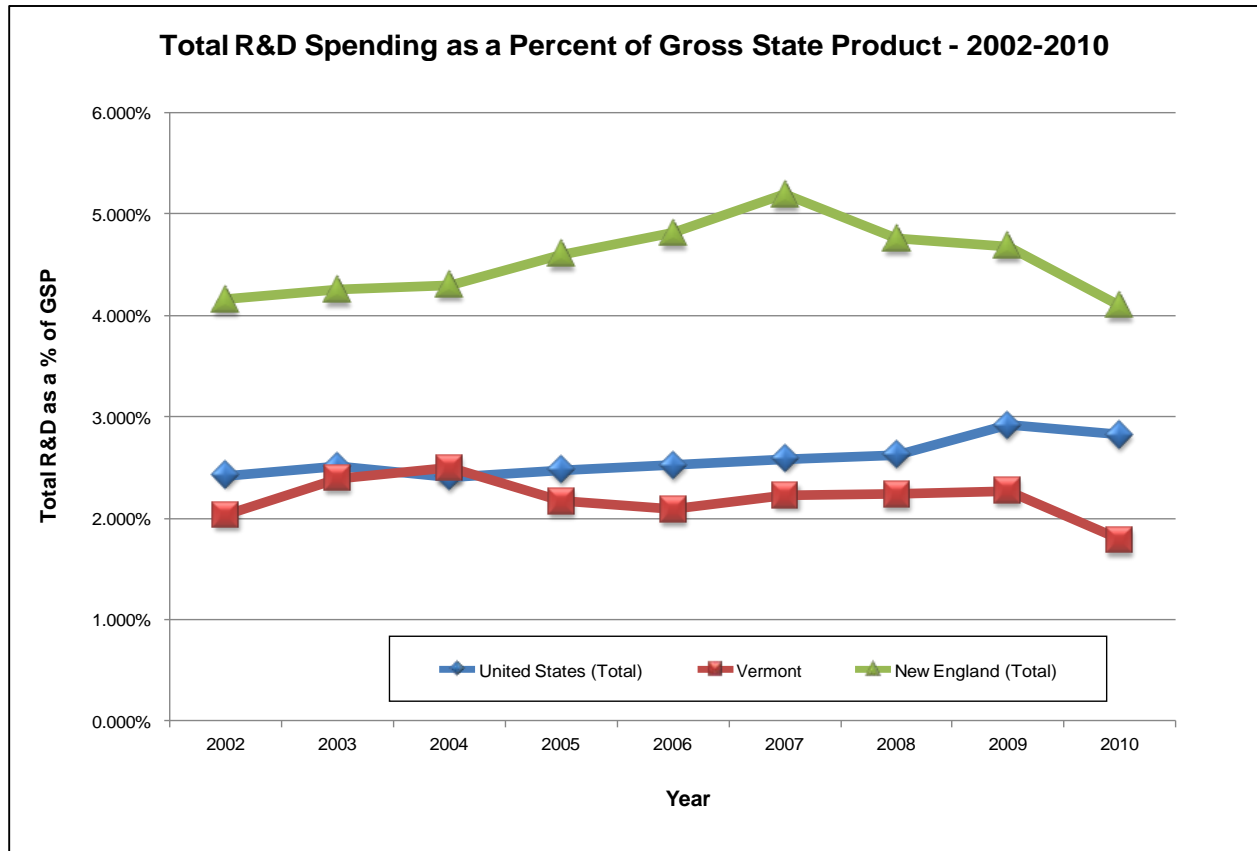


²⁵National Science Foundation/Division of Science Resources Statistics; National Patterns of R&D Resources
www.nsf.gov/statistics

When measured as a percent of gross state product, Vermont performs at a lower level than the United States and considerably lower than New England. In 2010 Vermont ranked 29th on this indicator²⁶.

Figure 13

Source: Bureau of Economic Analysis, U.S. Department of Commerce

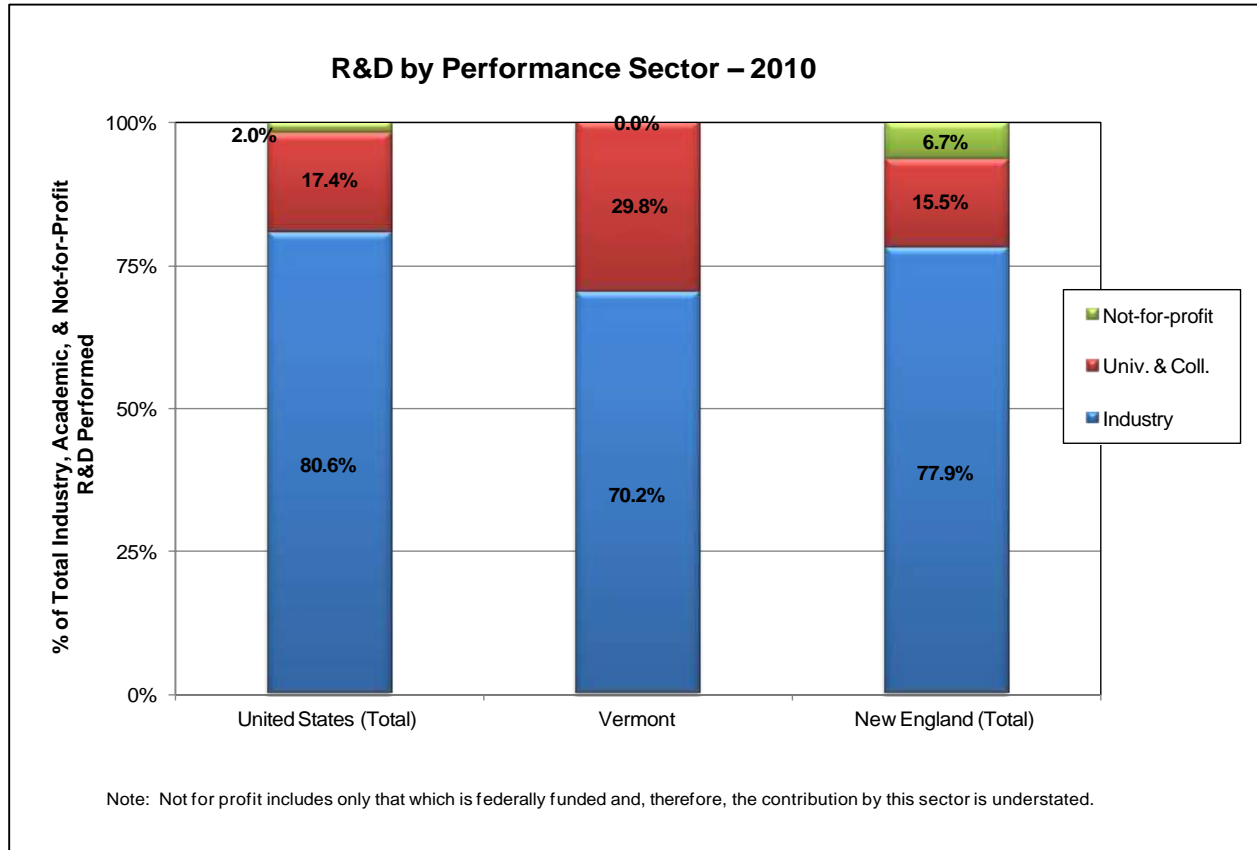


²⁶ Ibid and Gross State Product - Bureau of Economic Analysis, U.S. Department of Commerce; www.bea.gov

Like most places throughout the U.S., the majority of R&D in Vermont is performed by Industry (70.2% in 2010) followed by University and Colleges (29.8% in 2010). Relative to the rest of the U.S. and New England, within its R&D mix Vermont is more heavily reliant on academic R&D²⁷.

Figure 14

Source: National Science Foundation/Division of Science Resources Statistics



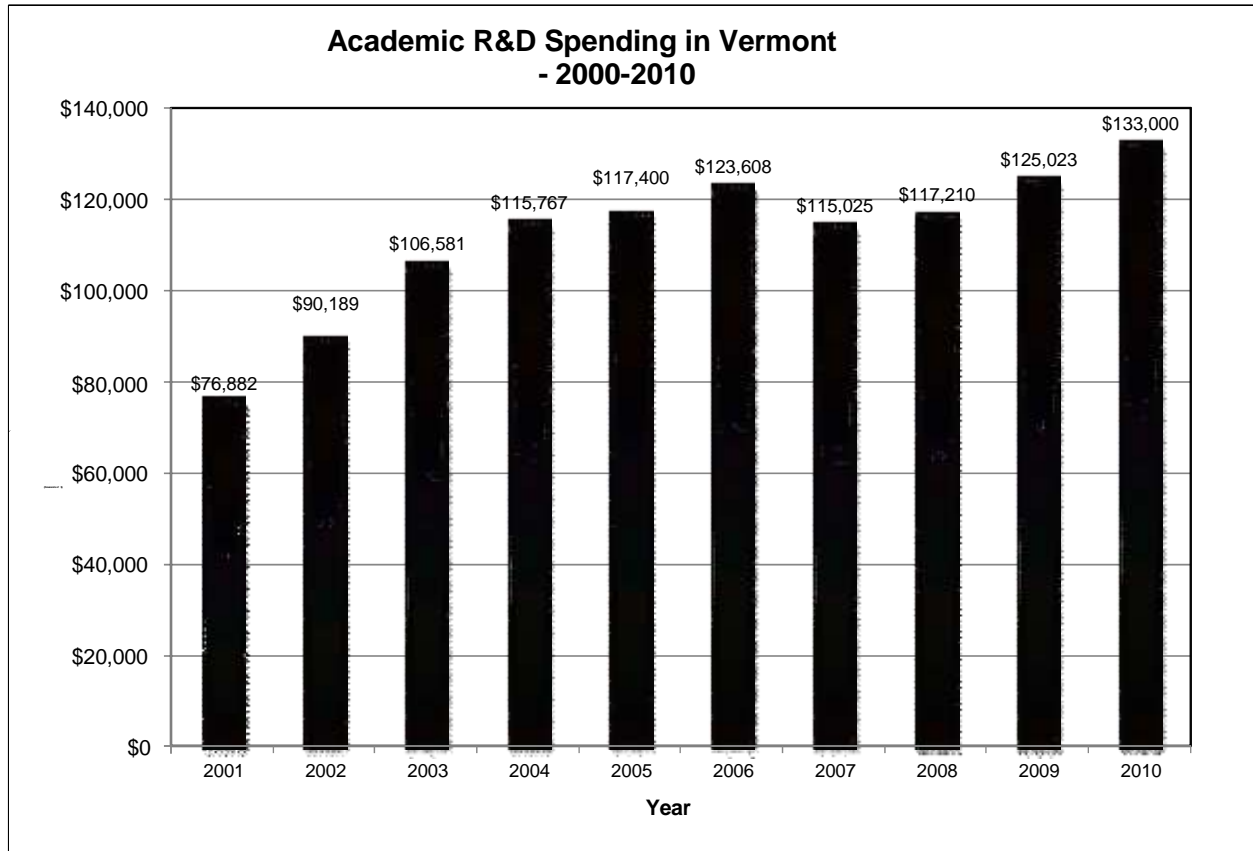
²⁷National Science Foundation/Division of Science Resources Statistics; National Patterns of R&D Resources
www.nsf.gov/statistics

Academic R&D

In 2010 Vermont's academic institutions performed \$133 million in R&D. This was the highest level during the period examined between 2001 and 2010²⁸.

Figure 15

Source: National Science Foundation/Division of Science Resources Statistics

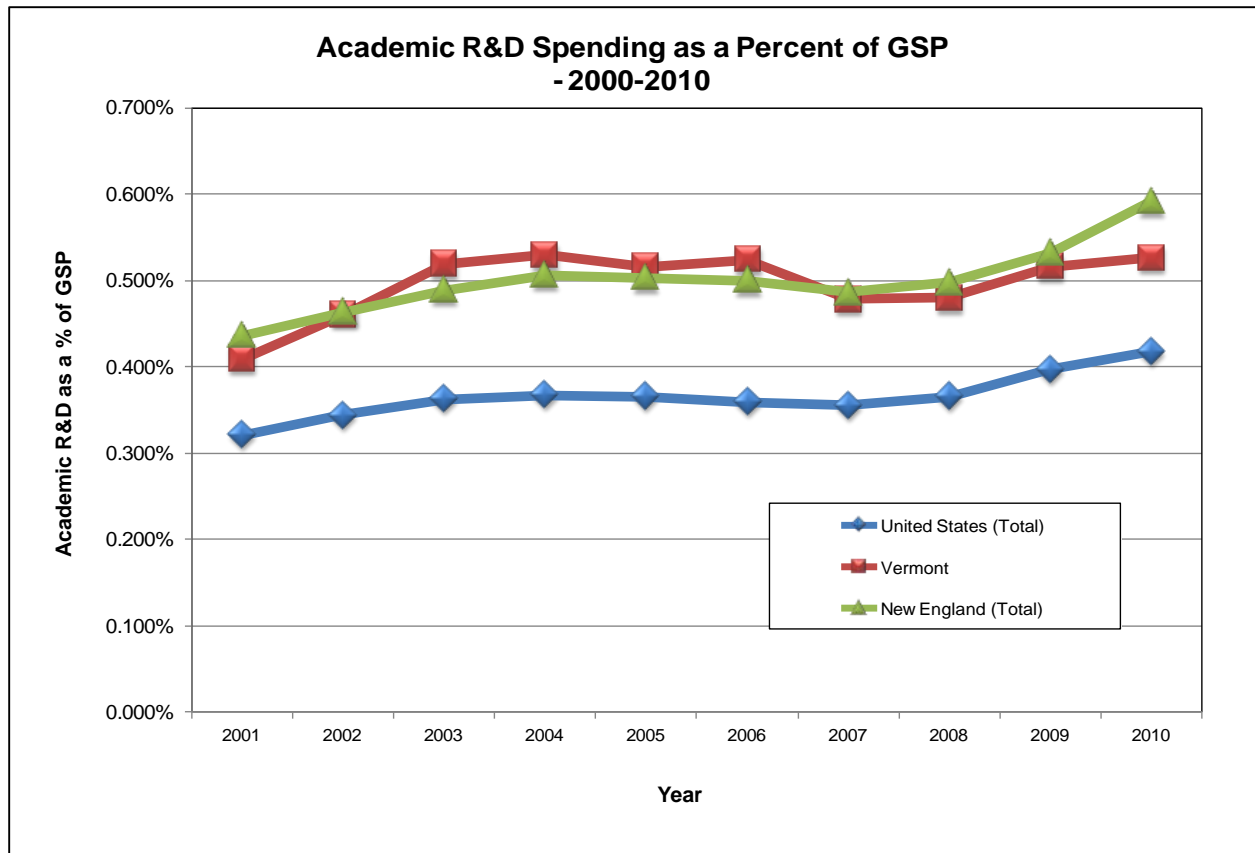


²⁸National Science Foundation/Division of Science Resources Statistics; Survey of R&D Expenditures at Universities and Colleges; www.nsf.gov/statistics

When academic R&D is measured as a percent of gross state product, Vermont outperformed the U.S. as a whole and performed at a level similar to New England as a whole. In 2010 Vermont ranked 11th on this indicator²⁹.

Figure 16

Source: National Science Foundation/Division of Science Resources Statistics and - Bureau of Economic Analysis



²⁹ Ibid and Gross State Product - Bureau of Economic Analysis, U.S. Department of Commerce; www.bea.gov

Funds to support R&D at Vermont's universities and colleges are provided by a mix of sources. In 2010 the federal government provided 75.9% of the funds. Industry in Vermont funded only 1.5% of the R&D, a level that is lower than the U.S. and New England³⁰.

Table 29

Source: National Science Foundation/Division of Science Resources Statistics

University & College R&D Spending by Source of Funds as a % of Total - 2010					
	Federal government	State and local government	Industry	Institution funds	All other sources
US	60.70%	6.28%	5.21%	19.91%	7.91%
Vermont	75.94%	0.00%	1.50%	17.29%	4.51%
New England	68.67%	1.74%	5.27%	15.12%	9.14%

In terms of field of study of the academic R&D performed, in 2009 82% of R&D performed at Vermont's universities and colleges was in life sciences³¹. This is driven by R&D performed by the University of Vermont and is related to the presence of the University's medical school. This however, is not matched with statewide industry strengths. Overall, Vermont's does not have employment concentrations in life science industries that perform and commercialize R&D. Additionally, Vermont academic R&D is less concentrated in environmental and physical sciences, fields which have great employment concentrations throughout the state.

Table 30

Source: National Science Foundation/Division of Science Resources Statistics

University & College R&D by Field of Study as a % of Total - 2009								
	Environmental sciences	Life sciences	Math and computer sciences	Physical sciences	Psychology	Social sciences	Other Sciences	Engineering
U.S.	5.35%	59.69%	3.91%	7.82%	1.78%	3.78%	1.93%	15.75%
Vermont	1.17%	82.00%	0.86%	2.30%	1.72%	0.18%	3.89%	7.88%
New England	8.72%	55.64%	3.60%	8.71%	2.20%	3.15%	3.10%	14.88%

³⁰National Science Foundation/Division of Science Resources Statistics; Survey of R&D Expenditures at Universities and Colleges; www.nsf.gov/statistics

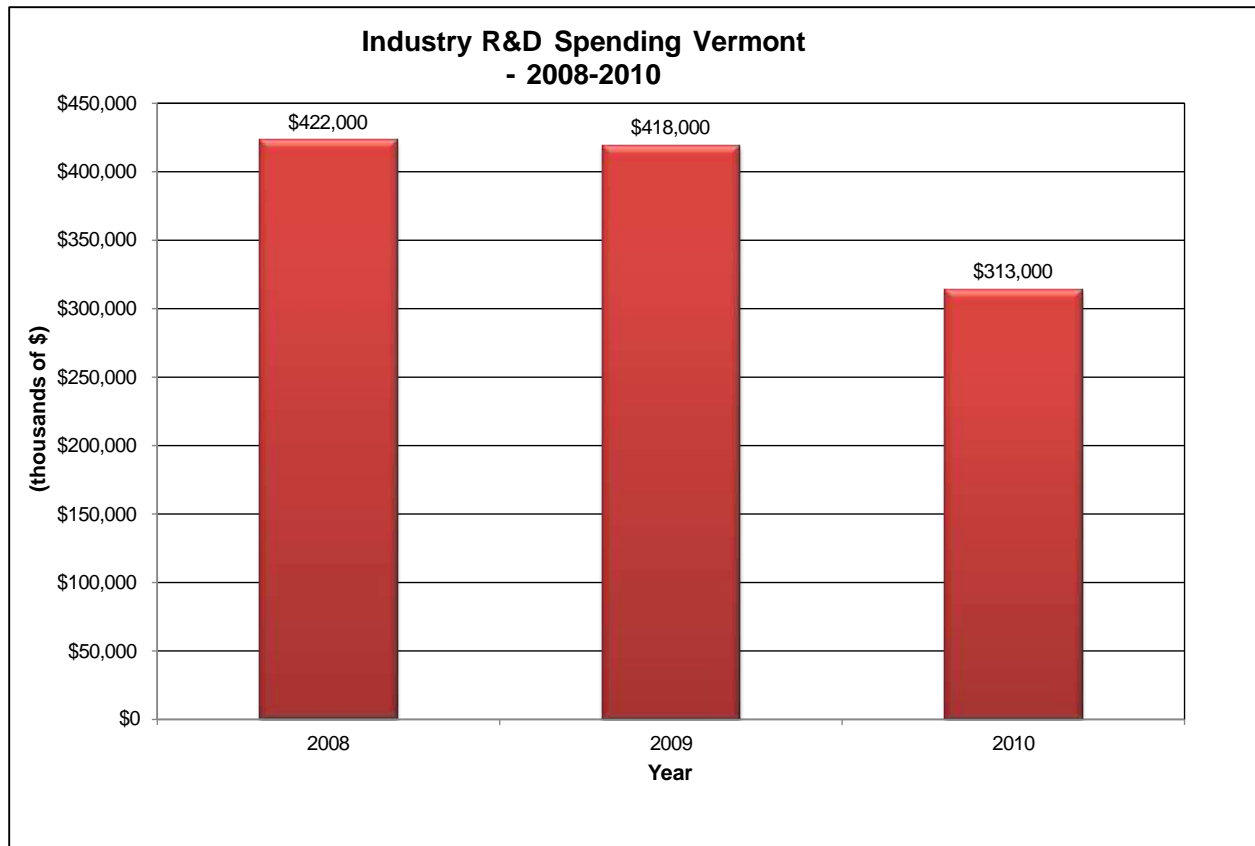
³¹ Ibid

Industry R&D

In 2010 Vermont's industries performed \$313 million in R&D, down from \$418 million in 2009³².

Figure 17

Source: National Science Foundation, National Center for Science and Engineering Statistics

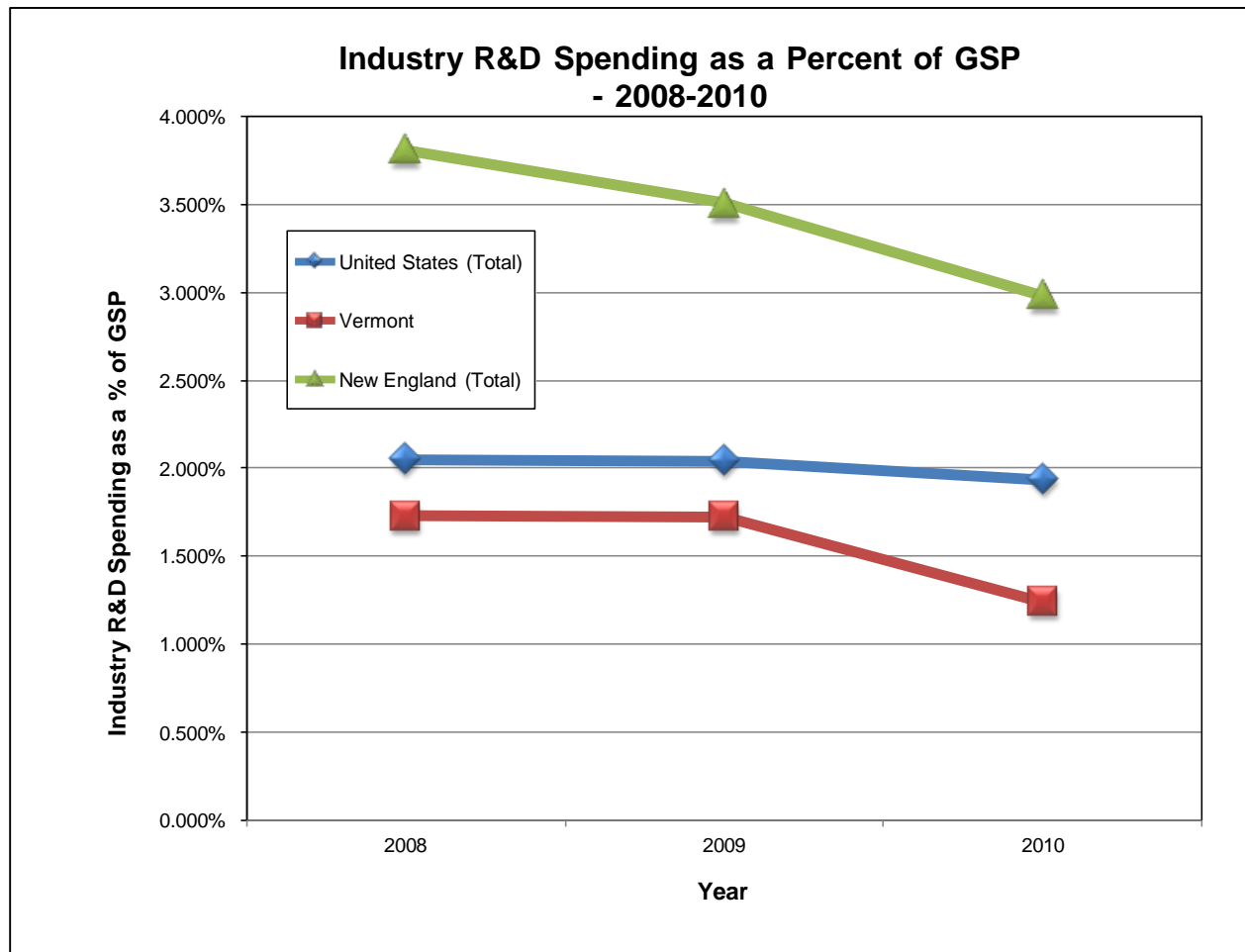


³²National Science Foundation, National Center for Science and Engineering Statistics, Business R&D and Innovation Survey; www.nsf.gov/statistics. Note: NSF's methodology on collecting data on industry R&D changed in 2008 and therefore 2008 data and beyond is not comparable to prior years.

Taking into consideration gross state product, Vermont industry R&D performance is at a level that is lower than the U.S. and New England³³. In 2010 Vermont ranked 24th highest on this indicator.

Figure 18

Source: National Science Foundation, National Center for Science and Engineering Statistics and Bureau of Economic Analysis



Innovation and Entrepreneurship Strengths

- **Entrepreneurial Climate - Business Formation** – Since 2004 Vermont has consistently ranked better on this measure than the U.S. or New England and in 2008 Vermont ranked 8th best among all states.
- **Entrepreneurial Climate - State Entrepreneurship Index** –In 2012 Vermont ranked 16th best in the nation on this index with high component score in technological innovation (patents) and business formation rate.
- On both measures of entrepreneurial climate, Vermont ranks high on business formation.

³³ Ibid and Gross State Product - Bureau of Economic Analysis, U.S. Department of Commerce; www.bea.gov

- Vermont has programs to support entrepreneurship and start-ups – Vermont has a multiple programs to assist entrepreneurs and start-ups across multiple sectors.
 - Vermont Center for Emerging Technologies - Incubation facilities, services, and mentoring for technology start-ups in partnership with universities and colleges
 - Vermont Manufacturing Extension Center - Innovation Engineering Management System
 - Vermont Seed Capital Fund – early stage capital for technology companies
 - Angel Venture Investment Capital Gain Deferral – tax incentive for angel investment
 - Vermont Small Business Development Center – technical support for small business
 - Peer to Peer Collaborative – peer advice
 - Clean Energy Development Fund – funds for renewable energy projects and ventures
 - Vermont Sustainable Jobs Fund – early stage funding to support initiatives related to sustainability
 - Incubator without Wall
 - Vermont Ag Development Program - venture coaching to businesses to help them obtain growth capital
 - The Vermont Venture Network provides networking and education, and information sharing events to support Vermont’s entrepreneurs.
 - North County Angels - network of experienced entrepreneurs who consider and make investments in early-stage projects and companies located in the northeastern United States
 - Working Lands Enterprise Initiative - makes essential, catalytic investments in critical leverage points of the Vermont farm and forest economy, from individual enterprises to industry sectors
- **Patents** - Patents per 1,000 residents - In 2012, on this indicator Vermont ranked 4th highest in the nation. Vermont has particular strengths in technologies for computer and semiconductor related technologies related to the IBM plant in Chittenden County. However, this also indicates that patent performance is not diffused throughout state. It should also be noted that certain industries including professional services, food and agriculture, and information technology (non-hardware) are not typically patent intense. These are all strengths in Vermont and therefore patents do not tell the full-story of innovation capacity and performance in the State.
- **Venture Capital** – Recent (2005 to 2010) venture capital received in alternative energy, ecommerce, and media. While venture capital is only one form of growth financing (debt, friends and family, grants, angel investment, and sweat equity are others) and not the most common, this shows that venture capital is not out of reach for Vermont companies that want to take this route. This is positive given that venture capital is concentrated in only a handful of areas nation-wide.
- **Small Business Innovation Research SBIR and Small Business Technology Transfer (STTR) Funding** – When SBIR/STTR is expressed as a percent of gross state product, between 2003 and 2010 Vermont has outperformed the U.S. on this measure and in 2010 ranked 6th highest nationally. This indicates

capacity of small research-intensive Vermont companies to access R&D dollars to support innovation and new product/process development.

- **Academic R&D** - when measured as a percent of gross state product, Vermont outperforms the U.S. as a whole and performs at a level similar to New England as a whole. In 2010 Vermont ranked 11th on this indicator.
- **Science, Technology, Engineering and Mathematics (STEM) Incentive Program** – This is a fairly unique program across the nation. This program pays eligible new hires in STEM related occupations at Vermont companies \$1,500 cash annually for each year they are employed, up to five years. The incentive goes directly to the individual. The program is administered by the Vermont Agency of Commerce & Community Development.

Innovation and Entrepreneurship Weaknesses

- **Total R&D Performed** - When measured as a percent of gross state product and compared to other states, Vermont performs at a lower level than the United States and considerably lower than New England. In 2010 Vermont ranked 29th.
- **Industry R&D Performed** - Taking into consideration gross state product, Vermont industry R&D performance is at a level that is lower than the U.S. and New England. While industry performed R&D is the largest source of R&D in Vermont and the U.S. as whole, relative to the rest of the U.S. and New England, Vermont is less reliant on industry.
- **Low Percent of Academic R&D Funded by Industry** - Industry in Vermont funds only 1.5% of R&D performed at Vermont's universities and colleges, a level that is lower than the U.S. and New England.
- **Academic R&D Mismatch With Industry** – Vermont's academic R&D is heavily skewed toward life science, and underrepresented by environmental sciences, engineering, and physical sciences (including earth sciences, chemistry, physics). In terms of field of study of the academic R&D performed, this is driven by R&D performed by the University of Vermont and related to having a medical school. This however creates a mismatch with statewide industry strengths. Overall, Vermont does not have employment concentrations in life science industries that perform and commercialize R&D. Additionally, Vermont academic R&D is less concentrated in environmental and physical sciences, fields which have higher employment concentrations in throughout the state.
- **Innovation and R&D Dispersion** - Innovation assets and performance centered around Chittenden County/Burlington Region (patents, R&D) and not dispersed throughout state.
- Vermont has several programs to support Innovation, R&D, commercialization, start-ups and acceleration including: Alternative Fuel and Advanced Vehicle R&D Tax Credit; Angel Venture Investment Capital Gain Deferral; Research and Development Tax Credit/Sustainable Technology

R&D Tax Credit; Science, Technology, Engineering and Mathematics (STEM) Incentive; Technology Loan Program (TLP); Vermont Center for Emerging Technologies; Vermont Procurement Technical Assistance Center; Vermont's Early Stage Venture Capital Fund; Vermont Manufacturing Extension Center; Peer to Peer Collaborative; Vermont Ag Development Program. However it could benefit from additional programs to provide immediate grant funding for innovation, R&D and commercialization in its technology-intensive sectors that increase partnerships between tech-intensive industries and research institutions. Examples in other states of such programs include programs offered through the [Maine Technology Institute](#), [Start-up NY](#), [Ben Franklin Partnership \(PA\)](#), [Utah Science Technology and Research Initiative \(USTAR\)](#), [Ohio Third Frontier](#), and [Innovate Rhode Island Fund](#). These programs provide funding for activities that are typically in early stages of development and precede readiness for capital and venture funding. They also help build capacity for industry-driven R&D at research institutions including colleges and universities.

Summary of Competitive Strengths and Weaknesses

This section provides a summary of the many strengths and weaknesses of Vermont as an economic development “product” noted in the more detailed assessment provided in this report to aid the reader in seeing them in a consolidated fashion.

Summary of Strengths

Location and Access to Market Strengths

- Proximity to major Boston – Vermont – Washington, DC economic corridor that contains a major portion of the country's population, businesses, and capital
- Proximity to many of the major Canadian markets
- One day highway-shipping to many U.S. and Canadian metropolitan areas
- Reasonable access to European or other international markets through airports in New York City or Boston or various size ports along the northeast coast

Transportation Strengths

- Four major interstates run throughout the state facilitating product movement, distribution access, and workforce commutation:
- There is also a network of U.S. highways, state, and county roads that facilitate reasonably convenient travel throughout the state and northeast, as well as providing linkages to eastern Canada.
- There are 16 airports throughout Vermont. Facilities range from the Burlington International Airport to smaller private and municipal general aviation facilities.
- Burlington International Airport (BTV) is served by Allegiant Air, Delta, JetBlue, Porter (providing service to Toronto City), United and US Airways. Primarily providing service to major hubs such as Chicago, Philadelphia, NYC, and DC. Burlington International Airport is currently served by six airlines (Continental, Delta, Jet Blue, Porter, United and USAirways) with direct flights to 12 destinations

(Atlanta, Chicago, Cleveland, Detroit, Newark, Vermont-JFK, Vermont-LGA, Orlando, Philadelphia, Toronto (seasonally by Porter Airlines), Washington-DCA and Washington-IAD). Depending on the day of the week, there are between 27 and 40 daily departures and arrivals, with all weekdays having 40. Current carrying capacity is approximately 2,500 seats per day, down from a high of about 3,400 seats per day in 2004-2006. This cutback included two very popular flights a day to Atlanta because the flight segments were judged too long by the airline (Delta).

- Both major commercial parcel carriers (UPS Airlines and FedEx Express) fly into BTV, providing service for much of northern Vermont. UPS uses Wiggins Airlines to ferry packages between Burlington and larger cargo hubs. FedEx Express in fact operates the largest aircraft to frequently utilize Burlington International Airport. Cargo is flown in from the company's "Super-hub" in Memphis, Tennessee aboard medium ranged Boeing 757-200 aircraft. Upon arriving from Memphis some of the cargo is unloaded from the 757 and distributed to smaller propeller driven Cessna 208Bs operated by Wiggins Airways and flown to closer destinations such as Portland, ME and Syracuse, NY. Royal Air Freight mainly flies small turbo-prop King Air and Embraer type aircraft to and from Burlington, Pontiac, and the cargo carriers HQ at Newark Liberty International Airport. UPS flies exclusive connection flights with aircraft from Wiggins Airways to airports in the Northeast with Cessna 208s and small jet aircraft.
- Portions of Vermont are also easily accessible to Bradley International Airport in Connecticut via I-91; Manchester-Boston Regional Airport via I-89 or I-93; NS Logan International Airport via I-89/I-93; and Albany International Airport via US 7/New York Route 7.
- The Vermonter Amtrak service runs from St. Albans to NYC and on to D.C. with 10 stops in Vermont. The Ethan Allan Amtrak service runs from Rutland to Albany, NY and on to New York City's Penn Station.
- There are several rail freight lines operating in Vermont.
- Scenic byways exist throughout the state to attract tourists and support the image of Vermont.
- Ten public transit providers throughout the state provide alternatives to personal automobile transportation. Bus and train ridership in Vermont has increased in recent years. High cost of gasoline and car ownership can also limit employment for residents in rural parts of the state especially for employees at low-income jobs.

Utilities Strengths

- Supported by a \$69 million Smart Grid Investment Grant by the U.S. Department of Energy, the Vermont electric utilities are making substantial capital investments in smart grid infrastructure that leverage and are leveraged by investments in broadband infrastructure. Smart grid is where electricity meets telecommunications and has enormous potential benefits for Vermont workers and residents through "smart meters". Allow users to see their detailed energy use, the timing of that use, how much they are consuming, and its cost. It also provides outage information to the utilities providing the service. The smart grid was funded through a combination of federal funds and matching utility funds.
- Vermont has numerous authorized municipal and co-op generation and distribution utilities and transmission companies, and one, Green Mountain Power Company that is a publicly traded

company. This diversity of companies offers electric power users the potential opportunity to select locations for their operations that best meet their electric power needs. Table 3 lists the state's authorized companies.

- Vermont's lone natural gas company announced a price reduction of 2.1% in February 2014 for business and residential customers. The cut is a result of lower Canadian tolls from TransCanada. This is the 17th rate reduction the company has implemented since 2008.
- The Public Service Board (PSB) in December approved Vermont Gas Systems' proposal to build a 43-mile, \$86.6 million natural gas pipeline that would connect Colchester to Middlebury and Vergennes in Addison County. Vermont Gas has applied to the PSB for a second phase of the pipeline expansion, which would connect Middlebury to the International Paper mill in Ticonderoga, N.Y. This second phase, planned for 2015, would move the utility closer to completing its final proposed extension to service Rutland.

Telecommunication Strengths

- The Vermont Telecommunications Authority has a number of dark fiber projects in progress. They are designed to support infrastructure needed by both cellular carriers and broadband Internet service providers in some of the most rural areas of Vermont.
- Projects are currently focused in parts of five counties. Two are under construction: a route from Newport to Hardwick in Orleans and Caledonia counties, and a route in Orange and Windsor Counties. The VTA is also engaged in projects in Essex County. These comprise two projects commonly known as the Orange County Fiber Connector (OCFC) and the Northeast Kingdom (NEK) Fiber Network.
- The state is advancing its technology infrastructure and usage.
- In January 2011, Governor Peter Shumlin launched a specific initiative to achieve statewide connectivity called ConnectVT by the end of 2013. Telecommunications infrastructure and services will support the state's economic viability with enhanced technological competitiveness, and greater efficiency and effectiveness in the delivery of services including education, healthcare and energy.
- At the end of 2013 99% of the state had broadband service. Only 3,000 homes still lacked high-speed Internet service at that time. However, solutions had been identified for most of these homes, although connections dates are not certain.
- Vermont's broadband strategy is focused on three points:
 - Concentrating high-speed service to "anchor" institutions, such as hospitals, libraries, public offices and major businesses
 - Have a "wireless" canopy that helps reach rural areas of the state by circumventing phone, cable and fiber optic networks
 - Coordinating broadband technology with a "smart-grid: infrastructure
- The state website BroadbandVT.org provides users with an interactive map, allowing them to find service options, a "speed test" of broadband service, and an online form to report a non-served address.
- Burlington is reported to have city-wide access to internet speeds 100 times faster than the national average.

Workforce Strengths

- The state's employment grew between 2000 and 2012.
- The state has a higher percentage of residents with at least a bachelors degree than the national average.
- The state is forecast to see an increase in its population aged 18-34 years old over the next five years that almost matches the national average. This age cohort is the core of an area's young workforce.
- The state is working to address the issues that adversely affect the difficulties in talent recruitment from other states, including promotion of the state's assets.
- Between 2002 and 2012 in Vermont there was an employment increase of 28.4%, or 5,772 jobs, in the professional and business services sector, and a 22.8% (10,668) gain in the number of education and health services jobs.
- In 2012 Vermont was the eighth highest state adding new residents, at 4.2% of the base population.
- Vermont ranked second in 2012 in the level of educational attainment of new residents, with 56.2% having a bachelor's degree. Interestingly, other New England states ranked high, Massachusetts ranked 1st with 56.3%, New Hampshire ranked 9th at 50.2%, and Maine ranked 10th at 49.7%.
- Vermont ranked first in 2012 among all states for the percentage of new residents with graduate and professional degrees.
- The state's attractive physical and social environments are an attraction for new residents.
- The median age of the in-migrants in 2012 was the lowest of all the states, at 23.4 years.
- A new website (<http://vermont.internships.com/join>) has been created to help match state employers with college students looking for internships in an effort to keep students in the state after graduation, especially those that are tech-educated.
- Tech internship program, created in 2010, helped place more than 60 college students with Vermont tech companies. Internships make students aware of the great employment opportunities in Vermont, and provide employers the chance to recruit their future workforce.
- The average wage at a software company in VT is \$65,000 annually, compared to \$51,841 for the median household income in VT in 2012.
- For every software developer hired, tech companies add an additional 6 nontechnical supporting positions in fields such as sales, marketing, support, administration and accounting.
- The Vermont Tech Jam, an annual job fair and tech expo created in 2008. The Tech Jam is an annual career fair/tech expo showcasing the state's most innovative tech and bioscience companies. More than 1,500 job seekers, students and tech professionals from Vermont and elsewhere came to the 2013 event held on October 18th and 19th in Burlington. 82 companies and organizations exhibiting at the Jam. The Vermont Tech Jam was started in 2008 by Seven Days, the Vermont Technology Alliance (formerly the Vermont Software Developers' Alliance) and a coalition of public and private sector partners that wanted to increase the visibility of the state's technology sector.
- Vermont's STEM (Science, Technology, Engineering and Mathematics) incentive program is working successfully and should be continued and expanded to promote competitive hiring in science-related and IT-related fields, according to the state's Committee on Enhancing Vermont's Software

and Information Technology Economy. The current STEM incentive is scheduled to sunset, requiring a new appropriation to continue.

Education Strengths

- The U.S. Department of Education's National Assessment of Educational Progress (NAEP) shows Vermont's 4th and 8th graders are performing better than the national average in the three subject areas for which test data are available: mathematics, reading and science. NAEP indicates the percentage of students at each grade level that perform at a basic, above proficient and advanced levels in these subject areas.
- NAEP 4th Grade Mathematics Performance: Between 2003 and 2013, 85% to 87% of Vermont's 4th graders performed at or above the basic level in mathematics, and since 2007 an average of 50% of students performed at the "above proficient" level, all of which were above the U.S. average. In 2013, 11% of Vermont's students performed at an advanced level, also above the national average.
- NAEP 8th Grade Mathematics Performance: Between 2007 and 2013, 81% to 84% of Vermont's 8th graders performed at or above the basic level in mathematics, and since 2000 an increasing percentage of students have been performing at the "above proficient" level. Since 2003 the state's 8th graders have scored better than the national average at the basic, above proficient and advanced levels.
- NAEP 4th Grade Reading Performance: Between 2002 and 2013, 73% to 75% of Vermont's 4th graders performed at or above the basic level in reading. In 2009 and 2013 75% of students performed at the basic level. Since 2005 the state's 4th graders have achieved better than the national average at the basic, above proficient and advanced levels.
- NAEP 8th Grade Reading Performance: Between 2002 and 2013, 79% to 84% of Vermont's 8th graders performed at or above the basic level in reading, and since 2011 44%-45% of the state's students scored above the proficient level. Since 2002 the state's 8th graders scored above the national average.
- NAEP 8th Grade Science Performance: Achievement scores are only available for 2011 for the 8th grade. In that year, 80% of 8th grade students scored at or above the basic level, while 43% scored above proficient. Both achievement levels were above the national average.
- Education Week (edweek.org) has issued annual Quality Counts Reports since 1996 that track key education indicators for each of the 50 states and grades the states on their performance and outcomes, using the research gathered by its Research Center, against each other and a national average. Table P shows summarizing the findings presented in the 2014 Quality Counts report. The report shows the state performed better than the national average in three categories: Chance for Success, K-12 Achievement, and School Finance Analysis, ranking nationally 7th, 5th and 6th respectively.
- There are 23 colleges and universities in Vermont, including one research university, five master's universities, an art school, a culinary school, a law school, and 14 undergraduate associates and baccalaureate colleges. The University of Vermont is the state's largest school and its flagship public university. The other five public institutions are organized as the Vermont State Colleges system.

- There are four institutions chartered in other states that also offer degree programs at locations in Vermont.

Business Climate Strengths

- Vermont ranks very well nationally on business climate indices that are broad and go beyond taxes and regulations, including the Beacon Hill Institute State Competitiveness Report where it ranked 19th best in the nation in 2012 and the Corporation for Enterprise Development Assets & Opportunity Scorecard where it ranked best in the nation for 2013. Vermont's high rankings are driven by a variety of factors related to the safety, health, and well being of residents and the environment.

Taxes Strengths

- Low to moderate tax rates for new call and distribution centers
- Low sales tax burden – 13th lowest nationally according to Tax Foundation

Support Services Strengths

- Well-integrated network of entrepreneurship assistance providers, including some specialized for technology, e-commerce, manufacturing, agribusiness, women's business, and support for low-income entrepreneurs
- Many organizations dedicated to helping businesses grow with a variety of non-financial services such as sector organizations (eg. AIV), RDCs, chambers, and others
- Direct involvement in business support by Vermont's Congressional delegation
- The state ED website (www.thinkvermont.com) serves as a one-stop portal to most entrepreneurial support services
- Regional business support providers are frequently co-located for user convenience
- Active peer support networks such as Vermont Technology Council, Peer to Peer Collaborative, and Vermont Businesses for Social Responsibility
- Targeted support programs available statewide through Community Action Agencies for low-income/disadvantaged entrepreneurs starting income-substitution businesses
- Vermont continues to excel as an entrepreneurial "ecosystem," now ranking behind only Montana in the 2013 Kauffman Index of Entrepreneurial Activity (up from 8th)

Available Sites and Buildings Strengths

- ACCD Commercial/Industrial Site Locator easy to find and navigate
- Good supply of available buildings, particularly for small and mid-size businesses
- Good mix of properties for sale and lease
- Active Brownfields Revitalization Fund (BRF) Loan Program administered by ACCD with loans made by VEDA

Financing and Incentives Strengths

- Vermont has a wide-array of entities and programs that provide incentives and support for business start-ups, retention, attraction, and expansion. These include: Alternative Fuel and Advanced Vehicle R&D Tax Credit; Angel Venture Investment Capital Gain Deferral; Research and Development Tax Credit/Sustainable Technology R&D Tax Credit; Science, Technology, Engineering and Mathematics (STEM) Incentive; Technology Loan Program (TLP); Vermont Center for Emerging Technologies; Vermont Procurement Technical Assistance Center; Vermont's Early Stage Venture Capital Fund; Vermont Manufacturing Extension Center; Peer to Peer Collaborative; Vermont Ag Development Program. Among the entities managing these projects specifically for economic and business development are the Vermont Agency of Commerce & Community Development and the Vermont Economic Development Authority.
- The Vermont Employment Growth Incentive (VEGI) provides a direct cash payment, based on the revenue return generated to the State through investment in jobs and/or capital. VEGI was recognized by Good Jobs First as the best incentive program in the country in 2011 due to its performance standards and requirements related to wages and health benefits.
- Vermont has programs with strong alignment with Working Lands Initiatives and support for farms and food systems – These include:
 - Working Lands Enterprise Initiative
 - Vermont Ag Development Program
 - Vermont Sustainable Jobs Fund
 - Vermont Farm Viability Program
 - Vermont Agricultural Credit Corporation
- Vermont has programs aimed specifically at workforce development – Workforce development is a major issue for existing and potential business. Vermont has versatile programs through its Vermont Training Program and a targeted program to directly help workers through the Science, Technology, Engineering and Mathematics Incentive.
- Vermont has programs to support entrepreneurship and start-ups – Vermont has multiple programs to assist entrepreneurs and start-ups across multiple sectors.
 - Vermont Center for Emerging Technologies - Incubation facilities, services, and mentoring for technology start-ups in partnership with universities and colleges
 - Vermont Manufacturing Extension Center - Innovation Engineering Management System
 - Vermont Seed Capital Fund – early stage capital for technology companies
 - Angel Venture Investment Capital Gain Deferral – tax incentive for angel investment
 - Vermont Small Business Development Center – technical support for small business
 - Peer to Peer Collaborative – peer advice
 - Clean Energy Development Fund – funds for renewable energy projects and ventures
 - Vermont Sustainable Jobs Fund – early stage funding to support initiatives related to sustainability
- Vermont has programs to support renewable energy initiatives – Renewable energy is a targeted cluster in Vermont and the State has several funding programs to support businesses and initiatives within the cluster, most notably the Clean Energy Development Fund. This Fund is designed to increase development and deployment of cost-effective and environmentally sustainable electric power resources. Other programs include the Alternative Fuel and Advanced Vehicle R&D Tax

Credit, Commercial Energy Loan Program, and Energy Loan Guarantee Program, and small Business Energy Loan Program.

- EB-5 Program - Vermont has become a national leader in the use of the EB-5 program to increase investment. This program was successfully used by Jay Peak and is being used by others including Sugarbush. The Vermont EB5 Regional Center's Unique Advantage is best summarized by the following from the Regional Center's Website:

The Vermont EB5 Regional Center is the only USCIS Designated Regional Center in the United States owned, controlled and supervised directly by a state government. As the only state run, statewide EB-5 regional center, Vermont offers businesses unique advantages. The Vermont EB5 Regional Center provides the oversight and infrastructure required by USCIS allowing businesses located in Vermont to access the EB-5 program without added cost or administrative burden. The Vermont EB5 Regional Center is operated by Vermont's Agency of Commerce and Community Development (ACCD). Businesses who are approved for an EB-5 project under the Vermont EB5 Regional Center benefit from the added credibility that a state run EB-5 regional center provides. Investors are ensured that Vermont EB5 Regional Center projects are managed by an independent and qualified authority. In addition, nearly the entire state qualifies under the EB-5 regional center program, which grants investors the same visa green card benefit as the standard EB-5 program, but requires only half the minimum investment and has lesser job creation requirements.

Public Services and Facilities Strengths

- Vermont in 2012 was the 2nd safest state in the nation in terms of homicides and other violent crimes
- Vermont's overall crime rate continues to be substantially lower than the nation's
- While most of Vermont's 235 municipal fire departments are volunteer-staffed, the majority of Vermont residents are served by professional, paid fire departments
- VT has a network of emergency response volunteers (VERV) which includes medical professionals and regular citizens
- Vermont fire death rates since 2000 are lower than national average
- All but 18 towns are served by a Solid Waste Management District (SWMD) which has a comprehensive plan to manage all aspects of solid waste
- Vermont has a specific program to help small businesses comply with solid waste disposal requirements
- Vermont's Act 148 "Universal Recycling" requirements may provide 'green business' opportunities
- Vermont has two Level I trauma centers within reach of a majority of its population (one is in NH just across the state border)
- Vermont's commitment to primary health care has resulted in there being a very small number of towns (12 of 251) designated as Primary Care Health Professional Shortage Areas (HPSAs)
- Most Vermont towns do not have their own police forces and rely on the State Police Force, which has only 327 officers

- Nonviolent property crimes (burglary, larceny) are on an increase as of 2011-12 after 2 decades of decline
- Vermont has seen drastic increases in its incarceration rates and in the need for additional Corrections staffing and funding
- Many Vermont municipal sewage treatment systems are aging and subject to leak and overflow, with limited funding for repairs and replacement
- Vermont has only one major and two small landfills active and open
- Vermont has a significant number of rural towns classified as Medically Underserved Areas, particularly near Canadian border and in isolated rural pockets

Quality of Life Strengths

- Vermont ranks high in quality of life issues in many studies and surveys
- Vermonters take public participation seriously which has been a tradition for many years. They take an active role in looking ahead with others in conversations and dialogues about the direction of the state recognizing the limits, but willing to address regional, national and global changes that impact quality of life.
- An excellent description of the perception of the collective quality of life for the people of Vermont was articulated in the Council of the Future of Vermont 2009 report *Imagining Vermont: Values and Vision for the Future*. The collective quality of life is stated in values of community, environment, hard work, independence, privacy, small scale and their state.
- Vermonters are committed to the “Vermont way and practice of the state’s motto, “Freedom and Unity.”
- Vermonters have a strong sense of identification with their state.
- Accessibility to nature and the connection to the land is an identifying element for Vermonters with stewardship of natural, cultural, and historical resources.
- The public good is advanced by the common purpose Vermonters share.
- Vermonters are active in preserving and enhancing the natural resources of clean water and air, its mix of forest and open land, and the availability of abundant areas of public and private land open to public access.
- The fragility of the state that can be harmed by energy, economic, or ecological problems that originate far beyond the borders of the state.
- Others moving into the state do not necessarily share the same values which causes conflict.
- There is a continuing tension between Vermonters’ desire for a thriving economy with good jobs and modern amenities and their desire for the preservation of Vermont’s traditional working landscape and small towns.
- The costs of housing, health care, energy, transportation, and education are central challenges affecting many Vermont families and have an impact on the quality of life.
- Although Vermont is one of the healthiest states, there are a complex array of social, medical, and wellness issues that are difficult to provide uniformly in a rural state and the costs and availability of health care are major concerns.
- People at or below poverty level and having difficulty do not have the “same quality of life” as others earning a better wage.

- A special strength for Vermont that relates to quality of life and an important economic sector is its national leadership in Farm to Plate (F2P) initiatives and working landscape programs. The results to date from F2P initiatives indicate it is a process that is yielding positive results for building a healthy food system and impacting Vermont's economy. According to data the F2P team has been tracking, there have been 2,162 net new jobs and 199 net new establishments created in the food system since F2P started in 2010 (many in manufacturing)

Workforce Housing Strengths

- Vermont has a policy commitment to affordable housing development at the state level via the Vermont Housing & Conservation Board, Vermont Housing Finance Agency, Housing VT, and others
- The state has a network of experienced housing development/management nonprofits committed to affordable housing
- Use of New Market Tax Credits is creating some new housing units in mixed-use developments in existing community centers
- Every 25 modest single-family homes constructed in VT could add or support 61 jobs, \$2 million in wages/salaries and \$6.3 million in business income.

Vermont's Image, Visibility and Brand Strengths

- State government at various levels has focused on the Vermont Brand and devoted resources to it on an ongoing basis.
- There were common words identified among residents, visitors and purchasers of Vermont products (Vermont Stakeholders) in 2003;*these words and message are still relevant.*
- The brand personality and brand attributes contain words that realistically match the message that is to be conveyed.
- Additional words have been added to target specific workers with a skill set (creative, skilled professionals)
- Additional words have been added to target families - Vermont is a good place to raise a family.
- The number and characteristics of the words are descriptive enough to allow flexibility for the various agencies in their marketing efforts, yet few enough so that the message is not being diluted.
- There is a good balance between people characteristics and the physical location.
- The homes, farms and historic sites in Vermont appear to be more intact than in other areas giving the impression of authenticity and being genuine. There appears to be less vinyl siding which is made from a petroleum product –less sustainability.
- The perceptions of the image of Vermont are generally positive.
- The Vermont Brand lines up with the citizens' view of themselves.
- The Vermont Brand provides for a distinct sense of place.
- The Vermont Brand is unique.
- The Vermont Brand is established with more recognition for it each year.

- Legislation creating the position of Chief Marketing Officer with specific charges has encouraged the Vermont State agencies work together more closely, but appears not to be working as well as it could.
- The Vermont Brand brings tourists and new residents.
- The Vermont Brand provides advantages to Vermont businesses.
- State government has continually reflected and reinforced the Vermont brand resulting in differentiating itself from other states.
- Vermont has both in-state and out-of-state recognition for its products.
- The Vermont logos are highly recognizable.
- The population of Vermont is small enough to have had nearly complete exposure to the Vermont Brand.
- It appears that locals, visitors and purchasers of Vermont products will continue to have a sustained sense of continuity with the Vermont Brand.

Innovation and Entrepreneurship Strengths

- **Entrepreneurial Climate - Business Formation** – Since 2004 Vermont has consistently ranked better on this measure than the U.S. or New England and in 2008 Vermont ranked 8th best among all states.
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- Vermont has many programs to support entrepreneurship and start-ups – Vermont has a multiple programs to assist entrepreneurs and start-ups across multiple sectors.
- **Patents** - Patents per 1,000 residents - In 2012, on this indicator Vermont ranked 4th highest in the nation. Vermont has particular strengths in technologies for computer and semiconductor related technologies related to the IBM plant in Chittenden County. However, this also indicates that patent performance is not diffused throughout state. It should also be noted that certain industries including professional services, food and agriculture, and information technology (non-hardware) are not typically patent intense. These are all strengths in Vermont and therefore patents do not tell the full-story of innovation capacity and performance in the State.
- **Venture Capital** – Recent (2005 to 2010) venture capital received in alternative energy, ecommerce, and media. While venture capital is only one form of growth financing (debt, friends and family, grants, angel investment, and sweat equity are others) and not the most common, this shows that venture capital is not out of reach for Vermont companies that want to take this route. This is positive given that venture capital is concentrated in only a handful of areas nation-wide.
- **Small Business Innovation Research SBIR and Small Business Technology Transfer (STTR) Funding** – When SBIR/STTR is expressed as a percent of gross state product, between 2003 and 2010 Vermont has outperformed the U.S. on this measure and in 2010 ranked 6th highest nationally. This indicates capacity of small research-intensive Vermont companies to access R&D dollars to support innovation and new product/process development.

- **Academic R&D** - when measured as a percent of gross state product, Vermont outperforms the U.S. as a whole and performs at a level similar to New England as a whole. In 2010 Vermont ranked 11th on this indicator.
- **Science, Technology, Engineering and Mathematics (STEM) Incentive Program** – This is a fairly unique program across the nation. This program pays eligible new hires in STEM related occupations at Vermont companies \$1,500 cash annually for each year they are employed, up to five years. The incentive goes directly to the individual. The program is administered by the Vermont Agency of Commerce & Community Development.

Summary of Weaknesses

Location and Access to Market Weaknesses

- Lack of passenger air service to Boston
- Distance from much of the country including the major growth areas in the south and west
- “Can’t get there from here” perception can make business attraction difficult.
- Some targeted industries (such as food product manufacturing and agribusiness) may find parts of the state too far away from major markets to be profitable when considering shelf life and transportation time.

Transportation Weaknesses

- There has been significant deferred maintenance on aging transportation infrastructure, resulting in structural deficiencies throughout the transportation system can increase wear and tear on vehicles and create cost for companies.
- Some parts of the state are far removed from transportation infrastructure, thereby limiting business attraction and expansion efforts.
- Other than I-89 between White River Junction and Burlington, Vermont lacks and high-speed east-west highways.
- The majority of US 7 between population centers in Burlington and Bennington is not high-speed for the purposes of supporting economic development purposes.
- Access to airports meeting standards for nighttime flying is critical for “just in time” delivery but it is not available at all airport locations in the state.
- Climate change and extreme weather can have an impact on transportation services and reliability throughout the state. There was significant impact of Tropical Storm Irene on transportation infrastructure including damage to 500 miles of state highways and 200 bridges (substantially all repaired within two months). New England Central Railroad reported over 65 stretches of track as badly damaged (but they were reopened within three weeks).
- The lack of, or limited availability of public transportation in the more rural parts of the state can limit workforce participation. The high cost of gasoline and car ownership can also limit employment for residents in rural parts of the state who have to travel long distances, especially for employees with low-wage jobs.

Utilities Weaknesses

- There has been significant deferred maintenance on aging water and wastewater in the state.
- There currently is one natural gas company authorized to operate in Vermont -- Vermont Gas Systems, Inc. Service is provided in the following locations in Chittenden and Franklin Counties, in the northwest corner of the state.
- Vermont's average commercial and industrial electric rates among public utilities are significantly higher than the national average,

Telecommunications Weaknesses

- The state's definition of "high-speed" Internet service needs to conform to the FCC's definition of 4 Mbps upload and 1 Mbps download. Some portions of the state may have service based on an older definition of 768 Kbps/200Kbps. load and 200Kbps download.
- The state's 2011 Broadband Telecommunications Plan established a goal of broadband pricing that is on par with national urban areas at the end of 2013. No clear information is available indicating whether this goal was achieved.
- The *Vermont Telecommunications Plan 2011: Broadband identified the following weaknesses:*
 - There are overarching economic challenges to the business case for sustainable broadband infrastructure in Vermont and strategies are necessary to overcome these challenges. On the demand side, sparse population and slow adoption in newly served areas provide lower incentive for private investment. On the supply side, Vermont's topography and the high costs of backhaul and tower construction are impediments to service deployment.
 - Because the mobile communications industry is lightly regulated, the types of technologies deployed remain largely up to the vendors. Insofar as the state supports tower construction and affordable fiber connectivity, it will be empowered to identify new locations for service and to work with vendors to achieve agreeable terms.
 - In the past, overarching economic challenges to the business case for sustainable broadband infrastructure in Vermont left many Vermont organizations with little or no choice of providers for enterprise-level broadband and pricing was prohibitive. In fact, pricing models historically encouraged network managers to 'slim down' applications and network use in order to afford minimal bandwidth from providers that operated within a model of scarcity. However, in the near future, where large-capacity fiber connections are available and priced so as not to discourage additional use of that abundant capacity, there will be a qualitative difference in the kinds of applications developed.
 - As increasing types of devices connect and users find new means of connecting to one another, demand for upload speed increases.

Workforce Weaknesses

- Vermont is a rural state with a small population. The population density is 67.16 residents per square mile, ranking the state as the 30th most densely populated state.
- The state's average unemployment rate is very low, compared to the national average, which may deter site selectors from choosing the state in favor of areas with higher rates, on the premise that the state's labor market is saturated.

- As reported in many of the regional meetings, many employers in the state report difficulty recruiting individuals from outside the state due to a shortage of alternative employment opportunities and satisfactory employment opportunities for spouses. This is due in part to the state's relatively small population and employer base.
- A small population results in a small labor force.
- The state's workforce has remained relatively static since 2002, with a growth rate of 1.4%. (See the Economic Base Report).
- The state's civilian labor force grew between 2000 and 2012, but at a slower rate than the national average.
- The state's population is growing at a rate well below the national average.
- The state has an older population than the national average, as measured by the median age.
- There has been a 21.6% (8,789) decline in the number of manufacturing jobs since 2002. This decline is important because of the high ripple effect generated by manufacturing.
- There also has been a 21.6% decline in manufacturing employment nationwide.
- The state's 2012 in-migrants registered the lowest median income in 2012 at \$12,679, possibly explained by a high percentage of college-aged individuals among the new residents.
- There is an influx of college students from other parts of the country (or world) who stay in Vermont after they graduate).
- Many of the new economic/social opportunities require much higher levels of education, consequently many people who do not possess the necessary skills are left behind. (regional meeting compilation)
- Many graduates from state colleges are attracted to job opportunities in other states and move to those states after graduation.
- Many of the graduating students are originally from out-of-state and are returning to their home state or region. (WDG interviews)
- The state has a high cost of living which is an obstacle for attracting new residents and keeping graduating students. (Burlington regional meeting)
- Housing availability and affordability are a problem for most regions, affecting the ability to recruit and keep talent. (Burlington regional meeting)
- Shortage of affordable housing affects low-income individuals and young professionals. (Dynamic SWOT)
- The largest occupational sectors in Vermont are generally low to modest paying, and many require only a short term on-the-job training. (Economic Base Report)
- Occupations with the greatest forecasted numeric growth require a range of educational preparation from modest to an Associate's Degree.

Education Weaknesses

- *Education Week* (edweek.org) has issued annual Quality Counts Reports since 1996 that track key education indicators for each of the 50 states and grades the states on their performance and outcomes, using the research gathered by its Research Center, against each other and a national average. Table P shows summarizing the findings presented in the 2014 Quality Counts report. The

report shows the state performed worse than the national average in three categories: Transitions and Alignment, Standards, Assessment, and Accountability, and Efforts to Improve Teaching.

- One report reviewed for this project, *The Green Economy and Environmental Enterprises in VT: Opportunities for the 21st Century*, by Glenn McRae, Heidi Klein, Snelling Center for Government, reports a disconnect between the skills of graduates from Vermont high schools and the needs of companies. Some specialized training is needed for key positions needed by industry. Specifically, there is a need to retool the curricula at many high schools to address the needs of green employers.
- The Committee on Enhancing Vermont's Software and Information Technology Economy, in its January 2013 report, indicated Vermont's K–12 education system does not provide adequate opportunities for students to learn critical skills that are prerequisites for college level study and career preparation in the fields of computer science and hardware/software engineering.
- The Vermont Technology Alliance (VTTA), Vermont Technology Council (VTC), and Vermont Bioscience Alliance report technology companies need a continuous supply of educated employees. The VTTA and the VTC would like to see increased communication between Vermont's tech companies and its high schools and colleges to assure skill needs of employers are met. The state's new science, technology, engineering and math initiative, which offers a financial incentive for recent graduates who accept STEM related jobs at Vermont companies is a step in the right direction.
 - The VTC and VTTA members want to see an increased focus, not just on science and math, but on graduating students who can write and reason, and work collaboratively to solve problems. There also is a need for employees to be curious and communicative problem solvers.
- The Vermont Technology Council reports a need to:
 - Increase the number and diversity of students who will pursue STEM -related careers and advance beyond K-12 to higher education.
 - Create a mechanism for graduates already in or who have left the workforce to re-train in STEM disciplines.
 - Maximize the opportunities for STEM students to complete internships and /or cooperative programs with technology-based companies; career path guidance increases the probability of working in Vermont
 - Promote the availability of funding to support early-stage science and technology-based companies including, but not limited to, expansion of support for VEDA and the Vermont Seed Capital fund.
- The Vermont Advanced Manufacturing Partnership, in its 2013 report identified a need to:
 - Develop and implement an education model (K-16) to adopt competency-based math standards for students and teachers that can support advanced manufacturing skills development based on models developed by Boston University and the University of Michigan no later than 2014.
 - Develop and implement entrepreneurship curricula in Vermont schools and state colleges such as Champlain College's "BYOBiz" program. Support and build on the successes and investments of the Vermont Manufacturing Extension Center (VMEC) and its federal partner NIST MEP, to teach and encourage the use of "Innovation Engineering" as a proven system to accelerate the creation and commercialization of meaningfully unique ideas while working with higher education in

Vermont to develop a post-secondary curriculum modeled after the Innovation Engineering degree program at the University of Maine.

- Restore full funding to the Vermont Training Program in the Agency of Commerce and Community Development and create a special fund targeted to upgrading the math skills of Vermont workers.
- Create an “Innovation Ecosystem” to sustain a culture of ongoing practical research and development by developing a non-profit Vermont Advanced Manufacturing Innovation Center modeled after the Nanotech Center in Vermont and the Dartmouth Regional Technical Center (DRTC) leveraging the resources of the University of Vermont, Vermont Technical College and the other Vermont state colleges, Norwich University and others as appropriate.

Business Climate Weaknesses

- Vermont ranks poorly nationally on business climate indices that focus solely on direct costs of taxes and regulation including the Tax Foundation State Business Tax Climate index where it ranks 45th best in the nation in 2013 and the Small Business Entrepreneurship Council Small Business Survival Index where it ranks 48th best in the nation for 2013.
- Vermont’s Act 250 is perceived by the economic development community to be overly restrictive, time-consuming, and costly, and therefore impeding economic growth.

Taxes Weaknesses

- High overall state and local tax burden - 10.10% according to the Tax Foundation, ranking the state 13th highest in the country. Nationally the burden is 9.9%.

Support Services Weaknesses

- While Vermont has a plethora of organizations, agencies and programs devoted to providing technical assistance for businesses and other organizations, it lacks a comprehensive and organized system for delivering such assistance
- Potential confusion of names, regions served and specific roles among plethora of economic development players (referred to by some as the “alphabet soup agencies”)
- Uneven availability of services and expertise in different parts of state
- Publicly funded entities seeing shrinking allocations
- Forestry and forest products sector (a major component of VT economy) is under-resourced for technical assistance and peer support

Available Sites and Buildings Weaknesses

- ACCD Commercial/Industrial Site Locator does not include many available properties
- ACCD property listings lack information on available utilities
- Small supply of available sites
- Lack of buildings for larger users (50,000 square feet or more)
- Some regions with very limited property availability
- Some property owners, particularly of brownfield sites, reported to place too high a value on their property

Financing and Incentives Weaknesses

- While Vermont has several programs to support Innovation, R&D, commercialization, start-ups and acceleration (see above), it could benefit from additional programs to provide immediate grant funding for innovation, R&D and commercialization in its technology-intensive sectors that increase partnerships between tech-intensive industries and research institutions. Examples in other states of such programs include programs offered through the [Maine Technology Institute](#), [Start-up NY](#), [Ben Franklin Partnership](#) (PA), [Utah Science Technology and Research Initiative \(USTAR\)](#), [Ohio Third Frontier](#), and [Innovate Rhode Island Fund](#). These programs provide funding for activities that are typically in early stages of development and precede readiness for capital and venture funding. They also help build capacity for industry-driven R&D at research institutions including colleges and universities.
- There is a need for additional programs targeted specifically to some of the identified target sectors and clusters – The State has targeted incentives for working lands, agriculture, clean energy, and small technology businesses but none specifically for statewide initiatives in aerospace, IT, and tech-intensive clusters. While businesses in these clusters can take advantage of the array of programs offered to all businesses in the state, additional programs can be used to support the growth of the industries within these targeted cluster areas.
- While as mentioned above, Vermont provides financial support for workforce training through its Vermont Training Program, workforce is such a significant issue for the stability and growth of Vermont industry and businesses, additional programs are needed to support industry-wide, systematic training efforts that include industry, workforce, and education partnerships.

Public Facilities and Services Weaknesses

- Most Vermont towns do not have their own police forces and rely on the State Police Force, which has only 327 officers.
- Nonviolent property crimes (burglary, larceny) are on an increase as of 2011-12 after 2 decades of decline
- Vermont has seen drastic increases in its incarceration rates and in the need for additional Corrections staffing and funding
- Many Vermont municipal sewage treatment systems are aging and subject to leak and overflow, with limited funding for repairs and replacement
- Vermont has only one major and two small landfills active and open
- Vermont has a significant number of rural towns classified as Medically Underserved Areas, particularly near Canadian border and in isolated rural pockets

Quality of Life Weaknesses

- The fragility of the state that can be harmed by energy, economic, or ecological problems that originate far beyond the borders of the state.
- Others moving into the state do not necessarily share the same values which causes conflict.
- There is a continuing tension between Vermonters' desire for a thriving economy with good jobs and modern amenities and their desire for the preservation of Vermont's traditional working landscape and small towns.

- The costs of housing, health care, energy, transportation, and education are central challenges affecting many Vermont families and have an impact on the quality of life.
- Although Vermont is one of the healthiest states, there are a complex array of social, medical, and wellness issues that are difficult to provide uniformly in a rural state and the costs and availability of health care are major concerns.
- People at or below poverty level and having difficulty do not have the “same quality of life” as others earning a better wage.

Workforce Housing Weaknesses

- Vermont’s housing stock is dominated by older, owner-occupied homes, many built before the era of high energy costs and therefore costly to heat; most Vermont housing relies on increasingly costly fuel oil.
- The median price of newly constructed homes in Vermont requires income at 150% or more of the Vermont median household income.
- The rate of home construction in Vermont is among the lowest in the nation due in part to high costs and regulatory constraints; affordable/workforce housing development typically faces particularly heavy permitting opposition, which adds costs and discourages private developers.
- There is a severe shortage of both rental and owner-occupied housing affordable to workers in typical VT wage ranges: a deficit of 21,000 rental and 12,300 ownership units as of 2005 is projected to continue to grow.
- Particularly in southern and east central Vermont, a high proportion of second homeowners drives up prices and outcompetes affordable units for builders.
- Rental subsidies for lower-income households and HUD funds for housing development are shrinking while demand and need are increasing.
- Vermont’s reliance on property tax for municipal and educational revenues creates a burden because they are among highest in nation and add to affordability problems.
- All of the above are barriers to retention of Vermont households in prime working age groups (25-40) and the ability of employers to find workers; households in this age range are projected to decline in the state.
- Based on New Hampshire research, there is a negative impact on employment from a lack of modestly priced housing; this may be in the range of 1,500-3,000 jobs per year.

Vermont’s Image, Visibility and Brand Weaknesses

- The unified brand identity should allow for better coordination of marketing efforts and the State of Vermont should be able to compete more effectively with larger, better-funded marketing efforts of other states. However, this does not appear to be happening at the present time.
- It has taken too much time to gain cooperation among state agencies that had their own identity *and* when asked that their individual department attributes and messages be integrated into the common brand architecture.
- There is an unrealistic expectation of a Vermont utopia by some citizens already living in the state or those who have recently moved there in the last few years.

- There is an unwarranted expectation that Vermont does not have issues that appear to conflict with the image of the Vermont Brand.
- The Attorney General's office has to invest time and money in its pursuit of companies with products falling afoul of Vermont Brand guidelines.
- There is some complaint about a lack of diversity in marketing images that represents the cross-section of the population.
- The overuse of bucolic images may convey the image of a backwater place lacking in economic opportunity; the images and words (beautiful, peaceful and natural) are not synonymous with rural and backward.
- There is the possibility of a distortion of the brand by a commercialized definition of the special place if the people of Vermont do not remain authentic.
- There are concerns about the threats to agriculture and the subdivision and loss of arable and forested lands due to residential sprawl.
- A dairy economy, which is the cornerstone of agriculture in state, is highly susceptible to national and global price fluctuations, and changes in markets and increasing costs of production. This can impact the brand.
- Vermont's forest products industry is cited as being at a dangerously critical point with the number of mills and other working forest enterprises at risk of closing. This can impact the brand.
- Despite an image that Vermont is one of the healthiest states, there is a complex array of social, medical, and wellness issues that are difficult to address uniformly in a rural state and the costs and availability of health care are major concerns.
- There is an image of two Vermons, one for Chittenden County and one for the rest of Vermont.

Innovation and Entrepreneurship Weaknesses

- **Total R&D Performed** - When measured as a percent of gross state product and compared to other states, Vermont performs at a lower level than the United States and considerably lower than New England. In 2010 Vermont ranked 29th.
- **Industry R&D Performed** - Taking into consideration gross state product, Vermont industry R&D performance is at a level that is lower than the U.S. and New England. While industry performed R&D is the largest source of R&D in Vermont and the U.S. as whole, relative to the rest of the U.S. and New England, Vermont is less reliant on industry.
- **Low Percent of Academic R&D Funded by Industry** - Industry in Vermont funds only 1.5% of R&D performed at Vermont's universities and colleges, a level that is lower than the U.S. and New England.
- **Academic R&D Mismatch With Industry** – Vermont's academic R&D is heavily skewed toward life science, and underrepresented by environmental sciences, engineering, and physical sciences (including earth sciences, chemistry, physics). In terms of field of study of the academic R&D performed, this is driven by R&D performed by the University of Vermont and related to having a medical school. This however creates a mismatch with statewide industry strengths. Overall, Vermont does not have employment concentrations in life science industries that perform and commercialize R&D. Additionally, Vermont academic R&D is less concentrated in environmental and physical sciences, fields which have higher employment concentrations in throughout the state.

- **Innovation and R&D Dispersion** - Innovation assets and performance centered around Chittenden County/Burlington Region (patents, R&D) and not dispersed throughout state.
- Vermont has several programs to support Innovation, R&D, commercialization, start-ups and acceleration including: Alternative Fuel and Advanced Vehicle R&D Tax Credit; Angel Venture Investment Capital Gain Deferral; Research and Development Tax Credit/Sustainable Technology R&D Tax Credit; Science, Technology, Engineering and Mathematics (STEM) Incentive; Technology Loan Program (TLP); Vermont Center for Emerging Technologies; Vermont Procurement Technical Assistance Center; Vermont's Early Stage Venture Capital Fund; Vermont Manufacturing Extension Center; Peer to Peer Collaborative; Vermont Ag Development Program. However it could benefit from additional programs to provide immediate grant funding for innovation, R&D and commercialization in its technology-intensive sectors that increase partnerships between tech-intensive industries and research institutions. Examples in other states of such programs include programs offered through the [Maine Technology Institute](#), [Start-up NY](#), [Ben Franklin Partnership \(PA\)](#), [Utah Science Technology and Research Initiative \(USTAR\)](#), [Ohio Third Frontier](#), and [Innovate Rhode Island Fund](#). These programs provide funding for activities that are typically in early stages of development and precede readiness for capital and venture funding. They also help build capacity for industry-driven R&D at research institutions including colleges and universities.

Appendix A: Current Competitive Realities in Economic Development

As part of identifying the economic development potentials and needs of Vermont, and carrying out a program that capitalizes on its potentials and meets its needs, it is necessary to understand the broader context in which current economic development occurs. Economic development is a continually evolving process and discipline. How it occurs today is much different than how it occurred as recently as five years ago. Even more perplexing, there is a growing recognition that how the economic development business operates in an unknown future is likely to be very different from today. State leaders and residents must understand these competitive realities and begin planning now for succeeding tomorrow.

Within that context, it is important to understand some of the key philosophies and trends upon which modern economic development is dependent:

Economic Development Is Extremely Competitive

Conway Data Inc.'s New Corporate Facilities and Expansions Database reports that nationwide in 2012, there were 5,580 project announcements (new construction and expansions for manufacturing, distribution, offices, R&D, and mixed-use facilities) that met any of 3 tests: an investment of at least \$1 million; 50 or more employees; or a facility of 20,000 square feet or larger. The 2012 activity was the third year in a row with an increase from the prior year – there were 4,978 projects in 2011; 4,623 in 2010; and 4,345 in 2009. However, the 2012 level is still 55% below 2000 when there were 12,529 such announcements.

Activity in Vermont since 2000 has been is shown in Table 1:

Table 1
Conway Data Vermont Project Activity; 2000 - 2011

Year	Manufacturing		Other	Total
	New	Expanded		
2000	0	1	0	1
2001	1	0	1	2
2002	0	9	0	9
2003	0	2	1	3
2004	1	0	2	3
2005	0	0	0	0
2006	1	2	1	4
2007	0	4	0	4
2008	1	0	0	1
2009	6	5	1	12
2010	5	4	3	12
2011	1	1	1	3
2012	2	6	0	8
Total	18	34	10	62

Over this 13 year period, Vermont has claimed only 0.07% of the total 83,862 projects in the United States.. Vermont must do everything it can to be as competitive as possible so as to get some of the declining major project economic activity that occurs in the United States.

Most observers of national economic development trends currently estimate there are 15,000 – 18,000 economic development organizations in the United States competing for these projects. In other words, in the United States alone, there are at least three to four times as many economic development agencies as there are new projects of substantial size announced annually. .

The competition to attract the capital investment, jobs and taxes brought by business locations is fierce. A focus on just attracting big projects is foolish. Other product improvement efforts and “grow-your-own” efforts are equally or more important for Vermont.

Avoiding Elimination

Due to the abundance of locational opportunities, the site selection process relies on an initial phase that emphasizes rapid elimination of states, regions and communities so as to reduce to a workable number the areas to be studied in detail. Companies in a search mode begin by evaluating states and regions; if they like a state or region, they will consider subsections, and finally individual communities. Therefore it is important that all regions, counties and communities be active allies with ACCD.

Even the smallest state, regional or community flaw can result in elimination. Critical attributes currently are:

- Essential state and regional data available from an easily navigable website and the ability to quickly produce customized reports
- Adequate labor supplies and skills
- An inventory of “ready-to-go”, available, fully serviced sites and buildings
- A friendly business climate and expedited permit and approval procedures
- Incentives and assistance programs
- A business climate that shows the community is seriously interested in the project

There are many other variables evaluated, and different industry sectors and companies will have their own set of priorities, but those listed above are usually the most important to most companies. Vermont appears to currently be at a disadvantage in having a limited inventory of available buildings and “shovel-ready sites”; however, this may be as much a matter of inadequate participation in ACCD’s site listing service as in a limited number of available properties.

This is not just a business recruitment factor – companies already in an area, but in need of new space, will also consider these and other factors, and compare their current community with alternative locations.

Speed Has Become Essential

The duration of the typical site location process has been cut in half from five – ten years ago. Site selection consultants report that the typical time frame for larger projects now allows six to eight weeks from the beginning of the process to the selection of the “preferred” community, and another six to eight weeks to have a site under control. These companies would like to receive all local permits and approvals within a 14 day time frame (with seven days is preferred) and all state permits and approvals within a 45 day period (30 days is preferred). Smaller companies may have longer time frames, but delay is still a project killer.

Vermont’s statutory requirements make the entire state less competitive than other states with the ability to expedite the permit and approval process – this is a problem for most of the Northeast where “home rule” or a similar focus on making the majority of decisions at the local level can add to project requirements and timeframe. Nonetheless, places like Vermont are competing with other locations that can meet these processing speeds and must do whatever they can to overcome this problem.

Staff Empowerment to Expedite Projects and Site Readiness Programs

Due to this need for expeditious project processing, an increasing number of places are responding by creating clear land use regulations and empowering staff to issue necessary permits and approvals for projects found to be in full compliance with regulations after careful staff review. Other places are implementing “self-certification” procedures where qualified architects and engineers can certify that plans meet all local requirements.

While the ability to do things like this is limited in Vermont, nonetheless, competitive places are constantly evaluating their project approval procedures in order to streamline them. Other approaches worth considering are undertaking the pre-permitting of sites without a specific project in hand, or having sites certified as “Shovel-Ready”, a tool that is now available in 24 states with others working to establish such a program. Vermont is not one of them.

Available Sites and Buildings are Essential

Economic development contacts from nearly every state report that currently 75% to 80% of all prospects conducting a site search begin looking for an existing building into which they can move quickly. Historically in most states, about 50 - 60% of projects that actually occurred used existing buildings, and that portion is even higher right now in many places that have an abundance of vacant, modern buildings. Again, this is a function of the need for speed. This puts a premium on having available both vacant space and fully serviced and appropriately zoned sites on which construction can begin immediately and be completed in a short time frame. The majority of companies are unwilling to wait for a community or private land owner to debate whether to help make a site ready, prepare designs, commit financing, and undertake infrastructure design, permitting, and construction. There are too many other communities already fully prepared. If you are not ready, you lose. As already noted, Vermont is at a disadvantage here because of what appears to be a very limited inventory of available buildings and “ready-to-go” sites.

You Must Be Aggressive

For some time now we have been in an era of a “global investment and jobs auction”. Companies have jobs to offer (and the capital investment and tax revenues that come with them) and can put them in a multitude of locations. Vermont competes not only with neighboring states, but with locations in other places such as Canada, Barbados, Mexico and India. It is a buyers' market, and places are both the sellers and the commodity being sold. Having an adequate inventory of available buildings and sites and an effective website targeted at business prospects are two common community responses. Both appear to need work in Vermont. Increasingly, places are also creating aggressive incentive and assistance packages and comprehensive informational databases in order to increase community competitiveness. The work is being done before the prospect arrives – not after. While Vermont’s incentives include some that provide competitive advantage, this is an area where continued attention is needed to remain competitive with other states.

Small Business Start-ups and Home Occupations are Very Important

According to the Kauffman Index of Entrepreneurial Activity, in 2012 an average of 0.30% of adults created a new business each month (down from 0.32% in 2011). This equates to about 514,000 new businesses (operating 12 hours per week or more) each month (down from 543,000 per month in 2011), which equals 6,168,000± new businesses per year (down from 6,516,000± in 2011), or approximately 1 new business per 48 people (based on the U.S. Census estimate of slightly more than 315 million total U.S. population as of January 1, 2013). If Vermont’s entrepreneurial activity equals this national average, it would mean approximately 13,000 new businesses being created in the state each year. These businesses will need a good location from which to operate. Vermont’s desirable quality of life will be a drawing factor for entrepreneurs, but its inadequate broadband and cellular service in some areas will be an impediment.

Initially, many new businesses, particularly those that are less than full-time, operate from the home of the entrepreneur. A trend first noted in 1997 found that more than half of new businesses were home-based. A report prepared for the Small Business Administration in 2004 (we have not found a more recent source) found that as many as 68% of new proprietorships, partnerships and S-Corporations were home-based. This trend, which has continued, makes the availability of reasonable home occupation regulations important for Vermont. This trend has also led to a growth in “incubator without walls” programs aimed at helping new businesses survive and succeed.

The Changing Nature of Retailing

Retailing as we have known it continues to change. Many communities are experiencing a decline in the vitality of older shopping areas. Communities are being impacted by many regional and national trends, which have been exacerbated by the recent recession and lingering aftereffects:

- Overbuilding of retail space has resulted in increased retail competition, retailer bankruptcies and increased vacancy rates. According to the 2007 Economic Census (results of the 2012 Economic Census are not yet available), there were 1,122,703 retail establishments in the United States and a

total of 14.2 billion square feet of retail space. That means that at that time, there were approximately 46.6 square feet of retail space per capita in the U.S.

- According to retail specialists DANTH, Inc. (October 2012):
 - Occupied retail space in the U.S. decreased by 259 million SF between 2001 and 2011 and is expected to drop by another 210 million SF by 2016 (source: Macquarie Capital Inc.).
 - Retailers are opening fewer stores, with less space, and looking for the least risky locations.
 - There is bifurcation occurring among retailers with those at the top end and the value retailers doing best, while middle market specialty retail chains and independents are disappearing.
 - There have been a significant number of closures of enclosed malls, with about one-third of those left in difficulty and at risk of closure or re-purposing.
 - Consumers have become much more deliberate in their purchasing, focusing on “need-to-have” rather than “want-to-have” and using their credit cards much less.
 - Catalog and Internet shopping are reducing sales in traditional retail establishments; while e-shopping still accounts for only a small fraction of total retail sales, it is growing. According to the U.S. Census Bureau, online sales accounted for 5.5% of total sales in the first quarter of 2013, or \$61.2 billion adjusted for seasonal variation but not for price changes. (See the next section for additional discussion of the impact of online sales on space needs.)
- Big box and category killer stores continue to increase their market share of GAFO (General Merchandise, Apparel and Accessories, Furniture and Other) sales, causing closures and bankruptcies among local stores and smaller store chains that cannot match their prices and promotional budgets. This has resulted in fewer tenants for shopping centers and more competition for those fewer tenants.
- Bankruptcies and closures within the big box category (e.g. in the past, Kmart, Caldors, Ames; more recently Borders, Linens ‘n Things, Circuit City, Filene’s Basement) have created large blocks of vacant space that are being used for non-retail purposes. Call centers are a common use, but this space also lends itself to other uses. (Two former Kmart stores in Lee County, Florida were purchased by the County for conversion into schools. A 2008 article in the International Economic Development Council’s *Economic Development Now* newsletter discussed the conversion of under-performing malls into medical malls in Prince George’s County, Maryland and other places.)
- Beginning in the early 2000s, big box developers such as Home Depot, Walmart and Best Buy began experimenting with smaller stores (15,000 – 50,000 square feet) for smaller population centers with other chains expected to follow the trend over time.
- Retail establishments are seeking to cluster in larger, master-planned and coordinated environments to draw larger numbers of shoppers and then pass them among multiple stores. Lifestyle centers (defined as “an open-air design with upscale architecture, vibrant public spaces and a critical mass of specialty retailers, cinemas and restaurants” are generating between 20 – 50% more per square foot than stores in older U.S. malls. (*CNN/Money*, January 12, 2005; DANTH, Inc. April 2010)
- Entertainment retailing, intended to give shoppers an experience beyond just the purchase of goods, is growing.
- Grocery stores are expanding in size and drugstores are moving toward larger freestanding stores, often including significant space for groceries. Walmart is establishing freestanding 42,000 square

foot Neighborhood Markets by Wal-Mart partly to counter the U.S. arrival of British grocer Tesco (the third largest global retailer). The new locations are described as convenience stores that fill the gap between Wal-Mart Discount Stores and Supercenters, offering full lines of groceries, pharmaceuticals, health and beauty aids, photo developing services, and a limited selection on general merchandise. There are now approximately 230 Neighborhood Markets, up from 151 in 2010 (source: Wal-Mart website), with aggressive expansion underway.

- Prior to the recent recession, chain restaurants were proliferating, causing more competition for local restaurants. However, the recession resulted in many bankruptcies in the chain restaurant sector (e.g., ARG Enterprises, Buffets Holdings, Metromedia Restaurant Group).

E-Commerce is Changing the Need for Space

The Internet is now involved in more than 45% of retail sales, sometimes as the method of purchase, and often as preliminary research before deciding what to buy and from whom. A common fear is that the expansion of electronic commerce will cause a significant reduction in the demand for space. While this may be true at the retail end of the chain as more people buy more goods without visiting a store, the opposite is occurring at the distribution end. More e-commerce vendors are requiring increasing amounts of order fulfillment space, scattered in a variety of locations. Many of these facilities do not need high bay space for racking systems – rather, they need large footprint space with sophisticated conveyor, sorting, and shipping systems. Many older, low ceiling manufacturing or retail buildings are ideal for conversion into this type of use. E-commerce fulfillment facilities also frequently employ more workers than traditional distribution warehouses, although not necessarily at high wages. The current state of e-commerce is one of rapid change, and perhaps turmoil.

Trends Impacting Space Needs and Facility Locations

- The emergence of strong employment areas in other countries will continue to have an impact on the amount of space U.S. companies need. Offshoring has impacted many types of jobs including those in technology, financial services, engineering, programming, accounting and many other fields.
- However, customer service dissatisfaction with overseas call centers and similar operations has caused firms like Dell Computers, AT&T and Delta Airlines to rethink the cost-benefit relationship of moving these operations overseas resulting in “back-shoring” or “reshoring”.
- Similarly, an increasing number of manufacturers (GE, Caterpillar, Coleman, Otis Elevator, Buck Knives, and many others) have moved production back to the U.S. because of concerns about quality control, fuel and shipping costs, labor costs, supply chain relationships, and other factors.
- Other companies are reducing costs by setting their workers up in home offices. According to Wikipedia, in 2012 more than 50 million U.S. workers could work from home at least part time, with many set up in full-time office spaces.
- Both off-shoring and home-basing are resulting in a declining need for new construction and increasing vacancies in existing space. These and similar trends are currently being exacerbated by the continuing weak U.S. economy. Places in need of additional tax revenues from new commercial construction or occupancy are being hurt by reduced company needs for space.

- The weakness of the dollar has encouraged “insourcing” or “inshoring” – the attraction of foreign investment for facilities (and employment) in the United States.

Education is Needed to Overcome Community Concerns

Vermont’s residents are rightfully concerned about the future appearance of their state, but may be overly cautious in envisioning what is acceptable. Frequently, community hesitation to committing to more economic development is a reflection of a deserved dissatisfaction with the negative consequences of older projects. Modern business facilities are vastly different from their predecessors. Architectural design, building code requirements, and performance standards all aim at making business buildings and operations more attractive and better neighbors. Community education is often a necessity to demonstrate that these kinds of negatives are no longer likely under the community’s current regulations, policies and procedures, and that the country is full of examples of high quality business buildings that are good neighbors and don’t detract from the community character.

Think—and Behave—Entrepreneurially

Economic development is one of the few areas of government expenditure where a return-on-investment can – and should – be expected. This relates directly to one of the caveats noted in the following section. Across the country, places like Vermont are increasingly thinking and behaving entrepreneurially. They are willing to make strategic investments in projects or the infrastructure necessary to obtain and support company expansions and locations, with the calculated expectation that this investment will reap the jobs, tax base and quality of life improvements the place desires. Increasingly, communities are investing in projects located outside their boundaries and being compensated like private developers. Often these projects are joint ventures by multiple governmental units, such as FirstPark, a business park in Maine being developed by 24 communities in partnership with each other. Support of this kind of cooperative venture in Vermont should be considered.

Community Preparation is Paramount

In the world of economic development, Vermont is a commodity. Companies select locations based on how well the location meets the company’s needs – not based just on how aggressive and sophisticated the area’s marketing program is. While some may believe a thrust of Vermont’s economic development program should be to position the state for an aggressive marketing effort, leadership and residents must recognize that the state and its regions and communities are a products in a highly competitive marketplace, and you must constantly strive to make necessary product improvements. Some of these improvements will be physical in nature; some will be procedural; and some will require additional planning.

Community Image and Attitude Can Make or Break You

Every resident of Vermont is an important member of the community’s marketing team, particularly business executives already in the state. A 2011 survey by Development Counsellors International (*Winning Strategies in Economic Development Marketing*, DCI – New York, NY) reported that corporate executives use dialogue with industry peers (50%), and articles in newspapers and magazines (46%) as

the leading sources of information influencing their perception of an area's business climate. (These same factors have consistently ranked as the top 2 in earlier DCI surveys conducted every three years since 1996.) A positive image and attitude can be an important marketing tool – a negative image and attitude can be a huge obstacle. Understanding how businesspeople in Vermont or nearby feel about it as a location for business must be an essential – and ongoing – element of your economic development preparation and marketing efforts.

Appendix B: Economic and Business Development Incentives in Vermont

Source: Camoin Associates

Incentive	Incentive Description	Lead Entity	Web Link	Industries	Type of Assistance
Vermont Job Start Program	Funds to help develop self-employment opportunities for low- and moderate-income Vermonters. Loans may be made in any amount up to \$20,000, with a lifetime cap of \$20,000 to any one borrower, and may be used to start, strengthen or expand small businesses	Community Capital of Vermont	http://www.communitycapitalvt.org/	Not Industry Specific	Loans
Brownfields Revitalization Fund (BRF)	The BRF, administered by ACCD, offers grants and loans for remediation of brownfield sites. The funds are made available to Vermont from EPA and eligible applicants can be private developers, non-profits and municipalities. There is no limit on the size of a loan; it depends on the amount of capital available in the fund. Grants are available to eligible non-profits and municipalities.	Vermont Agency of Commerce & Community Development	http://accd.vermont.gov/business/relocate_expand/capital/brownfields	Not Industry Specific	Grants and Loans
Downtown & Village Tax Credit	Tax credits for improvements and redevelopment of commercial buildings located within designated downtown or village centers.	Vermont Agency of Commerce & Community Development	http://accd.vermont.gov/strong_communities/opportunities/funding/downtown_village_tax_credit	Not Industry Specific	Tax Credits
Downtown Transportation Fund	Assists municipalities in paying for transportation-related capital improvements within or serving a Designated Downtown District. Past projects include parking facilities, pedestrian and streetscape improvements and utility relocation.	Vermont Agency of Commerce & Community Development	http://accd.vermont.gov/strong_communities/opportunities/funding/downtown_transportation_fund	Not Industry Specific	Grants
Science, Technology, Engineering and Mathematics (STEM) Incentive	Pays eligible new hires at Vermont companies \$1,500 cash annually for each year they are employed, up to five years. The incentive goes directly to the individual.	Vermont Agency of Commerce & Community Development	http://accd.vermont.gov/business/stem_application	Not industry but occupation must be related to science, technology, engineering, or math	Grants
Vermont Employment Growth Incentive (VEGI)	Can provide a cash payment, based on the revenue return generated to the State by prospective qualifying job and payroll creation and capital investments, to businesses that have been authorized to earn the incentive and who then meet performance targets. The VEGI program and the property tax programs are intended to provide	Vermont Agency of Commerce & Community Development	http://accd.vermont.gov/business/start/vegi	Not Industry Specific	Grants

Appendix B: Economic and Business Development Incentives in Vermont

Source: Camoin Associates

Incentive	Incentive Description	Lead Entity	Web Link	Industries	Type of Assistance
	incentives from the State of Vermont to businesses to encourage prospective economic activity in Vermont that is beyond the applicant's "organic" or background growth and that would not occur, would not occur in Vermont, or would occur in a significantly different and less desirable manner, except for the incentive provided.				
Vermont Film Production Incentives	Vermont offers basic tax savings for productions. The following are some of the incentives: Hotel tax exemption, sales and use tax exemption and income tax for performers limited to the amount performers would pay in their home states.	Vermont Agency of Commerce & Community Development	vermontfilm@vermontfilm.com	Film Industry	Tax Credits
Vermont Global Trade Partnership (VGTP)	Provide any Vermont business with international trade related educational seminars, trade show participation, technical assistance, and one-on-one consulting services	Vermont Agency of Commerce & Community Development	http://accd.vermont.gov/business/start/international_trade	Not Industry Specific	Technical Assistance
Vermont Training Program (VTP)	Provides funds for the training of employees in new and existing businesses in the sectors of Manufacturing, Information Technology, Healthcare, Telecommunication, and Environmental Engineering. Business must pay at least 50% of the cost of training and training efforts must be in addition to or supplement existing training efforts	Vermont Agency of Commerce & Community Development	http://accd.vermont.gov/business/start/training	Manufacturing, health care, telecommunications, information technology, and environmental engineering	Grants
Vermont Center for Emerging Technologies	Technology focused business incubator with client firms from most all sectors. VCET offers a targeted business incubator program designed to foster the success of high opportunity technology firms by providing firms with substantive business mentoring along with traditional incubator services such as low cost, flexible office space, shared resources, capital, networking, training, etc. VCET is an independent 501 c (3) public benefit corporation in affiliation with the University of Vermont and partners with Norwich University, Middlebury College,	Vermont Center for Emerging Technologies	http://vermonttechnologies.com/	Technology focused but not industry specific	Incubation facilities and services

Appendix B: Economic and Business Development Incentives in Vermont

Source: Camoin Associates

Incentive	Incentive Description	Lead Entity	Web Link	Industries	Type of Assistance
	Champlain College and the five Vermont State Colleges.				
Vermont Seed Capital Fund	Capital investment in early stage, high opportunity, technology based companies in Vermont. The fund is a revolving, “evergreen” equity fund with \$5 million of initial capitalization from the State of Vermont and U.S. Senator Patrick J. Leahy. The Vermont Economic Development Authority (VEDA) is a strategic partner for this fund. This is a professionally managed venture capital fund which invests exclusively into Vermont start-ups and growing firms determined as offering high growth potential, financial return commensurate with risk, and public benefit for Vermonters. Portfolio firms also have access to substantive programs, facilities, partners, and value-adding services offered via a strategic relationship with the non-profit VCET incubator. Investment transactions range from \$50,000 to \$250,000. The fund can act as lead investor or as part of investment syndicate.	Vermont Center for Emerging Technologies	http://vermonttechnologies.com/capital/	Not Industry Specific	Capital
Micro Business Development Program	Provides technical assistance and training to low to moderate income Vermonters planning to start or expand a small business.	Vermont Community Action Agencies	http://accd.vermont.gov/business/start/financing/micro_loanding	Not Industry Specific	Technical Assistance
Vermont Community Loan Fund	Provides flexible rate loans and technical assistance for affordable housing, community facilities, and small and micro businesses.	Vermont Community Loan Fund	http://www.investinvermont.org/about	Not Industry Specific	Loans

Appendix B: Economic and Business Development Incentives in Vermont

Source: Camoin Associates

Incentive	Incentive Description	Lead Entity	Web Link	Industries	Type of Assistance
Alternative Fuel and Advanced Vehicle R&D Tax Credit	Vermont businesses that qualify as a high-tech business involved exclusively in the design, development, and manufacture of alternative fuel vehicles, hybrid electric vehicles, all-electric vehicles, or energy technology involving fuel sources other than fossil fuels are eligible for up to three of the following tax credits: 1) payroll income tax credit; 2) qualified research and development income tax credit; 3) export tax credit; 4) small business investment tax credit; and 5) high-tech growth tax credit	Vermont Department of Taxes	http://www.afdc.energy.gov/afdc/laws/law/VT/5622 ; http://www.leg.state.vt.us/statutes/fullsection.cfm?Title=30&Chapter=089&Section=08015	For companies exclusively in the design, development, and manufacture of alternative fuel vehicles, hybrid electric vehicles, all-electric vehicles, or energy technology involving fuel sources other than fossil fuels are eligible	Tax Credits
Angel Venture Investment Capital Gain Deferral	Deferral of Vermont income tax on the capital gain for an investment of up to \$200,000 by any one person when the gain is used for capital investment in an eligible business	Vermont Department of Taxes	http://www.state.vt.us/tax/pdf.word excel/forms/2005/angelwkshti.pdf	Not Industry Specific	Tax Deferral
Clean Energy Development Fund-Natural Gas Vehicle (NGV) and Infrastructure Funding	Provides funding for projects that involve the purchase of dedicated NGVs and development of natural gas fueling infrastructure. To qualify for funding, the NGV must produce fewer emissions than commercially available vehicles using conventional fuel, and fueling infrastructure must deliver natural gas without interruption	Vermont Department of Taxes	http://www.afdc.energy.gov/afdc/laws/law/VT/8520 ; http://www.leg.state.vt.us/statutes/fullsection.cfm?Title=30&Chapter=089&Section=08015	Specifically for projects that involve the purchase of dedicated Natural Gas Vehicles and development of natural gas fueling infrastructure	Grants
Exemption for Fuel Used Directly or Indirectly in Manufacturing	Fuels used directly or indirectly in manufacturing tangible personal property for sale are exempt from sales and use tax. "Fuels" shall include electricity, oil, kerosene, natural gas, propane, wood, coal, and any similar product.	Vermont Department of Taxes	http://www.state.vt.us/tax/pdf.word excel/legal/regs/19701.pdf	Manufacturing	Tax Exemptions
Research and Development Tax Credit	Credit against the tax imposed equal to 30 percent of the amount of the federal tax credit allowed in the taxable year for eligible research and development expenditures. Any unused credit may be carried forward for up to 10 years.	Vermont Department of Taxes	http://www.state.vt.us/tax/business.shtml	Not industry specific	Tax Credits
Brownfields Revitalization Fund (BRF) Loan Program	Designed to provide funding to assist in the redevelopment of contaminated properties.	Vermont Economic Development Authority	http://www.veda.org/financing-options/other-financing-option/brownfields-revitalization-fund/	Not Industry Specific	Loans

Appendix B: Economic and Business Development Incentives in Vermont

Source: Camoin Associates

Incentive	Incentive Description	Lead Entity	Web Link	Industries	Type of Assistance
Direct Loan Program	Assists borrowers in financing fixed assets including purchase of land and buildings, including new construction or renovation; purchase and installation of machinery and equipment, furniture and fixtures. It is utilized in cooperation with commercial banks. VEDA may either make its own direct loan or purchase a portion of a bank loan	Vermont Development Authority	http://www.veda.org/financing-options/vermont-commercial-financing/direct-loan-program/	Not Industry Specific	Loans
Drinking Water State Revolving Loan Fund	Provides funds to privately-owned community water systems; privately-owned nonprofit, non-community public water systems; to repair or improve existing privately-owned drinking water systems	Vermont Economic Development Authority	http://www.veda.org/financing-options/other-financing-option/state-drinking-water-program/	Not Industry Specific	Loans
Export Finance Program	As the City/State Partner of the United States Export-Import (Ex-Im) Bank, VEDA provides one-stop service for export finance programs in the state of Vermont. These services include loan packaging and liaison with the Ex-Im Bank in Washington, D.C. VEDA may also provide a direct source of financing for support of export sales through Ex-Im Bank's working capital guarantee and insurance programs.	Vermont Economic Development Authority	http://www.veda.org/financing-options/other-financing-option/export-assistance/	Not Industry Specific	Loans
Vermont EB5 Regional Center	Federal investment visa program run by the United States Citizenship and Immigration Services (USCIS). The goal of the EB5 program is to incent investment and create American jobs by setting aside a pool of EB5 visa green cards for qualified foreign investors that invest capital into approved EB-5 projects. U.S. companies are able to use this investment for projects that meet the program's eligibility criteria, such as business expansions, development, or adding capacity. The Vermont EB5 Regional Center is the only USCIS Designated Regional Center in the United States owned, controlled and supervised directly by a state government.	Vermont EB5 Regional Center	http://accd.vermont.gov/business/relocate_expand/eb5	Not Industry Specific	Technical Assistance to Obtain Financing

Appendix B: Economic and Business Development Incentives in Vermont

Source: Camoin Associates

Incentive	Incentive Description	Lead Entity	Web Link	Industries	Type of Assistance
Commercial Energy Loan Program	Helps Vermont businesses finance larger qualifying renewable energy generation and energy efficiency improvement projects. Maximum loan size under this program is \$2.0 million	Vermont Economic Development Authority	http://www.veda.org/financing-options/vermont-commercial-financing/commercial-energy-loan-program/	Renewable Energy	Loans
Energy Loan Guarantee Program	Loan guarantees to participating financial institutions that enroll loans made to Vermont businesses for renewable energy generation, energy efficiency improvements, and/or to adopt technologies that enhance or support the development and implementation of renewable energy or energy efficiency, or both	Vermont Economic Development Authority	http://www.veda.org/financing-options/vermont-commercial-financing/energy-loan-guarantee-program/	Renewable energy generation, energy efficiency improvements, and/or to adopt technologies that enhance or support the development and implementation of renewable energy or energy efficiency	Loans
Local Development Corporation Loans	Provides financing to nonprofit local and regional development corporations to build facilities for lease to identified eligible tenants, or to plan and/or develop industrial parks	Vermont Economic Development Authority	http://www.veda.org/financing-options/vermont-commercial-financing/local-development-corporation-program/	Not Industry Specific	Loans
Mortgage Insurance Program	Insurance of up to 75% of a bank loan, not to exceed \$1 million; Insured loan may be for fixed assets and/or working capital - the Authority aids eligible and qualified businesses by insuring loans made by commercial banks. Loans may be made for the acquisition of land, buildings, machinery and equipment or working capital in connection with an eligible facility.	Vermont Economic Development Authority	http://www.veda.org/financing-options/vermont-commercial-financing/vermont-mortgage-insurance-program/	Specifically for manufacturing, processing, warehousing, research and development, travel and tourism, information technology, certain energy generation projects, and others as defined in statute	Loans
Small Business Energy Loan Program	This program helps Vermont businesses finance relatively smaller qualifying renewable energy generation and energy efficiency improvement projects. The maximum loan under this program is \$350,000	Vermont Economic Development Authority	http://www.veda.org/financing-options/vermont-commercial-financing/small-business-energy-loan-program/	Not Industry Specific	Loans
Tax-Exempt Revenue Bond Program for Manufacturers	VEDA's Tax-Exempt Revenue Bond Program is designed to aid certain manufacturers through the issuance of tax-exempt bonds. Tax-exempt bonds traditionally carry lower interest rates than conventional bank loans because income earned by purchasers of these bonds is	Vermont Economic Development Authority	http://www.veda.org/financing-options/vermont-commercial-financing/revenue-bond-program-for-manufacturers/	Manufacturing	Bonds

Appendix B: Economic and Business Development Incentives in Vermont

Source: Camoin Associates

Incentive	Incentive Description	Lead Entity	Web Link	Industries	Type of Assistance
	exempt from federal and, in some cases, state tax.				
Tax-Exempt Revenue Bonds	Designed to aid certain 501(c)(3) entities by VEDA's issuance of tax-exempt bonds. In these projects, VEDA acts as a conduit issuer, thereby enabling eligible borrowers to access the tax-exempt bond market	Vermont Economic Development Authority	http://www.veda.org/financing-options/vermont-commercial-financing/revenue-bond-program/	Not Industry Specific	Bonds
Technology Loan Program (TLP)	Provide loans to companies whose major activity is offering technology-based goods and services to customers located both inside and outside Vermont	Vermont Economic Development Authority	http://www.veda.org/financing-options/vermont-commercial-financing/technology-loan-program/	Specific to companies that provide technology-based goods and services to customers	Loans
Vermont Agricultural Credit Corporation	Provides credit to farmers and agricultural facilities. Farm loans are available to strengthen existing farm operations, encourage diversification, support beginning farmers, and to encourage marketing and processing of Vermont agricultural products	Vermont Economic Development Authority	http://www.veda.org/financing-options/vermont-agricultural-financing/	Specific to agriculture	Loans
Vermont Capital Access Program (VCAP)	Utilizes a pooled reserve concept and is designed to enable small businesses to access commercial credit. This program replaces the Financial Access Program	Vermont Economic Development Authority	http://www.veda.org/financing-options/vermont-commercial-financing/vermont-capital-access-program/	Not Industry Specific	Loans
Vermont SBA 504 Loan Program	Makes SBA 504 loans to eligible and qualified borrowers: Organized as a for-profit business; Business net worth cannot exceed \$15 million; Average net profit after taxes cannot exceed \$5.0 million for previous two years; Located, or planning to locate, in the United States; and Owner-user of the project being financed (51% occupancy minimum if existing building; 60% occupancy if new construction)	Vermont Economic Development Authority	http://www.veda.org/financing-options/vermont-commercial-financing/sba-504-program/	Not Industry Specific	Loans

Appendix B: Economic and Business Development Incentives in Vermont

Source: Camoin Associates

Incentive	Incentive Description	Lead Entity	Web Link	Industries	Type of Assistance
Vermont Small Business Loan Program	Available to assist growing Vermont small businesses that are unable to access adequate sources of conventional financing. This program may make loans of up to \$350,000 for fixed asset acquisition or for working capital purposes.	Vermont Economic Development Authority	http://www.veda.org/financing-options/vermont-commercial-financing/small-business-loan-program/	Manufacturing, processing, warehousing, research and development, travel and tourism, information technology, certain energy generation or efficiency projects, retail and service businesses, and others as defined in statute	Loans
Vermont State Infrastructure Bank (SIB)	The State Infrastructure Bank (SIB) program, operated by the Vermont Economic Development Authority in conjunction with the Vermont Agency of Transportation and the Federal Highway Administration, is available to assist in the construction or reconstruction of highways, roads and bridges, as well as certain facilities related to rail transit. This program also provides funding for the purchase of commuter vans	Vermont Economic Development Authority	http://www.veda.org/financing-options/other-financing-option/state-infrastructure-bank-program/	Not Industry Specific	Loans
Tax Increment Financing	Established by a municipality around an area that requires public infrastructure to encourage public and private real property development or redevelopment. Allows state and local property tax revenues generated from new development to be dedicated to paying off debt	Vermont Economic Progress Council	http://www.accd.vermont.gov/strong_communities/opportunities/funding/tif	Not Industry Specific	Tax Credits
Vermont Farm Viability Program	Offers planning and technical assistance to farmers and agriculture infrastructure businesses. Technical assistance includes business planning, financial planning, and meetings with various specialists. After completing the technical assistance program, farmers are then eligible for grants for capital expenses or more support to implement their business plan. Partners with the VADP.	Vermont Housing and Conservation Board	http://www.vhcb.org/viability.html	Agriculture	Grants and Technical Assistance

Appendix B: Economic and Business Development Incentives in Vermont

Source: Camoin Associates

Incentive	Incentive Description	Lead Entity	Web Link	Industries	Type of Assistance
Vermont Manufacturing Extension Center	The goal of the VMEC is to help Vermont manufacturers achieve sustainable and profitable growth through innovation, increased productivity, improved manufacturing and business processes and the adoption of advanced “Next Generation Manufacturing” business practices and attributes, all leading to the creation and retention of high wage manufacturing jobs. The VMEC offers regular training programs on lean manufacturing, problem solving, quality auditing, workplace communication, and a range of other topics. One of the key programs of the VMEC is the Innovation Engineering Management System program which is geared towards changing the mindset of the team to be geared towards new ideas, new processes, and new operations.	Vermont Manufacturing Extensions Center	http://www.vmec.org/	Manufacturing	Technical Assistance
Vermont Procurement Technical Assistance Center	Help Vermont businesses succeed in obtaining government contracts. The center offers free counseling services to Vermont businesses and provides assistance on how to bid on government contracts at the federal, state and local levels.	Vermont Procurement Technical Assistance Center	http://accd.vermont.gov/business/start/vtptac	Not Industry Specific	Technical Assistance
Clean Energy Development Fund	Designed to increase development and deployment of cost-effective and environmentally sustainable electric power resources. Funds projects that focused on energy efficiency throughout Vermont. Offers assistance in three main ways: 1) Small Scale Renewable Energy Incentive program, 2) Vermont Business Solar Energy Tax Credit Certification, 3) Grant program for specific initiatives. There was also a loan program that is no longer available.	Vermont Public Service Department	http://publicservice.vermont.gov/topic/renewable_energy/cedf	Not industry specific but designed for projects and companies involved in energy efficiency projects.	Tax credits and grants.

Appendix B: Economic and Business Development Incentives in Vermont

Source: Camoin Associates

Incentive	Incentive Description	Lead Entity	Web Link	Industries	Type of Assistance
Vermont Small Business Development Center	Provides no-cost, confidential business advising and low-cost training services to all small businesses and new ventures in Vermont. Specific assistance is available for issues related to Irene Business Recovery, Technology and Commercialization, Regulatory Assistance, Agribusiness Assistance, REAL (Rural Entrepreneurship Through Action Learning) Youth Entrepreneurship, Veterans and Service Connected Vermonters, and Vermont Procurement Technical Assistance Center.	Vermont Small Business Development Center	http://www.vtsbdc.org/	Not Industry Specific	Technical Assistance
Peer to Peer Collaborative	Provides companies with access to a group of "Peer Advisors" to provide advice and guidance. It is a 12-18 month process designed to help companies define their business strategy, grow leadership skills, and prepare for and manage growth.	Vermont Sustainable Jobs Fund	http://www.vsif.org/what-we-do/peer-to-peer	Not industry specific	Technical Assistance
Vermont Ag Development Program	Provides venture coaching to businesses to help them obtain growth capital. Only a few businesses are assisted each year and interested companies must apply and pay \$5,000. Partners with the VFVP.	Vermont Sustainable Jobs Fund	http://www.vsif.org/project-details/18/vermont-agriculture-development-program	Agriculture	Technical Assistance
Vermont Sustainable Jobs Fund (VSJF)	Early stage grant funding, technical assistance, and loans to catalyze and accelerate the development of markets for sustainably produced goods and services for Capital access or formation, Facility/site location, Product & process improvement Professional networking, Regulatory climate/issue, Tech & product development	Vermont Sustainable Jobs Fund	http://www.vsif.org/what-we-do	Agriculture, forestry, and bioenergy-must be used for companies that produce sustainable goods and services	Grants and Technical Assistance

Appendix B: Economic and Business Development Incentives in Vermont

Source: Camoin Associates

Incentive	Incentive Description	Lead Entity	Web Link	Industries	Type of Assistance
Working Lands Enterprise Initiative	The Vermont Working Lands Enterprise Board (WLEB) is an impact investment organization whose mission is to grow the economies, cultures, and communities of Vermont's working landscape by making essential, catalytic investments in critical leverage points of the Vermont farm and forest economy, from individual enterprises to industry sectors. Provides grants to agricultural and forestry based businesses. Grants are available for different activities including: 1)poultry processing (for construction of a mobile or fixed poultry slaughter and/or processing facility), 2) capital infrastructure investments (to increase operational capacity), 3)working lands enterprises (businesses involved in production of agriculture and/or forest related products), and 4) service provider grants (organizations that provide services to agriculture and/or forestry & forest products enterprises such as training, financial planning, regulatory assistance, etc.).	Working Lands Enterprise Initiative	http://workinglands.vermont.gov/	Agriculture and Forestry	Grants

Sources: Compiled by Camoin Associates from Vermont websites listed; Business Facilities, <http://businessfacilities.com/special-report/2011-incentives-guide/>; and C2ER State Business Finance and Incentives Resource Center, <http://www.stateincentives.org/index.asp>