



# Broadband Technology Project

*A grassroots approach to  
assessing and developing local  
broadband capacity and cross-  
sector partnerships*

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An electronic version of this report (PDF) is located online at <http://www.vapda.org/BroadbandPlan2012.pdf>.

# Broadband Technology Project

*A grassroots approach to assessing and developing local broadband capacity and cross-sector partnerships*

## INTRODUCTION

Across Vermont, broadband availability, adoption and related information technology use varies widely. Yet it is clear that adoption and use of broadband technologies are crucial to the success of our state and its communities. The Vermont Telecommunications Plan will be successful if the state's residents, governments, businesses, organizations and institutions aggressively pursue and utilize broadband infrastructure, both existing and soon-to-be deployed, and utilize the best available (fixed and mobile) broadband technology. The Broadband Technology Project addresses the fifth goal of the Vermont 2010 Telecommunication Plan: Ubiquitous adoption and use of broadband at home and work.

Vermont's Regional Planning Commissions (RPCs) developed a network of contacts in communities and local sectors to assess where promising opportunities are available to further develop broadband technology adoption and use. These Regional Technology Planning Teams used the Vermont Telecommunications Plan and other ongoing state-level efforts combined with local and regional knowledge to develop strategies and actions for integrated use of broadband technology. The Broadband Technology project also led to the creation of new cross sector partnerships, the identification of broadband technology gaps, and the creation of regional and statewide strategies and actions.

## Goals and Priorities

RPCs and Regional Technology Teams developed goals and strategies for regions and economic sectors as part of this project. Through that process several overall goals were found to be held in common:

- Broadband will be available and affordable to all Vermonters.
- Technology will be used to provide transparency, increase efficiency and allow greater access to local government.
- More Vermonters will be able to telework/telecommute while maintaining strong connections to colleagues, clients and the public.
- Fluency in and literacy about broadband, the internet and the accompanying technological devices will increase.
- Broadband will increase economic opportunity and support economic diversity.

## Project Report

This project report outlines the priorities identified by the Regional Planning Commissions and the Regional Technology Planning Teams to increase the use of broadband technology across all economic sectors.

The report is divided into several sections. The first section details the specific statewide goals, strategies and actions that will be consistently implemented by

### ECONOMIC SECTORS

- Agriculture
- Arts/Creative Economy
- Business
- Diverse Communities
- Education
- Energy/Utilities
- Healthcare
- Human Services
- Libraries
- Manufacturing
- Media
- Municipal Government/  
Emergency Services
- Non-Profit/Services
- Public Housing
- Public Safety
- Seniors/Youth
- Technolgy
- Tourism
- Transportation

all RPCs. The next section provides a Regional Profile for each RPC service area including a demographic profile, a review of available technology, high priority strategies and recommended actions. The final section is a detailed analysis for each region of technology use in all economic sectors.

### **Acknowledgements**

The Vermont Center for Geographic Information [www.vgci.org](http://www.vgci.org) and Vermont Telecommunications Authority [www.telecomvt.org](http://www.telecomvt.org) are key partners on a statewide level. Within each region, participants included representatives from various interests including: Utilities/Energy, Business (Agriculture, Technology, Arts/Creative Economy, Retail/Restaurant/Tourism, Professional Services, Manufacturing), Libraries/Education (College, K-12, Adult), Health Care (Hospitals, Clinics), Emergency Services/Town Government, Youth/Senior Centers, Non-Profit/Service.

This project also relied upon information from [www.Broadbandvt.org](http://www.Broadbandvt.org) and the Vermont Telecommunications Plan and broadband technology development efforts in e-Vermont Communities ([www.e4vt.org](http://www.e4vt.org)).

# Regional Planning Commission

## Statewide Priorities

Each of the 11 Regional Planning Commissions (RPCs) established regional technology and innovation teams with representation from a variety of sectors including business, education, libraries, government, media, health care and human services. Input from these teams shaped the goals, strategies and actions found in the region-wide commonalities and sector analysis sections of this plan. While there was some variability in priorities reflective of unique local and regional conditions, there was significant consistency in goals and strategies across the RPCs. The five themes that were present in each region: were the availability and affordability of broadband, the role of broadband in local government, telecommuting, digital literacy, and economic impact of broadband. The RPCs recommend the following *RPC Statewide Priorities* be pursued in order help achieve these five goals.

The RPCs recognize the critical role of broadband to the economic, civic and cultural lives of Vermonters. The RPCs are committed to supporting broadband adoption as much as feasible and will continue to work with partners to identify our role in furthering statewide strategies. To that end, each RPC has agreed to implement several tasks, listed as *RPC Actions*, as part of their regular planning program. If additional resources are found, all RPCs or a subset of the RPCs will pursue the *Future RPC Actions* or other tasks developed in cooperation with our statewide partners.

### **Goal: Broadband will be available and affordable to all Vermonters.**

#### *RPC Statewide Priorities:*

- Promote higher broadband speeds for village centers, downtowns and growth centers.
- Encourage providers to establish or expand programs that offer lower-priced internet to households that qualify for the free and reduced lunch program.
- Encourage providers to establish affordable internet pricing structures for the elderly and low income residents without school-age children.

#### *RPC Actions:*

- Integrate broadband infrastructure and broadband adoption needs, priorities and strategies into local and regional plans.

#### *Future RPC Actions (as resources allow):*

- Work with school districts to develop a brochure about lower-priced internet programs to be included with the free and reduced lunch program applications and promotional materials.

### **Goal: Technology will be used to provide transparency, increase efficiency and allow greater access to local government.**

#### *RPC Statewide Priorities:*

- Investigate allowing municipal website development to be an eligible task for Municipal Planning Grants (MPGs).
- Establish separate state grant for town website development and/or technical assistance.

**RPC Actions:**

- Complete a scan of all municipal websites and give feedback on municipal websites. Encourage ADA compliance and other best practices from the Snelling Center’s toolkit, “e-Government Help Center for Vermont Towns.”
- All RPC websites will be reviewed for ADA compliance and updated/revamped as necessary.

**Future RPC Actions (as resources allow):**

- At least one staff member from each RPC will receive training on best-practices for municipal/public websites.

**Goal: More Vermonters will be able to telework/telecommute while maintaining strong connections to colleagues, clients and the public.****RPC Statewide Priorities:**

- Encourage the state to develop policies to allow more state workers to telecommute.
- Promote and support the establishment of telecommuting centers in rural areas.

**RPC Actions:**

- Each RPC will work with their respective boards to develop a telecommuting policy that is appropriate for their region.
- Purchase software to increase video conference capacity and encourage more online collaboration amongst the RPCs.

**Goal: Increase fluency in and literacy about broadband, the internet and the accompanying technological devices.****RPC Statewide Priorities:**

- Support efforts of community libraries and educational institutions to promote technological literacy.
- Direct additional funding to community libraries to support technology upgrades, training and staff time.
- Revise online state government benefits applications for continuity and ease of use. Expand training and support to local libraries on assisting the public with these forms.
- Coordinate efforts to promote availability of broadband and promote understanding of the potential financial and economic benefits of broadband technology.

**RPC Actions:**

- Participate in conference sessions focused on municipal use of technology through the Vermont Education and Training Collaborative. (The Collaborative is a collection of agencies and organizations that provide technical assistance and education to local land use officials in Vermont and includes the RPCs, Vermont League of Cities and Towns, the Department of Economic, Housing & Community Development and other partners).

**Future RPC Actions (as resources allow):**

- Partner with RDCs and other regional organizations to provide one or more targeted trainings annually.
- Work to strengthen partnerships between RPCs and local libraries and promote the libraries’ role as a key resource for closing the digital divide.

**Goal: Broadband will increase economic opportunity and support economic diversity.**

***RPC Statewide Priorities:***

- Target higher broadband speeds for village centers, downtowns and growth centers to encourage redevelopment.
- Promote the use of broadband as a way to connect Vermont farmers with more consumers either through on-line farmers markets or expanded advertising.

***RPC Actions:***

- Identify specific technology infrastructure needs—such as telecommuting hubs and Wi-Fi hot spots—in local and regional plans to support economic development strategies.

***Future RPC Actions (as resources allow):***

- Complete scan of available local and regional mobile aps.
- Develop mobile applications and mobile device friendly websites as an alternative or add-on to traditional print publications such as trail maps and guidebooks.

# Addison County Regional Planning Commission

## ADDISON COUNTY REGIONAL PLANNING COMMISSION



## REGIONAL PROFILE

### Demographic Profile

Addison Region is comprised of 21 municipalities and approximately 36,000 residents. Its largest town is Middlebury, a college town of approximately 8,000 residents. Its location within Addison County, a rural county of rolling farms and woodlands, nestled between the Green Mountains to the east and the Adirondacks to the west.

Number of households: 13,068

Median household income: \$43,142

Age distribution:

19 and under: 10,624 (29.6%)

Ages 20-54: 18,112 (50.3%)

55 and over: 7,238 (20.1%)

Education (Population 25 years and older):

High school grad: 11,142 (49.6%)

College graduate: 8,269 (36.8%)

### Internet Technology and Access

DSL offers a broadband internet connection over a standard copper phone line, which also includes a voice line. According to information provided by regional DSL providers, DSL is available in more than 83% of the region. This is one of the highest rates of DSL availability in the state. Most Verizon, Shoreham Telephone Company and Waitsfield-Champlain Valley Telecom customers have access to residential DSL.

High-speed internet access can also be delivered through cable television lines. This service is available in many of the town centers in the Addison region and offers faster speeds than DSL.

Improved telecommunications is not only of central importance to many businesses and other enterprises, but it has also brought a new type of resident to the region in recent years — people whose jobs allow them to do their work from anywhere in the world. These residents have chosen to live in the Addison Region for a variety of reasons, many related to quality of life and the character of the region’s communities, yet they work remotely. For example, Bryan Alexander lives in the small mountain town of Ripton and works remotely as a senior fellow at the National Institute for Technology in Liberal Education (NITLE). He is author of *The New Digital Storytelling: Creating Narratives with New Media* and runs the NITLE futures market, a crowd-sourced prediction game.

Telecommunications infrastructure can have significant impacts — especially visual impacts from towers and antennas — on the region. The Addison Region has been spared most of the negative impacts of that type of infrastructure largely due to its rural nature and low population density. Most of the region’s cell phone coverage comes not from large towers, but from antennas mounted on existing structures like silos and steeples.

Several cellular providers serve the Addison Region, including AT&T, Verizon, CellularOne and Nextel. According to Broadbandvt.org, approximately 85% of the Addison region has cellular coverage. The primary gaps are in cell coverage are in Addison, parts of Weybridge, West Cornwall and in the Green Mountains (Starksboro, Lincoln, Ripton and Goshen). In Governor Shumlin’s 2011 Inaugural Address he promised to deliver cell service to “every corner of our state” by 2013. Connect VT is leading this effort. Much of this infrastructure already exists in the Addison Region.

This plan contains specific policies and actions that economic sectors in the Addison Region can adopt and take to increase broadband adoption and improve digital literacy.

## REGIONAL COMMONALITIES

### Current State of Region

The Addison Region is composed of 21 municipalities and stretches from the shores of Lake Champlain on the west to the peaks of the Green Mountains on the east. According to the map below, which was developed by the Broadband Mapping Initiative (BMI), the Addison region has excellent broadband coverage in almost the entire region. However, this map does not reflect the holes in broadband coverage that ACRPC is aware of, such as in the communities of Ripton and Whiting.

In contrast, according to the 2010 Vermonters poll, 18% of Vermont businesses report that they do not have broadband and half of those businesses report that they don’t have it because it is not available at their location. Among residential internet users who do not have broadband access at home, 53 percent report that they don’t have broadband because it isn’t available to them where they live.

### BROADBAND SERVICE STATUS



In addition to the widespread availability of DSL noted above, the Addison Region possesses several other attributes that strengthen the region’s opportunities for broadband utilization. The Vermont Center for Emerging Technologies (VCET) has a facility in Middlebury, where it provides emerging businesses with services such as mentoring, networking, access to capital and markets, team building, and more. VCET also offers flexible work space, a conference room, and common areas with advanced A/V capabilities, broadband, kitchen, and offices for its incubator clients. Additionally, the town of Middlebury will soon have a “Director of Business Development” to recruit new businesses to Middlebury. This may create opportunities for innovative broadband utilization, depending on what types of businesses are recruited.

Addison County is also home to organizations that are leaders and innovators in the area of broadband utilization. For example, Addison County Economic Development Corporation is a statewide leader in the “economic gardening” model of economic development. This model focuses on “growing” the businesses that exist in the region rather than trying to manage economic development by recruitment. Broadband utilization ties in well with economic gardening because it focuses on utilizing and expanding existing assets. Broadband is an exceptional media to market the Region’s businesses to the rest of the world. Similarly, the Addison County Chamber of Commerce and the Ilsley Public Library offer workshops to businesses and individuals on such topics as Internet 101, Internet marketing, social media and digital tools. The Region’s partners should continue to encourage this outreach and training and try to find a way to institutionalize it.

Middlebury College houses significant broadband infrastructure and is a magnet for innovative enterprises such as VCET and the English language software company, e-Corporate English. Middlebury College has also partnered with the town of Middlebury to make free wifi available in the entire downtown and to fund the new Director of Business Development position. The Region’s public and private sector leaders need to continue to broaden and expand these relationships to capitalize on this regional strength.

Finally, the towns of Bristol and Vergennes are e-Vermont towns, which has given them the opportunity to bring Front Porch Forum and village wifi to their communities. Other towns in the Region are also discussing ways to take advantage of some or all of the e-Vermont package of services to expand their own capabilities.

### **Shared Goals That Encompass More Than One Sector**

- Improve web presence, namely in the areas of user-centered design, interactivity, social media and ease of management.
- Leverage technology to achieve greater efficiency in day to day operations.
- Build awareness and foster inspiration about the possibilities of smart use of broadband technology.
- Do more collaboration within and across sectors.

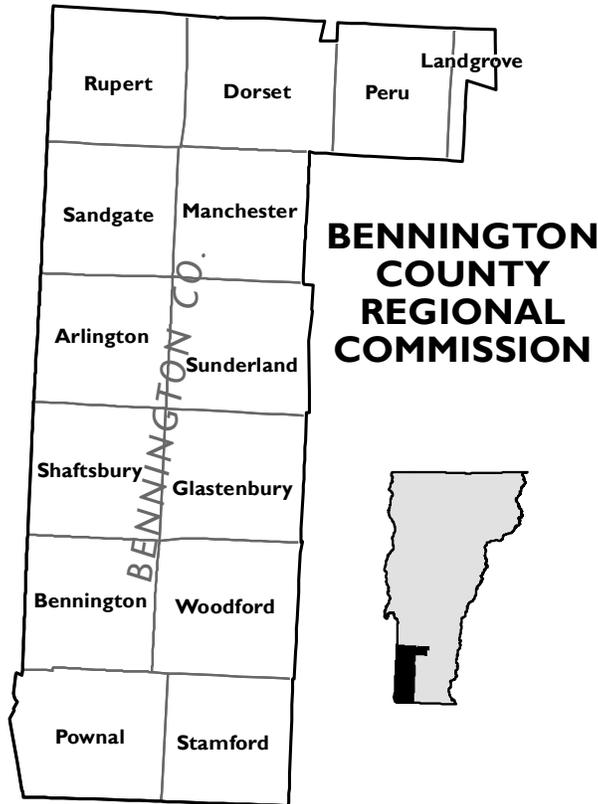
### **Shared Strategies That Encompass More Than One Sector**

- Foster more peer to peer sharing, collaboration and problem solving. Regular events such as tech meetup co-sponsored by ACEDC and VCET give leaders and “doers” an opportunity to network with others, be inspired by the success of others, and to learn from the wisdom of others. At each gathering one attendee could share an inspiring success story and one could share a challenge.
- Leverage the skills and knowledge of “digital natives” to help businesses and organizations with mobile applications and social media. High school or college students could be partnered with businesses, organizations and institutions. The students would gain valuable experience and the businesses would gain valuable expertise.
- Create a “one stop shop” for the region where businesses, organizations and institutions can get the support they need to move forward on initiatives. VCET and the Chamber of Commerce may be able to serve this need. This could include web support in the form of a website or wiki, educational support in the form of workshops, and live support in the form of staff expertise.
- Form strategic partnerships such as the one formed between Middlebury Community Television and the Addison Independent, who are working together to create and distribute digital content. Other opportunities abound for libraries, economic development centers, youth groups and career training centers.

**Shared Actions That Encompass More Than One Sector**

- Continue to plan conferences like the Vermont's Digital Future conference or create track for existing conferences (NOFA's Direct Marketing conference and the VLCT Municipal Technology conferences are good examples).
- Encourage telecommuting by implementing the necessary policies and technologies.
- Identify champions within organization and businesses to move broadband-related initiatives forward.
- Form Addison County Working Group with representatives from various sectors to help implement this plan locally.

# Bennington County Regional Commission



## REGIONAL PROFILE

### Demographic Profile

Bennington County, is located in the southwest corner of Vermont approximately 30 miles from the Albany, NY metropolitan area. The Bennington Region (noted in the map below) or the area represented by the Bennington County Regional Commission, differs slightly from Bennington County proper. The towns of Readsboro, Searsburg and Winhall are in Bennington County but not a part of the Bennington Region for planning purposes. In most cases the demographic data available is at the county level and is so noted. The largest population centers are Bennington (15,764) and Manchester (4,391). The Region has enjoyed a strong manufacturing sector and is a gateway and destination for tourism and recreation due to a concentration of scenic, cultural and historic resources, such as the Bennington Battle Monument, Robert Todd Lincoln’s Hildene, and the Robert Frost homestead. Larger institutions include Southwestern Vermont Medical Center, Bennington College, Community College of Vermont, and Southern Vermont College. Some of the larger private employers include Energizer, Southwestern Vermont Medical

Center, Vermont Country Story, Plasan USA and Kaman Composites. In 2010, the population of the County was 37,125 which is 0.4% higher than it was in 2000. The Vermont Department of Labor notes the per capita income for Bennington County in 2010 was \$40,888. Median household income is \$47,396 according to the 2010 Census. The population in the labor force is 19,693, or 65% of the population. The unemployment rate of the County as of April 2012 was 6.2%.

### Technology Currently Available Within the Region

The Bennington Region is served by a number of providers which can be viewed by searching providers on the State sponsored website [www.broadbandvt.org](http://www.broadbandvt.org). Speeds vary based on service packages offered. Companies serving the Region and providing Internet accessibility include: Comcast, FairPoint, Sovernet, Hughes Network Systems, Starband and Wildblue Communications. Wireless/Cell providers include: AT&T, Sprint Nextel, US Cellular, Verizon, and hybrids such as Tracfone.

The Bennington Region has a unique opportunity to take advantage of broadband upgrades given the substantial private and public investments to be made through the end of 2013. These include the Vermont FiberConnect project, a joint venture between the Vermont Telecommunication Authority (VTA) and Sovernet Communications, which will develop 773 miles of fiber-optic middle mile network in Vermont with a substantial build in the

Bennington Region. The goal of this middle mile network is to connect 340 anchor institutions such as schools, medical facilities, libraries, and government agencies. This backhaul capacity will also be made available to “last mile” providers in the project area. This is a critical element in the development of a robust broadband infrastructure in the region. Another important project is the VTel’s 4G LTE Wireless Open World project, which will be increasingly important where cable and DSL service is not available or robust. Increasing broadband adoption is an important goal of the plan to support infrastructure investment that would not otherwise be justified as a business venture.

### REGION-WIDE COMMONALITIES

The Vermont Telecommunications Plan will be successful if the region’s residents, governments, businesses, organizations and institutions aggressively pursue and utilize broadband infrastructure, both existing and soon-to-be deployed, and utilize the best available broadband technology both fixed and mobile. The effect of this over-arching strategy will be to aggregate demand and create favorable markets for service providers and application vendors to offer choice and quality at competitive and affordable prices. Cellular services, critical to the rapidly growing mobile applications for personal or business use, are equally important to the Region becoming fully and effectively digital and taking advantage of opportunities in real time. The broadband and cell services challenge will require a multi-pronged educational effort that can best be achieved if all the sectors in this plan make telecommunication technology a high priority; especially in the short term of the next several years as Vermont takes advantage of a window of opportunity with public and private telecommunications infrastructure investments.

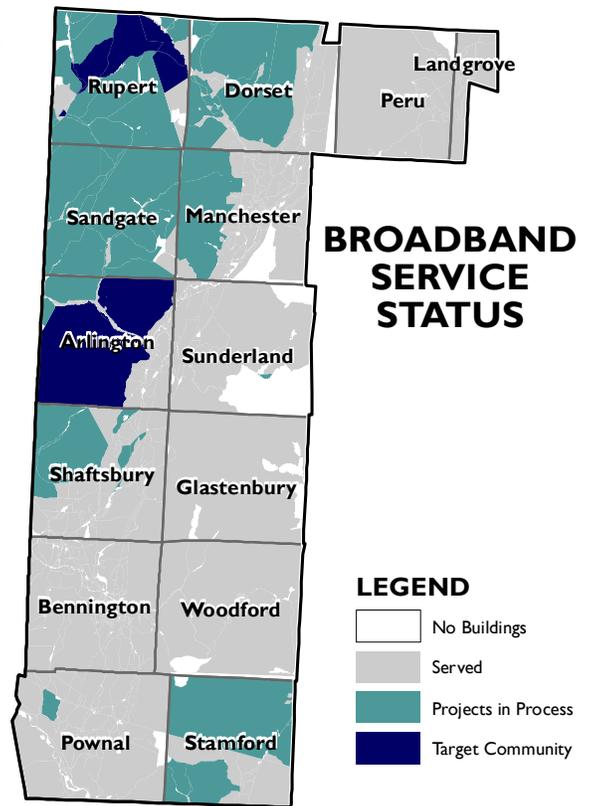
The Bennington Region Tech Team is made up of seventeen members representing seven different sectors including government, libraries, education, business and utilities. A number of meeting of this group were held to discuss elements related to the availability and utilization of broadband technology within the Bennington Region. As part of that work, several goals were identified which cross sectors and are of vital importance to increased adoption and utilization of broadband within the Region.

The following Regional Goals are a common undertaking to all sectors in the Region, while sector specific goals and actions in the following section will serve as a foundation to advance all sectors in the use of broadband, and thereby collectively elevate the region’s overall performance.

### Goal I: Promote Education and Awareness of Broadband Capacity and Utilization

#### Strategies:

- Promote training sessions/courses for beginning and advanced applications with consideration to residential personal computer and mobile application literacy and sector specific needs. Potential Partners: Libraries, Municipalities, RPC’s, VAPDA
- Inform sectors about and develop website applications, trends, and best practices to meet the needs



of area businesses, home occupations, cottage industries, organizations and institutions. This may be accomplished through professional web designers/developers including turnkey management services. Measure the effectiveness of such applications. Potential Partners: Vermont Council on Rural Development (VCRD), Small Business Development Centers (SBDC), RPC's

- Promote e-government tools to engage residents and improve the efficiency of government programs and services including video programming and conferencing. Potential Partners: Municipalities, VCRD

#### Actions:

- Prepare alerts about current projects being advanced and what they will enable, and what to consider in preparing for improved broadband (VT FiberConnect, VTel Wireless Open World, mobile). Potential Partners: Municipalities
- Determine particular training needs of mentors or colleagues and seek resources for cross-sector expertise to assist with training for current and new technologies.
- Hold periodic forums about communication technology and sponsor a technology fair annually. Form or assemble a technology corps to address issues and opportunities as needed and to promote regional or local events. Potential Partners: Workforce Investment Board (WIB), RPC's, Municipalities
- Develop and sponsor forums to connect people and organizations run and controlled by the membership, participants, or a lead entity. Social networking and engagement has grown dramatically as a communication venue throughout various sectors and community engagement including business outreach. Potential Partners: RPC's, WIB, SBDC

## **Goal 2: Promote Technology Infrastructure Development and Deployment**

#### Strategies:

- Support deployment of infrastructure and services to advance broadband and cellular services in the region. Potential Partners: Municipalities, Legislative Delegations, Vermont Telecommunications Authority (VTA)
- Facilitate public/private partnerships and coordinate initiatives that benefit the region, communities, residents and businesses. Potential Partners: Private Telecom Providers (Fairpoint, Sovernet, VTel, etc), VTA
- Advocate broadband to achieve download/upload speeds of 19Mbps/4Mbps in the short term. Target corridors such as State highways, Class 1 and 2 Town roads and anchor institutions for fiber trunk lines with potential branch extensions. Potential Partners: Municipalities, Legislative Delegations, VTA
- As in smart growth, target investments to achieve the greatest good to support employment centers, compact settlements and surrounding areas with high-end broadband, while also providing services to meet the needs of residents and small businesses in rural or remote areas. Potential Partners: RPC's Municipalities, Vermont Association of Planning and Development Agencies (VAPDA), VTA
- Support State and private provider initiatives to serve rural targeted communities that would not otherwise justify private market-based investments. Potential Partners: Private Telecom Providers
- Support ancillary initiatives such as the smart grid and smart meters to manage and conserve energy. Potential Partners: Green Mountain Power/CVPS
- Accelerate cellular deployments in targeted corridors and in areas with gaps throughout the region to assure connectivity without dropped calls to industry standards. Potential Partners: Municipalities, Cell Site Locator Companies

**Action:**

- Take an active role in meetings and regulatory proceedings to support telecommunication infrastructure and services. Potential Partners: RPC's, VAPDA

**Goal 3: Promote Utilization and Adoption of Broadband Services and Other Technologies****Strategies:**

- Support universal service through the development and use of land line and wireless applications – both critical to developed and undeveloped rural communities and areas in the region. Potential Partners: Private Telecom Providers, VTA
- Encourage pricing structures for broadband and cellular services that will promote utilization and stratified rates for special populations such as the elderly, those with disabilities, and lower income sensitivity, thus minimizing the “digital divide.” Potential Partners: Private Telecom Providers, VTA
- Encourage the regions sectors to share in non-proprietary applications that may benefit other sectors including broadband needs, both existing and future.

**Actions:**

- Encourage anchor institutions to utilize high capacity fiber optic transport networks, not only to support a critical backbone of the region’s infrastructure but also to benefit directly from the improved infrastructure. Potential Partners: Libraries, Schools, State Government, Healthcare Facilities
- Sponsor a business telecommunications roundtable to share and advance ideas, programs, and projects from both user and provider perspectives. Potential Partners: SBDC, VCRD
- Identify best practices and emerging trends and provide live demonstrations of applications. Potential Partners: SBDC, VCRD

**Goal 4: Promote Economic Opportunity and Development****Strategies:**

- Ensure that both small and large business enterprises have the requisite telecommunications infrastructure and applications to foster growth and competitiveness.
- Support community and regional initiatives such as community-sponsored agriculture and the potential for growing home occupations and cottage industries made possible with enhanced broadband and mobile applications. Potential Partners: Local Agricultural Producers and Organizations (i.e. – Bennington Farm2Plate)

**Action:**

- Monitor deployment and utilization of broadband, cellular, and mobile applications to support the region’s businesses; including job creation and workforce development across key industry sectors. Potential Partners: SBDC, RPC's, VTA

**Goal 5: Utilize Broadband and Other Technologies to Improve Public Safety****Strategies:**

- Enhance broadband, wireless, two-way voice, and video for interoperability of first responders. Potential Partners: Municipalities

- Local government should have the capacity to rapidly convey information about incidents via the Internet, live video programming, radio, and other means such as Facebook with resident feedback in real time for certain emergency events. Potential Partners: Municipalities
- Assure that enhanced e-911 is effective and fully operational in all communities. Potential Partners: Municipalities

**Action:**

- Support the development of a unified communications platform for an effective and seamless communication network across the state, regions, and local governments. Potential Partners: Municipalities, Vermont Emergency Management (VEM)

# Central Vermont Regional Planning Commission

## REGIONAL PROFILE

### Demographic Profile

The Central Vermont Region is comprised of the 20 towns of Washington County in addition to three municipalities in adjacent Orange County: Orange, Washington, and Williamstown. The 2010 population of Central Vermont was 65,034 – approximately 10 percent of the entire population of Vermont. The largest population concentration in the Region can be in Barre City, with 9,052 residents, followed by Barre Town, with 7,924 residents. The Region is rural in nature with approximately eighty percent of inhabitants living outside of the urban core areas of Montpelier and Barre City.

Beyond the urban core areas, the Region is characterized by smaller towns and villages, reflecting the historic settlement patterns whereby population concentrated in compact hamlets, villages, and cities, often found along the fertile river valleys, while the surrounding rural areas supplied the raw materials for manufacturing. Over the past few decades, such settlement patterns have shifted due to changes in transportation, lifestyle preferences, and the growth of resort areas and second homes. As a result, many of Central Vermont’s rural municipalities have doubled their populations while the larger cities have witnessed negative growth.

According to the Census Bureau, the Central Vermont region mirrors state demographics to an extent. The median age is 43.2 years with the largest population group ranging from 50 to 59 years. (compared to 41.5 for the state of Vermont). The median household income is \$54,227; roughly ten percent of the population lives below the federal poverty line; and the current unemployment rate is five percent. In 2009, a majority 63 percent of the population reported working in the service providing industries which would address transportation, distribution, and sales of food products. Other major employers throughout the Region include healthcare, education, manufacturing, and the public sectors. The average worker earned \$3,348/mo in 2009. The major employment centers included Montpelier, Barre City and Waterbury.

### Current Service

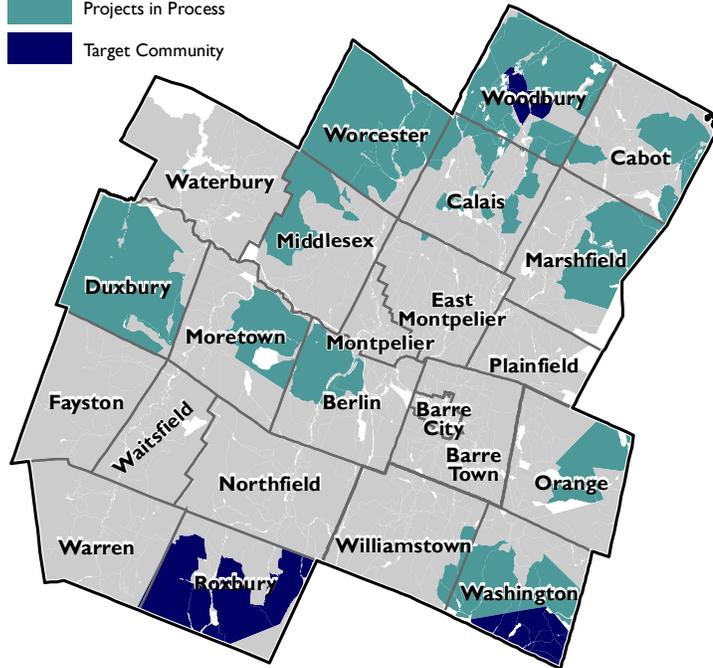
Although the majority of the Central Vermont Region is served by Broadband in some capacity, primarily through cable and DSL (digital subscriber line via a telephone provider), the maps of cable, DSL, and fixed wireless



**LEGEND**

- No Buildings
- Served
- Projects in Process
- Target Community

**BROADBAND SERVICE STATUS**



service (WISP) provided online by BroadbandVT show Roxbury, Washington, and Woodbury as the most underserved towns in our region. With large portions of the towns without access to Broadband service or with access at less than 25% of residences, these areas should be targeted for increased connectivity and access. Other communities reported to lack Broadband access, but that are anticipated to have increased Broadband access by 2013 include: Duxbury, Moretown, Berlin, Worcester, Woodbury, and Marshfield. Current service providers throughout the Region include: FairPoint, AT&T, Verizon Wireless, Hughes Network Systems, LLC, Cloud Alliance, Kingdom Connection, Windblue Communications, and Starband.

**E-Vermont Communities**

Within the Central Vermont Region, the towns of Middlesex, Moretown, and Calais participated in the E-Vermont Community broadband initiative. Middlesex

underwent the planning stage of the process in 2010, Moretown and Calais underwent the planning stage of the process in 2011. More information about these community initiatives can be found in the *Summary of Statewide Initiative* section of this document or at <http://e4vt.org/programs/e-vermont/communities>.

**REGION-WIDE COMMONALITIES**

**Description of Region’s Process**

The process to develop the Central Vermont Regional Technology Plan’s goals and strategies involved: numerous meetings with our technology team; a survey that was distributed to the Region via the CVRPC town officials email list, the CVRPC blog and webpage, and to eight towns via Front Porch Forum; and one-on-one interviews with representatives from each of the identified ten sectors.

The initial step of the process was to develop a regional technology team. Members on the team varied from experts in their field to the everyday computer user interested in developing their broadband expertise and knowledge. During the initial technology team meetings, we identified common goals, barriers, and strategies regarding widespread adoption of broadband technologies.

To gather additional data and fill in data gaps, we developed a survey that was distributed via several online outlets. The survey identified: how people use broadband technology at work and in their day to day activities; in which sector they used broadband technologies; and whether or not having broadband was essential to them accomplishing their activities. The survey results were analyzed based on sector and provided valuable information that helped us identify common and sector goals, strategies, and projects. From the surveys we were also able to develop an email list of regional citizens who were interested in participating in regional broadband forums, as well as provide input on the draft plan.

The final step of gathering input for the plan was one-on-one interviews with regional experts in each sector. We developed a standard set of questions for the interviews for consistency of responses. The questions were similar to those of the survey, but the one-on-one interview allowed for greater depth and detail of responses.

In all three survey methods we observed similar responses leading to overall regional trends. The result of this process is a comprehensive technology plan that identifies future goals, policies and projects that will enable generations young and old to better adopt broadband technologies at work, school and in their daily activities.

### **Shared High Priority Goals**

1. Ubiquitous adoption - A broadband adoption rate of 100%. Broadband technologies have the capacity to enhance our everyday experiences and serve as valuable tools in every sector. Everyone should be able to use broadband to suit their needs in personal and professional settings.
2. Increase web presence of entities within all sectors – Every business, municipality, school, library, and service will have a web page. As Central Vermonters shift from looking up services in a phone book to using internet based search engines, it will be important for businesses/organizations to have a functioning webpage that provides rich information. Such websites will increase the ease of searches and provide a competitive advantage over those entities without web pages.
3. Ensure that all residents have basic computer and broadband literacy skills – The digital divide was a concern among all sectors. To ensure that no Central Vermonter is left behind in the digital age, we encourage all sectors to develop digital literacy outreach programs that provide training in basic computer skills and broadband technologies.
4. Increase connectivity for those unable to reach anchor institutions or fixed point broadband centers – The advantage of broadband technologies is its mobility. Wifi, cellular communications, WVSPs, etc allow Central Vermonters in rural locations to utilize broadband technologies without being in a fixed location. In the future, greater cellular coverage along with portable computer labs and mobile devices (cell phones, tablets etc.), will allow those previously unable to access broadband technologies to do so.

### **High Priority Strategies/Actions**

1. Purchase of portable lab supplies – This action supports the goal of increasing access to rural and/or immobile Central Vermonters. Lab supplies could be purchased by anchor institutions and loaned out to various community entities to provide workshops and trainings.
  - Possible partners: Kellogg Hubbard Library, Central Vermont Medical Center, Washington County Supervisory Unions, Green Mountain United Way, Central Vermont Chambers of Commerce
2. Develop peer to peer mentoring programs in all sectors – This action aims to utilize the skills of those already established within a sector and train their counterparts. Peer to peer mentoring may be more effective in that trusted relationships are already established or when provided through formal or anchor institutions such as local schools and libraries.
  - Possible partners: Vermont College of Fine Arts, Norwich University, UVM extension, Community College of Vermont, Central Vermont Adult Basic Education, Central Vermont Food Systems Council, Central Vermont High Schools, Central Vermont Chambers of Commerce, Central Vermont Council on Aging, Center for Independent Living, Green Mountain United Way, Boys and Girls Club, Central Vermont Meals on Wheels, Central Vermont Adult Basic Education, Central Vermont Veteran Services
3. Ensure human services facilities have access points for patrons and patients – As more services change from paper to digital forms, it will be essential that human service facilities have computer work stations with aides in order assist patrons and patients with the transition.

- Possible Partners: Central Vermont food shelves, Vermont Food Bank, Central Vermont Medical Center, Washington County Mental Health, Central Vermont Adult Basic Education, Central Vermont Senior Centers, Central Vermont Houses of Worship, Washington County Youth Service Bureau
4. Develop educational and training materials specifically for the technologically adverse – This action will help to lessen the digital divide. Materials could be placed in anchor institutions in order to promote greater distribution.
    - Possible partners: Central Vermont Senior Centers, Central Vermont Council on Aging, Center for Independent Living, Central Vermont Medical Center, Central Vermont Adult Basic Education, Central Vermont Chambers of Commerce, Central Vermont Food Shelves, Central Vermont Libraries, Community College of Vermont, Central Vermont Housing Authorities
  5. Provide social media training – Social media provides the opportunities to engage a variety of audiences in all sectors due to their ease of use and low cost for service providers. Greater understanding of social media tools can enhance user experiences and allow for greater engagement.
    - Possible partners: Central Vermont Chambers of Commerce, Central Vermont Economic Development Corporation, Central Vermont Community Action Council, Central Vermont Senior Centers, Washington County Youth Service Bureau,, Central Vermont Libraries
  6. Regional tele-centers – Two tele-centers set up in the region would house equipment such as high power computers, printers, projectors, conference call phones etc. and office space to rent. These centers would allow small businesses and visitors access to high speed broadband technologies without the significant start up costs and capital. The centers could be staffed to provide additional technical assistance and training.
    - Possible partners: Central Vermont Chambers of Commerce, Central Vermont Economic Development Corporation, Central Vermont Community Action Council, Center for Independent Living, Central Vermont Adult Basic Education
  7. Encourage Municipalities to include broadband goals and strategies within local plans as tools to enhance economic development, education and overall resiliency.
    - Possible Partners – VLCT, Central Vermont Planning Commissions, Central Vermont Select Boards, Central Vermont Supervisory Unions, Central Vermont Economic Development Corporation, Agency of Commerce and Community Development, VAPDA

# Chittenden County Regional Planning Commission

## REGIONAL PROFILE

### Demographic Profile

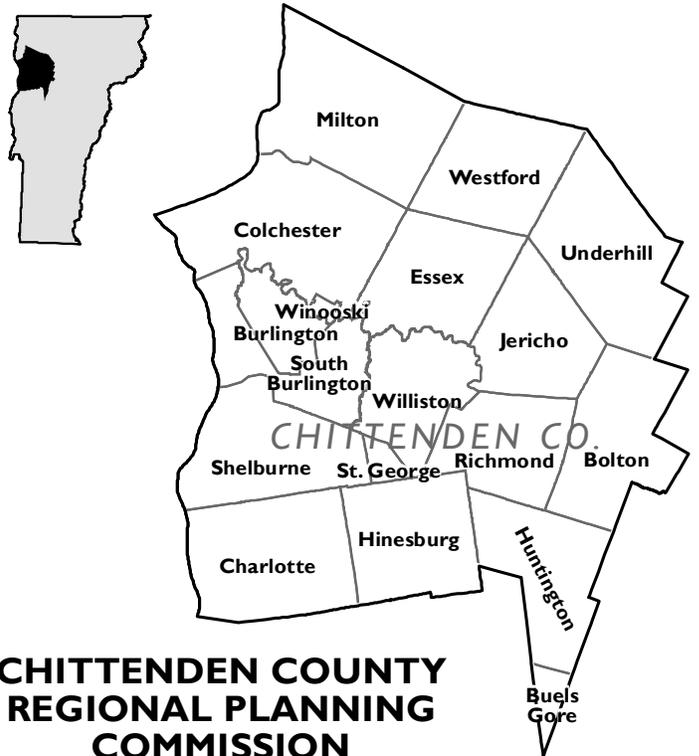
Chittenden County is located in northwestern Vermont between Lake Champlain and the highest peaks of the Green Mountains. The County's nearly 350,000 total acres have a rich diversity of landscapes: forests, farms, water bodies, small cities, suburban areas, and villages.

Founded in 1787, Chittenden County has over 156,000 residents living in 19 municipalities that range in size from 30 to approximately 42,000 residents. Chittenden County is the heart of the Burlington – South Burlington Metropolitan Statistical Area (the economic engine of Vermont); home to the State's largest higher education institution, health care facility, and private sector employer; and nationally recognized as having outstanding quality of life.

As stated in the Chittenden County Regional Plan, economic prosperity funds our needed community facilities and infrastructure, as well as the social, cultural, and conservation programs that contribute to our high quality of life. Our prosperity and quality of life will continue to result from thoughtful development that sustains healthy businesses and ecosystems, a vital economy that is consistent with stewardship of our natural resources, and a network of safe and healthy communities. Broadband Technology is integral to our economic prosperity.

### Technology Available Within the Region

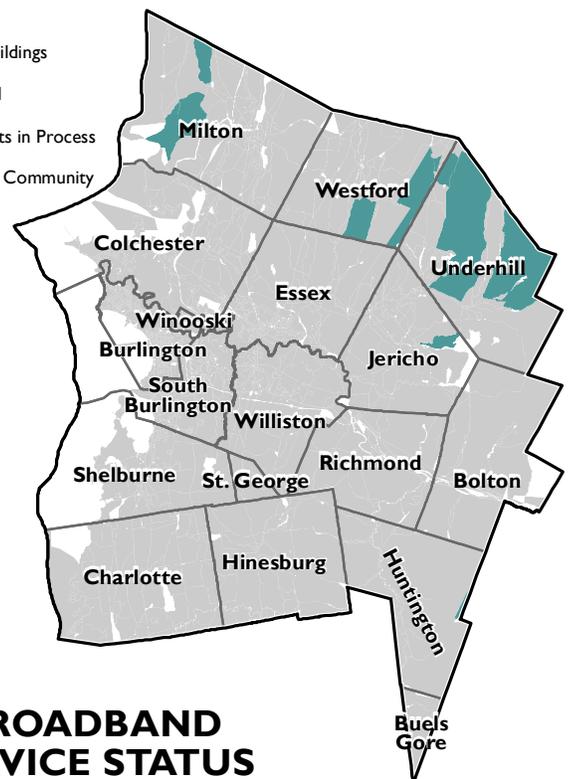
Broadband technology is widely available throughout Chittenden County, coverage is practically 100%. As of December 2011, approximately 99% of Chittenden County residents and 99.5% of non-residential structures (analysis included commercial, industrial, municipal structures) have access to Broadband – the federal definition of broadband is 768 kbps download/200 kbps upload speeds. The graphic to the left highlights the few areas in the county where projects are in progress. For the most current view of broadband availability by census block, please refer to the maps at <http://www.BroadbandVT.org>.



**CHITTENDEN COUNTY  
REGIONAL PLANNING  
COMMISSION**

### LEGEND

- No Buildings
- Served
- Projects in Process
- Target Community



**BROADBAND  
SERVICE STATUS**

While Chittenden County may not be home to any e-Vermont communities, it is the birthplace of Front Porch Forum (<http://frontporchforum.com/>), a major e-Vermont partner. As of June 2012, Front Porch Forum has 27,500 members out of about 61,800 existing households. Through the success of E-Vermont Front Porch Forum has quickly grown from the community-building service in Burlington, VT to hosting neighborhood forums in 70 Vermont towns. Front Porch Forum is a great way to connect with neighbors and build community through broadband.

## REGION-WIDE COMMONALITIES

### Description of Region's Process

The Chittenden County Regional Technology Team (CCRTT) is comprised of technology savvy people from the following sectors – agriculture, libraries, education (k-12, college, and adult education were represented), health care, human services, youth/senior centers, municipal government, emergency management, media, and non-profits. A list of team members can be found in the appendix. Over the course of a year, the CCRTT held 3 in-person meetings. CCRTT also used Google Docs, interviews and an online survey to develop the goals and strategies for our region. Each team member helped distribute the survey to peers and colleagues. There were approximately 50 completed surveys, with a few other partially completed. Team members attended and participated in the Vermont Digital Future Conference held at Champlain College on May 8<sup>th</sup> and the Vermont Communities in a Digital Age held at Vermont Technical College on February 16<sup>th</sup>.

### Shared/High Priority Goals

1. Many sectors share the goal of having a Telecommuting policy in the work place.
2. Many sectors mention a goal of formalized network for sharing resources.
3. All Municipal websites are useful and ADA compliant.
4. Many sectors share the goal of increased education and training to improve skills. These skills include:
  - Internet security
  - Basic computer skills
  - Internet navigation & web access
    - ♦ All browsers look different & treat web pages differently
5. Digital Literacy for all is a priority goal for all sectors since literacy is what will make broadband successful across all sectors.

### Shared/High Priority Strategies/Actions

**Telecommute Policy – CCRPC will consider including this in FY14 workplan.**

#### **Strategy:**

- Conduct online research of various telecommuting policies throughout the United States.

#### **Action:**

- Make research available to interested companies, municipalities, and organizations. Use web, email, and blog to create interactive dialog so that organizations can learn from each other.

## Resource Sharing Network

### Possible Partners: The Chamber and/or the United Way.

#### Strategy:

- Create list of interested parties with contact information. This may need to be divided up by sectors – various creative arts organizations may wish to collaborate with each other, while various municipalities would work together. Like minded organizations will most likely find there are more common resources to share.

#### Action:

- Share contact list among interested parties. Use a website(s) to list available resources.

## Municipal Websites – CCRPC will consider including this in FY14 workplan.

#### Strategy:

- Conduct an assessment of all Chittenden County websites to find out if they are following federal and state standards and are ADA.

#### Action:

- Inform municipalities of the standards and help to create a website that is useful and meets standards.

## Education and Training to improve skills

#### Strategy:

- Offer classes often and through a variety of sources/locations.

#### Action:

- Use CCRTT members, Front Porch Forum, and social media to advertise the classes. Utilize a train the trainer program to increase availability of qualified instructors.

## Digital Literacy

#### Strategy:

- Integration of sectors will work well here.

#### Action:

- Use computer knowledgeable high school students to help seniors or to be computer help desk people at libraries.

## Education

#### Strategy:

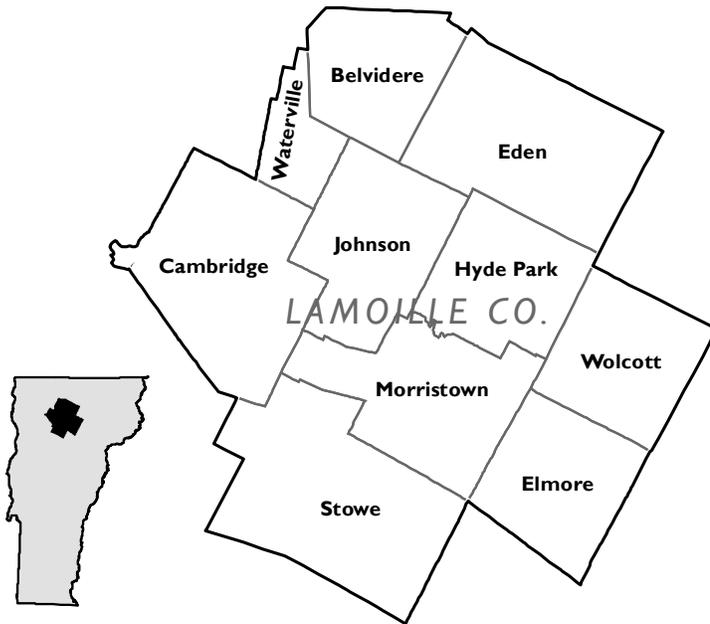
- Strive to have iPads or netbooks for k-12 students in all of Chittenden County.

#### Action:

- Ensure K-12 supervisory unions are aware of DigitalWish and One-to-One programs. Provide professional development to educators to help close the technology gap with students.

# Lamoille County Planning Commission

## LAMOILLE COUNTY PLANNING COMMISSION



## REGIONAL PROFILE

### Demographic Profile

Lamoille County is located in the north-central region of Vermont. The County is bounded by the Green Mountains to the west and Worchester Range to the east. The Lamoille River, which flows east to west and bisects the County, is one of the region’s most distinct physical features. Ten Towns – Johnson, Morristown, Stowe, Cambridge, Hyde Park, Waterville, Belvidere, Wolcott, Elmore, and Eden, are located within the County. According to the 2010 U.S. Census, 24,245 people live within Lamoille County.

A cluster of small manufacturing firms centers around Morristown and extends into several other communities. Growth of this manufacturing base is hampered by a lack of available land served by necessary infrastructure. Travel, tourism, and outdoor recreation

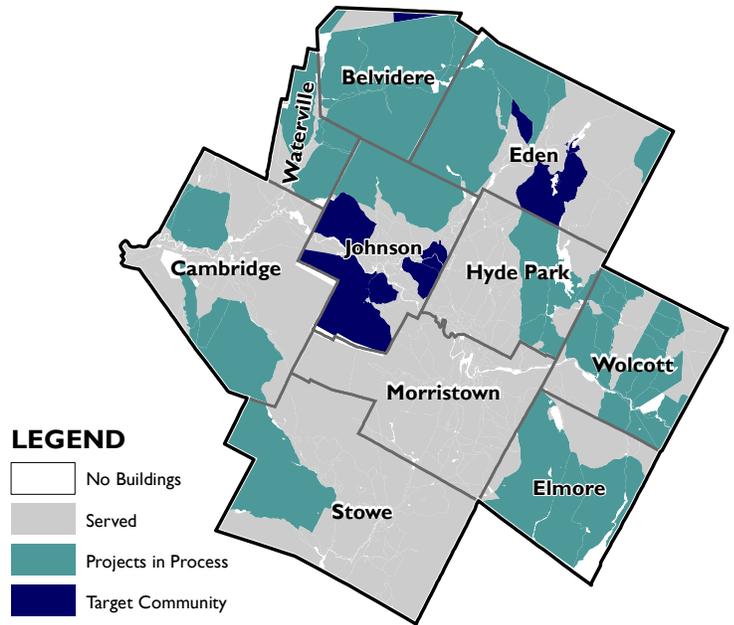
are major components of Lamoille County’s economy. Two of Vermont’s largest ski resorts, Smugglers Notch Resort and Stowe Mountain Resort, are located within the County. Stowe is a well known resort community with a large number of second homes. As the ski industry declines nationwide, the County is shifting to a four season tourism economy which is enhanced by the County’s natural beauty, prominent ridge lines, and network of lakes and ponds – including Belvidere Bog, Lake Eden, Lake Elmore, Wolcott Pond, and the Green River Reservoir.

Due to Lamoille County’s proximity to employment centers in the Greater Burlington Area and along the I89 Corridor and comparatively more affordable housing costs, many Lamoille County residents commute out of the County for employment. Forty-five percent of Lamoille County residents work outside of Lamoille County. Twenty percent work in Chittenden County with another ten percent working in Washington County. With a growth rate of 5.1 percent over the last ten years, Lamoille County is the second fastest growing county in the State. Despite these strengths, the County has higher than statewide unemployment and poverty and lags in median annual family income.

Telecommunications and broadband technology in Lamoille County has improved in recent years. However, there are still significant “drop zones” on several major highway corridors, including Route 15 in Cambridge, Johnson, and Wolcott, Route 12 in Elmore, Route 108 in Cambridge and Waterville, and Route 109 in Belvidere and Route 118 in Eden. Morrisville is a central hub for several major electric transmission lines. Stowe Electric, one of six municipal utilities in the County, is in the process of installing smart meters at all of its customer locations. Vermont electric coop has also installed smart meters in Lamoille County. A series of river gauges monitor water levels along the Lamoille River and are part of a nationwide system that can be programmed to send alerts when the river approaches flood levels.(<http://water.usgs.gov/wateralert/help/instructions.html>)

As of the drafting of this Plan, DSL broadband is available in most, but not all, communities in Lamoille County. Cable broadband is available in portions of Morristown, Stowe, Hyde Park, and Johnson. A Back Roads Broadband Grant was awarded to extend DSL Services to all areas of Cambridge (including Jeffersonville Village) and Waterville. Carrier Ethernet is available throughout the Back Roads Broadband area and selected areas in other towns. Through the E-Vermont Community Broadband Project, the Town of Morrisville has installed a public access WiFi zone in its downtown. Broadband is not available in Belvidere, much of Elmore, and many remote areas of other towns.

### BROADBAND SERVICE STATUS



### REGION-WIDE COMMONALITIES

A Regional Technology and Innovation Team composed of representatives of diverse sectors provided input and oversight for the development of this Plan. In addition, 23 individual interviews were held with community leaders, business owners, social service providers, teachers and librarians, and other stakeholders. The following goals and strategies represent a synopsis of the top priorities identified by these stakeholders.

### Goal I: County residents are aware of the potential benefits that broadband provides and are empowered to take full advantage of these benefits.

#### Strategies:

- Promote widespread understanding that broadband offers more than entertainment. Engage County residents to understand ways in which broadband can be used as a creative rather than consumptive tool. Promote the potential financial benefits for business, non-profits and government agencies, and individuals.

#### Actions:

- Provide trainings tailored to the specific needs of individual sectors. All sectors are under intense pressure to fulfill their “core” functions. In order to be successful, technology training should be incorporated into existing programs.
- Support computer and internet literacy training opportunities for adults in the region at libraries, colleges, technical centers, and other areas with public computers. Coordinate training efforts by different organizations and sectors to ensure efficient use of financial resources and personnel. Develop best practices and model curriculum for computer and disseminate to the appropriate organizations.

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## **Goal 2: Broadband reinforces, strengthens, and builds community ties and is used as a tool to actively bring communities together rather than passively move them apart.**

### **Strategies:**

- Promote E-government tools to engage residents and improve the efficiency of government programs and services. Continue using traditional means of communications to ensure that residents without broadband access are not disenfranchised or denied access to government records or services.
- Evolve roles of existing community anchors, such as libraries, schools, and community centers to ensure the vitality of these institutions in the Digital Age.
- Use broadband as a tool to revitalize Lamoille County's rural villages and downtowns, allowing these areas to reclaim their historic roles as centers of commercial and civic life and to function as incubators for new, high tech businesses.

### **Actions:**

- Broadcast government hearings, public meetings, and other important public gatherings online. Develop mechanisms for residents who cannot physically attend meetings to participate remotely. Provide local governments and other public entities with technical assistance on best practices for developing and maintaining a municipal website, including issues such as ADA accessibility.
- Equip existing community anchors with the equipment, tools, and training necessary to serve as technology and communications hubs. When feasible, provide public access to these facilities. (For example, formal public "drop in sessions" at school computer labs after school hours).
- Implement tools to provide public, high speed internet access in villages and downtowns. Such tools include, but are not limited to, development of public access WiFi zones, establishment of tele-centers, or development of publicly accessible "internet cafes." Appropriate tools will be selected based on input from the local community.

## **Goal 3: Broadband is used to strengthen and grow Lamoille County's economy.**

### **Strategy:**

- Increase economic opportunity and employment options for Lamoille County residents. Allow more people to both live and work in Lamoille County. Ensure that County residents and businesses are equipped with the tools and skills needed to compete in a digital economy.

### **Actions:**

- Promote the County's diverse assets, including its recreation and natural resources base, on the web. Increase the internet presence of Lamoille County based businesses. This may take the form of cooperative ventures between public and private parties. Develop an online Lamoille County Directory, akin to the Lamoille County Phone Book.
- Promote development of telecommuting, home-based businesses, and remote offices. Evaluate the feasibility of establishing "Tele-centers" in Lamoille County. Actively promote Lamoille County to large firms located in urban areas of the Northeast and Canada as a desirable place to locate a remote office.
- Work with workforce development agencies and human service providers to provide training in essential digital skills among the County's workforce. Ensure that efforts by various agencies are coordinated to minimize duplication of services.

**Goal 4: All County residents have access to the benefits provided by expanded broadband. The “Digital Divide” between those with access and those without is bridged.**

**Strategies:**

- County residents who are the most likely to face significant barriers to accessing or utilizing broadband, such as elderly and low income residents, are provided tools to overcome these barriers.
- Children from rural areas and/or low income families are provided with the same digital opportunities as children from urban areas and/or more affluent families.
- Provide targeted outreach to people who are hesitant to embrace technology, or have questions about its use, regardless of demographics and/or income level.

**Actions:**

- Promote development of affordable pricing structures to facilitate broadband adoption by elderly and low income residents.
- Encourage community service partnerships in which individuals with technology experience share their skills with others (for example, facilitating formal or informal connections between high school or college students to share technology skills with seniors.)
- Rehab used and discarded computers and distribute to families with children that qualify for free or reduced lunch program. Facilitate through a coordinated effort by Lamoille County businesses and institutions, technical education programs, solid waste management organizations, and schools.
- Develop a coordinated, multi-sector public outreach campaign on the benefits of technology specifically geared toward “late adopters.” Identify individuals in various communities to serve as ambassadors/advocates for technology.

# Northeastern Vermont Development Association



**NORTHEASTERN VERMONT DEVELOPMENT ASSOCIATION**

## REGIONAL PROFILE

### Demographic Profile

The Northeastern Vermont Development Association covers the region of Vermont referred to by residents as the Northeast Kingdom. This region makes up a fifth of Vermont’s land area in its northeastern most corner. An ageing, rural population faced with challenges of educational attainment characterizes broadband adoption and utilization issues for the area.

The Northeast Kingdom population of 65,000 is spread across the landscape in villages, working farms and forests with homesteads, second homes, and in the regional population centers of St. Johnsbury, Lyndon, Derby, Newport City and Hardwick.

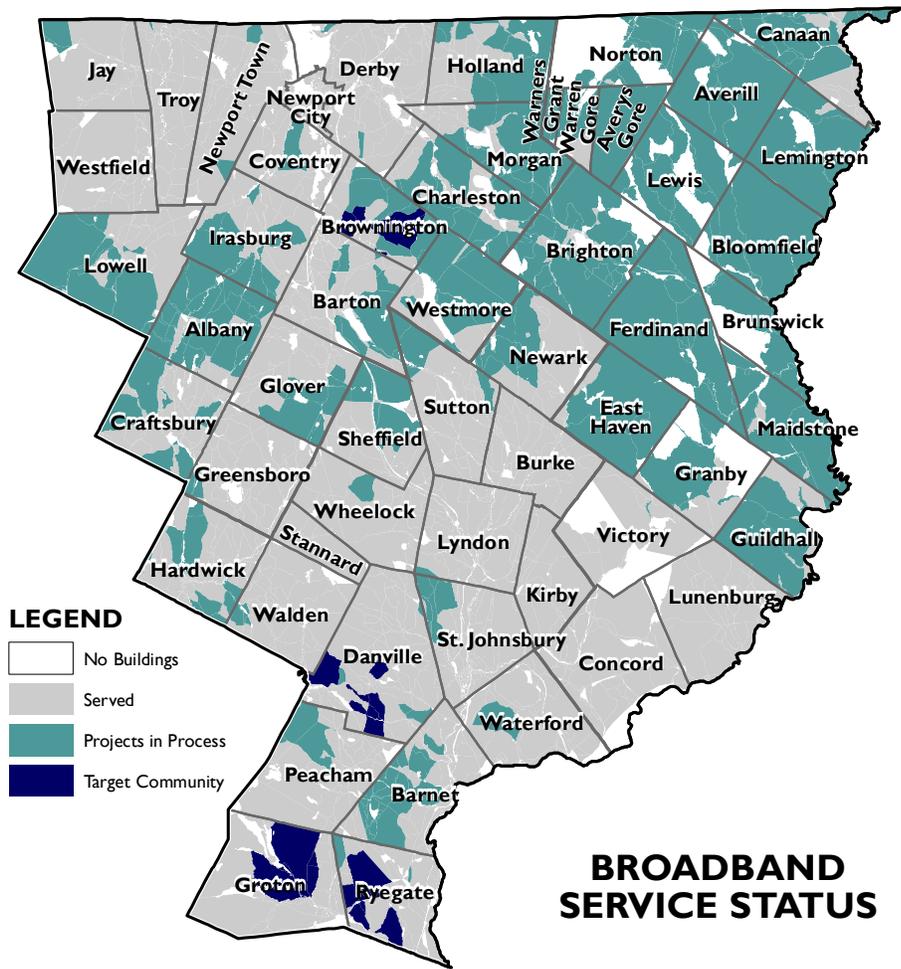
The Northeast Kingdom is characterized as a community of entrepreneurs, where one in three workers is a proprietor. These employers are increasingly facing challenges finding young and/or skilled workers to replace the aging workforce or expand operations. The largest age demographic in northeastern Vermont is people ages 45-64, and in the coming decades this group will become the retired demographic of people over 65 years in age. Educational attainment among the Northeast Kingdom population is also below average rates for Vermont for both high school and college graduation. Many seasoned workers and those in retirement therefore have less exposure to information technology, and as the majority, they drive the customs of communication and information circulation in business and community life.

As this workforce retires and desires to replace itself, broadband technology can play a defining role in preparing resident young people to become productive employees and entrepreneurs, as well as spur the economic activity and vibrant community life sought by skilled employees from outside the region.

### Technology Currently Available in the Region

The Northeast Kingdom’s five major population centers enjoy adequate services via DSL, cable and fixed wireless options. Mobile wireless service through AT&T, Verizon Wireless and U.S. Cellular is available at the majority of addresses, although some locations may experience slower data transfer speeds. Many residents also

have the option of purchasing fixed wireless services through providers such as Kingdom Connection, Great Auk Wireless and North Country Communications. Fiber optic lines serve very limited areas in St. Johnsbury, Lyndon, Danville and the Newport City/Derby community. Approximately 86 percent of addresses are served by one or more of these technologies at the minimum download speed of 0.768 Megabits per second and a minimum upload speed of 0.2 Megabits per second. The map below reflects the areas already served at this speed, in green. Areas in light blue will be served by the minimum download/upload speed by the end of 2013 when projects currently underway through the Vermont Telecommunications Authority and ConnectVermont are completed. White areas were not included in any of these projects as of December 31, 2010 but have been the subject of targeted work by these agencies since that date.



**BROADBAND SERVICE STATUS**

## HIGH PRIORITIES FOR BROADBAND ADOPTION IN NORTHEASTERN VERMONT

### Process

Northeastern Vermont Development Association’s Regional Broadband Plan was developed by gathering information through research as well as with input from stakeholders representing the interests of various social and economic sectors. Stakeholders shared the issues, needs and opportunities they have experienced through meetings of the Regional Technology Team, written comments and individual conversations with NVDA staff. This information was then developed into goals, strategies and actions to accomplish the change and improvements that stakeholders desire for their sector and northeastern Vermont.

### Goals, Strategies and Actions

**Goal: Increased awareness of the success and insights of the e-Vermont Project.**

**Strategy:**

- Identify outlets and short-term actions requiring minimal resources to retell the success stories provided by e-Vermont and direct those interested in taking action to the e-Vermont Toolkits and partners.

**Actions:**

- Identify those who took part in e-Vermont and other broadband champions who will commit to executing the actions and using the outlets.
- Utilize websites, social media, e-newsletters, and inserts in other outgoing communications to spread the awareness of broadband.

**Goal: Leaders, decision-makers, businesses, and residents are aware of the opportunities presented by wise broadband usage for economic prosperity and community vitality.****Strategies:**

- Educate and advocate through existing reputable and trusted channels typically used by non-adopters, such as trade associations, events, print publications, etc. (e.g. through the use of case studies or real-world success stories).
- Advocacy is based on solutions to persistent problems and achieving goals relevant to the desired user (including increased profitability). Broadband is the powerful tool to be applied.

**Goal: Resources and training are readily available to allow the region's businesses and residents to see a positive benefit from their investment of time and resources in adopting broadband tools.****Strategies:**

- Provide training to address common needs and for technologies and skills that are unique to each sector. (Example – free Google business trainings that have been happening around VT)
- Incorporate assistance with broadband technology as a standard service within existing business and community support organizations, non-profits, and government entities. (Northern Community Investment Corporation in St. Johnsbury has been using USDA Rural Business Enterprise Grants to fund the development of new/updated business websites)

**Goal: Affordable, reliable, high- speed broadband data service as well as cellular phone voice service will be available throughout the northeastern Vermont region.****Strategies:**

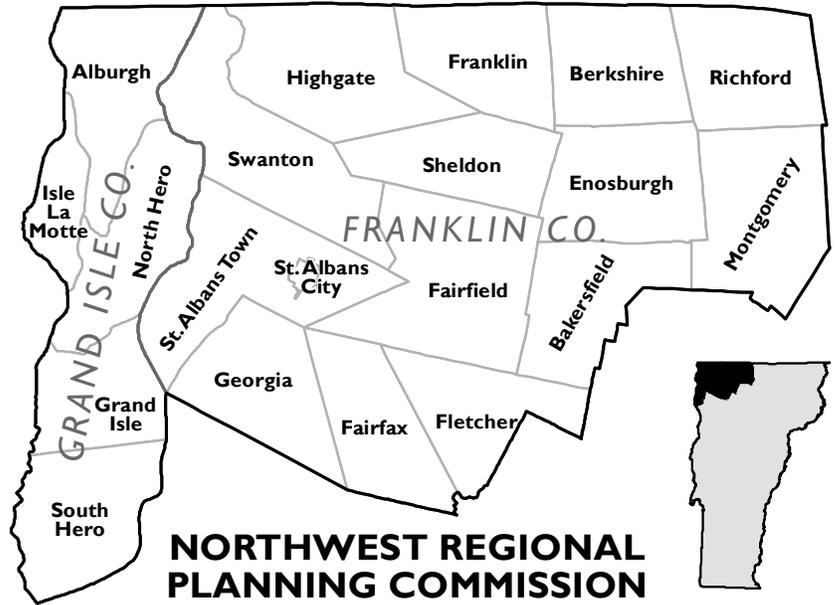
- Provide communities with the knowledge and tools to work with providers to bring service to individual homes and businesses and/or other community access points such as libraries, schools, public Wi-Fi Spots, or telecommuting centers. (List and promote existing Wi-Fi spots in local communities.)
- Support the broadband network deployment work of Northern Community Investment Corporation, the Vermont Telecommunications Authority, Connect Vermont, Broadbandvt.org, and other private providers (e.g. through letters of support for funding or permitting, or through participation in local or state permitting processes, such as the PSB Section 248, or Act 250 processes).

# Northwest Regional Planning Commission

## REGIONAL PROFILE

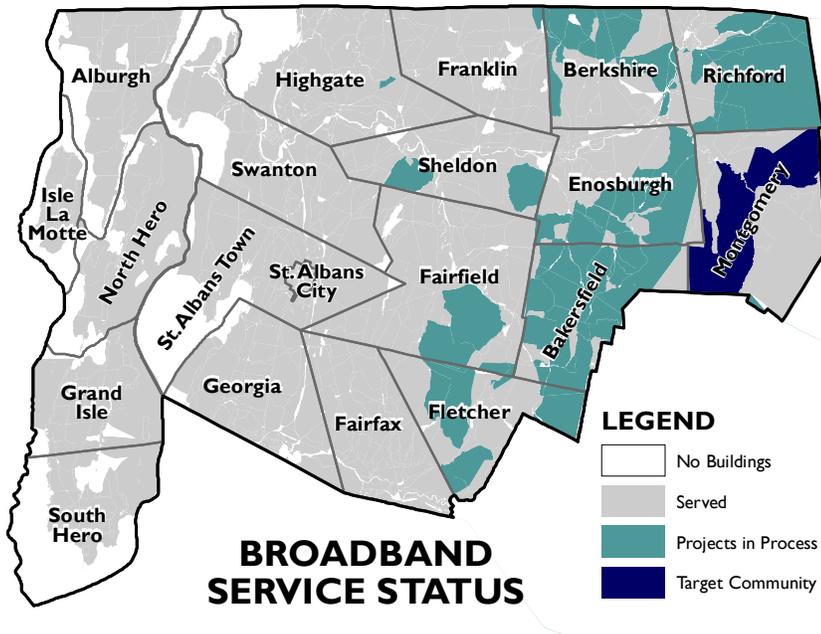
### Demographic Profile

Franklin and Grand Isle Counties in northwestern VT are bordered by Canada to the North, New York to the West and VT's urban area, Chittenden County to the South. The region is predominantly rural, with a population of 54,716 people according to the 2010 Census. Of the 23 municipalities in the two counties, St. Albans City has the largest population and Isle La Motte has the smallest. St. Albans City is located in the western portion of Franklin County between I-89 exits 19 and 20, just half an hour north of Burlington, VT's largest city and employment center and one hour south of Montreal, Canada. St. Albans is the region's only urban center and the heart of economic, government, and cultural activities. The region overall is very rural, with only 20% of the population living in urbanized areas and a population density of 73 persons per square mile.



The communities of Franklin and Grand Isle Counties have significant assets to support economic vitality: working landscapes, beautiful lakeshores, proximity to Canada and a ready workforce. Communities are also faced with challenges including development pressures from neighboring regions, rural isolated communities, limited access to educational opportunities and public health challenges. The working landscape of the northwest region reflects a continued reliance on resource based economies. Approximately half the area remains in commercial agricultural production; commercial forestry, fishing, quarrying and extracting operations, and an increasing number of related value-added industries, continue to support local and regional economies. Residents of the Northwest Region travel long distances to meet their basic needs of housing, food, and work. With an 80% rural population, most people are auto-dependent and 19% of low income residents have no car and live more than 1 mile from a grocery store. Chittenden County, the major employment center in the state borders Franklin County to the south which creates long commutes for the region's residents. The average travel time to work in the region is 28.25 minutes.

Broadband availability and ubiquitous broadband adoption are critical to support the region's resource-based economy and overcome some of the challenges of its rural nature. The internet will be used to promote local businesses and connect the region's farmers with more consumers. Increased technology in our schools will prepare our children for 21st century jobs while bridging the digital and economic divides. The region's residents will be able to reduce their lengthy commutes either by incorporating telecommuting into their workweek or finding jobs new jobs closer to home—jobs that were made possible because our historic downtowns and village centers have the technology and infrastructure to support diverse and strong economies.



**Broadband Technology Available Within NRPC Region**

The majority of Northwest Region land area has broadband coverage (with speeds at or exceeding 768kbps download / 200kbps upload). According to the Vermont Broadband Mapping Initiative, as of 12/31/2011 approximately 73% of the region had broadband with the remaining areas anticipated to have coverage by 2013. The coverage gaps are concentrated in the eastern portion of Franklin County and include parts of Bakersfield, Berkshire, Fletcher, Sheldon, Richford and Montgomery. For the most current view of broadband availability by census block, please refer to the maps at <http://www.BroadbandVT.org>.

Existing broadband service includes DSL, cable, satellite, mobile wireless and fixed-point wireless. Companies serving the area include: Comcast, FairPoint Communications, Hughes Network Systems, Starband, GlobalNet, AT&T Mobility and Sprint Nextel. An updated list of service providers can be found at [www.broadbandvt.org](http://www.broadbandvt.org).

**REGION-WIDE COMMONALITIES**

**Planning Process**

Beginning in spring of 2011, the NRPC began assembling a local technology and innovation team to help guide the development of the plan. The NRPC solicited membership from individuals from a wide-array of fields or sectors including: Energy/Utilities, Business, Libraries, Education, Health Care, Human Services, Municipal Government, Media and Non-Profits. In many cases, one individual was able to represent several different sectors.

Using a Strength,Weaknesses,Opportunities and Challenges (SWOC) analysis,the local technology team evaluated how each sector was currently using broadband,tools and resources need to drive broadband adoption and how increased adoption would create opportunities within each sector. The NRPC used the results of the SWOC analysis to develop goals, strategies and actions for each of the sectors with input from the local technology team.

Below is a list of high priority goals, strategies and actions that were common among many sectors or were considered very important within one sector.

**Goal I: Broadband will be used to promote and support local business and diversified agriculture.**

**Strategies:**

- Work with stakeholders and regional organizations to provide support for agri-business.
- Modernize tourism materials to take advantage of ubiquitous broadband access.

**Actions:**

- Continue to participate in the Diversified Agriculture Working Group and help to identify technology strategies to promote and market products such as on-line farmers markets.
- Geocode all regional attractions so they are searchable in Google maps and other online mapping tools and create smartphone applications for recreational resources such as the Missisquoi Valley Rail Trail.

**Potential Partners:**

- NRPC, Franklin County Industrial Development Corporation, Champlain Islands and Franklin County Chambers of Commerce and the Diversified Agriculture Working Group.

**Goal 2: Technology will be seamlessly integrated into the school curriculums.****Strategies:**

- Expand options and choices for students to have after school internet access.
- Work toward all students grade 6-12 having a dedicated piece of technology (such as an iPad or laptop) that they can use at school and at home.

**Actions:**

- Provide public spaces, such as public libraries, with internet access to students after school hours and on weekends.
- Promote internet provider programs that offer reduced –cost broadband plans for families who qualify for the free or reduced lunch program. Advocate for the expansion of these programs to more internet providers.
- Develop a white paper on how local school boards can fund I-to-I computer initiatives based on existing programs within the region.

**Potential Partners:**

- The region's supervisory unions, area schools, supervisory union/school district technology coordinators, community libraries and the NRPC.

**Goal 3: Technology will be used to provide transparency, increase efficiency and allow greater access to local government.****Strategies:**

- All municipalities will have a functional website with up-to-date agendas, minutes and other relevant information.
- Public meetings will be available online in either a video or audio format.

**Actions:**

- Complete scan of municipal websites and work with municipalities to adopt best practices.
- Work with municipalities to encourage posting of video or audio files on municipal websites.
- Encourage public access TV to provide content as possible through streaming and/or live streaming.

**Potential Partners:**

- NRPC, Public Access Stations, Snelling Center and local municipalities.

**Goal 4: All residents in the region will have affordable access to broadband either at home or at a nearby public space.****Strategy:**

- Provide public spaces, such as public libraries, with internet.

**Actions:**

- Promote internet provider programs that offer reduced –cost broadband plans for families who qualify for the free or reduced lunch program. Advocate for the expansion of these programs to more internet providers.
- Identify and inventory specific technology infrastructure needs—such as telecommuting hubs and Wi-Fi hot spots.

**Potential Partners:**

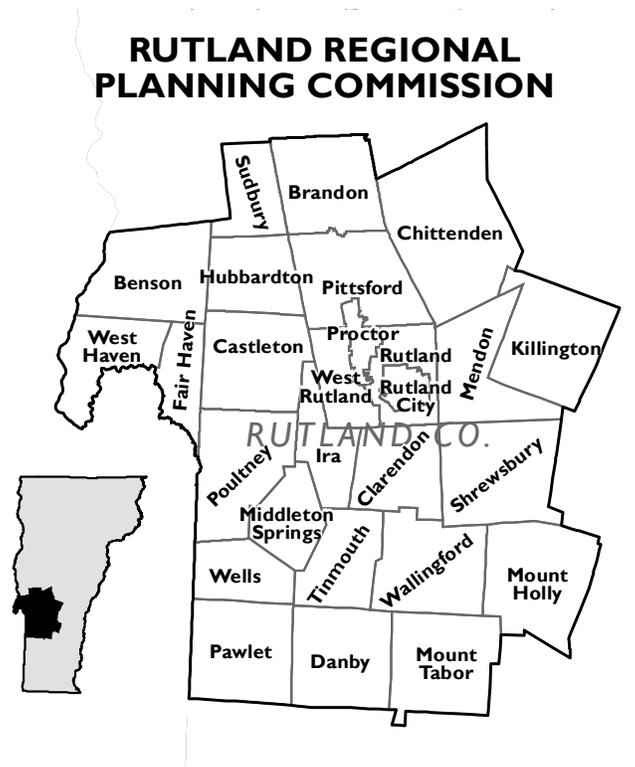
- NRPC and community libraries.

# Rutland Regional Planning Commission

## REGIONAL PROFILE

### Demographic Profile

The Rutland Region consists of 27 municipalities: 26 towns and Rutland City. The City serves as the central economic and transportation hub for Rutland County, and is home to roughly one-quarter of the Region's 61,000 residents. Beyond Rutland City, the Region is largely rural, with eight dense sub-regional and town centers and a dozen smaller villages that reflect a legacy of early industrialization and the extraction of marble, slate, and forest resources. Each town center follows traditional development patterns—compact commercial centers surrounded by neighborhoods of single-family homes. The majority of the county is rural with significant second-home development in eastern towns (near the main ridge of the Green Mountains) and western towns (around seven lakes and ponds). In 2010, 17% of the Region's housing units were seasonal homes.



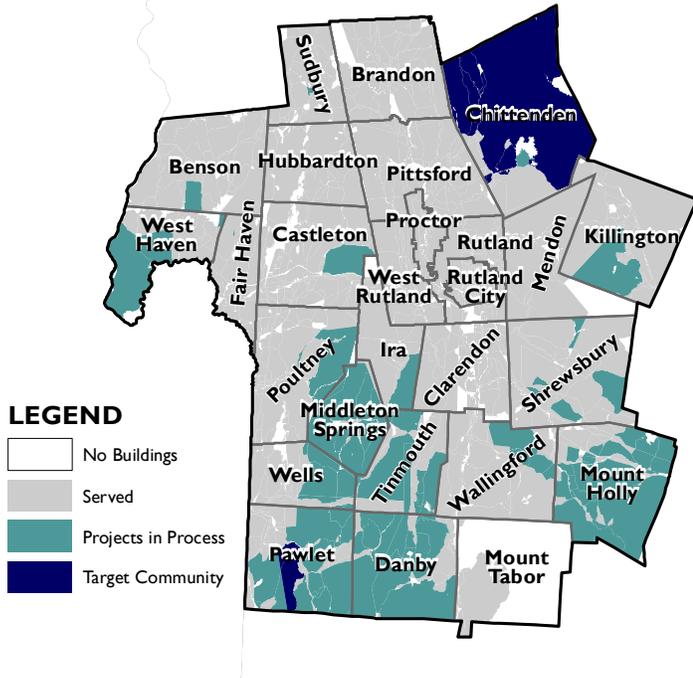
The Census Bureau reports that Rutland Region residents are, on average, older, poorer, and less educated than Vermonters as a whole. The Region median age is 44.3 years (compared to 41.5 for the state and 37.2 for the nation), and nearly 17% of the Region's residents are over age 65. The median household income is \$47,493, which is only 93% of the statewide figure. Only 26.5% of the Region's adults are college graduates (compared to 33.2% across Vermont).

Mirroring Vermont, the Region's major employers span the manufacturing, healthcare, education, and public sectors. Tourism is a major contributor to seasonal and year-round employment. Winter visitors frequent the Killington and Pico ski areas.

### Current Broadband Availability

Residents and businesses primarily rely on cable and DSL (digital subscriber line via a telephone provider) for current broadband access. Fiber is available in a few select areas. In 2007, the Vermont Department of Public Service (DPS) estimated that 95% of Rutland County residences had broadband availability through cable modems or DSL. This may have been an optimistic estimate. Because DSL relies on transmitting data at high frequencies over traditional copper telephone lines, speed degrades rapidly with increasing distance from the central hub. FairPoint, VTel, and Shoreham Telephone serve parts of the Region.

## BROADBAND SERVICE STATUS



Comcast operates an extensive cable network along US Route 7 and select state highways, as well as resort areas in Killington and Mendon. When Comcast purchased its Vermont infrastructure from Adelphia Communications in 2006, it took on Adelphia’s commitment to expand cable infrastructure.

## REGION-WIDE COMMONALITIES

### About the Process

The plan was developed by the Rutland Regional Planning Commission in December 2011 and revised in May 2012. A Regional Tech Team was formed in June 2011 with leaders from a broad representation across sectors around the Rutland Region. Information was gathered from the Tech Team and others to complete each sector analysis. These analyses informed the shared vision, goals and strategies identified below.

### Vision

The Regional Technology Team envisions a future where broadband internet is available to all residents regardless of location or financial status.

The future of the Rutland Region’s economy depends on broadband. The Region will accrue major economic and societal benefits by ensuring that every resident and business acquires skills and capability to use high-speed Internet service. Affordable access, available equipment, and physical infrastructure are only part of the challenge: citizens must first understand the personal benefits of broadband use in order to adopt the technology as a societal norm.

### Current State of the Region

The Rutland Region is in the early stages of adopting broadband as a way of life. The complete spectrum of adoption is represented; a significant minority of citizens does not use computers and express little interest in learning, while others rely completely on Internet connectivity for their livelihood. A majority of users occupy the middle ground.

Training opportunities are sporadic in the Rutland Region, and often targeted at specific groups. Although the e-Vermont project brought workshops for citizens and business owners to four towns in Rutland County, the program only lasted 12 months. Senior centers located in large towns offer occasional trainings. Librarians provide daily computer training through informal assistance. Many patrons require intensive support, which is demanding at best and impractical when only one staff member is working. One tech team member noted that providing adequate technological assistance is the greatest challenge for most libraries.

## **Shared Goals Across Multiple Sectors**

### ***Training-Jobseekers of all ages and backgrounds are adequately prepared for digital careers:***

Although the Regional Technology Team did identify a local need for computer programmers, training and education offering must span all skill levels. Workers with job functions that are not computer-based still require computer skills for various tasks, such as attendance recordkeeping, web-based vocational learning, and inventory management. In addition, Internet skills are needed for professional advancement and to manage personal finances.

### ***Coordination-The websites of public institutions are easy to use and efficient to operate:***

Various state agencies have shifted substantial services to the web. Application for financial, food, and fuel assistance can now be completed online. Although BROCC, the Region's community action agency, provides support with the application, help is also provided by librarians where public computer terminals are used, shifting the burden from state to local entities. Greater consistency is needed across state, regional, and local institutions. The portal Vermont.gov serves as an effective homepage for the state, but many other agencies and town governments have outdated websites, or no web presence at all. State government should also offer assistance to towns for local websites, including templates developed for the e-Vermont project.

### ***Affordability-Ensure all Vermonters can afford to connect:***

Excluding the price of hardware, the annual cost of Vermont broadband service averaged \$468 in 2009. Regional Tech Team members noted that increased competition to wireline telephone service (from cell phones) has not reduced monthly telephone bills, and that increased broadband competition is unlikely to reduce bills.

### ***Public Access-Make computers and wireless access available in public places:***

The cost of owning, maintaining, and regularly upgrading a computer provides a major upfront barrier to home use. The rapid transition to wireless devices and wireless service may solve this problem, but in the immediate future, greater public access is needed. Computer and wireless access points similar to library offerings should be more broadly available. For example, as the healthcare industry transitions to electronic records and unified web portals for patients, medical facilities (hospitals, clinics, and pharmacies) should have a major role in serving the public with computer terminals.

## **Shared Strategies Across Multiple Sectors**

### ***Promote public education:***

Like any attempt to change perceptions and behaviors, public education plays a key role in encouraging new users to adopt broadband. Messaging must highlight the ways broadband can improve the viewer's own life, such as personal convenience and communication with friends and family. All institutions and organizations can contribute to this strategy through their existing public outreach.

### ***Digitize public services:***

Businesses, organizations, and governments should continue the trend to place more services and information online. Beyond potential efficiency gains, online content will create more convenient customer service. State support is needed to find cost-effective ways to place records online and universally accessible.

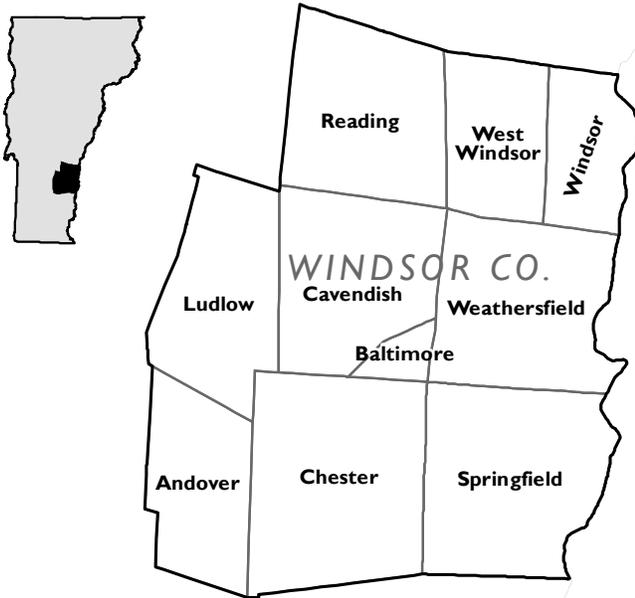
### ***Secure funding for public access, equipment, and training:***

Libraries are the sole community institution with a mission to provide patrons information free of bias and censorship. Today, Internet access and digital services are one of libraries' core function. Because libraries serve absolutely all sectors of society, they have become the natural locus for advancing digital literacy. Other institutions should act to expand access to all of society regardless of geographic location. For example, since most rural libraries have limited hours of operation, 24-hour access to computers in the unlocked vestibules of rural town halls would accommodate residents working during afternoon and evening hours.

# Southern Windsor County Regional Planning Commission

## SOUTHERN WINDSOR COUNTY REGIONAL PLANNING COMMISSION

## REGIONAL PROFILE



### Demographic Profile

The Region is comprised of ten towns including Andover, Baltimore, Cavendish, Chester, Ludlow, Reading, Springfield, Weathersfield, West Windsor, and Windsor. The Region is located in southeastern Vermont, and much of the Region remains undeveloped or sparsely developed due to the physical constraints imposed by the terrain.

Springfield is by far the most populous town in the region representing almost 38 percent of the total population of Southern Windsor County in 2010. Windsor, Chester, and Weathersfield are the three next most populous towns with Baltimore being the least populated town in the region.

The population growth rate for Southern Windsor County has varied greatly over the last twenty years with an increase of 12 percent between 1990 – 2000 to a decline of 1.3 percent from 2000 – 2010.

More than 30 percent of the population in our region is under the age of thirty. Fifty-six percent of the population is under the age of fifty and more than 80 percent are under the age of 65. As the retirement age is 65, one can infer that a majority of the population is working and would benefit from greater broadband access at home.

Median adjusted gross income in Southern Windsor County increased by almost 20 percent in the years between 2000 and 2009 increasing from \$25,748 to over \$30,840. The average increase for the state was 18 percent over the same time period.

### Technology Available Withing SWCRPC Region

[Broadbandvt.org](http://Broadbandvt.org)

Throughout the region, there currently exists an incomplete patchwork of cable, DSL, and fixed wireless broadband; although, as indicated by the map below, many projects are underway. The maps of cable, DSL, and fixed wireless service show Reading, Chester, and Andover as the most underserved towns within the SWCRPC region. There are significant tracks of land in many towns with no building locations and therefore, no service.

### E-Vermont Communities

Ludlow is the only municipality in the region currently participating in the E-Vermont Community Broadband Initiative. Ludlow began the planning stage of the process in 2010 and is currently in the process of implementing the

projects identified in the work plan including, educating businesses and citizens to better utilize technologies that are currently available, and increasing the amount of online services used by citizens, government, schools, and other public institutions such as the local television station. There is also a focus on increasing broadband access within the village by upgrading the internet services of the public library, donating netbooks to every student in the 4-6<sup>th</sup> grades, and possibly creating “a business cooperative that provides public access to broadband in the downtown.”

**Anticipated Expansions by 2013**

VTel is installing wireless broadband within the SWCRPC region (WOW 4G/LTE service). The goal for this project is to reach many of the “last mile” residences that are currently without service. The initial sites are projected to be operational by 2012 and include all areas of Andover, Chester and Springfield as well as the portions of Cavendish and Reading that are without broadband service.

**BROADBAND SERVICE STATUS**

**LEGEND**

- No Buildings
- Served
- Projects in Process
- Target Community



Sovernet is currently developing a 770 mile fiber optic network in Vermont that focuses on connecting community anchor institutions such as libraries, schools, government office, and hospitals. The project will connect over 340 of these locations throughout the state. This project will do more to improve current service than it will to introduce broadband to areas that do not currently have access. It is however, an upgrade necessary to support the connection of other last-mile residences. This may be most valuable in towns such as Ludlow that are looking to improve centralized computing hotspots such as downtown districts or public libraries.

Fairpoint communications recently completed the installation of 300 new broadband stations and almost 1,000 miles of fiber cable over the past several months. This project also focuses more on middle mile connections than addressing underserved areas. This infrastructure will provide broadband service to areas of Springfield, Ascutney, and Windsor in our region.

**REGION-WIDE COMMONALITIES**

**Planning Process**

The planning process used to develop the SWCRPC Broadband Plan began at a public meeting held at the RPC office on June 15th, 2011. The purpose and intent of this meeting was to familiarize a core group of partners with the vision of the broadband planning project. Attendees of this meeting included local business leaders who expressed an interest in the broadband project and those that have been early adopters of broadband technology. The meeting agenda included an overview of the planning task, review of the proposed outline, and a broad discussion on the state of broadband within the SWCRPC region. Following the meeting, SWCRPC staff interviewed local business leaders from nine identified economic sectors including education, health care, local government, and others. During these individual meetings, SWCRPC staff guided the organization through

a Strengths, Weaknesses, Opportunities, and Challenges analysis as related to the organizations current usage of broadband technology. The final piece in each analysis was to identify Goals, Strategies, and Actions that each individual organization could undertake in both the near and long term that would increase their ability to integrate greater broadband technologies into future activities. These SWOC analyses were analyzed and synthesized into common Strengths, Weaknesses, Opportunities, and Challenges for each economic sector that were incorporated in the final plan.

Below is a list of shared high priority goals, strategies, and actions that were common among many economic sectors.

## **Goal 1: Utilize available broadband technologies to reach a broader audience**

### **Strategies:**

- Increase the ease with which new customers can find businesses and available tools online.
- Identify tools to assist in 'selling' the usage of broadband.
- Identify forums for greater public engagement in town government processes.
- Create opportunities for citizens to learn about services and become motivated to be more involved in ongoing programs.
- Develop email contact lists that can be used to target different members of their organizations.
- Increase public awareness of available online resources.

### **Actions:**

- Utilize available tools, including social media and websites, to supplement traditional forms of advertising.
- Mandate online usage for required work tasks.
- Contact available media outlets to request involvement (video, etc.).
- Develop engaging programs using email, e-newsletter, social media, and interactive websites.
- Use traditional media sources to reach citizens who are unaccustomed to broadband technology and inform them of the ways they can use broadband technologies to interact with different organizations.

## **Goal 2: Keeping content of websites and social media current and applicable**

### **Strategies:**

- Decide upon which technologies best fit the needs of the organization and focus on the few rather than the many.
- Educate staff on the functionality of websites and basic maintenance activities.
- Generate content appropriate and suitable for social media outlets.
- Create or better maintain current websites to make them more user friendly and engaging.

### **Actions:**

- Choose only as many technologies as can be maintained with fresh and engaging content.
- Read through current website and social media content to ensure accuracy and timeliness of information.
- Publish content onto Facebook, website, and other available tools.
- Train necessary staff to maintain websites using VT Universal Class.

### **Goal 3: Increase utilization of available current technologies**

#### **Strategies:**

- Create additional opportunities for broadband usage in the everyday work environment.
- Continued training for staff and all end users.

#### **Actions:**

- Attempt to incorporate new technology into everyday use.
- Provide and promote greater broadband usage throughout all economic sectors.
- Make training available to build confidence and interest in adopting new technologies.

### **Goal 4: Utilizing telecommuting and other available broadband tools**

#### **Strategies:**

- Identify outside resources for training and continue to seek support from employers.
- Develop telecommuting policy and identify needed hardware and software.
- Identify collaborative tools that will create ease of workflow and greater capacity.
- Identify areas of limited broadband access and develop a plan for limiting work disruptions.

#### **Actions:**

- Develop consistent follow through plan on technology goals and trainings.
- Seek employer support for telecommuting.
- Utilize online suggestions highlighting effective methods of remote workplace applications.
- Increase available connections to make technological needs available.
- Coordinate with broadband providers throughout the region to bring greater access to critical facilities.

# Two Rivers-Ottawaquechee Regional Commission

## TWO RIVERS-OTTAUQUECHEE REGIONAL COMMISSION

## REGIONAL PROFILE

### Demographic Profile

The Two Rivers-Ottawaquechee Regional Commission (TRORC) provides land use, transportation, economic development, and other planning services to its thirty member municipalities along the central-eastern side of the state. In 2010, the U.S. Census reported that the Two Rivers-Ottawaquechee (TRO) region had 55,996 residents spread amongst towns of varying sizes ranging from approximately 300 to 10,000 in population.

According to the American Community Survey (taken during a period between 2005 and 2009), 30,264 members of this region's civilian labor force were employed, while 1,739 were not—an unemployment rate of 5.7 percent at that time. While the unemployment rate has doubtless changed since that study was conducted, the global economy continues to struggle, and job searching remains a reality for many. While



people used to rely on the newspaper to publish job advertisements, the search and application process is almost exclusively online today, requiring a broadband connection and technology skills.

Eighty-seven percent of those employed and sixteen years in age or older in this region drove to work, while just 8% worked from home, with the rest commuting by other means such as walking or public transit. As oil prices continue to rise and climate change becomes a reality, more companies and employees are developing 'telecommuting plans' in which workers connect with the office via broadband from home.

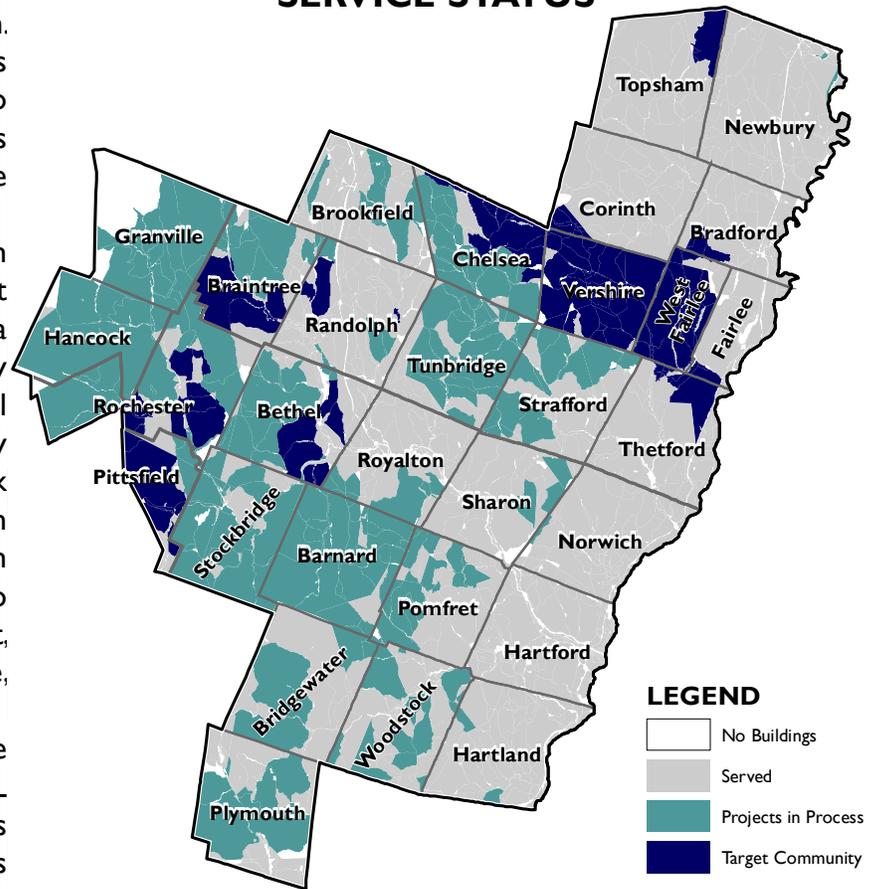
With 10% of the region's total population and 12% of all children under the age of 18 living beneath the poverty level, universal broadband access and low-cost opportunities to increase digital literacy are of paramount importance (ACS 2005-2009). Like other libraries across the state, those in the TRO region experience a steady stream of people who need to utilize their free computer and broadband access.

### Technology Available

Reliable broadband access fluctuates in availability throughout the TRO region. Some sites have enjoyed this type of access for years, while others are still struggling to obtain service. The following organizations and companies are helping to increase access:

- ECFiber, a community organization and consortium of Vermont municipalities, has been building a broadband network with community support and individual financial investments. As of spring 2012, they had completed Phase I of network construction (a loop between Royalton, Bethel, and Barnard). Soon network access will be expanded to parts of Barnard, Royalton, Pomfret, Tunbridge, Strafford, Vershire, Chelsea, and more.
- Fairpoint, an internet service provider, completed copper DSL (Digital Subscriber Line) upgrades and extensions into most of its wireline TRORC communities, including Woodstock, Bridgewater, Pomfret, Newbury, Tunbridge, Chelsea and Hartford in 2010 and 2011.
- VTel expects to complete its fiber expansion to its wireline customers in Hartland, Plymouth, Bridgewater and Woodstock in 2012 or 2013.
- SoverNet’s middle mile fiber trunk will soon bisect (North to South) the TRO region. The lines will travel from Hartford (through White River Junction and Quechee) to Royalton, Bethel, and Randolph, toward Barre. While this fiber rollout will connect community anchor institutions (for example, schools, libraries, and hospitals), it also includes network drops every ¼ mile for local provider access.

### BROADBAND SERVICE STATUS



## REGION-WIDE COMMONALITIES

### Description of Region’s Process

TRORC’s Regional Technology Team met several times over the course of the past year to discuss topics that they felt were relevant to broadband adoption in this region. While many different professional sectors were represented by members of the Regional Technology Team, TRORC’s lead staff on this project (Emma Zavez and Pete Fellows) interviewed additional people to ensure that the experiences and insights from all sectors were considered. Between Regional Technology Team meetings and one-on-one interviews, specific themes emerged as particularly important. These included the definition of broadband and timeline of infrastructure rollout, the digital divide (or the gap between those people who have broadband and computer access, and those who do not), the digital economy, telecommuting, and more. The Regional Technology Team developed the following high priority cross-sector goals and strategies.

## Shared/High Priority Goals

- Secure broadband infrastructure to meet current upload and download demand (re: typical online activities that individuals, businesses, towns, and institutions engage in), as well as future demand.
- Increase broadband access, adoption, and digital literacy among the entire Two Rivers-Ottawaquechee population, regardless of geography, income, or other limiting factors.
- Foster an environment in which people are informed about the advantages of using the internet and therefore feel more comfortable with (rather than fearful of) using a computer and getting online.
- Leverage broadband access and adoption to increase employment opportunities in the region and make work less dependent on fossil fuels (via telecommuting).
- Increase awareness in the TRO region of existing public access points and opportunities for free or low-cost digital fluency trainings.

## Shared/High Priority Strategies/Actions

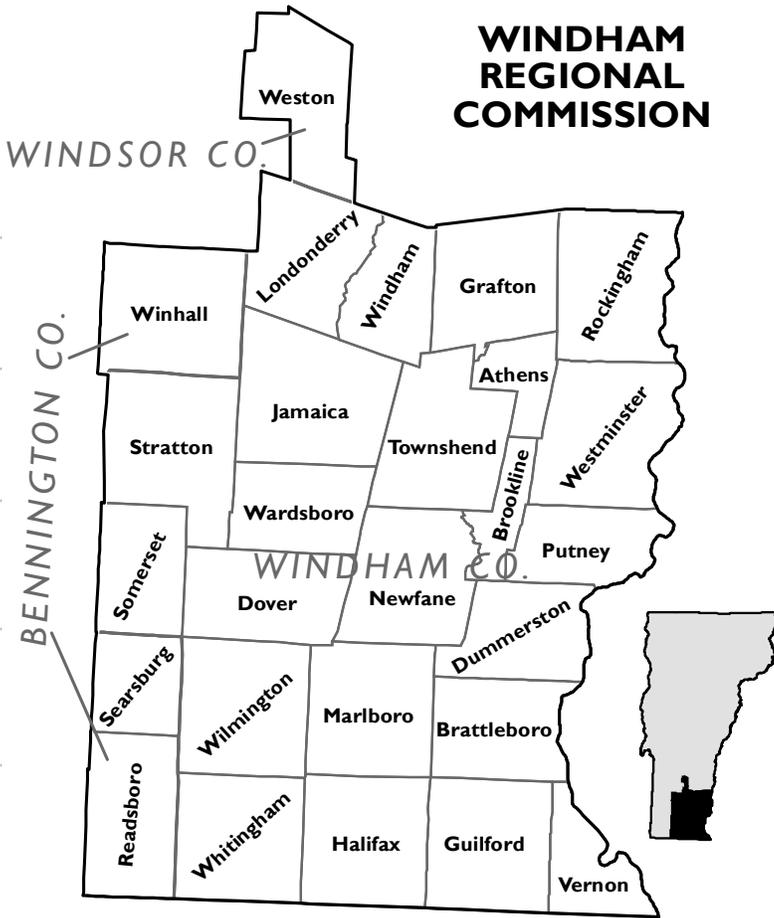
### Strategies:

- Advocate for network speeds that will sufficiently support the activities that businesses and individuals need to perform now, as well as in the future. At minimum, this would require speeds of 4 megabits per second (Mbps) download and 1 Mbps upload, according to the Federal Communications Commission (FCC), to engage in bandwidth intensive activities, like videoconferencing and telelearning. Additionally, homes in the Two Rivers-Ottawaquechee region should be among the 100 million with a broadband connection of 100 Mbps download/50 Mbps upload by 2020 (Goal #1 of the National Broadband Plan). *Potential Partners: Regional Planning Commissions (RPCs), Vermont Association of Planning and Development Agencies (VAPDA).*
- Work with public school administrators to support computer and internet literacy training opportunities for adults in the community by opening up facilities (i.e. computer labs) after-hours. Inform them of other successful models (such as the computer drop-in sessions and courses offered at the Randolph Technical Career Center), and identify willing and interested staff who would supervise or teach during such sessions. *Potential Partners: VT Dept. of Education.*
- Collect information on public access points and computer or internet fluency trainings in the Two Rivers-Ottawaquechee region, and advertise these opportunities in community spaces. For example: on bulletin boards and in libraries, town offices, local newspapers, food shelves, community centers, and churches. (\*Note: The Randolph Technical Career Center advertises its drop-in times and courses through the local newspaper, which is how most of their students first hear about the offerings.) Also, work with 211 and the creators of [www.BroadbandVT.org](http://www.BroadbandVT.org) to ensure that all of these opportunities are published online. *Potential Partners: TRORC, BroadbandVT and 211 teams.*
- Create opportunities for students to teach adults about using computers, software programs, and the internet for credit in school or as a means of community service. Ensure that these teachers are properly trained in how to convey information in an effective, but also patient manner. *Potential Partners: VT Dept. of Education.*
- Educate employers about the benefits and drawbacks of allowing employees to telecommute (on a daily basis or in emergency situations only) through marketing and by organizing trainings that would demonstrate how one could craft an effective policy. The State of Vermont or Efficiency Vermont could also offer incentives (ex: tax break) for companies that implement telecommuting policies. *Potential Partners: VTrans, Vermont Telecommunications Authority (VTA), Efficiency Vermont.*
- Educate policymakers about the benefits and drawbacks of e-government, including what an online e-government policy means for citizens with limited broadband access or digital literacy. Likewise, advocate

that the State of Vermont redesign its e-government forms so that they are intuitive and user-friendly, and each one includes the final question “Was this online form easier to fill out than the paper form? If not, what improvements could be made?” Request that the design is tested and reviewed by a sample of Vermont residents as well as librarians and other social services providers across the state. *Potential Partners: RPCs, VAPDA, librarians.*

- Introduce the topic of creating telecenters in the TRO area at Town Meeting or through the local newspaper. Encourage community discussion of the following questions: How many people would want to work at a telecenter? How close of a distance would it have to be from your home? Are there existing empty spaces in municipally or privately owned buildings that could be used to start a telecenter? *Potential Partners: TRORC, the TRO Technology Team.*
- Incorporate information about sector specific broadband applications into that sector’s existing, successful events. For instance, broadband application education for town officials could occur at the annual spring Town Officer’s Education Conference (TOEC), while information on applications for farmers could be shared at the annual Northeast Organic Farmers Association or Vermont Grazing and Livestock conferences. *Potential Partners: RPCs could assist with TOEC.*
- Advocate that libraries and other non-profits that offer free broadband access and digital literacy trainings receive adequate financial support from the State of Vermont. (Note, while hardcopy books and magazines remain relevant, libraries also facilitate other, rapidly changing methods of accessing information which involve broadband and computer access (i.e. webinars, ebooks, etc.). Given the state government’s reliance on libraries as places where the public can access and fill out government forms, the State of Vermont must increase funding to cover the associated costs in staff time, hardware, broadband access, and more.) *Potential Partners: RPCs, VAPDA, librarians.*

# Windham Regional Commission



## REGIONAL PROFILE

### Demographic Profile

Situated in Vermont’s southeastern corner, the Windham Region consists of 23 towns in Windham County; 3 towns in Bennington County; and 1 in Windsor County. The region is bordered by Massachusetts to the south and New Hampshire to the east. At over 900 square miles (600,000 acres), the region accounts for roughly 9.8 percent of the state’s total land area. The Windham Region is geographically defined by the Connecticut River Valley on the eastern border of the region, and the Green Mountains in the western portion of the region.

The total population of the Windham Region according to the 2010 census is 46,720. Towns in the Windham Region with the most dense village centers include Brattleboro, Rockingham, Westminister, Newfane, Wilmington and Putney.

### Technology Available Currently Withing the Windham Region

In the Windham region, satellite access is the only coverage that is present everywhere, and many home owners in the southeast portion of the region rely on it for broadband. Although they have coverage, access is often not reliable because of regularly occurring bad weather conditions. Many towns in the Windham region (Windham, Wardsboro, Marlboro, Halifax, Whitingham and Readsboro) are not serviced by cable modem broadband technology. The most serviced areas in the southeast portion of Vermont are the more populated areas of Brattleboro, Putney Village, Stratton Mountain resort area and West Dover (Mt. Snow resort area).

VTel’s project known as Wireless Open World (WOW) is working to bring 4G/LTE wireless broadband to every un-served home and business in rural Vermont. The most un-served areas in southeast Vermont, to include Halifax, Marlboro, sections of Newfane, Wilmington, West Dover and Londonderry show to be included in the VTel roll-out. Almost all of the anchor institutions in the Windham region have signed on for the Sovernet FiberConnect build out with the exceptions of Halifax, Winhall, Weston Public Library, and public schools in Westminister.

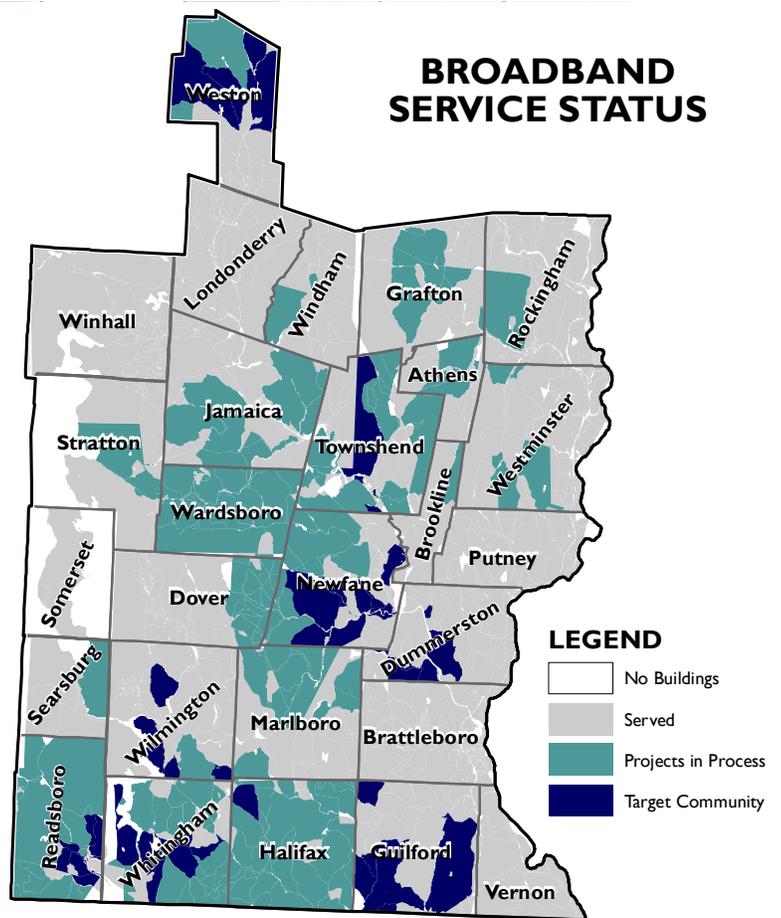
## REGION-WIDE COMMONALITIES

The Windham Regional Commission recruited stakeholders in the spring of 2011 to form a regional broadband technology team. An introductory meeting was held on May 31 to describe the key goals, outcomes and timeline of the project. At that first meeting, the group held a discussion about using universal broadband in our region,

elaborating on how sectors can work together and how we can better prepare citizens to realize the opportunities provided by high speed fiber access promised by the state in 2013. A subsequent meeting took place in June 2011. During the summer months of 2011, WRC staff conducted several interview sessions with the individual sectors listed in the Sector Analysis section of the report. Specific goals, strategies and action items pertaining to the sectors came out of those interviews. The complete stakeholder group came back together in February 2012 to discuss the information gathered from the individual sector interviews, to talk about the crossover of goals, and to summarize the region-wide commonalities as they pertain to broadband.

**Current State of Region**

- People from Brattleboro are well connected with high speed broadband.
- Most all other areas of the region, other than ski resorts, are severely lacking in reliable high speed (or any) broadband access.
- Educational opportunities are being missed at the K-12 level.
- The region is a magnet for artists, home artisan businesses, small scale agriculture and second home/home business real estate market.
- There is substantial need for awareness, fluency and literacy of the types of technology (software and hardware), adoption and usage.



When the Windham Region broadband technology team came together in February 2012 to discuss the common goals for broadband adoption across the region, the goal of economic development came across as the overarching goal. Many of the towns in southeast Vermont have a large population of second homeowners. The owners of these second homes are typically technologically progressive people, coming from more urban areas, who want to spend more and more time in their second homes in southeastern Vermont. They are contributing to the tax base of the Vermont town they are in, but many of them do not utilize much else that the village center has to offer, such as arts and culture, shopping, the library, or services provided by the town office, because it doesn't occur to them. Some of these more remote village centers, such as the Town of Readsboro, signed up for high speed fiber for their anchor institution because they realize that any economic vitality the town may see will be dependent on high speed fiber. Their plan is to make the Village of Readsboro a destination place, by offering various annual events (such as a snow shoe competition and the Fourth of July Celebration) that will give tourists and people from nearby communities a reason to come to visit, and even stay in, their remote spot. Making high speed fiber available to the second home owners in any part of the region will enable those people to work remotely (telecommute), and will likely lengthen their stay, causing them to spend more money at the local businesses.

Being the 21<sup>st</sup> century, it is the expectation of most prospective buyers of property, that the property has high speed fiber access. Not only is the housing stock in Vermont older, many homeowners are older. More and more homes will be for sale during the next decade and real estate values will be dependent on high speed broadband access.

Businesses in metropolitan areas that want to expand by having satellite offices in more remote places will survive the best if equipment and software is the same and the level of access is the same between the flagship office and the satellite office. Small villages in southeastern Vermont are poised to be excellent locations because they are within driving distance of Boston, New York, and larger cities in Connecticut. Additionally, any home business or artisan business that requires the uploading and downloading of graphic or design files will require high speed fiber. Many of the rural villages realize that economic development in their towns may be dependent on the younger, creative class who view Vermont as an attractive place to reside part-time, but still need the essential lines of communication they are accustomed to in the city, and that can only come with advanced technology.

## **Goal 1: To increase wealth and economic stability through economic development**

### **Strategies:**

- Co-officing to enable new business start ups (Brattleboro's Brooks House urban design renovation project will include such a space with wi-fi capabilities).
- Libraries to offer temporary office or meeting space with high speed Internet.
- Marketing by word-of-mouth, from tourists in region back to hometowns.
- Marketing that Vermont is a place to live, not just a place to visit.

### **Actions:**

- Create regional telecommuting hubs/work spaces that serve more rural areas.
- Work with local businesses to determine their needs for establishing efficient telecommuting options.
- Ensure there is connectivity at rural lodging facilities, such as B&Bs.
- Apps advertising localvore, arts & culture, and historical locations.

## **Goal 2: To retain the younger generation in Vermont after high school and/or college**

### **Strategies:**

- Provide opportunities for regional schools to get together and information share.
- Retain high school grads by offering skills training coursework (not all high school grads want to immediately go to college).

### **Action:**

- Convene a group of stakeholders who can converse about implementing skills courses at the high school level.

## **Goal 3: To increase regional fluency in and literacy about broadband, Internet and the accompanying technological devices**

### **Strategies:**

- Libraries promote universal classes – coursework from higher educational institutions online.

- Provide technology to educators to teach via video.
- Education via K-12 students to adults.
- Ensure technology is available regionally.

**Actions:**

- Have one-on-one training workshops with towns so they can make their websites more useful.
- Have child/parent nights at schools, where child teaches parents or grandparents how to use the computer and Internet.
- Provide a mobile broadband vehicle that travels around the region to help in both computer literacy and to proselytize the benefits of broadband.

**Goal 4: To provide easier access to healthcare in a remote region****Strategies:**

- Making healthcare more accessible from the home via video consultations with healthcare providers.
- Providing greater ability to shop online for groceries.
- Making pharmaceutical services available online.

**Actions:**

- Establish electronic medical records system that allows both doctors and patients to retrieve them online – using a secure/confidential access system.
- Subsidizing of Internet access at Senior and Youth Centers.

# Addison County Regional Planning Commission

## SECTOR ANALYSIS: AGRICULTURE

### Current Conditions

The geographical nature of agriculture lends itself to wide open, sparsely populated spaces, which are often the last in an area to receive broadband internet and cell phone services. In the past this has hindered the widespread use of technology in agricultural businesses. However the next generation of farmers is relying increasingly on the internet, mobile broadband, and smart phones to enhance their businesses.

Many of the smaller farms and food businesses do very little online to promote, manage or market their products. Even fewer do online sales. The use of social media and video is also minimal. Some are using third party platforms like farmigo for selling product or managing CSA. Main hurdles are time, money and expertise. Some also do not believe that the potential benefits are worth the investment. Due to the rural nature of agriculture, some farms do not have access to broadband. Also, some farmers are “adverse” to technology.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. A great deal of innovation in agriculture community.</li> <li>2. Potential customers seek farmers and food businesses out online.</li> <li>3. New apps and platforms coming online (farmplate.com, for example).</li> <li>4. A great deal of support from organizations and businesses, state and local government, and the community as a whole.</li> </ol>	<ol style="list-style-type: none"> <li>1. Older farmers – just learning to use the Internet is difficult. Lack of technology skills and knowledge huge obstacles.</li> <li>2. Lack of broadband access due to rural nature.</li> <li>3. Lack of time and funds to invest in broadband utilization.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Leverage technology for agritourism websites, direct sales, CSA subscription management, building connections between producers and consumers.</li> <li>2. Chuck Ross, Vermont Secretary of Agriculture, has stated that the Internet is taking a front seat for farms to tell their stories and the story of Vermont agriculture as a whole. Stories told through Facebook, Twitter, YouTube and blogs.</li> <li>3. Technology keeps farmers in touch with farms anywhere in the world for information gathering, commerce, marketing and education.</li> </ol>	<ol style="list-style-type: none"> <li>1. Developing a web presence can be a struggle. Especially for small farmers, who struggle to find time to build, maintain and update websites. Not enough time to spend on social media. Easy website maintenance is key.</li> <li>2. Navigating the sea of tools and providers; which ones make sense?</li> </ol>

**Goals/Strategies/Actions**

GOALS	STRATEGIES	ACTIONS
<p>Expand access to markets.</p>	<p>New and better websites for farms and food businesses.</p> <p>Embrace functionality such as web 2.0, easy to use content management systems and third party platforms.</p> <p>Leverage social media and video for story-telling about growers and producers Focus on the message, not the medium. Conduct careful cost-benefit analysis.</p> <p>Smart use and promotion of mobile-friendly platforms and apps.</p>	<p>Ag support groups help to vet tools and partners.</p> <p>Create wiki with best models of farms using social media or the Internet to market their businesses.</p>
<p>Use technology to tell unique stories that moves a product from a commodity where price is dictated to them by the supply to a specialty market with more demand and pricing flexibility.</p>	<p>Inspire producers (or for the organizations that serve them) of the possibilities broadband presents Focus on stories more than technology.</p>	<p>Build this content into ag conferences. Examples of local artists successfully leveraging broadband include Eric Rozendaal of Rockville Market Garden, Jennifer Breen of Hall and Breen Dairy Farm and Greg Bernhardt and Hannah Sessions of Blue Ledge Farm. The most innovative uses of broadband technology connect the producer to the consumer through story-telling and transparency building.</p> <p>Promote Vermont-based farm website promoting more peer to peer sharing (such as ThreeRevolutions.com).</p>
<p>Use technology to organize new ventures or existing farm organizations into ventures that can share/ access capital.</p>	<p>Use the Farm Bureau., Farmer’s Market or grange to collectively create marketing, cooperatively purchase services, partner to access new markets.</p>	<p>Link the Middlebury Farmers Market to all hotels and inns in the area.</p> <p>Utilize marketing and software to organize CSA’s to capture local food expenditures.</p> <p>Request the State Department of Ag to create a site showing all capital available for farms with links to each type of capital (i.e. loans, grants, fed funding).</p> <p>Encourage Midd TV to conduct a video tour of Addison County Farms and air on community TV and You Tube.</p> <p>Work with ACORN and the Addison Independent to create a database of Addison Farm sales Studios open to the public and digitally present maps and information.</p>

## SECTOR ANALYSIS: ARTS/CREATIVE ECONOMY

### Current Conditions

Many visual artists do not have their own websites. Even fewer do online sales. Some don't even have email. The use of social media and video are also minimal. Some are using third party platforms like Etsy for selling art. Main hurdles are time, money and expertise. Some also do not believe that the potential benefits are worth the investment. Many artists work out of their home where they may not have broadband access. Also, some artists are "adverse" to technology.

Examples of local artists successfully leveraging broadband include Tim Clark, Reed Prescott, and Bob Compton. The most innovative uses of broadband technology connect customers and fans with the artist and their work by creating windows into the process through social media, video, photography, and storytelling.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Creativity, outside-of-the-box thinkers, independence.</li> <li>2. Potential customers seek artists out online.</li> <li>3. For some: flexibility in scheduling of personal &amp; work time.</li> </ol>	<ol style="list-style-type: none"> <li>1. Lack of broadband access.</li> <li>2. Lack of skills or interest in technology.</li> <li>3. For some: lack of time (to develop &amp; maintain web presence on their own) due to necessity of PT/FT non-arts employment. (And for organizations, not having enough staff to devote extra time to this area.)</li> <li>4. Lack of funds to pay for professional web development or even for the tools to create content like camera, etc.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Innovative use of new media for story-telling and connecting with audience.</li> <li>2. Online sales. (Much larger market.)</li> <li>3. Appropriately-scaled apps for managing small businesses.</li> <li>4. Collaboration both within the arts sector &amp; between the arts &amp; tech sectors. (Education, public/community TV, libraries, etc.).</li> </ol>	<ol style="list-style-type: none"> <li>1. Noise in marketplace.</li> <li>2. Confusion in arts community about how to leverage broadband or to whom to turn to help.</li> <li>3. Lack of availability (or perhaps knowledge of available options) of low cost web development providers and education/training.</li> </ol>

**Goals/Strategies/Actions**

GOALS	STRATEGIES	ACTIONS
<p>Utilize broadband technologies to help local Addison County Artists increase markets and sales.</p>	<p>New and better websites for artists and galleries that embrace functionality such as web 2.0 and easy to use content management systems.</p> <p>Encourage collaboration within arts sector (orgs and artists) and between arts &amp; tech sectors (&amp; educational institutions/programs).</p> <p>Focus on the message, not the medium.</p> <p>Leverage social media and video for story-telling about artists and their work.</p> <p>Inspire artists (or for the staff that serve them within support organizations and galleries) of the possibilities broadband presents.</p>	<p>Create tech resource database for artists/orgs to access (could include local web designers, education &amp; training offerings, school programs that might connect artist with student needing a web design project).</p> <p>Create wiki with best “models.”</p> <p>Encourage Midd TV to conduct a video tour of Addison County.</p> <p>Artist studies and air on community TV and You Tube.</p> <p>Work with ACEDC and ACCOC to create a database of Addison Art Studios open to the public and digitally present maps and information.</p> <p>Smart use and promotion of mobile-friendly platforms and apps.</p> <p>Arts support organizations vet partners.</p> <p>Plan half-day or all-day conference.</p>
<p>Use web-based systems or training to increase artists access to capital.</p>	<p>Explore alternative approaches such as crowd funding.</p>	<p>Connect with SBDC or SCORE for experts on this aspect of business development.</p> <p>Leverage Middlebury Arts Walks and other local art events to collect and disseminate use of broadband.</p>

## SECTOR ANALYSIS: BUSINESS

### Current Conditions

Small businesses lack the vision to see how broadband access can help them grow/improve their business. There is also reluctance to utilize broadband to enable telecommuting and remote workers because senior management finds it difficult to manage these users. Also, local businesses do not feel comfortable identifying ways that broadband can help decrease operating costs.

### Strengths/Weaknesses/Opportunities/Challenges

A broadband Internet connection does not in itself provide any value or service, thus contrasting with a traditional telephone connection that provides an instant use and benefit through immediate and direct verbal communication (saving travel costs and time of alternative means to communicate). Only the use of Internet services and applications made possible through a broadband connection create benefits for the user, such as remote network access, VoIP services, video-conferencing, online-banking etc.

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. No dependency on opening hours.</li> <li>2. It is possible to adapt services to local needs.</li> <li>3. Strengths that derive from e-solutions are time savings and cost-effectiveness.</li> <li>4. Better internal contro.</li> <li>5. Simpler routines for archiving.</li> <li>6. Greater flexibility with the help of e-solutions.</li> </ol>	<ol style="list-style-type: none"> <li>1. No human contact.</li> <li>2. Consulting is impersonal.</li> <li>3. It can be difficult to reach standard solutions since there are so many market forces that wish to earn money from an internet presence.</li> <li>4. It demands certain skills and changed routines.</li> <li>5. Most of the existing enterprises in the rural regions are no-tech or low-tech businesses.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Offers considerable potential for new jobs or new enterprises.</li> <li>2. Great possibilities to reorganize one's own operation and modernize the company's way of working.</li> <li>3. Provides opportunities to expand.</li> <li>4. Opportunity to enlarge their networks of customers and suppliers, to achieve greater productivity and to offer more technology orientated products and services.</li> </ol>	<ol style="list-style-type: none"> <li>1. There is a risk that the offers do not match the customers' wishes.</li> <li>2. Long-range threats to e-solutions can arise from the inability to standardize solutions, and in turn, a huge jungle of e-commerce solutions can develop.</li> <li>3. Lack of skills.</li> <li>4. Excessive expenses.</li> <li>5. The development of e-solutions for business may lead to more intense competition and offline enterprises may lose out.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Create new fields of employment resulting from the availability of broadband connection.	Campaigns, workshops, online training, increased digital presence.	Social media campaigns targeted at small businesses highlighting the benefits of broadband and internet solutions/services.

<p>Strengthen technology and broadband skills and services.</p>		<p>Workshops to educate citizens and business owners on the benefits of broadband based solutions.</p>
<p>Create additional workplaces in new broadband-based activities.</p>		<p>Work with local developers to explore opportunities to build or retro fit office spaces with secure networks and technology resources (<a href="http://www.regus.com/">http://www.regus.com/</a> offers some of these types of services).</p>
<p>Develop broadband-based entrepreneurship.</p>		<p>Development of new electronic and digital resources (forum, website with toolkit, collaborative space, peer to peer) to promote region and tourism – e-culture and e-tourism.</p>
<p>Create business start-up e-services.</p>		<p>Modernize vocational school curriculum highlighting technology skills and job opportunities to raise interest.</p> <p>Promote VCET to new and growing businesses in the region.</p>
<p>Develop e-skills in businesses/ enterprises.</p>		<p>Promotion of tele-working, e-government, e-banking, and conducting other activities on-line to offset emissions generated through travel.</p> <p>Create e-business support directory.</p> <p>Get the word out about ACEDC database for Addison County businesses.</p>

## SECTOR ANALYSIS: EDUCATION

### Current Conditions

Education in Vermont is working with two gaps, when it comes to internet usage. First, most schools have decent computer hardware and internet access, yet teachers and support staff do not generally make full use of that potential.

Second, while some Vermonters have access to broadband and can exploit it for learning, not all residents of Addison County can do either, or both. Broadband rollout is still incomplete, and basic knowledge of learning online is limited.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
1. Pre-existing infrastructure (human, institutional, physical). Teachers' love of profession. Vermonters' appreciation of learning.	1. Budgetary limitations. Professional development for teachers and staff is often endangered due to financial pressures. Tenure system helps older teachers resist change. Incremental nature of educational change. Schools rarely change quickly. Broadband usage sometimes resisted. Internet access within classrooms can intimidate some teachers.
EXTERNAL	
Opportunities	Challenges
1. Rise in retraining interest, due to economic crisis. Retirements open the way for new teachers + support staff. Entrepreneurial: distance learning programs or entire schools, like <a href="#">this New Hampshire one</a> .	1. Increasing adjunctization of teaching profession makes it harder to support transient instructors.

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Articulate uniquely Vermont/Addison county aspects of .edu broadband use.	Survey usage, sharing results.	Create an inventory by sampling from diverse sectors (K-12, community college, professional training, etc). Finish by end of January. Share results by March, via Web-based ebook + multiple media sites (tv, radio, newspaper, Web (VtDigger)).
Partner with other sectors to expand educational use of broadband.	Work with public libraries.	Hold a series of talks, workshops, and trainings at county libraries.
	Work with businesses.	Conduct interviews with selected local businesses, learning about what educational needs they have which technology can assist with.
	Work with emergency services.	Build a Website to identify best of breed online training materials.

	Work with museums.	Broker story-writing between local media and local museums, so the former does stories about the latter's online public education work.
Grow awareness of teaching with broadband.	Hold "A Season of Online Learning."	Produce a series of stories about learning through broadband. Publish through communities venues (public access tv, Addison Independent) and online.
Expand teachers' knowledge and abilities of teaching with broadband.	Develop targeted professional development workshops.	Interview local teachers to identify needs. Broker workshops with external instructors, as needed.

## SECTOR ANALYSIS: ENERGY/UTILITIES

### Current Conditions

- Broadband is critical for communicating with customers and balancing supply with demand creating the opportunity for increased efficiency and lower cost and fuel consumption. This will be truer with smart grid, which will have web-based user interface.
- Due to the nature of utilities, network needs to be considerably more reliable than 3G.
- Broadband is critical for monitoring how energy is flowing or not flowing.
- It is challenge to bring users up to a higher level in their use of technology (disconnect between energy providers and customers).
- There is a huge opportunity for users to be more in tune with their energy use due to smart grid and real time data.
- Electric car charging infrastructure is dependent on reliable broadband.
- Smart phones and apps expected to play an increasingly large role.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
1. Solid infrastructure. 2. Well-funded. 3. Above average level of technical expertise.	1. Weakest link can wreak havoc. 2. Disconnect between energy providers and customers in technical aptitude.
EXTERNAL	
Opportunities	Challenges
1. Smart Grid a significant opportunity on multiple levels. 2. Real time data on energy usage. 3. Electric vehicles (on multiple levels).	1. Rural demographics. 2. Broadband carriers lack sensitivity requirements needed for this critical infrastructure. 3. Transition to Smart Grid. 4. Electric vehicle infrastructure build-out.

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Increase the efficiency in which utilities can balance supply with demand, therefore lowering cost and fuel consumption.	Smart Grid + apps Strategy is already well on its way.	Continue with current smart grid and apps project.
Enable local distributed generation to strengthen reliability, reduce dependence on foreign fossil fuels, develop local economic investment and reduce the region's overall carbon footprint.	Enable communications systems that utilize local resources to reduce expensive peak electrical loading.	Plan for and build smart grid and electric vehicle charging stations.
Self-healing electrical network.	SG coupled with distributed generation.	

<p>Educate consumers and businesses to include conservation in their electrical and other energy consumption decisions.</p>	<p>Locate, create devices/apps that easily allow consumers to adapt their behavior.</p>	<p>Utilize efficiency Vermont and other local energy organizations (ACORN) to make the economic and other arguments that spur adoption of the devices/apps.</p>
<p>Create a widely available and stable electric vehicle infrastructure.</p>	<p>Multi-stakeholder working groups.</p>	<p>Support Project Get Ready (already in works). Utilize web based application to create charging network that can bill consumption like software supporting Coulomb energy technology.</p>
<p>Encourage Middlebury College, ACORN and other local technology innovators to utilize broadband to share successes concerning local energy decisions (price, carbon reduction, reliability, local investment (Increased transparency about source, cost and quantity of energy (in real time).</p>	<p>Smart Grid coupled with local organization champion (collecting, aggregating and distributing information concerning local electric generation and other fuel use.</p>	<p>Encourage project owners to adopt a technology that tells the story of their facility in real time, similar to the technology used at the Ferrisburgh Solar Farm and aggregate that data.</p>

## SECTOR ANALYSIS: HEALTHCARE

### Current Conditions

- Statewide effort to digitize healthcare records, which is being spear-headed by Vermont Information Technology Leaders (VITL). Implementation is well under way in the Addison region.
- There is a movement within this sector to leverage broadband for better communication with both colleagues and patients and for better management of data. In many ways, the healthcare sector is behind other sectors in this regard. For example, even today, patient records are not 100% digital and communication is still heavily reliant on phone and letter rather than email.
- Due to the sensitive nature of the communication and data in this sector, security within the network and systems is vital.
- The opportunity for greater efficiency in data management and streamlining workflow is huge. Similarly, the patient stands to gain in the areas of convenience and quality of care.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Federal funding to help facilitate the transition to electronic records.</li> <li>2. VITL in place to help coordinate efforts state-wide.</li> </ol>	<ol style="list-style-type: none"> <li>1. Major cultural change, especially among older practitioners and older institutions.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Greater efficiency in data management and streamlining workflow.</li> <li>2. Increased convenience and quality of care for patient.</li> <li>3. Increased accuracy in health records.</li> <li>4. Better communication with colleagues and with patients.</li> <li>5. Increased access to vital information.</li> </ol>	<ol style="list-style-type: none"> <li>1. Security of data.</li> <li>2. Significant cultural shift.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
100% digitization of patient records.	Coordinate with VITL.	Already well under way.
Leverage broadband for better communication with patients.	Coordinate with VITL.	Implement tools, apps and protocols for e-communication with patients.
Better access to patient data by practitioners.	Coordinate with VITL.	Create 24/7 remote access to patient data by practitioners.
Better access to patient data by patients.	Coordinate with VITL.	Create web interface for patients to get access to their records.
Create pilot project for e-health.	Coordinate with VITL.	
Broaden tele-medicine.		

## SECTOR ANALYSIS: LIBRARIES

### Current Conditions

- For many people, libraries are their only source internet access.
- Libraries are gateways for information in communities.
- Libraries provide free access to databases, government information, audio and video content.
- Libraries are sites for digital literacy training.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>Existing technological infrastructure, including broadband network, computers, and personal devices.</li> <li>Solid resources in downloadable audio books and e-books.</li> <li>A collaborative Vermont consortium of public, school, and academic libraries.</li> <li>A modest technology budget.</li> </ol>	<ol style="list-style-type: none"> <li>Library has a limited understanding of community needs.</li> <li>The demand for digital content has outpaced the supply, and budgets limit supply.</li> <li>Persistent digital divide between those with basic technological skills and those without.</li> <li>Vermont lacks a simple union catalog (a catalog of catalogs) where Vermonters can look for books at other libraries and interlibrary loans cannot be initiated by patrons and are challenging to track.</li> <li>Staff needs more training in technologies.</li> <li>Staffing limits the amount of workshops and training opportunities we can offer the public.</li> <li>The library needs to promote its databases.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>There are many opportunities for collaboration with educational, government, and private organizations.</li> <li>As a branch of the town government, we might serve the community as a repository for local government information.</li> <li>Grant funding opportunities abound.</li> </ol>	<ol style="list-style-type: none"> <li>The public's attitude towards libraries has led to minimal financial support.</li> <li>Many alternative sources for media, including booksellers.</li> <li>Training users in how to use our services places a larger and larger burden on the staff.</li> <li>Other cultural organizations compete with the library as a venue for events.</li> <li>The more individual technologies, the more equipment there is to maintain and protect.</li> <li>Items are not returned and the library lacks a means of recovering borrowed items.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Provide Vermonters with universal access to libraries and all digital content within the state system.	Create a statewide library card.	Link to drivers VT license, no renewal unless books returned and or fines paid.

	<p>Use technology to create statewide library databases including:</p> <ul style="list-style-type: none"> <li>• A simplified print management system</li> <li>• A statewide time management system</li> <li>• Unified purchasing contracts for upgrading computers and equipment or purchasing software or digital content (e-books and or video)</li> <li>• Unified web homepage design to facilitate ease of use, but allow for individual creativity within the template</li> <li>• Streamline interlibrary loan system</li> </ul>	<p>Work with the Green Mountain Library consortium members to implement the most important technology offerings.</p>
<p>Provide meaningful and accessible digital content to all Vermonters.</p>	<p>Expand the library beyond its physical footprint to make digital media (e-books and movies) available to remote locations within service areas.</p>	
	<p>Utilize Ilsley as a regional resource serving towns surrounding Middlebury.</p>	<p>Invite neighboring towns without libraries or with limited resources to collaborate with Ilsley as their digital hub. Focus on revenues as well as services.</p>
<p>Establish libraries as training centers for digital literacy.</p>	<p>Invest in staffing and technology to provide adult digital literacy training.</p>	<p>Relieve staffing pressures somewhat by having readily available video-instructions available for most popular applications (Facebook, Twitter, I phones, etc. and share best trainings throughout the consortium.</p>
<p>Establish libraries as storage centers for community digital content.</p>	<p>Collaborate with local publishers, government (non-critical documents), community TV, schools other organizations to create online content and store public, non-critical data.</p>	<p>Focus on both preserving local archives and enhancing a revenue source for storage that the library already has expertise in.</p>

## SECTOR ANALYSIS: MEDIA

### Current Conditions

- Newspapers across the nation are struggling to adapt and find new strategies as readership moves online.
- Ad-supported news agencies are seeing web advertising revenues fall short of print revenues, and strategies that have been income drivers are being replaced by free online services (like transition from classifieds to Craigslist).
- News desks (especially at organizations with limited staff) are also struggling to adapt to a new rhythm for a readership that expects up-to-the-moment information online rather than waiting for the newspaper to be published.
- On the bright side, local news readership in Addison County remains strong.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Few media outlets cover most regions of Vermont, so readers tend to be loyal and willing to pay for news.</li> <li>2. Loyal following offers some freedom to experiment with new technologies &amp; ideas.</li> <li>3. Inexpensive cameras and recording-enabled cell phones make it easier for both media and the public to get footage.</li> <li>4. New ways to reach out to public (social media) mean that journalists can be more accessible to the community, with potential for more interaction/story ideas.</li> </ol>	<ol style="list-style-type: none"> <li>1. Lack of digital archiving process</li> <li>2. Still experimenting with ways to support the digital news process through ads/paywalls</li> <li>3. Lack of digital training for journalists</li> <li>4. Justification of time and resources spent only on digital vs. things that can be used in print and on the web.</li> <li>5. Mainstream media standards for video are hard to match at the local level. Editing video is very time consuming and can't be supported by limited audiences.</li> <li>6. Good audio requires better and more complex equipment than video and short distance between speaker and microphone.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Advances in journalism/new media. Training, extensive information &amp; open-source (free) opportunities abound online.</li> <li>2. News organizations nationwide are struggling with the same problems, and lots of people are working to solve them.</li> <li>3. More and more story-related resources and data available online, plus tools to analyze that data. Potential for more in-depth news coverage and reporting, as well as more chances to ensure governments and organizations are doing their jobs.</li> </ol>	<ol style="list-style-type: none"> <li>1. Myriad ways of peer-to-peer reporting and social media question the basic role of the media and the mission of a news organization.</li> <li>2. As news organizations provide more ways of accessing information digitally, the public must also be trained to use these new tools &amp; media — i.e. closing the digital divide.</li> <li>3. Customized web development and back-end database systems are expensive, but cheaper and open-source software isn't always reliable.</li> <li>4. Growing expectations of instantaneous news coverage.</li> <li>5. Digital Media has expanded the amount of information available exponentially compared to the printing press.</li> <li>6. With huge amounts of information available, huge amounts of misinformation are also available.</li> </ol>

**Goals/Strategies/Actions**

GOALS	STRATEGIES	ACTIONS
Create more online content.	Make sure reporters are always thinking of new media opportunities to go with stories, encourage use of digital media tools with small stories as practice to develop skills.	Leverage expertise already in newsrooms to train others (video/audio editing, basic HTML).  Set aside training time.  Bring up digital media regularly, make sure it's something people are thinking about.
Encourage people to interact with media, not just consume content.	Make staff more accessible to public, and highlight reader voices.	Encourage reader submissions, use social media to reach out not just with news, but also with less serious posts — polls, photos of staff, photo contests.
Digital archiving.	Need workflow that makes print editions, stories and digital media accessible.	Research best formats for page and text document storage, possibly work with libraries (Ilsley?) to archive documents. Consider accessibility. How much access does public have, online or at a specific place?
Develop brand as a source for both breaking news and in-depth analysis.	Adapt newsroom workflow to be publishing breaking news, timely stories and blog posts throughout week, not just on print schedule.	Have reporters post own (edited) content on website.  Maintain regular social media presence so more readers follow and can be alerted to new information.

## SECTOR ANALYSIS: MUNICIPAL GOVERNMENT

### Current Conditions

- Inadequate websites.
- Limited use of broadband infrastructure.
- Minimal use of communication tools.
- Limited social media.
- Mixed technical ability among staff and stakeholders
- Good infrastructure.
- Aging, rural population.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
1. Solid infrastructure.	1. Training needs across the board. 2. Inadequate websites. 3. Not leveraging communication tools and social media.
EXTERNAL	
Opportunities	Challenges
1. Increase participation and engagement with stakeholders. 2. Increase efficiency of organizations. 3. Increase transparency.	1. Increasing adoption rates among stakeholders who maybe inexperienced with technology or technology adverse. 2. Limited staff capacity and limited budgets.

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Increase citizen participation and engagement in government through the innovative use of technology.	Research/fund communication tools and leverage social media tools to better engage with audience.	Pursue grant funding for demonstration project centered on the innovative use of technology for government.
Increase technology skills among staff and stakeholders.	Make training available for all technology deployed.	Offer training, including access to videos or webinars so that staff and stakeholders and effectively use the technology employed.
Increase use of websites by both staff and stakeholders.	Prioritize functionality and usability of website.	Rebuild websites, if necessary, with a focus on usability and ease of management.
Increase transparency of government operations.	Embrace transparency and interactivity on web platform.	Integrate web 2.0 functionality into websites.
Increase efficiency and/or productivity of organizations.	Screen software for functionality, usability & ROI.	Employ technology that passes screens (communications, project management, billing, etc.).
Increase ability of staff to work remotely.	Develop tools and processes for telecommuting.	Install telecommuting software and training for staff.

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## SECTOR ANALYSIS: PUBLIC SAFETY

### Current Conditions

The majority of Fire, Police and EMS agencies have access to laptop computers provided by Homeland Security. Most do not use them other than to access the internet to submit mandated reports. The primary means of communications are with VHF or UHF radios within vehicles or as portables. Radio communications is slowly moving toward digital delivery as units are updated. The latest issue lies with “narrow banding” of radios and the great switchover mandated by the federal government by 2013. Primary backup communications is currently cellular telephone generally owned by the first responder rather than available as a service provided by the agency.

Increasingly gaps in radio coverage are being identified and addressed through the addition of “repeaters” which receive a weak signal and amplify it. The expectation is increasingly that radio coverage should be of high quality and available equally everywhere in spite of terrain differences in what is primarily a line of sight delivery system. Narrow banding is said to reduce the effective distance at which radios can be functional.

Many first responders are hesitant to depend on digital/broadband use due to its lack of availability uniformly throughout the region. When coupled with a leadership made up often of senior members who eschew more modern technologies, the transition to ubiquitous use of broadband is slow at best. The perception is often that of the technology being inappropriate in a life safety situation due to lack of dependability rather than an opportunity to build greater capacity when it works.

The State of Vermont had moved its disaster documentation/management tool to a web-based application over the past 3-4 years. When the State Emergency Operations Center had to evacuate, the State e-mail system also collapsed, leaving the state without its web-based tools. The existing back-up plans also failed leaving the State without e-communications for the better part of a day. This failure of systems will be pointed to by the first response community for a number of years as a reason to not use or become dependent on systems which rely on broadband access.

**Strengths/Weaknesses/Opportunities/Challenges**

<b>INTERNAL</b>	
<b>Strengths</b>	<b>Weaknesses</b>
<ol style="list-style-type: none"> <li>1. The leadership is aging and increasingly younger members of response agencies have grown up with and are comfortable with use of computers and cell phones.</li> <li>2. Federally mandated changes in how the sector uses radio communications will likely put most on the same page at a base level by 2013.</li> <li>3. Broadband coverage is generally available via land line throughout the region and many offices/stations have broadband access on site.</li> <li>4. Many responders work with broadband and its capabilities through their everyday workplace and are exposed to it.</li> <li>5. Increasingly, training and simulations are being developed out in the world which will become more available over time.</li> </ol>	<ol style="list-style-type: none"> <li>1. Understanding of what is available via broadband is limited to the youngest members of the first response community.</li> <li>2. The belief that hands on “working with the equipment” is the only effective method of learning is widespread.</li> <li>3. Widespread availability of coverage is lacking.</li> <li>4. The 1st response community needs to be very mobile in its applications. Landline broadband access is viewed as the territory of an office worker rather than a tool for a responder.</li> <li>5. Cellular will likely be the primary access for use during a response and historically, cell access can be gridlocked during a major event.</li> <li>6. Interactive training and exercising have not developed as far as needed to capture the needs of action-oriented personnel.</li> </ol>
<b>EXTERNAL</b>	
<b>Opportunities</b>	<b>Challenges</b>
<ol style="list-style-type: none"> <li>1. Interactive training and exercising are wide open and are a huge growth area.</li> <li>2. Computer simulation for the first response community goes hand in hand with training and exercising opportunities.</li> <li>3. Real-time situational updates initially of weather and chemical risks and eventually of scene information via audio and visual reporting.</li> <li>4. Online mapping applications via cellular smart phones for response routing.</li> <li>5. Instant patient monitoring from mobile ambulance to physician in hospital.</li> <li>6. Law enforcement is actively using Computer based information systems within their mobile units.</li> </ol>	<ol style="list-style-type: none"> <li>1. Overcoming an innate resistance to change within the first response communities. (Fire is most resistant followed by Police. EMS is most able to internalize rapid change and should be used as a spear point.)</li> <li>2. With most fire agencies manned by volunteers and with limited financial support, many will lag behind without targeted funding opportunities. Similarly, government budgets will preclude cutting edge access and training for most of the sector.</li> <li>3. Dependable mobile computer-based information systems require an extensive and expensive network of communications.</li> </ol>

**Goals/Strategies/Actions**

GOALS	STRATEGIES	ACTIONS
<p>Improve public safety services through the appropriate use of electronic, web based communications.</p>	<p>Use training to develop expectations and build capacity among the first response agencies.</p> <p>Use electronic reporting and recordkeeping.</p> <p>Use of interactive courses to deliver training Use of smart technology is perceived as beneficial to first responders.</p> <p>Ability for first responders to access dependable mobile broadband is universal.</p> <p>Develop access to crowd sourcing systems or ability to monitor social media to tap into “live” reporting made available via web.</p>	<p>Conduct Public Information Officer training with a focus on electronic communications.</p> <p>Require all statewide reporting to be done electronically.</p> <p>Research and find competent courses and/or develop them in-house.</p> <p>Increase availability and quality of these courses.</p> <p>Continually expose the sector to new and developing systems.</p> <p>Use existing sector communications systems to announce/advocate new developments.</p> <p>Develop financial support for expansions/sharing at the State and federal level.</p> <p>Develop Ushahidi or other program to provide a platform for citizens to communicate with Emergency management and friends during a disaster.</p>

## SECTOR ANALYSIS: TOURISM

### Current Conditions

Virtually all lodging establishments are dependent on the internet for marketing, communication, and guest use. The larger properties also use it for employee recruitment, training and accounting. Restaurants, attractions and most other businesses who serve visitors also depend on broadband for the same functions. Social media is starting to be effectively utilized by the tourism sector as well.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Because web pages do a good job of showing lodging properties and their amenities, and in some cases availability, they are extensively used by properties to help travelers find accommodations appropriate to their needs and budget.</li> <li>2. Retailers and restaurants have also done a reasonably good job of using the web to market to and communicate with potential customers.</li> </ol>	<ol style="list-style-type: none"> <li>1. Spotty cell coverage and internet availability is detrimental to travelers using mobile devices to research or interact with businesses including those in the hospitality sector. In some cases these weaknesses can be a strong deterrent—such as an inn without internet availability will be out of the question for many people.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Mobile devices are very useful while people are in transit or once they've arrived at their destination because of their accessibility.</li> <li>2. Mobile sites and mobile applications are both excellent communication and marketing tools.</li> <li>3. Augmented reality (AR) tourist information, where the real world is augmented by computer generated images is a very exciting opportunity. Since AR is location specific, it can be used to tremendously enhance the visitor experience from almost anywhere.</li> </ol>	<ol style="list-style-type: none"> <li>1. The greatest challenges keeping hospitality businesses from fully utilizing broadband effectively is money and training. The two are certainly related.</li> <li>2. Even if businesses are aware of the many ways they could benefit from the use of broadband-dependent tools, they often are unable to do so because of the cost. For example, AR is certainly beyond the reach of most tourism-related businesses in our area.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Help tourism related businesses to be more profitable.	Inform/train tourism related businesses on the value of broadband dependant tools to all aspects of their business, particularly marketing.	ACCOC will hold series of seminars starting Jan. 2012, on marketing including digital marketing for hospitality businesses.
	Locate unique and effective uses of by hospitality businesses.	ACCOC will profile businesses using digital tools well and profitably in newsletter by Jan. 2012.
Increase visitor spending.	Determine best tools (and way to fund them) to capture increased visitor spending.	ACCOC will implement a mobile site and app by Oct. 2012.

# Bennington County Regional Commission

## SECTOR ANALYSIS: BUSINESS

### Current Conditions

- Widely varying levels of technology utilization across this sector.
- Mixed deployment of social media resources.
- Mixed technical ability among business owners, staff and consumers.
- Varying levels of access to broadband capacity across the sector.
- Huge upside opportunity with effective adoption and utilization of technology.

Most manufacturing enterprises in the Region have fairly good connectivity to the Internet and special applications. Enhanced services may be needed depending on particular upload/download data needs, types, and volume. Fixed systems, upgrades, servicing, redundancy, and maintenance can add up to considerable cost. Not only in manufacturing, but in other businesses, as well, there is a growing trend to transition IT infrastructure to cloud technology. With cloud computing, the ability of companies to expand quickly to the global marketplace is enormous and may be undertaken at lower cost.

Mobile communications is especially important to the manufacturing sector with a need for on-the-go communications in real time, for business decisions and basic communications. The Bennington Region falls short on a robust wireless and cell phone infrastructure, especially outside urban centers. Just as important as building a fiber core to support landline services is the need to upgrade cellular service.

The Vermont Farm to Plate Strategic Plan (F2P) is a blueprint to get more Vermont-produced food into Vermont kitchens and to employ more people along the way. The plan is based on three primary goals: increase economic development in the farm and food industries; create new jobs in those industries; and make it easier for Vermonters to buy healthy local foods. Approaches to Farm to Plate will vary from region to region. Community-supported Agriculture (CSA) and Internet presence is growing in the Bennington Region from basic website presence to Facebook and other outlets (Clear Brook Farm, Dutton Farm Stand, Dorset Farmers Market, Walloomsac Farmers Market). And, these local markets have winter season delivery systems for local pick-up. Other Community garden initiatives, such as 'Grow a Row' in Bennington, provide opportunities for local residents to grow their own produce. Virtual farmers markets benefit local growers by having a web presence for the sale of produce which is conveniently accessed from home.

Visiting arts and craft studios in Vermont can be an exciting experience, but time and travel limits exposure to many fine works of artists and craft persons. The Vermont Crafts Council ([www.vermontcrafts.com](http://www.vermontcrafts.com)) is increasingly expanding web-based venues to identify artisans by region, shops, and galleries. Open Studio Weekend in October promotes the natural fit of fall foliage viewing with visits to artists' studios. Short of making the preferred trip, one can view in detail Artisans' pages on the web, thus opening-up increased sales and orders to support the artist community.

There are many examples of travelers who may be vacationing overnight or passing through and cannot get an Internet or cell phone connection. Consumers at vacation destinations expect connectivity which requires an investment by the proprietor including Wi-Fi. These have become essential in attracting businesses and should be

available and reasonably priced for both small and large sized tourist businesses in the Region. Many are in rural and remote areas and may have no access or poor access to internet and cell service. Hopefully, the expansion of telecommunication infrastructure over the next few years will enable these businesses to take advantage of enhanced broadband and, hopefully, expanded cell service.

**Strengths/Weaknesses/Opportunities/Challenges**

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Good access to broadband and cellular infrastructure in higher population density areas and key business locations.</li> <li>2. Existence of a number of technology-oriented companies utilizing industry “best practices.”</li> <li>3. High connectivity among manufacturing businesses in the Region.</li> <li>4. Solid basic Solid infrastructure.</li> </ol>	<ol style="list-style-type: none"> <li>1. Wide variation among adoption and utilization of existing broadband services to promote business efforts.</li> <li>2. Inconsistent access to broadband service availability throughout the region.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Significant upside potential for many businesses who gain better understanding of and expand utilization of broadband-based technologies and programs for commerce.</li> <li>2. Potential for sharing of resources and personnel to mutual benefit across industries.</li> </ol>	<ol style="list-style-type: none"> <li>1. Gaining cross-industry and cross-platform understandings of opportunities available through better utilization of e-commerce and other technology-based tools.</li> <li>2. Closing the gap among between the early adopters and successful deployers of business technologies and those businesses and consumers with limited understanding and access to broadband technologies.</li> </ol>

**Goals/Strategies/Actions**

GOALS	STRATEGIES	ACTIONS
Continually increase levels of available broadband and cellular infrastructure throughout the region.	Maintain regular dialogue with service providers to discuss plans, needs and opportunities.	Establish regular schedule of meetings with service providers active in the Region.  Create roundtable of business sector leaders to discuss deployment, access and utilization of broadband and cellular technologies on at least a semi-annual basis.
Improve business understanding of benefits of utilization of electronic marketing and communication and social media.	Develop educational and training sessions directed toward business owners.	Work with Chamber of Commerce, SBDC and other organizations to create training opportunities for businesses.  Conduct at least 3 events in 2012.

<p>Encourage the sharing of resources and personnel to improve e-business applications and penetration.</p>	<p>Ask industry leaders to facilitate sharing of information and evaluate opportunities to share other resources with mutual benefit.</p>	<p>Identify best practice adopters and inquire about their willingness to lead a resource sharing effort.</p>
<p>Expand opportunities for home-based and web-based businesses to develop and expand in the Region.</p>	<p>Provide training and guidance in identifying and assisting home-based and web-based businesses.</p>	<p>Develop and inventory or web-based and home-based business opportunities.</p> <p>Create a list of resources to assist home-based and web-based businesses.</p>

## SECTOR ANALYSIS: EDUCATION

### Current Conditions

- As with libraries, schools and educational institutions are critical to expansion of broadband availability as anchor institutions.
- Present access and utilization is widely disparate between urban and rural areas of the Region.

Top economists attribute the health of the economy to the flexibility of global markets, economic dynamism, and increased productivity due to technology, all of which are dependent on a highly educated, high-tech, 21st century workforce. To compete successfully in this global economy, students must be inventive thinkers, self-directed learners, and effective communicators-tech savvy and digitally literate.

The Southwest Vermont Career Development Center ([www.svcdc.org](http://www.svcdc.org)) is a vital institution that brings and advances technology offerings in the region it serves through its Adult Education Program and the Learning Institute. The extensive class and course offerings provide an opportunity for area residents to learn and develop proficiencies in computer skills and communication technologies. Distance learning through the CDC will become increasingly important given the rapid changes in technology and the ability to access specialized training and learning venues. This will enable the workforce to maintain current and develop needed technology savvy. The Career Development Center is anxious to identify all employers associated with the Broadband Initiative throughout the State and to identify necessary skill sets and training needs to CDC can provide. Working hand-in-hand with businesses has proven to be an effective method for CDC in developing program instruction. Customizing curriculum targets along these lines not only benefits young adults entering the workforce but adults looking to be re-trained in emerging technologies and employment opportunities.

The Region’s post-secondary schools include Bennington’s Community College of Vermont ([www.ccv.edu/locations/bennington](http://www.ccv.edu/locations/bennington)), Bennington College ([www.bennington.edu](http://www.bennington.edu)) and Southern Vermont College ([www.svc.edu/](http://www.svc.edu/)). These institutions provide an array of science and technology offerings including computer applications and information technology in specialized areas, and self-directed learning for certain focused interests.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Institutions exist throughout the Region at all levels – primary, secondary, post-secondary, vocational, adult.</li> <li>2. Staff is generally tech-savvy.</li> </ol>	<ol style="list-style-type: none"> <li>1. Some more rural schools in the Region do not yet have good access to broadband.</li> <li>2. Technology is not always integrated in meaningful ways.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Schools can assist in expansion of broadband availability.</li> <li>2. Enhance digital literacy at multi-levels – primary, secondary, technical/vocational, post-secondary, adult.</li> <li>3. Schools are focal points for workforce development initiatives.</li> </ol>	<ol style="list-style-type: none"> <li>1. Hardware and capacity upgrades to fully leverage technology is challenging in light of very tight budgets.</li> <li>2. Wide range in levels of access in various parts of the Region.</li> </ol>

**Goals/Strategies/Actions**

GOALS	STRATEGIES	ACTIONS
Increase digital literacy at all levels of education – primary, secondary, post-secondary, vocational/technical, adult.	Institute training and educational offerings.	Establish regular series of trainings for staff and public.
Assist in expansion broadband availability.	Leverage public and private investment such as Vermont FiberConnect project and Gates Foundation.	Sign on as anchor institutions to Vermont FiberConnect project.
Increase quality of Region’s workforce.	Work with employers and other training and service providers.	Develop training programs and degree or certificate programs to facilitate development of skills to meet needs of areas employers – i.e. – Composite Cluster in the Region.
Improve integration of technology in classrooms at all levels.	Provide training for staff.	Create training programs to provide staff with new strategies and techniques for leveraging available technologies.

## SECTOR ANALYSIS: ENERGY/UTILITIES

### Current Conditions

- Limited technology utilization at consumer integration level.
- Limited use of broadband infrastructure.
- New opportunities being created through Smart Meter deployment.

The Smart Grid is an integrated utility and communication system to manage the supply and use of electricity. In the Bennington Region it will enable CVPS to manage system energy use in real time, while customers can manage their own use in real time down to the hour for electrical consuming devices. While there are real benefits to the enhanced systems, customers can opt out and retain current technology, if they so choose. According to the CVPS website [www.cvps.com/smartpower](http://www.cvps.com/smartpower), smart meters in the Bennington Region will be installed in the winter of 2011 and 2012. The website provides a status of the project and information about the Smart Power/Grid. Customers will need to educate themselves about the rate packages which are most advantageous to energy consumption patterns, with the ability to change energy use when rates are more favorable. Smart Meters can also be used to control appliances and devices if the customer so chooses. It is anticipated that the new Smart Meters will not have a discernible effect on the new rates.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
1. Solid technical capacity on staff. 2. Solid infrastructure. 3. New technology becoming available – Smart Grid.	1. Not effectively utilizing technology, websites, social media to interact with consumers.
EXTERNAL	
Opportunities	Challenges
1. Increase participation and engagement with stakeholders. 2. Increase efficiency of organization. 3. Increase transparency.	1. Increasing adoption rates among stakeholders who maybe inexperienced with technology or technology adverse. 2. Uncertainty over Smart Grid deployment at consumer level.

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Promote energy efficiency programs and improvements to complement Smart Meters.	Assist in development of educational outreach programs.	Work with CVPS to organize educational events for consumers, businesses and institutions.
Promote effective utilization and leveraging of Smart Meter technology.	Assist in development of educational outreach programs.	Work with CVPS to organize educational events for consumers, businesses and institutions.

## SECTOR ANALYSIS: HEALTHCARE

### Current Conditions

- Fairly high degree of integration in move toward digital medical records.
- Southwestern Vermont Health Care – Dartmouth Hitchcock alliance will provide new opportunities in the Region.
- Health Care Sector can serve as leader in patient education and improved efficiency of service delivery.

The Southwestern Vermont Health Care (SVHC) website is a key portal for education, patient medical records, physician resources, and area support groups. Area physicians can access hospital patient records instantly through their own computers. This enables physicians to receive, in real time, the most recent results of tests or lab work during patient visits using tablets or laptops. With respect to medical records, the hospital serves as a clearinghouse for medical information, not only for insurance and federal reimbursements but as a central source for patients. Direct online access to medical records at the source remains a work in progress due to security and the need for quality control for the data that is stored. Nevertheless, the modernization process to e-records needs to advance.

Telemedicine enables doctors and medical institutions and practitioners to receive or send information about patients who may require distant care or receive expertise from medical specialists not otherwise available in the area to share medical records and files. A new relationship between SVHC and Dartmouth Hitchcock will take effect on July 1, 2012 and may serve to further enhance medical services for residents in the Bennington Region. The Dartmouth Hitchcock website includes a patient survey for every visit to gauge progress of the patient and the services being provided. Management is able to use this information to evaluate performance at both the patient and physician levels. Electronic transfer of information and communication between the institutions can bridge the needs for certain types of medical services not otherwise readily available in the Bennington Region. As files and imagery become more enriched and support venues such as teleconferencing, so does the demand for high-end broadband connectivity. The Vermont FiberConnect project being deployed by Sovernet and the VTA, with federal and private funds will be made available to anchor institutions such as hospitals, and could more than meet the medical telecommunication needs well into the future. It is important that anchor institutions in the Region support large pipe (fiber) deployment projects that have the potential to serve the greatest good and are economically competitive to support the cost of the installations.

Small private practices in the region converting to electronic office can spend \$60,000+ for the initial investment with annual upgrades of approximately \$15,000. Storage of information/medical records can reside at the physician's site or be managed off-site. Privacy and protection of patient electronic records requires careful consideration in choosing vendors and storage locations. Small practices are increasingly converting to electronic record systems to avoid reductions in reimbursements from various sources. On the positive side for the patient is the immediate access to data previously presented on paper documents. Just as important is the physician's exchange of information with other providers or the host hospital. The host hospital can also retrieve certain patient information from the patient doctor's electronic records or office notes, if needed. This would not have been possible or at least been a burden with paper documents.

The demand for home health providers is likely to continue to grow over the years with aging of the baby boomer population. While there is no substitute for direct one-on-one visits it may be necessary to share and convey information for home health needs online although, as pointed out, the elderly are less enthusiastic about digital technology and the use of computers. Home health providers use laptops during visits, collecting information that can be readily shared with primary care physicians and the hospital data base. This sharing of information

and overall coordination of care is exactly the right direction for digital information and communication. Perhaps educating patients who have computers can strengthen the use of feedback from the patient about their condition, progress, or questions in lieu of a home visit.

The United Counseling Service (UCS) ([www.ucsvt.org](http://www.ucsvt.org)) is a non-profit organization that provides one-on-one behavioral and developmental services in the Region. Their website includes an extensive list of links to a variety of educational, clinical, and personal assistance services. One such link is the Vermont Agency of Human Services (AHS) which includes a portal called Screen Door. This web-based tool helps Vermonters find out about the various services that are available, and eligibility, as individuals enter information about their particular situation and needs ([www.humanservices.vermont.gov/services](http://www.humanservices.vermont.gov/services)).

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
1. Strong regional hospital (SVMC). 2. High bandwidth capacity. 3. Tech-savvy practitioners.	1. Smaller practices not online and fully integrated digitally. 2. Comfort level of patients in accessing online records and information.
EXTERNAL	
Opportunities	Challenges
1. More efficient delivery of medical services and information can reduce costs, increases safety and improve outcomes. 2. Opportunity to create online portals for patient information to assist them in managing own health care. 3. SVHC – Dartmouth Hitchcock affiliation.	1. Costly to integrate smaller practices.

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Improve patient access to health information.	Provide training and resources to patients.	Fully integrate digital medical records.  Develop secure online patient portals for access to own medical information.  Improve access to general medical information, appointment scheduling, etc through websites – SVHC, United Counseling, SVHC Foundation, private practices.
Create safer, more efficient delivery of medical services.	Utilize online tools and resources.	Fully integrate digital medical record keeping.  Develop secure online patient portals for access to own medical information.
Support expansion of regional broadband.	Leverage public and private investment such as Vermont FiberConnect project.	Sign on as anchor institutions to Vermont FiberConnect project.

## SECTOR ANALYSIS: HUMAN SERVICES

### Current Conditions

- Region has an aging population.
- Use of technology among the older demographic is increasing but still significantly lags.
- Youth are generally technologically proficient but may be in situation where affordability of access and availability of hardware is an issue.
- Room to increase mobile communication and work opportunities for service providers in the field.

Bennington County has one of the highest percentages (19.1%, 2010) of persons age 65 and older in Vermont. Surveys of Internet users show that utilization of the Internet drops off significantly for this segment of the population. A number of reasons are cited such as cost, health, keeping up with technology and literacy, and simply lack of interest. Yet with the boom in the elderly population and more home health services, and the potential to communicate with family near and distant there is an obvious need to close the learning and use gap. Some hardware and software providers are designing systems to be less challenging for those who may have impairments or are simply frustrated and challenged by the technology. The high percentage of elderly in the Region suggests the need for special outreach through various venues to encourage utilization at home or in places frequented by the elderly.

Moreover, there may be a compelling health reason for seniors to engage in computer and Internet use. A study by UCLA scientists found older adults benefited from Internet surfing, book reading, and other tasks by triggering key centers in the brain for decision-making and complex reasoning.

This exercise may improve brain function, health, and cognitive ability. This is a compelling reason to engage seniors who have the physical and mental ability to use the Internet in addition to the convenience of meeting other needs.

Lower and moderate income residents make-up a good portion of the so called “digital divide” and access to the Internet becomes an affordability choice compared to other basic needs. While universal service is a laudable goal there remains the need to have affordable quality Internet services available for this population group. Since Internet and mobile services are private delivery systems, discounted rates for “qualified” persons and families should be available on a means tested basis. This would improve adoption and utilization of broadband services. Younger school age children who are in this category are disadvantaged by not using the Internet as an extended learning tool outside of school hours.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Youth demographic is generally tech-savvy.</li> <li>2. Human service providers reach into many areas subject to the “digital divide” –elderly, low-income, etc.</li> </ol>	<ol style="list-style-type: none"> <li>1. Access to hardware and capacity not affordable for many.</li> <li>2. Wide range of technology integration among service providers.</li> </ol>

EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Service providers can provide current information on needs of under-served populations.</li> <li>2. Mobile/remote work capabilities may increase efficiency of service provision.</li> <li>3. Older demographic can benefit cognitively, medically and socially from increased integration of technology.</li> </ol>	<ol style="list-style-type: none"> <li>1. Service provider budgets are tight and may not have adequate capacity for hardware and access upgrades.</li> <li>2. Gaining easy access to technology is beyond reach for many.</li> </ol>

**Goals/Strategies/Actions**

GOALS	STRATEGIES	ACTIONS
Increase utilization of technology in older/senior demographic.	Provide training and resources for this demographic.	<p>Create training programs through human service providers (i.e. – Bennington Project Independence).</p> <p>Research opportunities for needs-based assistance for hardware and service.</p> <p>Create mentoring programs partnering youth and seniors.</p> <p>Research and recommend solutions to other barriers to utilization by seniors (i.e. – mobility, ergonomics).</p>
Increase utilization of technology in low and moderate income demographic.	Provide training and resources for this demographic.	<p>Research opportunities for needs-based assistance for hardware and service.</p> <p>Utilize schools and service providers to identify needs for hardware and access to bandwidth in homes.</p> <p>Leverage e-Vermont Broadband and similar programs to bring technology to homes of low and moderate income population.</p> <p>Work with schools, institutions and businesses to create a program for donation of hardware no longer being utilized.</p>
Increase utilization of mobile technologies for service providers.	Create programs for increased utilization of mobile work platforms.	Research best practices among service providers and recommend programs to increase mobile work capacity.

## SECTOR ANALYSIS: LIBRARIES

### Current Conditions

- Wide variation of service levels at libraries throughout the Region.
- Limited use of broadband infrastructure in some cases.
- Vermont Department of Libraries assisting in e-Vermont Broadband efforts.
- Libraries can serve as training centers for increased digital literacy and expanding access to broadband technologies.
- Libraries serving as anchor points for vastly expanded broadband service in the Region through VT FiberConnect project.

The Vermont Department of Libraries is coordinating e-Vermont efforts to develop public computing centers and other Internet-based library services through the purchase of equipment, software, and technical support. Public libraries provide free public access to computers, the Internet, and current technologies. For many residents who do not have, or cannot afford a computer, the library eliminates the digital divide and represents an essential service. Libraries are functioning as computing and data centers with the deployment of Wi-Fi connections to enable downloading of electronic documents in the vicinity of the library during closed hours. Grants supported the recent installations of hardware and software for several libraries in the Region.

Libraries are located throughout the Bennington Region, and with improved broadband service this network of libraries will enormously expand access to the digital world. In order to support a wide range of 21st Century technology-based services, libraries require increasing levels of bandwidth. The middle mile Vermont Fiber Connect project will make available direct connection to fiber backbone to nearly the libraries in the Region.

Libraries also function as training centers, acquainting users with computer literacy and applications for library resources.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Widespread availability throughout the Region.</li> <li>2. Central to expansion of broadband availability as anchor institutions in Vermont FiberConnect.</li> </ol>	<ol style="list-style-type: none"> <li>1. Hardware not current in many cases.</li> <li>2. Varying levels of readiness for adoption an of new technologies.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Ability to serve as central community learning centers to increase exposure and access to broadband technologies.</li> <li>2. Can expose technologies to un-served and under-served populations.</li> </ol>	<ol style="list-style-type: none"> <li>1. Increase presence of e-books presents need to modify existing models in some cases.</li> <li>2. Funding is tight in a challenging economy, making it difficult to upgrade hardware and capacity.</li> </ol>

**Goals/Strategies/Actions**

GOALS	STRATEGIES	ACTIONS
<p>Serve as vital community resource for learning, both traditional and new technologies.</p>	<p>Expand and enhance e-library offerings and access to technologies and training.</p>	<p>Increase availability of public computers with access to broadband.</p> <p>Leverage e-Vermont and other programs to improve hardware.</p> <p>Present training in computer use, skills and technologies at least three times per year.</p>
<p>Assist in expansion broadband availability.</p>	<p>Leverage public and private investment such as Vermont FiberConnect project and Gates Foundation.</p>	<p>Sign on as anchor institutions to Vermont FiberConnect project.</p> <p>Create Wi-Fi hotspots inside and out to increase access for citizenry.</p>
<p>Increase public availability of information.</p>	<p>Create and upgrade websites.</p>	<p>Encourage participation in e-Vermont Broadband and other such projects to provide funding for improvement of library websites.</p>

## SECTOR ANALYSIS: MEDIA

### Current Conditions

- Media sector is facing a rapidly changing environment in terms of revenue sources and information delivery.
- Social media is gaining rapidly-increasing importance in delivery on information
- Many technologically-savvy individuals in this sector can serve as leaders.

Broadband availability and accessibility are integral to a rapidly changing and growing media landscape. One way communication is becoming more bilateral in engagement, improving participation and accountability. Traditional outlets of media such as newspapers, radio, TV, music, Internet, and mobile are merging more through technology, and consumers have more choice and opportunities for access in real time.

Improved Internet presence complements, and can expand services from, public access television stations, such as CAT-TV in Bennington and GNAT in Manchester. Some program content is also provided on the website through and content is shared with other Vermont Access Centers through a web-based platform. A recent survey by CAT-TV, revealed the need for more community programming, continued improvement in the coverage of school and town board meetings, and increased knowledge of CAT-TV services. Wider access to technologies would assist the efforts to meet goals in providing access for those who lack it, and providing options to enhance services. Like CAT-TV, Greater Northshire Access TV (GNAT) uses its website to provide a host of venues for local consumers including public access programming, technology applications, notifications and alerts, and other live programming. Resources are available for those who do not have direct TV access.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Concentration of tech-savvy users in this sector.</li> <li>2. Access to bandwidth and other technological capacities.</li> </ol>	<ol style="list-style-type: none"> <li>1. Decline in traditional revenue sources makes continued investment in technology challenging.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Broad reach can position this sector in a leadership role in expanding technological integration.</li> <li>2. Integration across media platforms can provide additional sources of information in variety of formats.</li> <li>3. Increase in social media utilization creates more interactive media environment.</li> </ol>	<ol style="list-style-type: none"> <li>1. Rapidly changing model moving away from print and other traditional means of news accumulation.</li> <li>2. Staying abreast of new technologies and platforms.</li> </ol>

**Goals/Strategies/Actions**

GOALS	STRATEGIES	ACTIONS
<p>Increase community access to information.</p>	<p>Provide new means of information aggregation.</p>	<p>Work with radio stations to enhance availability of programming online.</p> <p>Work with community access televisions stations in Northshire and Southshire to provide ascess to programming online for those who miss or do not have access to regular programming, as well as for live streaming of shows.</p> <p>Support provision of information via social media sites – Facebook, Twitter, You Tube.</p>
<p>Utilize existing media outlets in new ways.</p>	<p>Integrate media outlets into emergency management planning.</p>	<p>Create an emergency response system which leverages existing media outlets and creates new ones, such as through social media.</p> <p>Make this system redundant to provide multiple opportunities to access information in emergencies.</p>

## SECTOR ANALYSIS: MUNICIPAL GOVERNMENT/EMERGENCY SERVICES

### Current Conditions

- Inadequate websites in many cases.
- Need to utilize lessons learned in aftermath of Tropical Storm Irene to better utilize technology in provision of emergency services.
- Some local governments moving toward increase in provision of services and information utilizing technology.
- Government serves key role in supporting expansion and adoption of technology.

Vermont has and continues to improve its e-government initiative with more and more applications throughout State agencies. Likewise municipalities are moving in the same direction; more so for those with greater resources and who have made a commitment to e-government. Technology enables government to deliver services far more effectively without the need for person-to-person contact, and offering information and transactions online. In the Bennington Region, municipalities are already headed down this path. Another important benefit of online capability is to communicate efficiently to the citizens with greater transparency via websites, social media and video coverage of meetings. Some communities are converting to total digital environments to reduce the costly and time consuming management of paper records and supplies. Many communities in the Bennington Region have websites, and more are being created. Small towns lack sufficient staff and often rely on volunteer efforts to create and maintain websites. All municipalities in the Region should embrace technologies as a means to improve service delivery and participation by the citizenry. Furthermore, municipalities can take a lead role through their local officials to move the digital environment through any number of channels and integration with government services.

Vermont is moving to a unified communications platform to improve responders' ability to coordinate and communicate during emergency responses. The federal government has reserved a set of frequencies for the next generation public safety wireless system with enhanced features and enhanced interoperability. The Vermont Communications Board (VCOMM) will use existing communication sites developed and used by municipal public safety entities and others, to deploy new equipment for the network and some new towers. Communications systems, during local emergency events, often lack a means of communication to those affected or in a community, especially when power is lost. Following Tropical Storm Irene, the local public TV access stations and WBTV radio effectively communicated storm events. The Internet proved to be an effective and efficient means of communication and photo/video sharing. Anyone with access to the Internet could report in and learn about conditions in different communities, regions, and state geographies. The Town of Manchester on Facebook was loaded with posts and photos, as was the case for other communities and the Vermont Emergency Management page. Lessons learned include: improve communications for first responders, more two way communication through social media benefiting responders and the citizenry, and a clear case for adoption/utilization. Another critical piece of Vermont's emergency response system is enhanced next generation 9-1-1 (<http://e911.vermont.gov>). This telecommunication system, accessed through landline, wireless, and "voice over the Internet," must be accessible to everyone. Key to the system is a locatable address, and key to the locatable address is the municipal E-911 coordinator, to assure a current and accurate location database.

**Strengths/Weaknesses/Opportunities/Challenges**

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Many local governments and emergency service providers have tech-savvy staff.</li> <li>2. Larger local governments can serve as model for smaller in provision of information and services via technology.</li> </ol>	<ol style="list-style-type: none"> <li>1. Varying levels of hardware, software and bandwidth capacity, especially rural vs. urban.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Increased efficiency and reduced costs of service delivery.</li> <li>2. Improved reliability and timeliness of emergency response possible through increased use of technology.</li> <li>3. Regionalize support for smaller local governments.</li> </ol>	<ol style="list-style-type: none"> <li>1. Municipal governments face ever-increasing funding pressures making technology and capacity investments more difficult.</li> <li>2. Cell coverage is lacking or inadequate in more rural areas.</li> </ol>

**Goals/Strategies/Actions**

GOALS	STRATEGIES	ACTIONS
Improve efficiency of government service delivery.	Expand digital and online options for service delivery.	Upgrade or develop municipal government websites.  Create social media outlets.  Appoint technology ombudsmen for local governments.
Improve communication during emergencies.	Provide multiple options for communication during emergencies.  Systematize communication platforms across responders.	Create public portals for information and services.  Utilize a variety of technologies for delivering information – web, mobile phones, text, landlines, community access TV, radio.  Review communications platforms for emergency responders in Region.  Develop plan for integration of technologies across responder groups.
Improve access to technology for citizenry.	Review plans and ordinances to ensure support of reasonable capacity expansion.	Ensure that town plans, zoning bylaws, tower ordinances, etc. balance protection or resources with need for additional capacity.  Support public and private investment in capacity.  Support the Vermont Telecommunications Plan (2011).

## SECTOR ANALYSIS: NON-PROFIT/SERVICE

### Current Conditions

The Non-Profit/Service Sector is comprised of a wide range of providers with widely varying degrees of access and integration of technology.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Some tech-savvy users in the this sector.</li> <li>2. Some with access to bandwidth and other technological capacities.</li> </ol>	<ol style="list-style-type: none"> <li>1. Budgets have been tight as giving has been curtailed in challenging economy making investment in hardware and service difficult.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Broad reach can position this sector in a leadership role in expanding technological integration.</li> <li>2. Increase in social media and other technology utilization creates more interactive service environment.</li> </ol>	<ol style="list-style-type: none"> <li>1. Funding for training and provision of hardware, software and access capacity.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Increase community access to information regarding services.	Provide new means of information distribution.	Support provision of information via social media sites – Facebook, Twitter, You Tube, etc.  Look for funding opportunities to assist service providers in creating and upgrading websites, increasing accessibility and training staff in technology utilization.
Create new methods for providing services to community, participants and stakeholders.	Provide new channels and methods of service delivery.	Research and recommend options for interactive delivery of services, electronically.

## SECTOR ANALYSIS: TRANSPORTATION

### Current Conditions

- Transportation is a huge consumer of energy and new technologies can serve as means to reduce consumption.

The transportation industry in the United States is an enormous consumer of energy, and the amount of energy used for transportation in rural places like Vermont has grown more rapidly than energy use in other sectors. Much emphasis has been placed on strategies to conserve fuel within the transportation realm. Broadband and advanced communication infrastructure can make the transportation system, both public and private, safer, cleaner, and more efficient. Moreover, broadband itself provides an alternative to transportation and travel through web conferencing, telecommuting and videoconferencing, and mobile communication devices. Choices along these lines should contemplate the benefits of communication and workplace technologies versus traditional vehicular travel.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
1. Telecommuting, web conferencing and interactive video are becoming increasingly acceptable and common forms of business communication. 2. Green Mountain Transport provides public transportation opportunities.	1. Low integration of telecommuting technologies.
EXTERNAL	
Opportunities	Challenges
1. Significant energy savings, cost savings for commuters and flexible work schedules possible with enhanced telecommunications applications.	1. Vermont's rural landscape and lack of consistent broadband availability make telecommuting difficult.

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Increase opportunities for telecommuting, web-based conferencing and interactive video to reduce demands on energy and transportation infrastructure.	Work with businesses and technology service providers to expand options.	Research best practices in areas of telecommuting, video conferencing and interactive video in the workplace.  Report recommendations to bring these best practices to the Region.  Support expansion of broadband and cellular technologies to allow for telecommuting, video conferencing and interactive video in the workplace.
Use technology to further improve public transportation.	Improve access to information regarding public transportation.	Support continuous improvements to public transit websites and social media pages for up-to-date information on schedules, routes, service delays, etc.

# Central Vermont Regional Planning Commission

## SECTOR ANALYSIS: AGRICULTURE

### Current Conditions

Central Vermont has an active agricultural community that is devoted to producing local, fresh food, while also engaging and teaching citizens and potential new farmers about farming, and the food system within Central Vermont.

SECTOR QUICK FACTS
<ul style="list-style-type: none"> <li>• Use of broadband technology varies from farmer to farmer.</li> <li>• Numerous opportunities to increase and incorporate broadband use for advertising and selling of products.</li> </ul>

The broadband adoption rate of farmers within Central Vermont varies from person to person. While some farmers market their products on online farmers markets, many farmers still use traditional methods of communication to sell their products.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Tech gurus emerging within the sector.</li> <li>2. Numerous stakeholder organizations established at local, regional and state levels.</li> </ol>	<ol style="list-style-type: none"> <li>1. Time to learn the technology.</li> <li>2. Fear of technology.</li> <li>3. Web presence of farmers.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Peer to peer mentoring.</li> <li>2. Connecting with other supply chains, vendors, distributors, markets.</li> <li>3. Ability to compare local prices.</li> <li>4. Engaging all stakeholders in meaningful adoption conversations.</li> </ol>	<ol style="list-style-type: none"> <li>1. Using mobile sale applications that use credit cards - % of sale fee.</li> <li>2. Price comparisons – what is your bottom line?</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Increase broadband adoption rates of Central Vermont farmers.	Encourage technology training during slow seasons.	<p>Develop peer to peer (farmer to farmer) mentoring program.</p> <p>Research and secure funding to purchase portable computer lab supplies to bring training to farmers.</p>

<p>Increase web presence of farmers.</p>	<p>Support use of online farmers markets, CSAs and social media Support engagement with local and regional stakeholders.</p>	<p>Develop centralized regional/state website with online farmers markets and CSAs.  Contract local organization or provide internships to local students to develop website templates for farmers.</p>
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**IN THEIR OWN WORDS**

*Farmers are busy people, so it would be wonderful if the technology and training could come to us during the winter or slower time of year.*

## SECTOR ANALYSIS: BUSINESS

### Current Conditions

Businesses in Central VT see the benefit to e-commerce and developing a strong internet presence for their products and services. The problem is that not all of the target consumers are able to take full advantage of the product and services being offered because of older computer equipment and slow connection speeds.

#### SECTOR QUICK FACTS

- Strong marketing presence to consumers.
- Limited ability to provide all services to clients because of slow internet connections.
- Need to educate consumers on the use of digital tools.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Ability to e-commerce.</li> <li>2. Strong marketing presence to consumers.</li> <li>3. Sharing of content.</li> <li>4. Research and business development.</li> <li>5. Communicating with colleges, partners, and clients.</li> <li>6. Ability to telecommute from home or away.</li> </ol>	<ol style="list-style-type: none"> <li>1. Slow connection speeds limit ability to conduct work.</li> <li>2. High cost for DSL connection.</li> <li>3. Limited ability to provide all services to clients because of slow connections.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Increased productivity.</li> <li>2. More services provided to more clients.</li> <li>3. More effective and efficient communication across a variety of sectors and channels.</li> <li>4. Connect to work and home from anywhere while on the go.</li> <li>5. Ability to share larger files without long waits for upload or download.</li> <li>6. Improved marketing, merchandising, education, and business.</li> </ol>	<ol style="list-style-type: none"> <li>1. Broadband connection speeds slow down when demand is high.</li> <li>2. Connecting with underserved areas with products and services.</li> <li>3. Educate consumers on the use of digital tools.</li> <li>4. Use of digital forms and applications with clients and partners.</li> <li>5. Clients and consumers are held back because of old computer equipment and slow connections.</li> <li>6. Ensure privacy and secure personal information.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Market more products and services online.	Increases business presence on the web and expand opportunities to contact consumers.	<p>Develop material for business expansion through online marketing abilities.</p> <p>Partner with existing web based organizations like Front Porch Forum to promote products and services.</p>
Attract more business and business professionals to Central VT.	Partner with Central VT business organizations and leaders to identify the needed infrastructure to attract more business.	Encourage Central VT businesses and communities to invest in the needed infrastructure to attract more business to Central VT.

Increase the use of digital forms, applications, and services.

Survey consumers and businesses to determine barriers to using digital forms, applications, and services.

Developed marketing material addressing barriers, and distribute to target markets and consumers.

**IN THEIR OWN WORDS**

*Broadband makes me more productive. Without it I couldn't work.*

## SECTOR ANALYSIS: EDUCATION

### Current Conditions

Education adopted broadband early and has made it available to faculty and students at school and in the classrooms. Many classrooms still lack the ability to utilize technology to the fullest. The Vermont Department of Education is dedicated to improving the use of technology by teachers and students at school and at home.

SECTOR QUICK FACTS
<ul style="list-style-type: none"> <li>Prevent non-computer literate students from falling behind.</li> <li>Wide spread access to online books, resources, and teaching curriculum.</li> <li>Poor technology and slow connection speeds both at school and home.</li> </ul>

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>Access to online education materials and courses.</li> <li>Access to online books, resources, and teaching curriculum.</li> <li>Allows for better communication with students and parents on class curriculum.</li> <li>Collaboration among faculty and staff.</li> <li>Schools have access to high quality internet.</li> </ol>	<ol style="list-style-type: none"> <li>Not every student has access to internet at home.</li> <li>Poor technology and slow connection speeds.</li> <li>Lack of training on technology in the class room for faculty and students.</li> <li>Working with faculty and students that aren't digital natives.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>Improve efficiency and communication among teachers, parents, students, and college personnel.</li> <li>Ability to access materials from home and telecommute.</li> <li>Better access to material and class room curriculum.</li> <li>Improve the sharing of resources.</li> </ol>	<ol style="list-style-type: none"> <li>Provide for the safety of students while online.</li> <li>Prevent non-computer literate students from falling behind.</li> <li>Provide support for educators to incorporate more technology in the class room.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Increase the use of technology in the class room like computers, projectors and SMART boards.	Encourage teachers to use technology in their curriculum.	Secure funding to purchase technology for the class room.
Increase the access for faculty, students, and parents to curriculum and other resources.	Encourage parent engagement with the curriculum.	Develop web sites to share content and provide out reach.
Improve the safety of students while online.	Promote good searching and browsing habits.	Provide education to students and parents on appropriate web safety and habits.

<p>Increase technological use opportunities for children outside of school.</p>	<p>Encourage local schools to identify students that do not have access to computers at home.</p>	<p>Develop and promote extended learning in conjunction with school curriculum and Internet based learning.</p>
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**IN THEIR OWN WORDS**

*You're living in the Dark Ages if you don't have Internet access.*

## SECTOR ANALYSIS: ENERGY/UTILITIES

### Current Conditions

Vermont’s energy demands continue to grow, particularly when considering such factors as average annual vehicle miles traveled, inefficiencies in the heating and cooling of buildings, average housing stock age and conditions, and an overall lack of education and promotion regarding the effects of energy consumption during non-peak hours. Utility companies throughout the region are partnering to invest in smart grid technologies; programs such as Efficiency Vermont are helping to connect homeowners to financial incentives and provide the necessary education to improve home efficiency; many employers are offering telecommuting and teleconferencing options; and programs such as GoVermont are connecting commuters to viable alternatives to the single-occupancy vehicle. Overall, as broadband availability improves throughout the region, the potential for energy efficiency will increase throughout various sectors.

### SECTOR QUICK FACTS

- Vermont serves as a national model for energy efficiency programs.
- Utility companies throughout the state are moving beyond service lines and organizational boundaries- determining effective strategies to decrease peak usage.
- Telecommuting and teleconferencing are becoming more common throughout the workforce.
- Public transportation providers are investing in technologies that will improve transparency and increase ridership.
- Cost, training, and topographical limitations are the largest limiting factors.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Utility company collaboration and promotion of smart meter technologies.</li> <li>2. Behavioral pilot projects being conducted to determine the most effective way to promote energy efficiency through smart grid technology.</li> <li>3. Smart grid technologies provide economic and financial data to support efficient energy use.</li> <li>4. GoVermont empowers commuters with information to support alternatives to the single occupancy vehicle.</li> <li>5. GMTA provides affordable public transit opportunities throughout much of the region.</li> <li>6. Smart grid technology increases electric reliability and efficiency of utility companies.</li> </ol>	<ol style="list-style-type: none"> <li>1. Lack of collaboration amongst various energy sectors to ensure uniformly executed holistic approach to energy efficiencies.</li> <li>2. Public transit lacks uniform wireless capabilities on all buses.</li> <li>3. Lack of education regarding peak use.</li> <li>4. Successfully affecting behavioral change to decrease energy consumption.</li> </ol>

EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Development and adoption of technological advancements to provide real time location information for transit riders.</li> <li>2. Development of affordable home energy efficiency alternatives.</li> </ol>	<ol style="list-style-type: none"> <li>1. Increase technological literacy amongst users.</li> <li>2. Lack of homeowner capital needed to invest in energy efficient home improvements.</li> <li>3. Maintain the state's scenic beauty while providing equitable and affordable broadband service.</li> <li>4. Long term concerns of sourcing electricity as energy demand will exceed supply.</li> <li>5. Some technological advancements that would support increased public transit ridership are cost prohibitive.</li> <li>6. Overall infrastructure challenge-topographical, bandwidth limitation, etc.</li> </ol>

**Goals/Strategies/Actions**

GOALS	STRATEGIES	ACTIONS
Reduce transportation energy consumption and carbon emissions.	Encourage the development of telecommunication polices and web-conferencing.	Research and promote available resources and educational opportunities supporting telecommuting and web-conferencing.
Increase visibility of smart meter technology.	Assist in promotion and outreach with local utilities regarding the use of smart grid technologies in the home.	Co-host informational session open to the public focusing on smart meter technologies.
Increase visibility of transportation alternatives to the single occupancy vehicle.	Increase Way to Go Week participation in the Central Vermont Region.	<p>CVRPC continued participation in Way to Go Week.</p> <p>Assist with marketing and outreach to increase Way to Go Week participants.</p>

**IN THEIR OWN WORDS**

*Smart Grid technology is not a magic bullet-we need to look more holistically at our energy consumption and take advantage of programs like Efficiency Vermont and really provide incentives for homeowners to increase their structural efficiency.*

## SECTOR ANALYSIS: HEALTHCARE

### Current Conditions

Central Vermont has a variety of types and sizes of health care facilities. The largest in the Region is Central Vermont Medical Center. CVMC has partnered with several smaller facilities to provide IT and billing support to allow doctors to focus on providing quality health care.

### SECTOR QUICK FACTS

- CVMC and Fletcher Allen both utilize electronic medical records (EMR).
- Smaller non CVMC/FA affiliated facilities are undergoing the switch to EMR to improve patient services and experiences.

As of October 2011, CVMC has merged with University of Vermont’s Fletcher Allen to combine services. The merger will allow both hospitals to better share patient records and increase efficacy of service.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Many smaller clinics are linked to larger anchor hospitals to provide IT support.</li> <li>2. Multiple applications in use already – teleconferencing, transcription services, prescriptions, billing, research.</li> </ol>	<ol style="list-style-type: none"> <li>1. Cost and training needed to switch over to EMR for smaller clinics and private practices.</li> <li>2. Use of standard paging technologies due to better service coverage.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Connect additional smaller clinics to anchor hospitals for greater IT support.</li> <li>2. Interactive records for patients.</li> <li>3. Telemedicine, especially with rural patients.</li> <li>4. Patient self-diagnosis.</li> </ol>	<ol style="list-style-type: none"> <li>1. Concerns over security of data and patient confidentiality.</li> <li>2. More formal protocols/insurance billing for time spent using “telemedicine.”</li> <li>3. Common platform for EMR.</li> <li>4. Patient self-diagnosis.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Increase the use of telemedicine among all sizes of providers.	Encourage providers to use telemedicine to save patient/doctor time and resources.	Provide additional training and purchase hardware for practices lacking in telemedicine capacity.  Develop website identifying possible telemedicine partners, institutions and resources.
Increase use of EMR among rural clinics and private practices not connected to anchor hospitals.	Provide additional assistance to rural clinics and private practices.	Identify costs and gaps providers need to either use their own EMR system or connect to anchor hospital (CVMC/FA).

<p>Increase patient use of EMR patient portals.</p>	<p>Encourage patients to be active participants in health regimes and prescribed care.</p>	<p>Develop patient materials that outline how to log into patient portals available on EMR platforms.</p> <p>Providers can “prescribe” health regimes that can be researched online. Patients can record progress on EMR.</p>
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**IN THEIR OWN WORDS**

*Using a larger hospital’s IT network and EMR platform has allowed me to spend more time with and provide better care to my patients. It’s great not to have to worry about upgrading networks or changing EMR platforms.*

## SECTOR ANALYSIS: HUMAN SERVICES

### Current Conditions

As service capacity improves and technology advances at a cumulative pace, the community’s most vulnerable populations are often left behind, further widening the gap that characterizes the Digital Divide. Broadband technology has the potential to increase quality of life through communication, entertainment, and service opportunities, but as such technologies become the norm, there is the potential for a significant portion of the region to be at a disadvantage. Currently, community based facilities such as schools, libraries, and senior centers provide affordable access to such services, but a lack of population-specific educational opportunities means that those that are most in need may not take advantage of such services. Overall, there is a need for programs and funding to target such vulnerable populations.

SECTOR QUICK FACTS
<ul style="list-style-type: none"> <li>• Communication technologies improve senior independence and decrease isolation.</li> <li>• Broadband availability can increase service providers efficiency through digital records and cross referencing with other medical records.</li> <li>• Community-based organizational service and hardware access already available in many area.</li> <li>• Lack of population specific adult educational opportunities.</li> <li>• Cost, population appropriate hardware and software, training, and availability are the largest limiting factors.</li> </ul>

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Isolation reduction and improved socialization opportunities for vulnerable populations through the use of communication technologies.</li> <li>2. Public schools providing education and resources for youth.</li> <li>3. Increasing vulnerable population access to goods and services.</li> <li>4. Human service organizations able to virtually contact and monitor clients and patients.</li> </ol>	<ol style="list-style-type: none"> <li>1. “Digital Divide” –lack of accessibility, affordability, and education regarding use of available technologies.</li> <li>2. Educational opportunities that will accommodate a variety of learning styles.</li> <li>3. Safe usage education for technologically adverse and vulnerable populations-particularly seniors and children.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Hardware and software providers are designing systems for those that have impairments or lack technical experience.</li> <li>2. Community-based resources (i.e. libraries, community centers, senior centers, schools) providing hardware and service access.</li> <li>3. Population-specific organizational resources (i.e.AARP, continuing education courses) partnering with service providers (Verizon, AT&amp;T, etc.) to provide hands-on training opportunities.</li> </ol>	<ol style="list-style-type: none"> <li>1. Lack of population appropriate financial and technical support.</li> <li>2. Lack of ability-appropriate available technologies.</li> <li>3. Development and availability of affordable user-friendly hardware and software.</li> <li>4. Safety concerns-Exposing vulnerable populations.</li> <li>5. Increasing adoption rates among stakeholders who maybe inexperienced with technology or technology adverse.</li> </ol>

**Goals/Strategies/Actions**

GOALS	STRATEGIES	ACTIONS
Increase technological access for vulnerable populations.	Encourage service-based organizations to partner with local service providers and community facilities equipped with the appropriate technology.	Identify funding sources for augmentative devices.  Identify sources of low-cost hardware and software via gifts, donations, etc.  Identify service providers that offer discounted rates for qualified users.  Promote community facilities that already provide such opportunities such as local libraries.
Increase vulnerable population use of broadband technologies.	Increase technological educational opportunities through the development of population specific curriculum and programs.	Create and promote a working database of regional education opportunities to be updated annually.  Identify customized hardware and software for ease of use by seniors and demonstrate usage.  Develop population specific trainings such as traditional continuing education classes, peer to peer mentoring, in-home trainings, etc.
Increase broadband technology use for technology adverse seniors.	Promote the role broadband technologies play in supporting continued independent living.	Develop educational and training materials specifically for the technologically adverse.
Increase service/care provider technological use.	Support the use of technology by service care providers.	Develop staff and client trainings focused on available resources (i.e. electronic records access).
Encourage the development of paperless services.	Promote population appropriate educational materials to facilitate transition to paperless services.	Provide additional training and equitable access opportunities for recipients of services transitioning to a paperless format.

**IN THEIR OWN WORDS**

*I think that broadband internet will become an essential medium for the increasing number of computer-savvy but homebound seniors of the future-not just as a way of finding and staying in touch with service providers...but for staying connected with family and friends through social media sites.*

*The interactive utility of broadband internet will become far more useful than any medium currently used now for senior outreach. I think that social networking and continuing education sites will be two strong areas of use that will increase the demand for broadband among seniors.*

## SECTOR ANALYSIS: LIBRARIES

### Current Conditions

There are 15 public libraries within the Central Vermont Region and numerous additional college and K-12 libraries. Libraries serve as valuable anchor institutions within the Region and provide additional services such as public internet access, community gathering places and educational trainings/opportunities.

### SECTOR QUICK FACTS

- Internet connectivity speed and type depending on location.
- Staff enthusiastic about learning and sharing new technologies.
- Fiber access expected in late 2012 for largest libraries in Region.

Libraries within the Region are striving to acquire additional bandwidth to increase membership and provide additional online services such as webinars, online classes and enhance regional and local online catalog capabilities.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Staff have solid technical capacity and enthusiasm to learn.</li> <li>2. Adequate public computer access and free wi-fi in most locations.</li> <li>3. Access to Vermont Universal Classes with membership.</li> </ol>	<ol style="list-style-type: none"> <li>1. In need of full time IT staff.</li> <li>2. Limited library budget for additional equipment unless provided grant funds/private donations.</li> <li>3. Limited presence and use of library websites and social media for outreach/engagement.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Engaging additional library stakeholders – board members, colleges, public schools, local governments, eVT, State Department of Libraries to provide additional resources/trainings/marketing/funding.</li> <li>2. Scale of Vermont libraries to try pilot projects.</li> </ol>	<ol style="list-style-type: none"> <li>1. State funding to libraries is limited and dependent on donations/memberships.</li> <li>2. Small scale of Vermont institutions.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Increase use of website and social media engagement by staff, members and stakeholders.	Enhance navigation, appearance and breadth of library websites and media content.	Redesign of library websites, launch facebook and twitter media campaigns by the time fiber reaches the institutions.
Increase training/educational opportunities for members and staff.	Promote trainings available for all new technologies used within the libraries.	Collaborate with region colleges to develop student internship/volunteering programs to teach trainings.  Advertise Vermont's Universal Classes.  Hire fulltime IT staff person.

Increase connectivity for members who are unable to reach a library.	Improve physical presence within members' community.	Purchase portable computer lab supplies for exhibits outside of the library.
Increase library operating budget for broadband related activities.	Research additional traditional and nontraditional sources of funding.	Work with State Dept of Libraries to help find additional sources of grant funding and increase State appropriation for libraries.
Increase use of e-materials (books, podcasts, videos) among members.	Support e-materials as suitable alternatives to standard paper materials.	<p>Create separate branch of library for e-materials to avoid restriction issues.</p> <p>Advertise e-material options via social media and webpage.</p> <p>Have e-readers available for loan.</p> <p>Provide training opportunities for use of e-materials.</p>

**IN THEIR OWN WORDS**

*We didn't realize how much use our e-collection experienced until the service was down. We heard patrons in outlying member towns tracked down additional collections at 3 other area libraries so they could continue using electronic books. Clearly, our e-collection is a valuable resource to those who live farther away from the library.*

## SECTOR ANALYSIS: MEDIA

### Current Conditions

As a sector, the media are technology advanced and are early adopters of the use of broadband. They have embraced the sharing, collaborating, and making content available over the internet. The challenge, however, is making the content available to more people and sectors that lack technology and bandwidth at home.

#### SECTOR QUICK FACTS

- Media uses large amounts of bandwidth to view and post content.
- Rich environment for sharing of media.
- Provides a richer media experience for all.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Communicate with partners and colleagues out of state.</li> <li>2. Ability to share large files.</li> <li>3. Stream media live or after editing.</li> <li>4. Better collaboration on projects.</li> <li>5. Rich environment for sharing of media.</li> </ol>	<ol style="list-style-type: none"> <li>1. Limited ability to send large data to all clients because of limited bandwidth.</li> <li>2. Use of antique equipment.</li> <li>3. Upload speeds.</li> <li>4. Media is a huge bandwidth hog.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Enhanced communication with high definition video conferencing.</li> <li>2. Engage with more colleagues and other professionals.</li> <li>3. Being able to work off-site from more locations.</li> <li>4. Provide for more live media feeds.</li> <li>5. Save on costs.</li> </ol>	<ol style="list-style-type: none"> <li>1. Getting more people access to online content.</li> <li>2. Provide a richer media experience for all.</li> <li>3. Closing the digital divide regarding technology and access to it.</li> <li>4. Access to DSL to view media content.</li> <li>5. High cost of high bandwidth internet.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Increase access to online media content.	Promote the use of online media content.	Create local and regional websites to host local and regional media content.
Increase the adoption of streaming video and media content.	Encourage municipalities to stream meetings live.	Develop education and training material on how to create online content.
Improve download and upload speed to help share content.	Encourage the adoption of broadband in Central VT.	Expand broadband to underserved areas of Central VT.
Highlight the benefits of the use and sharing of digital content.	Encourage the use of digital content at home and work.	Develop media for education and promotion of digital content.

## SECTOR ANALYSIS: MUNICIPAL GOVERNMENT/EMERGENCY SERVICES

### Current Conditions

Many towns and villages within the CVRPC region currently have town maintained websites which are utilized for the posting of meeting agendas, minutes, and a calendar of events. Additionally, some towns engage social media outlets such as Twitter, Facebook, and more commonly, Front Porch Forum to enhance or serve in place of a website. The recent disaster of Irene has given municipalities the opportunity to reflect on the efficiency and effectiveness of emergency services. As real-time information sharing becomes a reality across various public safety sectors, first responders will have the opportunity to provide more efficient and effective service.

Overall, while some towns are able to use and maintain communication through available technologies, the region lacks the uniform service and resource capabilities to consistently create and manage such technologies as well as take advantage of more interactive technologies that would increase transparency and efficiency.

### SECTOR QUICK FACTS

- Lack of uniform resources throughout the region.
- Mixed technical ability among staff, commissioners, and stakeholders.
- Minimal use of social media.
- Increasing availability of real time emergency planning tools and information sources.
- Topography is a limiting factor throughout the region for widespread use.
- Cost, training, and availability are the largest limiting factors.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Capability to maintain town websites, Facebook pages, and postings on Front Porch Forum as a resource for current events, meeting announcements, agendas, and minutes, etc.</li> <li>2. Improved job and communication efficiency.</li> <li>3. Current abilities and comfort with common technological applications.</li> <li>4. Use of both public and private online forums for the exchange of ideas.</li> <li>5. Conversion of paper files and data to electronic files.</li> <li>6. Ability to access Emergency Operation Plans and coordinate disaster responses remotely.</li> <li>7. Use of various forms of media during an emergency (i.e. radio, local television, social media, etc.).</li> <li>8. Increase efficiency and transparency of organization.</li> </ol>	<ol style="list-style-type: none"> <li>1. Uniform training needs, particularly for smaller towns and villages that lack designated IT support staff.</li> <li>2. Established services not changing to reflect interactive technological advancements.</li> <li>3. Not utilizing online handling of routine requests.</li> <li>4. Lack of uniform availability and implementation of real-time emergency planning tools and information sources across municipalities.</li> <li>5. Lack of uniform access to various forms of communication technologies for first responders.</li> <li>6. Lack of collaboration and coordinate amongst smaller municipalities to leverage available resources and effectively reach a broader audience.</li> <li>7. Limited staff capacity and budget constraints-particularly amongst smaller municipalities.</li> <li>8. Potential duplication of services.</li> </ol>

EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Increased opportunity for public participation through various mediums.</li> <li>2. Partner with local media to host interactive public meetings, feature plans, documents, etc.</li> <li>3. Coordinate evacuation and care plans for vulnerable population during an emergency.</li> <li>4. Use of social media outlets to increase communication before, during, and after emergencies.</li> </ol>	<ol style="list-style-type: none"> <li>1. Lack of community-based educational opportunities keeping pace with technological innovation to facilitate public use of government services.</li> <li>2. Increasing adoption rates among stakeholders who maybe inexperienced with technology or technology adverse.</li> <li>3. Financial infeasibility of more advanced services (greater bandwidth and faster speed access).</li> <li>4. Lack of universal implementation of digital services amongst all branches of government.</li> <li>5. Lack of uniform service throughout the region.</li> <li>6. Topographical limitations.</li> </ol>

**Goals/Strategies/Actions**

GOALS	STRATEGIES	ACTIONS
Increase citizen participation and engagement in government through the innovative use of technology.	Promote broadband usage as an effective sharing tool for government uses.	Research/fund communication tools and leverage social media tools to better engage with audience.
Increase visibility of CVRPC as a resource center.	Promote CVRPC’s technical assets through the use of traditional and social media outlets.	Host informational session open to the public focusing on regional technological resources.
Increase use of CVRPC website by both staff and stakeholders.	Prioritize functionality and usability of website.	Rebuild website by mid-March.
Increase technological skills among staff and stakeholders.	Promote educational opportunities for staff, stakeholders, and citizens.	Offer three (3) in-house workshops/”lunch and learns” so that staff effectively use the technology we employ.
Increase organizational efficiency and productivity.	Promote the transition of traditional paper based services to online services.	<p>Research currently available online government services within the region.</p> <p>Educate town staff regarding enhanced website use and potential resource collaboration opportunities.</p> <p>Promote online training tools for basic government services through outreach coordination and educational workshops.</p>
Increasing telecommuting opportunities for staff.	Develop and adopt telecommuting policy.	Increase VPN connection to all staff, hook up server for remote access capabilities.
Increase the use of a variety of communication mediums during emergencies.	Promote the use of social media as a medium of communication between towns and citizens.	Develop educational materials for town staff regarding the role of social media in the event of an emergency.

<p>Ensure effective emergency procedures and policies address all populations.</p>	<p>Promote the development of uniform communication services during an emergency event.</p> <p>Support the development of communication and emergency plans that track special populations.</p>	<p>Research current municipal emergency service plans throughout the region.</p> <p>Educate municipal emergency management staff regarding potential opportunities to more effectively target vulnerable populations.</p>
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**IN THEIR OWN WORDS**

*Information can be more current and accurate because it can be updated by staff remotely, which is important when there is a crisis or emergency.*

*Although Broadband is mostly available throughout the region, there are still pockets where the only option is dial-up. Slow downloads and dropped signals cause many hardships and hinders economic growth.*

## SECTOR ANALYSIS: NONPROFIT/SERVICES

### Current Conditions

Email, websites, and Facebook pages are the most common methods of communication for the non-profit and service sector. Technical support can be less of an issue than in other sectors due to the small size of many of these organizations which generally does not require an in house server or network. The availability of broadband has contributed to non-profit efficiency in communication-enabling organizations to share large documents, telecommute, and reach out to a global audience.

#### SECTOR QUICK FACTS

- Some technological advances are cost-prohibitive for non-profits.
- Strong use of websites and social media such as Facebook and blogs to communicate with the public.
- Advanced technology adoption and use by staff.
- Staff and client base can be broadened beyond the local level.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Enhanced communication with clients (i.e. sharing of files, training via video conferencing) and overall efficiency.</li> <li>2. Broaden client and staff base.</li> <li>3. Strong adoption of social media.</li> <li>4. Reduce overhead cost through the use of social media outlets (Front Porch Forum, Facebook, and email).</li> </ol>	<ol style="list-style-type: none"> <li>1. Limited resources to increase broadband utilization within organizations.</li> <li>2. Need for increased social media contacts.</li> <li>3. Limited staff capacity and limited budget.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Partner with e-commerce businesses to develop online donation and membership capabilities.</li> <li>2. Increase participation and engagement with stakeholders.</li> <li>3. Collaboration and connection with similar organizations throughout the world.</li> </ol>	<ol style="list-style-type: none"> <li>1. Aging population may lack connection opportunities</li> <li>2. Financial infeasibility of more advanced services (greater bandwidth and faster speed access).</li> <li>3. Need for an affordable rate structure.</li> <li>4. Internet speeds decrease at high volume times.</li> <li>5. Lack of uniform connection throughout the region.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Promote the use of broadband-based advanced software technologies to increase donation and fundraising opportunities.	Research available online donation, membership, and fundraising capabilities.	Develop educational training materials for web-based applications which support online donations, memberships, and fundraising.
Increase communication and resource sharing among non-profits.	Support interactive resource sharing and communication among nonprofits.	Develop a database or list serve to serve as a communication tool among nonprofits throughout the state.

<p>Increase the visibility of nonprofits throughout the region and state.</p>	<p>Support online marketing efforts through websites, Facebook, and other social media.</p>	<p>Host website development and web-based marketing educational; work sessions.</p>
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**IN THEIR OWN WORDS**

*I have a small home-based business that is currently 100% internet based. Without the internet, it wouldn't exist. I'm also on the board of directors of a national non-profit, but we individuals are all over the country. We use the internet for all our communication and for meetings. In addition, as a homeschooling family, we rely on the internet for many learning aids.*

# Chittenden County Regional Planning Commission

## SECTOR ANALYSIS: AGRICULTURE

### Current Conditions

- Agriculture entities in Chittenden County generally have very good access to the Internet, usually through a broadband connection.
- Internet access is important to a number of on-farm functions, including regulatory compliance, sourcing of inputs, and operations planning.
- Internet plays a major (and increasing) role in retail sales.
- Farmers access and utilization of the Internet has few barriers.

SECTOR QUICK FACTS	
•	591 farms in Chittenden County (2007 Census)
•	Websites for Agriculture in Chittenden County:
◊	<a href="http://www.intervalefoodhub.com/">http://www.intervalefoodhub.com/</a>
◊	<a href="http://burlingtonfoodcouncil.org/">http://burlingtonfoodcouncil.org/</a>
◊	<a href="http://www.vermontgrowersguide.com/">http://www.vermontgrowersguide.com/</a>
◊	<a href="http://www.yourfarmstand.com/HomePage">http://www.yourfarmstand.com/HomePage</a>

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Sourcing inputs; 40% consider internet access very important, 44% consider it somewhat important to this function.</li> <li>2. Access to markets: more than 50% consider the internet very important to accessing retail markets.</li> <li>3. Access to regulatory information; 63% consider internet access very important, 27% consider it somewhat important to this function.</li> <li>4. Accessing social networks and listservs ; 70% consider internet access very important, 20% consider this function somewhat important to their work.</li> <li>5. 80% find the internet a very important source for agricultural related information.</li> </ol>	<ol style="list-style-type: none"> <li>1. Sourcing Labor: only 20% considered broadband an important tool, 40% considered it not important.</li> <li>2. Wholesale; only 20% consider the internet an important factor, more than 60% find it not important to accessing wholesale markets.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. All respondents have good access to fast reliable service.</li> <li>2. Facilitates marketing of produce, particularly wholesale.</li> <li>3. Facilitates search for farm labor.</li> </ol>	<ol style="list-style-type: none"> <li>1. 20 % of respondents feel limited by time in their use of the internet - any added tasks/ functions must be time efficient.</li> <li>2. 30% find lack of training as a moderate barrier to further use.</li> <li>3. 20% consider equipment cost as a moderate barrier to their use of the internet.</li> </ol>

**Goals/Strategies/Actions**

GOALS	STRATEGIES	ACTIONS
Increase access to wholesale markets.	Explore feasibility of hosting/facilitating on-line markets.	Contact Intervale or Your Farm Stand to discuss possible collaboration/expansion of food hub website.
Facilitate short term labor market.	Explore further the need for improved access to short-term labor that could be facilitated by an internet-based tool.	Contact Vermont Farm Bureau and Dept. of Agriculture to study feasibility.
Increase access to sector-related information.	Farmers are comfortable accessing information on-line. Continue to expand information available through this channel.	Create farm-based listserv for Chittenden County.

## SECTOR ANALYSIS: ARTS/CREATIVE ECONOMY

### Current Conditions

- Primary use is for communication among staff, constituents, and audiences of Art and Creative Organizations.
- Social Media is utilized as a low cost marketing media.
- Most organizations cannot afford adequate equipment or technical staff to support use/Non-Profit status.
- Varying technical skills in organizations.
- Partnerships with other organizations increase abilities. (Many organizations work with local colleges, RETN, Fairpoint, Comcast to extend their resources.)

#### SECTOR QUICK FACTS

- Chittenden County is recognized nationally as a Creative Economy Center.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Online presence is seen as an essential tool for interaction with public.</li> <li>2. Enhances communication within the organizations.</li> </ol>	<ol style="list-style-type: none"> <li>1. Outdated equipment.</li> <li>2. Staff needing training.</li> <li>3. Inadequate Tech Support.</li> <li>4. Funds are not present to support.</li> <li>5. Keeping up and understanding PCI compliance requirements.</li> <li>6. Lack of technology planning.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Allow working from home; ability to interact with the larger art/creative community.</li> <li>2. Outreach to members, visitors, and general public easier via online presence.</li> <li>3. Expanding reach of programs and events via Internet.</li> <li>4. Broadening audience/customers beyond Vermont.</li> </ol>	<ol style="list-style-type: none"> <li>1. Choices for high speed broadband access are limited in some areas.</li> <li>2. High cost of access/Lack of non-profit pricing.</li> <li>3. Difficulty keeping up with changes/opportunities and knowing what is best option.</li> <li>4. Keeping up and understanding PCI compliance requirements.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Reduce costs of hardware, software, cloud based services.	Locate existing or create consortium of buyers.	Identify providers & manufacturers that currently offer reduced pricing for group buying.
Trained staff in all technologies, equipment and services.	Locate existing education/training resources.	
Best Management Practices for utilizing technology – internal & external use.		

Organizations have technology plans to support mission.		Identify what is out there now. Identify key components.
Reduce costs of hardware, software, cloud based services.	Locate existing or create consortium of buyers.	Identify providers & manufacturers that currently offer reduced pricing for group buying.

## SECTOR ANALYSIS: BUSINESS

### Current Conditions

- Chittenden County is home to 25 percent of the State’s private businesses .
- Accounted for 45 percent of total manufacturers’ shipments in 2007.
- Twenty nine percent of retail sales occurred in the County (2007).
- GDP per capita is \$50,000 vs. \$40,000 for the State.
- Provides 32 percent of sales tax revenue in Vermont.
- In 2010, there were approximately 5,650 businesses in Chittenden County.

### SECTOR QUICK FACTS

- Social and mobile technologies boost local food movement.
- Use of Apps, Facebook, and Twitter increasing by most area businesses.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
1. Ability to tele-commute – many Chittenden County residents live in VT but work in another state. 2. Trainings offered via webinars.	1. Not all places in the county offer broadband speeds that allow for tele-commuting and webinars.
EXTERNAL	
Opportunities	Challenges
1. Use of Facebook, Twitter, and Apps increases customer awareness. 2. E-commerce.	1. Using technology to improve transportation infrastructure.

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Improve customer mobility.	Using latest technology, improve traffic flow of major roadways.	Explore the use of broadband to improve traffic flow at intersections.
	Research Apps for transit.	Explore using Apps for CCTA riders to better track bus locations.

## SECTOR ANALYSIS: EDUCATION

### Current Conditions

- Colleges are well-immersed in technology not only for their operations but for their service in education, depending heavily on technology.
- Web-based learning is available through all Chittenden County Colleges.
- Vermont Virtual Learning Cooperative offers online courses for junior high and high school students.
- Utilizing broadband for teacher to student and teacher to parent communication.
- Many teachers are using online grading.
- Chittenden County k-12 schools integrate computers and technology into curriculums at all grade levels.

SECTOR QUICK FACTS
<ul style="list-style-type: none"> <li>• All Chittenden County School Districts have a Technology Plan posted on their website.</li> <li>• Web-based grade book - <a href="https://jupitergrades.com/">https://jupitergrades.com/</a>.</li> </ul>

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Willing to increase capacity and reliance in technology.</li> <li>2. K-12 technology plan.</li> </ol>	<ol style="list-style-type: none"> <li>1. Lack of Disaster Recovery Systems</li> <li>2. Lacking funds to upgrade hardware and software at the k-12 level.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. To further understand needs and potential impact of increased access.</li> <li>2. Research tools.</li> </ol>	<ol style="list-style-type: none"> <li>1. Provider challenges/financial barriers.</li> <li>2. Increasing access to areas in need could not only assist in drawing more students (e.g. online) but also increase efficiency in at-home learning.</li> <li>3. Can be double-edge sword for young students – parents try to discourage the connection to technology, while schools are encouraging.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Understanding landscape.	Population statistics.	Compare and contrast areas without service to available population stats (education, economic, etc.).
Hear from other leaders.	See where colleges are in their planning and see what can be added.	Decide who should receive and create quick survey.
Increase math & literacy skills.	Use technology (Fastt Math, Symphony Math, Type to Learn, Read 180) to increase student skills.	Introduce tools such as Young Writers Project, and online educational simulations and games to teach math concepts.

Continue to expand and integrate use of technology in k-12.	Review technology and education integration on a regular (yearly?) basis.	Use the goals outline in school district technology plans to measure success.
Ensure all k-12 students have access to technology.	Establish a partnership between all school districts that provides funding for k-12 students to have access to technology.	Work with Burlington School District to evaluate their one-to-one initiative. <a href="https://sites.google.com/a/bsdvt.org/one-to-one/home">https://sites.google.com/a/bsdvt.org/one-to-one/home</a> .

## SECTOR ANALYSIS: ENERGY/UTILITIES

### Current Conditions

- Primary use is for communication among staff, constituents, and audiences of Art and Creative Organizations.
- Social Media is utilized as a low cost marketing media.
- Most organizations cannot afford adequate equipment or technical staff to support use/ Non-Profit status.
- Varying technical skills in organizations.
- Partnerships with other organizations increase abilities. (Many organizations work with local colleges, RETN, Fairpoint, Comcast to extend their resources.)

SECTOR QUICK FACTS
<ul style="list-style-type: none"> <li>• GMP has an app for the iPhone that brings you to the latest about green living, green business and Green Mountain Power.</li> <li>• VELCO and IBM have agreed to build an intelligent fiber optic and Carrier Ethernet communications and control network. <a href="http://www.velco.com/NewsEvents/Pages/PressRelease.aspx">http://www.velco.com/NewsEvents/Pages/PressRelease.aspx</a>.</li> </ul>

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Solid infrastructure.</li> <li>2. Strong technical capacity on staff.</li> </ol>	<ol style="list-style-type: none"> <li>1. Training needs across the board.</li> <li>2. Not all are leveraging communication tools and social media.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Online contacts offer additional avenues for customer to contact utility.</li> <li>2. Smart Grid technologies allow better tracking of energy usage and demand, improve response time to power outages, and identify areas of "line leakage."</li> </ol>	<ol style="list-style-type: none"> <li>1. Improving traffic flow.</li> <li>2. Improving transit ridership.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Increase outreach and education of energy/utility information.	Research/fund communication tools and leverage social media tools to better engage with audience.	Utilize Facebook and Twitter.
Improve traffic flow through major arterials in Chittenden County (Rt. 7, Rt. 2).	Research ways to use broadband to make smart intersections.	Explore the use of broadband to improve traffic flow at intersections.

## SECTOR ANALYSIS: HEALTHCARE

### Current Conditions

- Hospitals are heavily invested in technology and reliant upon broadband for many services.
- Most small physician practices are looking to implement electronic health records or already have.
- Some disparate health care organizations are using encrypted tunnels over the Internet to create efficiencies with regard to prescriptions and diagnostic testing.
- Recent Federal and forthcoming state legislation will initiate more information sharing via networks to create efficiencies in health care.
- The state chartered VITL to coordinate the adoption of electronic health records and to coordinate the sharing of health information.
- The New England Telehealth Consortium is using federal funds to create a network dedicated to linking hospitals of Northern New England together.
- Many physicians who practice in Chittenden County do not have broadband access at their homes, making it difficult to participate in critical decision making processes without first commuting.
- The most promising methods to reduce the cost of health care involve interaction between clinicians and patients before the patient presents at a health care facility; necessitating advanced communication tools to do regular proactive check-ups for those with chronic conditions.

### SECTOR QUICK FACTS

- Chittenden County is included in the largest Health Service Area in the state.
- 12% of people have no primary care provider.
- 1 health care organization serves Chittenden County and the surrounding area for inpatient and critical care.
- Chittenden County was the top ranked county for health outcomes in the state, according to research by Robert Wood Johnson and the University of Wisconsin in 2010.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Adoption of technology within individual health care institutions.</li> <li>2. Desire to improve services while reducing costs.</li> <li>3. Access to broadband where most health facilities exist.</li> </ol>	<ol style="list-style-type: none"> <li>1. Adoption of technology at the patients' homes that could inform the medical decision making process in a more accurate and timely manner.</li> <li>2. Access to broadband in all homes (including patients and care providers).</li> <li>3. A unified framework for collating disparate health information from independent health care organizations.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Creation of local standards for sharing health information.</li> <li>2. Implementation of technology in the homes of patients with chronic conditions.</li> </ol>	<ol style="list-style-type: none"> <li>1. Bureacracy preventing movement toward a standard.</li> <li>2. Cost of implementing technology in the homes of individuals.</li> <li>3. Training required to help chronically ill patients use technology.</li> </ol>

**Goals/Strategies/Actions**

GOALS	STRATEGIES	ACTIONS
Increase patient engagement in proactive management of chronic conditions.	Utilize Blueprint for Health findings to begin using promising solutions.	Review latest Blueprint findings.
		Get funding.
		Procure necessary technology for patients with chronic conditions.
		Train patients in use of technology.
		Follow-up to determine efficacy and appropriate expansion.
Increase sharing of health information to reduce duplicative procedures.	Work with State leadership to support movement towards a unified health information exchange.	Review current progress toward exchange.
		Identify obstacles to creating exchange.
		Develop and implement local plan to remove obstacles.

## SECTOR ANALYSIS: HUMAN SERVICES/NON-PROFIT

### Current Conditions

- Non-profits use broadband to communicate with the public about community challenges and their organizations’ services.
- Larger organizations, with more resources, are devoting significant staff time to use websites, YouTube, Facebook and Twitter.
- Smaller organizations are struggling to use these tools strategically.
- Non-profits are carefully exploring how to use online communications as fundraising tool.
- Non-profits are beginning to use video to engage people in their work.

SECTOR QUICK FACTS
<ul style="list-style-type: none"> <li>• Common Good Vermont is the primary non-profit technology resource. - <a href="http://commongoodvt.org/">http://commongoodvt.org/</a>.</li> <li>• United Way of Chittenden County uses web to connect volunteers - <a href="http://volunteer.truist.com/chittenden/volunteer/search.aspx">http://volunteer.truist.com/chittenden/volunteer/search.aspx</a>.</li> </ul>

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Using email for staff communications and scheduling.</li> <li>2. Using websites to provide and share information.</li> </ol>	<ol style="list-style-type: none"> <li>1. Using social media to actively engage the public, stakeholders and potential donors;</li> <li>2. Integrating use of online tools into job descriptions;</li> <li>3. Many non-profits do not do technology planning and budgeting.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Partnerships to share technology, tech. planning, training opportunities and peer knowledge.</li> <li>2. Resources exist in our community, but they must be identified, and their use leveraged and coordinated.</li> </ol>	<ol style="list-style-type: none"> <li>1. No specific entity to do #2 of External Opportunities. Common Good Vermont does some, but not all of this.</li> <li>2. Universal Access.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Non-profits have the hardware, software, training and resources they need to accomplish their missions.	Establish a partnership that provides funding, training and peer sharing opportunities for non-profit technology use.	<p>Contact Common Good Vermont to identify all their services.</p> <p>Survey non-profits about their technology needs.</p> <p>Create inventory of current technology resources.</p> <p>Identify common needs, gaps and promising opportunities - short, medium and long-term.</p>

## SECTOR ANALYSIS: LIBRARIES

### Current Conditions

- Internet has increased scope of public library service, as technology access is now central to mission of libraries.
- Providing free access to computers and the Internet is a major investment of library resources.
- A library’s physical infrastructure may limit its ability to increase the availability of computer and Internet access to meet demand.
- Library trustees have important role in supporting and communicating the role that libraries play in providing public access computing.
- Mixed technical ability among library staff, providing one-on-one help to patrons is hard to accommodate.
- Libraries are unique community-based institutions that serve a broad spectrum of the public.
- Internet access is critical to library communication with the public and also other libraries.
- Quality and speed of broadband internet has high impact on services offered by libraries to the community.

SECTOR QUICK FACTS
<ul style="list-style-type: none"> <li>• 16 public libraries in Chittenden County, separate and independent.</li> <li>• Locally funded.</li> <li>• Services : Circulation, Programs, Communication and Information Technology.</li> <li>• Most libraries in Chittenden County have broadband internet access.</li> <li>• 14 public libraries offer audio and e-books through Listen Up! Vermont.</li> </ul>

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Solid technical capacity of staff.</li> <li>2. Solid infrastructure.</li> <li>3. Computer and Internet capability.</li> <li>4. Ability to offer classes to the public to enhance technological expertise of community members.</li> </ol>	<ol style="list-style-type: none"> <li>1. Training needs across the board.</li> <li>2. Inadequate understanding of the value of providing free access to computers.</li> <li>3. Limited physical space to dedicate to technology.</li> <li>4. Inadequate staffing to support public in understanding new services offered.</li> <li>5. Lack of funding.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Increased opportunities to network and locate services to assist in library partnerships.</li> <li>2. Online training opportunities for staff and public.</li> <li>3. Better connectivity to other libraries.</li> </ol>	<ol style="list-style-type: none"> <li>1. Integrate Technology Services with other library services.</li> <li>2. Provide Ongoing Technical Training for Library Staff.</li> <li>3. Communicate the value of free access to computers and Internet.</li> <li>4. Little choice in internet providers.</li> <li>5. Lack of leadership at state level to assist libraries in what services to prioritize as most important to offer and offer training opportunities in these areas.</li> </ol>

**Goals/Strategies/Actions**

GOALS	STRATEGIES	ACTIONS
Establish plans that support the demand for free access to computers and Internet.		
Increase technology skills among staff and stakeholders.	Make training available for all training deployed.	Offer training so that staff and stakeholders and effectively use the technology we employ.
Provide patrons with one-on-one technology assistance.	Increase technology skills among staff.	Offer training so that staff and stakeholders and effectively use the technology we employ.
Increase marketing of services.	Identify best partners for marketing and cost effective marketing resources.	Promote equipment, classes and programming available at libraries.
Increase funding.	Publicize library needs for equipment, space and training.	Attend municipal meetings to advocate for increased funding.
Increase quality of broadband services.	Identify areas that service providers could target for better connectivity and bandwidth.	Use resources available to communicate needs.

## SECTOR ANALYSIS: MEDIA

### Current Conditions

- Most media providers in Chittenden County utilize the web for content and communication.
- Use to connect advertisers to consumers.
- Research, training and communications.
- Most media use Facebook and Twitter as another avenue to relay information.
- Provides opportunities for more informed and engaged citizens.

SECTOR QUICK FACTS
<ul style="list-style-type: none"> <li>• Burlington Free Press uses Facebook Comments on articles to create a more civil environment for conversation.</li> </ul>

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Research tool.</li> <li>2. Training.</li> <li>3. Communication.</li> </ol>	<ol style="list-style-type: none"> <li>1. Telecommuting.</li> <li>2. Online meetings.</li> <li>3. Document sharing.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Ability for print media to get news out in real time through web, apps, twitter, and facebook.</li> <li>2. More ways to connect advertisers to consumers.</li> </ol>	<ol style="list-style-type: none"> <li>1. Maintaining so many ways of getting the news to consumers.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Increase customer involvement.		
Telecommuting policy.		

## SECTOR ANALYSIS: MUNICIPAL GOVERNMENT/EMERGENCY SERVICES

### Current Conditions

- Current dependence on technology is very high.
- Planning for inability to use technology during emergency event remains crucial at both the state and regional level.
- Email/phone, weather tracking all were functional during Irene for the most part. And electronic communication was heavily relied upon. For those that were without power, there was a sincere gap in accessing needed information. We can take this as a model for areas not serviced in the state.
- Primary use is to communicate among staff and to the public.
- Use website as a way to keep general public informed on meetings, plans and projects.
- Some municipalities use on-line registration for recreation department.
- Some municipalities are using social media (facebook and twitter) to reach their citizens.
- Almost all municipalities use cable access to air meetings.

### SECTOR QUICK FACTS

- Disaster LAN: The central, web-based emergency response tool during Irene.
- 17 of the 18 municipalities in county have websites.
- Many use GovOffice as platform - <http://www.essex.org/>.
- [www.ccrpcvt.org](http://www.ccrpcvt.org) – new Regional Planning Commission website.
- South Burlington Public Works uses Twitter to inform drivers of traffic issues.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. A current system that joins the many arms of emergency response with needs.</li> <li>2. Enhances communication within and between departments.</li> <li>3. Easy to share documents.</li> <li>4. Networked copier/printer/scanner increases productivity.</li> </ol>	<ol style="list-style-type: none"> <li>1. Without prior training, difficult to use and can be cumbersome. Reliant on intact infrastructure.</li> <li>2. Hard to keep up on advancing technology.</li> <li>3. Staff needing training.</li> <li>4. Inadequate Tech Support or task falls to staff that has computer knowledge but it isn't primary job.</li> <li>5. Funds are not present to support.</li> <li>6. Lack of technology planning.</li> <li>7. Many need tele-commuting policy.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Local level planning for response without technology (e.g special needs populations, alternate routes, trouble spots).</li> <li>2. Online presence is seen as an essential tool for interaction with public.</li> <li>3. Outreach to boards, commissions, residents made easier through website, email, facebook, twitter, front porch forum and listservs.</li> <li>4. Low-cost training opportunities through webinars.</li> <li>5. Websites can provide outlet for public comment.</li> </ol>	<ol style="list-style-type: none"> <li>1. Takes time and resources.</li> <li>2. Keeping website up to date can be a challenge.</li> <li>3. For social media to be successful, it must be utilized often.</li> <li>4. Choices for high speed broadband access are limited in some areas.</li> <li>5. High cost of access/Lack of non-profit pricing.</li> <li>6. Difficulty keeping up with changes/opportunities and knowing what is best option.</li> </ol>

**Goals/Strategies/Actions**

GOALS	STRATEGIES	ACTIONS
Learn landscape.	Talk to responders and state.	Collect info on perceived needs and barriers.
	For areas lacking in access, what do they do in times of emergency?	Compare and contrast areas without access to level of damage or something along these lines that can shed some light on the impact of no or limited access on response and safety.
More formalized network for partnerships for sharing resources.		Inventory of existing resources. Identify needs of organizations. (needs assessment).
Reduce costs of hardware, & software.	Locate existing or create consortium of buyers.	Identify providers & manufacturers that currently offer reduced pricing for group buying.
Trained staff in all technologies, equipment and services.	Locate existing education/training resources.	Offer trainings via webinars to reach wider audience.
Best Management Practices for utilizing technology – internal & external use.		Develop BMPs.
Technology plans to support mission.		Identify what is out there now.  Identify key components.
Raise public awareness.	Use technology to raise the public awareness of government and encourage involvement.	Use tools such as Front Porch Forum and Public Posts.

# Lamoille County Planning Commission

## SECTOR ANALYSIS: AGRICULTURE

### Current Conditions

- Growing number of value/added specialty food based businesses.
- Base of traditional and nontraditional agricultural operations in county.

### SECTOR QUICK FACTS

- Proximity to Greater Burlington Area and tourist/restaurant center in Stowe creates reliable market for value added food products.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
1. Proximity to Greater Burlington Area and tourist/restaurant center in Stowe creates reliable market for value added food products.	1. Direct marketing of products may require attendance at numerous Farmers Markets per week. 2. Many agricultural based businesses are not aware of how to effectively use web based technologies.
EXTERNAL	
Opportunities	Challenges
1. Web is tool for expanding market of agricultural based businesses. 2. Technologies such as email, instant messaging, etc. can be used to link farmers directly to consumers. 3. Technology can be used to reduce the amount of time needed for marketing and allow farmer to focus on farm related tasks.	1. “Developing a website is like having a new business. Doing an online mail order is not the same as going to a farmers market.” 2. Expense of developing a website is a barrier to many businesses. 3. Web-based business often requires developing a mail order aspect of the business.

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Expand the reach and customer base of Lamoille County agricultural enterprises.	Increase the web presence of Lamoille County based agricultural businesses.  Increase online marketing opportunities for agricultural based businesses.	Develop online marketing opportunities for small Lamoille County producers, such as yourfarmstand.com.  Provide trainings and technical support for farmers wishing to develop their own web based businesses. In general, these trainings should be scheduled for late January and February so as not to interfere with the growing and marketing season.

## SECTOR ANALYSIS: ARTS/CREATIVE ECONOMY

### Current Conditions

- Diverse arts and creative economy based businesses and institutions in Lamoille County.

### SECTOR QUICK FACTS

- Existing institutions, such as River Arts and Vermont Studio Center.
- Cluster of private and non-profit galleries in Stowe and Jeffersonville.

### Strengths/Weaknesses/ Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
1. Solid base of existing creative economy based businesses. 2. Existing institutions allow for further development of arts and creative economy.	1. Lack of awareness of existing business base in the greater community. 2. Lack of broadband limits ability to use web to share/advertise artwork.
EXTERNAL	
Opportunities	Challenges
1. Potential to “brand” Lamoille County or Towns within the County, as an artistic community.	1. Cost of developing and maintaining web based tools may be prohibitive for smaller businesses.

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
“Brand” Lamoille County as a creative, artistic community.	Publicize existing art/creative economy based businesses and institutions.  Publicize and promote County as a whole.	Use online social networking tools and other web based tools to promote existing Lamoille County Art/Creative Economy businesses. Consider creating a single, online “storefront” for these businesses.  Incorporate artwork from Lamoille County based businesses into websites for regional organizations, such as LCPC, LEDC, Chambers of Commerce, and GMTCC.

## SECTOR ANALYSIS: BUSINESS

### Current Conditions

- Many established businesses owned by individuals in their 40's or older.
- Mixed technical ability among business owners.
- Minimal use of communication tools.

### SECTOR QUICK FACTS

- Cluster of manufacturing businesses in Morrisville area.
- Large number of small, home based businesses.
- Lack of available land with infrastructure for commercial/ industrial development.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>Existing cluster of manufacturing businesses in Morrisville Area.</li> <li>Large number of small, home based businesses.</li> </ol>	<ol style="list-style-type: none"> <li>Gap between the existing skill set of the County's workforce and the skills needed by employers.</li> <li>Existing businesses may not see the value of using the internet, as it was not necessary in the past.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>Wider broadband access will allow more Lamoille County residents to telecommute or operate home based businesses. This may allow more diverse businesses, included high tech and profession-based business, to locate in the County.</li> <li>Broadband access may change where businesses locate within the County. Some businesses which now require office space may be run out of the home.</li> <li>Teleconferencing can reduce travel time and allow more frequent interaction with clients. It may also allow employees to remain in contact with main office when visiting other sites or clients.</li> </ol>	<ol style="list-style-type: none"> <li>Cost of developing and maintaining web based tools may be prohibitive for smaller businesses.</li> <li>Businesses without a web presence are likely losing customers, but may not be aware of this leakage.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Educate business owners about the wide array of tools available to them.	Increase awareness of broadband and web based tools available to businesses.	<p>Incorporate use of these tools into existing business training courses offered by organizations such as the VT Small Business Development Center.</p> <p>Work with LEDC, the Lamoille Region Chamber of Commerce, and other area business associations to "lead by example" by incorporating web based tools into their programming.</p> <p>Publicize examples of successful use of web based tools by Lamoille County businesses.</p>

<p>Increase technology skills among County's workforce.</p>	<p>Make training available to diverse segments of the County's workforce.</p>	<p>Work with area High Schools, CCV, JSC, and GMTCC to enhance technology based curriculum.</p> <p>Work with existing adult education programs to incorporate technological skills needed by area employers into job retraining programs.</p>
<p>Use broadband to diversify Lamoille County's economic base.</p>	<p>Provide support for growth of small and home-based businesses in the County.</p>	<p>Use social media to increase networking opportunities among County's small businesses.</p> <p>Investigate the feasibility of creating a "tele-center" or business incubator, or other physical or online space where business owners can go for information, training, and technical support.</p> <p>Provide businesses technical assistance to businesses seeking to develop telecommuting policies.</p>

## SECTOR ANALYSIS: EDUCATION – PRIMARY/SECONDARY

### Current Conditions

- Most teachers began teaching before many new technologies existed.
- Students often know what is available, but may not know how to use it properly.
- Investing and maintaining computers in schools is an expensive, long term commitment.
- Some students do not have access to computers at home.

### SECTOR QUICK FACTS

- Most students attend local elementary/middle schools and regional high schools.
- Green Mountain Technical and Career Center (GMTCC) provides technical education.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. There are existing programs and software that can be integrated into other curriculum.</li> <li>2. GMTCC incorporates broadband and internet technology into all of its programs.</li> </ol>	<ol style="list-style-type: none"> <li>1. Equipping schools with up-to-date computers may be cost prohibitive for small communities.</li> <li>2. Small schools often do not have a dedicated technology person. The responsibility for maintaining computers often falls on a teacher.</li> <li>3. Many teachers are “technology immigrants” who have not been trained on best practices for use of technology in the classroom.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Use of technology provides an opportunity to make learning more interactive for students and increase their interest in a subject.</li> <li>2. Online classrooms may allow small, rural schools to offer more diverse curriculums (For example, GMCTT students take Social Studies courses online).</li> </ol>	<ol style="list-style-type: none"> <li>1. Teachers are under pressure to focus professional development time on core skills such as literacy and mathematics, not technology.</li> <li>2. Students who do not have access to computer and/or internet access at home risk falling behind, especially as these technologies become more integrated into the curriculum.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Educate educators on use of internet technology in the classroom.	Integrate technology into EXISTING Education Curriculum. Technology should cease to be a stand-alone course in the education curriculum.	<p>Work with JSC, UVM, and other providers of Teacher Education to integrate best practices for use of technology into subject specific courses, especially early literacy and mathematics.</p> <p>Implement teaching methods which encourage active, creating interaction with technology to facilitate core subjects.</p>

<p>Provide opportunities for all students to utilize technology, regardless of income.</p>	<p>Identify and implement best practices for increasing access to technology among lower income students.</p>	<p>Equip school computer labs, class rooms, libraries with technology.</p> <p>Develop and disseminate methods to allow students without access to technology at home to take advantage of these resources. Methods that do not appear punitive (for example, doing research during recess) should be explored and encouraged.</p>
<p>Equip Schools with up-to-date equipment and software.</p>	<p>Address challenges of financing, managing, and maintaining school owned hardware.</p>	<p>Investigate the most cost effective means of equipping schools (lease vs. own, central labs vs. classroom computers, etc.).</p>

## SECTOR ANALYSIS: EDUCATION – HIGHER/CONTINUING

### Current Conditions

- Vermont Small Business Development Center hosts online workshops and webinars.
- Internet has changed the format of the college classroom. The professor’s role is now based more on facilitating than lecturing.

### SECTOR QUICK FACTS

- Johnson State College and Community College of VT both located in Lamoille County.
- Green Mountain Technical and Career Center (GMTCC) provides adult education.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Three existing institutions offering formal higher and continuing education curriculum.</li> <li>2. GMTCC has capacity to host large groups for onsite trainings and workshops.</li> </ol>	<ol style="list-style-type: none"> <li>1. Some students come to college lacking basic communication and research skills.</li> <li>2. Much of the County’s workforce lacks the skills needed by 21st century employers. There is a need for adult education and retraining.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. A CCV campus is located within 25 miles of all Vermont communities. This existing network provides an opportunity for accessible adult education.</li> <li>2. Greater broadband access will allow more residents to take advantage of online courses.</li> </ol>	<ol style="list-style-type: none"> <li>1. Many working people and small business owners do not have the time to devote to additional training.</li> <li>2. Individuals in most need of further education may also be those who lack interest or access to educational opportunities.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Graduates of Higher Education Programs in Lamoille County are equipped with the skills needed to succeed in the 21st century information economy.	Incorporate technology and communication skills into higher education curriculum.	Work with JSC and CCV to incorporate use of technology into all program curriculum.
Modernize the skill set of the County’s workforce.	Provide Lamoille County Residents with diverse options for continuing education.	Develop online courses tailored for specific needs and demographics identified.

## SECTOR ANALYSIS: ENERGY/UTILITIES

### Current Conditions

- Hub of transmission lines located in the Morrisville area.
- Portions of Lamoille County, especially Stowe, experience a winter peak due to the prevalence of the ski industry.
- 30% of Morrisville Water and Light Department’s electricity provided by local hydroelectric facilities.

SECTOR QUICK FACTS
<ul style="list-style-type: none"> <li>• Six municipal utilities operate in Lamoille County (Stowe, Morrisville, Hyde Park, Johnson, Hardwick and Enosburg Falls) Some existing programs for seniors throughout County.</li> <li>• Electric power provided by mix of regional and local sources.</li> </ul>

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Stowe Electric installing smart meters to all customers.</li> <li>2. Locally owned utility poles provide a ready means of installing fiber lines.</li> <li>3. Federal ARRA dollars have recently funded upgrades to many municipally owned substations.</li> <li>4. GIS Mapping of utility lines can provide more efficient line location.</li> </ol>	<ol style="list-style-type: none"> <li>1. Some municipal utilities do not currently allow customers to access and pay their bills, gather information, or report outages.</li> <li>2. Small utilities may lack the financial resources for long term capital planning.</li> <li>3. The large number of second home owners in portions of Lamoille County reduces the likelihood of customers reporting outages.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Smart Grid, including Smart Meters and SCADA, technologies allow better tracking of energy usage and demand, improve response time to power outages, and identify areas of “line leakage.”</li> <li>2. Website, text messaging, and other means can be used to alert customers of power outages and maintenance work.</li> <li>3. Smart Grid monitoring coupled with GIS mapping can provide for more effective line maintenance and tree removal.</li> </ol>	<ol style="list-style-type: none"> <li>1. Small utilities may lack the critical mass of customers to justify the start up expense of central hardware needed to manage Smart Grid Technologies.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Expand use of Smart Grid in Lamoille County.	Address the structural barriers to Smart Grid investment by small municipal utilities.	Work with municipal utilities to pool their resources to purchase the central hardware needed for smart grid.
	Educate Utilities on the operational benefits of Smart Grid.	Publicize the benefits of Smart Grid to Stowe Electric.

<p>Increase the accessibility of municipal utilities.</p>	<p>Improve and modernize the websites of municipal utilities.</p> <p>Improve communications between municipal utilities and their customers.</p>	<p>Implement technologies which allow customers to access and pay their utility bills online.</p> <p>Utilize websites, social media, and text messaging to disseminate information about outages, maintenance, and other operational issues.</p>
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## SECTOR ANALYSIS: HEALTHCARE/HUMAN SERVICES

### Current Conditions

- Pockets of rural poverty in County.
- Agency staff often visits clients remotely.
- Nationwide mandate to develop electronic health records.
- Some doctors are resistant to making this change.
- Copley Hospital has several “tele-medicine” units.

### SECTOR QUICK FACTS

- Agency of Human Services delivers many services through local agencies.
- Most agencies are located in Morristown, while client base is spread through the County.
- Copley Hospital centrally located in County. Local providers located throughout the county.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>Existing network of service providers.</li> <li>Copley Hospital centrally located in County.</li> <li>High value placed on face-to-face time with clients in both Health Care and Human Services.</li> </ol>	<ol style="list-style-type: none"> <li>Professional staff will need training to effectively utilize technology.</li> <li>Privacy issues associated with electronic health records.</li> <li>Need for professional guidance and standards regarding when remote communications are sufficient and when face-to-face time is necessary.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>Use of teleconferencing can reduce travel time costs by (a) allowing agency staff to meet with some clients remotely (b) allow staff in the field to communicate with the central office, access information, and file some reports remotely.</li> <li>“Tele-medicine” and remote access allows some monitoring and healthcare services to be conducted without a patient traveling to a hospital.</li> <li>Broadband would allow some training to be offered online, and may allow small agencies to “share” staff with expertise.</li> <li>Broadband can be used to improve access for the elderly and individuals with disabilities, and can help to reduce issues associated with isolation.</li> <li>Younger generation more prone to utilizing internet and text messaging to access information.</li> </ol>	<ol style="list-style-type: none"> <li>Cost of equipment/access to technology is a major barrier for clients. Many clients live on fixed incomes and lack computers or high-speed internet at home.</li> <li>Transportation is a major barrier for some individuals in accessing employment.</li> <li>Some providers may not be able to afford upgraded technology or staff time for related trainings.</li> <li>Some private practices are resisting transition to electronic health records.</li> <li>While Comcast offers a low cost internet subscription program for low income customers called, “Internet Essentials,” This Service is not available in Lamoille County.</li> <li>Legal issues related to distributing some information via text messages.</li> </ol>

**Goals/Strategies/Actions**

GOALS	STRATEGIES	ACTIONS
<p>Ensure effective and appropriate use of broadband and web-based tools by service providers.</p>	<p>Encourage appropriate use of broadband to improve client access and care.</p>	<p>Provide training for service providers on appropriate uses of technology. Where feasible, incorporated this information into existing trainings.</p> <p>Select appropriate mediums for distributing information to different demographics.</p>
<p>Work to ensure that Lamoille County Residents have basic access to information and technology, regardless of income, education, or ability.</p> <p>Modernize the skill set of the County’s workforce.</p>	<p>Provide opportunities for residents to access technology in public areas.</p> <p>Develop mechanisms to provide low income residents with home computer and internet access.</p>	<p>Equip public libraries, community centers, town offices, and other public spaces with modern, publicly accessible technology.</p> <p>Partner with businesses and Technical Education Programs to refurbish used computers and distribute to families with children on school meal programs and residents of affordable.</p> <p>Work with service providers to develop low cost options for basic internet access, or develop a publicly funded alternatives.</p>
<p>Increase the ability of seniors, including those in rural areas, to “age in place.”</p>	<p>Expand use of “tele-medicine” and other remote services.</p>	<p>Provide peer based training for healthcare providers on appropriate use of telemedicine.</p> <p>Educate residents, particularly aging residents, on telemedicine options in addition to hospital based care.</p> <p>Increase the number of “tele-medicine” units available within the County.</p>
<p>Improve coordination of services between agencies.</p>	<p>Use technology to enhance coordination of services.</p> <p>Identify opportunities to make efficient use of limited financial and staff resources.</p>	<p>Develop means to strengthen the relationship between School Nurses and other health service providers. Provide School Nurses with information about available services.</p> <p>Where feasible, allow small agencies to share staff members with specialized skills.</p> <p>Develop systems for tracking client/patient support, especially when receiving services or treatment from more than one agency or provider. Ensure that these systems respect client privacy.</p>

## SECTOR ANALYSIS: LIBRARIES

### Current Conditions

- Libraries are adding E-Books, DVDs, and other similar items to their circulation.
- Libraries are developing open source systems to allow residents to search for books from home.
- Many Libraries offer additional programming for the community.

### SECTOR QUICK FACTS

- Public Libraries located in most Towns in Lamoille County.
- Vermont has more libraries per capita than most other states. However, they are not part of a coordinated system.

*“The Library is not just about books it is about access to information”*

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Independence of libraries allows them to innovate.</li> <li>2. Libraries host programs such as children’s events, authors’ visits, and workshops for adults/seniors.</li> <li>3. Many Lamoille County libraries have space to hold meetings. Some residents, particularly older residents and children, may feel more comfortable in this setting.</li> </ol>	<ol style="list-style-type: none"> <li>1. Independence of libraries makes it more difficult to adopt new technology.</li> <li>2. Libraries’ traditional role of decimating books is changing.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. If equipped with necessary hardware, libraries can provide internet access to people who cannot afford it at home.</li> <li>2. Broadband could enhance library programming. For example, Skype could be used for a remote author’s visit.</li> <li>3. Libraries could be utilized to host technology literacy trainings for residents who would be uncomfortable in a more institutional setting.</li> </ol>	<ol style="list-style-type: none"> <li>1. Libraries must expand the scope of their services as more residents have access to books and other information online.</li> <li>2. New technologies also allow greater use of “passive” media such as television and video games. These can compete with early literacy efforts.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Libraries adapt to changing technologies and continue to serve as important community institutions.	<p>Libraries provide low const-public access to information and new technology mediums.</p> <p>Use technology to enhance existing library programs and develop new offerings.</p>	<p>Equip libraries with modern technology and equipment. Incorporate use of this equipment with existing programs.</p> <p>Provide trainings to libraries and library staff on best practices for use of technology to promote literacy.</p> <p>Investigate and implement effective ways to use technology to expand library programming, such as hosting remote author’s visits or lectures.</p>

## SECTOR ANALYSIS: MANUFACTURING

### Current Conditions

- Growing use of web for advertising, customer service, billing and other functions.
- Little available space for new manufacturing businesses to locate in.

### SECTOR QUICK FACTS

- Existing cluster of manufacturing businesses in Morrisville area.
- Most industrial parks in the County are full.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Strong existing cluster of manufacturing businesses.</li> <li>2. Nationally recognized manufacturers such as Concept 2 and MSI.</li> <li>3. Numerous smaller manufacturers throughout the county.</li> </ol>	<ol style="list-style-type: none"> <li>1. Little available space for new manufacturing businesses. Most industrial parks in the County are full.</li> <li>2. Many existing manufacturers are not well integrated with the Web.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Opportunity to use social media tools and website to increase visibility of County Businesses.</li> <li>2. Potential to do preliminary research on a potential customer or client before doing a “cold call.”</li> <li>3. Use of technology improves tracking of inventory and customers.</li> </ol>	<ol style="list-style-type: none"> <li>1. As home businesses grow, they reach a transition stage where they are “too big for the garage” but do not have the resources or skills to manage their own warehouses or production lines.</li> <li>2. Many companies now send manufacturing specifications via email. Federal and State Governments post bid documents online. The County’s manufacturer will fall behind if they do not adapt to these trends.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Encourage Lamoille County based manufactures to take greater advantage of opportunities provided by web based tools.	Increase awareness of application of web based tools to manufacturers.	Work with the Lamoille Area Board of Realtors to incorporate information about expanded broadband access and the opportunities it presents for home business owners and telecommuters. Commerce, and GMTCC.
Plan and provide for the expansion of manufacturing in the County.	Increase land and space available for manufacturing development.	Assess County’s available land and infrastructure to determine potential areas for new industrial development or redevelopment.  Work with municipalities and utilities to provide upgraded infrastructure, including broadband access, to the most suited areas.

## SECTOR ANALYSIS: MUNICIPAL GOVERNMENT

### Current Conditions

- Limited use of broadband by local governments
- Most Towns have a website. However, the amount and type of information available varies from community to community.
- Little dedicated staff for managing technology. Varying level of technical skill among existing staff.

### SECTOR QUICK FACTS

- Ten municipalities in Lamoille County.
- Front Porch Forum available in Stowe, Morrisville, Johnson, and Cambridge.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Availability and utilization of tools such as Front Porch Forum and Town Websites is growing.</li> <li>2. Local governments often keep active lists of residents involved in community activities.</li> </ol>	<ol style="list-style-type: none"> <li>1. Use of websites and other online tools only effective if a significant number of people have internet access.</li> <li>2. Smaller towns may lack financial and human resources to develop and actively maintain a website.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Technology can be used to foster discussions and disseminate information.</li> <li>2. In an emergency, Town websites and other online tools can be used to disseminate information to the general public.</li> </ol>	<ol style="list-style-type: none"> <li>1. Use of the internet raises questions regarding public records and open meeting laws.</li> <li>2. Towns do not have clear guidelines about use of social media tools by public officials.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Ensure that state laws and regulations related to open meetings records are followed.	Assist Towns in modernizing their policies in light of new technologies.	<p>Develop model policies for use of social media by public officials.</p> <p>Develop clear guidance regarding retention of email and other electronic documents.</p> <p>Develop clear guidelines regarding use of email by Town Staff and public officials.</p>
Increase transparency and citizen access to government.	<p>Increase use of online tools to disseminate information to the general public.</p> <p>Utilize Broadband to enhance opportunities for public participation.</p>	<p>Expand availability of Front Porch Forum into other Lamoille County communities.</p> <p>Develop “best practice” guidelines regarding information to include on municipal websites.</p> <p>“Live Stream” Public Meetings and allow residents viewing remotely to post questions and comments.</p>

## SECTOR ANALYSIS: PUBLIC HOUSING

### Current Conditions

- Commuters seeking homes in Lamoille County due to proximity to Chittenden County and lower overall housing prices.
- Lack of broadband reduces housing values in County.

### SECTOR QUICK FACTS

- Large second home market, particularly in Stowe.
- Some communities have a high concentration of older buildings/housing stock.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. The Region’s diverse outdoor environment and recreational opportunities make it an attractive place to own a home.</li> <li>2. The Region’s location on the Route 15 Corridor and its proximity to I89 make it an attractive location for commuters.</li> </ol>	<ol style="list-style-type: none"> <li>1. Lack of broadband is a major impediment to development of a diverse housing stock in Lamoille County.</li> <li>2. Lack of a diverse housing stock is a major barrier to economic development in Lamoille County.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Expanded broadband will increase property values in the County. This will benefit existing homeowners and businesses.</li> <li>2. Expanded broadband will make Lamoille County a more attractive place for people wanting to telecommute or operate home businesses.</li> <li>3. Expanded broadband will make Lamoille County more attractive for second homeowners and retirees accustomed to broadband access.</li> </ol>	<ol style="list-style-type: none"> <li>1. Expanded broadband will increase property values in the County. This may make some areas of the County less affordable for lower income households.</li> <li>2. Local Land Use Plans may not be prepared to address potential changes in development patterns that could be triggered by expanded broadband access.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Use broadband expansion as an opportunity to diversify the County’s housing stock.	Promote Lamoille County as a potential home for telecommuters and home business owners.	Work with the Lamoille Area Board of Realtors to incorporate information about expanded broadband access and the opportunities it presents for home business owners and telecommuters. Commerce, and GMTCC.
Adjust local and regional planning in light of expanded broadband access.	Ensure that municipalities are prepared to address potential land use implications of expanded broadband access.	<p>Develop capital plans and update road ordinances to address the potential impacts of increased traffic resulting from development.</p> <p>Update local plans and bylaws to address issues associated with increased development pressures on rural areas.</p> <p>Work with municipalities, Lamoille Housing Partnership, Housing Vermont, and private developers to ensure a diverse housing stock within the County and local communities, including affordable housing.</p>

## SECTOR ANALYSIS: SENIORS/YOUTH

### Current Conditions

- Technology such as social media increasingly important to youth’s social lives.
- Many seniors do not see value in utilizing technology. Libraries are adding E-Books, DVDs, and other similar items to their circulation.

### SECTOR QUICK FACTS

- Some communities have teen centers, but activities for youth are limited.
- Some existing programs for seniors throughout County.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>Existing Senior Housing and Senior Centers in larger Lamoille County Communities.</li> <li>Some organized activities for youth through schools, libraries, and other community organizations.</li> </ol>	<ol style="list-style-type: none"> <li>Limited activities for youth within Lamoille County, especially more rural towns.</li> <li>Seniors in rural areas often face isolation as they grow older.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>Libraries and schools can promote “productive” use of internet and social media tools.</li> <li>Access to the internet can help seniors maintain connections with families, especially those who live out-of-state.</li> <li>Access to the internet can allow seniors to pursue some interests at home. This reduces isolation and keeps minds active, which can reduce the onset of Alzheimer’s and Dementia.</li> </ol>	<ol style="list-style-type: none"> <li>Lack of internet connection at home puts youth at a disadvantage. Students have difficulty developing technology skills, and are also isolated socially.</li> <li>Some seniors may need “basic” training on use of a computer that many younger users take for granted.</li> <li>Some seniors will have difficulty traveling to central locations for “trainings” and may feel uncomfortable in institutional settings.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Provide Lamoille County Seniors with greater access to technology.	Increase Lamoille County senior’s access to and understanding of computer and internet technologies.	<p>Develop basic internet education curriculum for seniors, which focuses on applications that they will actually use and value (for example, using Skype to interact with family members or email to download pictures of grandchildren). Programs should begin with basic information and explain terminology (what is a “window” how to use a mouse). These skills should be repeated through training to build confidence.</p> <p>Deliver programs in settings where seniors will feel comfortable, such as senior centers and libraries.</p> <p>Include internet safety in these trainings.</p> <p>Equipping Senior Centers and Senior Housing complexes with equipment.</p>

<p>Create additional activities and outlets for youth within Lamoille County.</p>	<p>Provide opportunities for creating use of technology by youth.</p>	<p>Equip libraries, youth centers, and other areas frequented by youth with appropriate technology.  Incorporate use of this technology into programming for youth in Lamoille County.</p>
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## SECTOR ANALYSIS: TOURISM

### Current Conditions

- Numerous assets in Lamoille County that make it attractive to visitors. However, assets outside of Stowe not widely known or advertised.
- Many visitors to County come from areas where high-speed internet is the norm.
- Increasing number of visitors rely on social media and web in planning vacations.

### SECTOR QUICK FACTS

- Nearly two thirds of Lamoille County economy related to travel and tourism.
- Traditionally built around winter tourism, particularly ski industry.
- Winter guests in general spend more than summer guests.
- Working to diversify into a four season tourist sector.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Strong, existing infrastructure to support tourism, especially in Stowe.</li> <li>2. Core of assets throughout County that make region an attractive place to visit.</li> </ol>	<ol style="list-style-type: none"> <li>1. Current activities that attract summer tourism are less lucrative than the winter ski industry.</li> <li>2. Lack of awareness and promotion of the County's assets and attractions outside of the Stowe Area.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Expanded broadband creates new avenues to market the Region.</li> <li>2. Online tools and social media create new opportunities to market region as a whole.</li> </ol>	<ol style="list-style-type: none"> <li>1. There is a large expense to developing and maintaining a website. It may be cost prohibitive for small establishments to market themselves online independently.</li> </ol>

**Goals/Strategies/Actions**

GOALS	STRATEGIES	ACTIONS
<p>Expand awareness of assets and attractions throughout County.</p>	<p>Market the County to visitors as a whole.</p> <p>Incorporate tourism with other planning programs, such as the Scenic Byways and Designated Village Centers and Downtowns.</p>	<p>Develop Countywide or Town- wide website(s) promoting small businesses. Participating businesses could pool resources to develop a web presence.</p> <p>Build on the Vermont Downtown Program’s online mapping tool of Designated Downtowns and Village Centers to provide additional information about businesses and attractions within these areas.</p> <p>Use the Morrisville Designated Downtown as a model to test and develop online social networking tools to market the area.</p> <p>Provide an outline of successful strategies to the Vermont Department of Tourism and Vermont Downtown Program to be emulated by other communities.</p> <p>Develop downloadable walking/driving tours of Lamoille County.</p> <p>Develop walking tours for Villages and Downtowns and driving tours of scenic byways. Use the Smugglers Notch Scenic Byway as a “pilot” for replication on other scenic byways (example see <a href="http://traveltex.com/multimedia/podcast-walking-tours">http://traveltex.com/multimedia/podcast-walking-tours</a>).</p>
<p>Plan and provide for the expansion of manufacturing in the County.</p>	<p>Increase land and space available for manufacturing development.</p>	<p>Assess County’s available land and infrastructure to determine potential areas for new industrial development or redevelopment.</p> <p>Work with municipalities and utilities to provide upgraded infrastructure, including broadband access, to the most suited areas.</p>

# Northeastern Vermont Development Association

## SECTOR ANALYSIS: SIGNIFICANT TO ALL SECTORS

These themes recur repetitively throughout every sector analyzed and are summarized here to present a foundational understanding of broadband adoption issues before presenting ideas unique to each individual sector.

### Current Conditions

- Aging, rural population
- Average to below average educational attainment relative to Vermont & the nation
- Limited cellular coverage in parts of the region
- A significant number of stakeholders have no access to broadband service or only inadequate service

### SECTOR QUICK FACTS

- Individuals search for product or service information online.
- Individuals search for jobs/employment online.
- Individuals interact with businesses and co-workers online.
- Individuals purchase goods or services online, and use online bill payment.
- Individuals telecommute to work online.

## Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Many potential adopters exist who can be counted on to adopt as soon as adequate access to service reaches their home or business.</li> <li>2. Access has expanded recently &amp; many homes &amp; businesses do have adequate access even if such access is not yet available universally.</li> </ol>	<ol style="list-style-type: none"> <li>1. Training needs in every sector.</li> <li>2. Basic digital skills are now critical for being socially &amp; economically independent, &amp; specifically for starting a business, accessing social benefits, obtaining education at all levels &amp; seeking any office employment.</li> <li>3. Minimal utilization by majority creates lack of impetus for any one individual or group to adopt.</li> <li>4. Many important decision-makers, such as business owners, non-profit &amp; public board members, etc., lack awareness of potential benefits of broadband adoption.</li> <li>5. Misconceptions that broadband technology use is effortless can lead to abandonment after adoption.</li> <li>6. Staunch unwilling attitude of some individuals to adopt new technology.</li> <li>7. Small businesses, non-profits &amp; small municipal governments lack capacity for in-house IT, marketing or training staff to effectively use or make better use of technology &amp; broadband tools.</li> <li>8. Difficulty maintaining uniform software versions between employee workstations.</li> <li>9. Some customers or stakeholders don't have broadband service or have inadequate service.</li> </ol>

EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Realize economic &amp; social benefits by gaining access to large populations &amp; other parts of the world.</li> <li>2. Geographic/distance barriers within the NEK can also be overcome, or the associated costs eliminated, through broadband adoption.</li> <li>3. Widespread adoption &amp; adequate access presents outstanding opportunities for economic recovery in the Northeast Kingdom, including:                             <ul style="list-style-type: none"> <li>• Improved performance of existing businesses,</li> <li>• Attraction of new businesses,</li> <li>• Existing workforce development,</li> <li>• Retention or attraction of young workers, and</li> <li>• Attraction of new workers with different skill sets.</li> </ul> </li> </ol>	<ol style="list-style-type: none"> <li>1. Time &amp; budget resource limitations.</li> <li>2. Many users are not online, due to both challenges to adoption &amp; lack of adequate access, therefore diminishing the necessity for organizations &amp; business to provide services via broadband. Users do not expect services to be available online, &amp; a circular problem is created.</li> <li>3. Many potential adopters feel that the investment of time &amp; resources is not worth the potential benefits of adoption.</li> <li>4. Many other potential adopters believe that the benefits of adoption are very worthwhile, but they do not feel that they have adequate time, resources or the skills to make it work.</li> <li>5. Keeping information secure once it is digital through policies, best practices &amp; secure software, hardware &amp; networks.</li> <li>6. Non-profits, small businesses &amp; small municipal governments have limited resources to allocate when making decisions about the best technology investments.</li> </ol>

**Goals/Strategies/Actions**

GOALS	STRATEGIES	ACTIONS
Develop a “How-to” on working with service providers to bring better coverage to a community.	Find & interview communities that have successfully improved service.	Recruit/assign/procure someone to conduct the research & write the “How to.”
Small businesses, non-profits & government entities with restricted staffs & budgets should have the knowledge to most effectively leverage their technology use.		Develop & disseminate best practices including the areas of: <ul style="list-style-type: none"> <li>• Assessing technology needs &amp; opportunities,</li> <li>• Network security,</li> <li>• Choosing hardware &amp; systems,</li> <li>• Choosing software &amp; systems,</li> <li>• Choosing cloud-based services,</li> <li>• Choosing IT services,</li> <li>• Selecting a web developer, and</li> <li>• Other requested topics.</li> </ul>

<p>Community, business &amp; development agencies will promote &amp; provide broadband utilization assistance as a standard service.</p>	<p>Include digital skills training in standard suite of training programs.</p> <p>Incorporate broadband applications as eligible uses of general business &amp; community assistance funding.</p>	
<p>Address lack of awareness of the opportunities that adoption affords.</p>	<p>Use traditional channels for communicating trade opportunities to communicate internet &amp; broadband opportunities.</p> <p>Use other channels that may be most relevant to this demographic for education &amp; exposure.</p> <p>Focus on the challenges &amp; use of broadband as one possible tool to meet them, rather than advocating broadband as proscriptive cure all.</p>	<p>Schedule publicity &amp; education through trade associations, chambers of commerce, newsletters, business publications, newspaper business sections, business community events &amp; other channels.</p> <p>Utilize reputable &amp; trusted voices for advocacy.</p> <p>Acknowledge benefits &amp; costs of adoption &amp; provide evidence that costs can be managed for net benefit.</p>
<p>Address misconceptions about internet utilization.</p>	<p>Identify misconceptions that may exist beyond those identified in this plan.</p> <p>Focus on the challenges &amp; use of broadband as one possible tool to meet them, rather than advocating broadband as proscriptive cure all.</p>	<p>Address misconceptions through general awareness outreach when appropriate.</p>

## SECTOR ANALYSIS: BUSINESS

### Current Conditions

- Online presence is critical for some business for retaining patronage by certain markets. This necessity will continue to grow.
- Some NEK businesses are not interested in growing & are also uninterested in adopting. However, the region overall needs job creation.
- Many businesses have web presence, but quality and/or effectiveness could likely be improved.
- Social media outlets available, but not widely used by region’s businesses.
- Businesses need to be prepared to take ownership of their online presence & the internal responsibilities that go along, to get the most out of the web.
- An online farmer’s market is available in Caledonia county.
- Most businesses have adequate broadband service available, but some rural businesses still use dial-up.
- Completely web-based businesses exist in parts of the region.
- Few small businesses use e-business tools for inventory management.
- Few small businesses use cloud based accounting services.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. A well-established network of business assistance &amp; business membership organizations exist already in the Northeast Kingdom.</li> <li>2. Technical assistance is offered in the region for website development.</li> <li>3. Businesses exist whose broadband success can be used as an example.</li> <li>4. Businesses with a technology leader willing to commit to changes that adoption force &amp; help employees adapt are much more likely to have positive adoption experiences.</li> </ol>	<ol style="list-style-type: none"> <li>1. Weak business and/or marketing/customer service skills often lead to failed endeavors to use technology.</li> <li>2. Businesses may not be ready for the cultural shift that is often required when reaching customers online.</li> <li>3. In the 2011 regional industry cluster analysis, all business leaders identified spotty cell/broadband coverage as an issue that needs to be addressed.</li> <li>4. For a small percentage of small business owners, security concerns factor into decisions.</li> </ol>

EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Tap into larger regional &amp; worldwide markets.</li> <li>2. Target specific customer demographics.</li> <li>3. Market the NEK “brand” across business “subsectors” (agriculture, tourism, arts, manufacturing, etc.).</li> <li>4. Leverage traditional marketing channels alongside broadband &amp; tech to create more powerful marketing.</li> <li>5. Savings &amp; convenience through e-business practices.</li> <li>6. Improve quality of workforce skills for skill building appropriate to online training.</li> <li>7. Connectivity allows visitors to conduct business &amp; personal matters while away from home if they choose.</li> <li>8. Costs associated with e-business practices are not as prohibitive as costs associated with website development for small businesses.</li> </ol>	<ol style="list-style-type: none"> <li>1. Perceptions that adoption of tech/broadband channels for marketing will overwhelm business operations.</li> <li>2. Many customers use online search to find &amp; screen businesses. Businesses with no online presence or an unprofessional site are very likely to lose customers to their competition. This is especially true for those customers from places with higher internet utilization rates.</li> <li>3. The up-front investment for a professional website is cost prohibitive for many small businesses.</li> <li>4. To attract large businesses, which require broadband connectivity to compete nationally &amp; internationally in the 21st century economy, northeastern Vermont will need to offer competitive data service.</li> </ol>

**Goals/Strategies/Actions**

GOALS	STRATEGIES	ACTIONS
All businesses in the NEK have access to the quality digital training & business skills training they may need to create a professional web presence.	<p>Take advantage of training events/ programs provided by companies like Google, VTel (others? Web hosts?) promoting adoption.</p> <p>Provide additional qualified Business Advisors specializing in online tools.</p>	<p>Establish availability of such touring programs &amp; identify host locations.</p> <p>Support Vermont Small Business Development Center &amp; other business assistance orgs in funding these positions &amp; hiring qualified advisors.</p>
Small businesses will be online with interactive websites & an understanding of how to use social media marketing to their fullest advantage.	Use local business e-teams to promote broadband in towns & regions.	Sponsor a regional Internet Biz competition similar to the 2009 event sponsored in part by NVDA.
<p>NVDA &amp; other business assistance organizations will have an accurate picture of business broadband/ telecomm needs.</p> <p>Provide small business loans for website development &amp; maintenance.</p>	<p>Regional business service providers will collaborate on survey of business needs.</p> <p>Expand existing programs such as that through Northern Communities Investment Corporation (NCIC).</p> <p>Seek funding for new programs.</p>	<p>Comprehensive survey to include connectivity &amp; training needs.</p> <p>Initiate discussion of this possibility with existing program providers and/or promote availability to businesses.</p> <p>Secure USDA Tech Assist. Funds to assist businesses w/websites.</p>

## SECTOR ANALYSIS: EDUCATION

### Current Conditions

- There is a strong perception that rural regions are falling behind urban area.
- Broadband is increasingly thought to be essential to the cost-effective distribution of educational & workforce development services.
- The Northeast Kingdom has two four-year colleges within its borders, as well as the two-year Community College of Vermont with two campus locations.
- State agencies like DOL, WIBs, & Regional Tech Centers have online courses & trainings available for workforce development.
- The majority of North Country Supervisory Union schools have laptops available to students as a shared resource. A few of the schools have 1:1 initiatives in place.

**SECTOR QUICK FACTS**

- The North Country Supervisory Union (NCSU) faces specific challenges when utilizing its broadband connections:
  - ◊ NCSU has only 30 Mbps internet access serving all 2801 students.
  - ◊ The majority of NCSU schools are currently receiving some combination of TI access varying from 1.5 Mbps to 5 Mbps.
  - ◊ All internet traffic within NCSU is routed back to North Country Union High School, where the Supervisory Union internet connection is shared by everyone.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Most, if not all, schools have Education Technology Plans w/ identified goals &amp; strategies.</li> <li>2. Students are willing to use broadband services.</li> <li>3. NCSU has invested heavily in technology &amp; supports classroom technology initiatives. Specifically:                             <ul style="list-style-type: none"> <li>• NCSU has received two Rural Utilities Service (RUS) grants during the past five years to make Video Conferencing Technology available to NCSU schools.</li> <li>• The most recent RUS grant would create an interactive classroom in each of the NCSU Schools.</li> </ul> </li> </ol>	<ol style="list-style-type: none"> <li>1. Not all students have broadband services at home.</li> <li>2. Not all teachers have ability/willingness to use or integrate broadband into curriculum.</li> <li>3. NCSU specifically lacks sufficient bandwidth to use grant funded equipment effectively.</li> <li>4. There is a lack of sufficient internet access in the communities served by NCSU specifically.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Provide students with the skills to compete in the global workforce as well as enhance the Northeast Kingdom economy when they choose to live close to home.</li> <li>2. All learning institutions can serve as community centers for digital learning &amp; creative use of technology for all learning.</li> <li>3. Provide parents with better school to home communications.</li> <li>4. Provide students with more &amp; better opportunities to learn outside of the classroom.</li> <li>5. Provide students access to learning resources no matter how far away the resources are.</li> </ol>	<ol style="list-style-type: none"> <li>1. Barriers include the cost of computers or connections, lack of online skills, &amp; lack of understanding about the relevance of broadband applications.</li> <li>2. NCSU lacks adequate infrastructure to support learning initiatives:                             <ul style="list-style-type: none"> <li>• Bandwidth is inadequate to accomplish many of our goals, including involving parents at home with learning that utilizes technology.</li> </ul> </li> </ol>

**Goals/Strategies/Actions**

GOALS	STRATEGIES	ACTIONS
Teachers & school staff will have access to training & curriculum support to integrate technology into everyday learning.	<p>Provide teachers &amp; advocates the tools to successfully advocate the importance of technology to decision-makers.</p> <p>Connect schools to other resources for funding, training &amp; curriculum, such as Digital Wish.</p>	
Review school Education Technology Plans.	<p>Look for recommendations that could help to increase adoption.</p> <p>Make recommendations on adoption that could help school goals.</p> <p>Identify other important broadband issues.</p>	Assist schools in identifying resources & partners to support implementation of their Technology Plans.
Every high school provides students opportunity to earn credit via online distance learning courses.	Identify flexible learning opportunities for schools/students & policies that may need to be changed.	
Schools & learning institutions will play a key role in increasing broadband adoption.	Offer basic digital literacy skills training & advanced content creation training.	Outreach & awareness campaign to make public aware of opportunities at learning institutions.
All schools & adult learning institutions will have the best service available in their community.	<p>Identify what schools &amp; adult education providers are using for broadband.</p> <p>Have students survey broadband use at home.</p>	
Schools utilize interactive classrooms, Student Management Systems & Learning Management Systems to cooperate & collaborate with each other to broaden & enrich the educational experience of students.	Schools & school systems cooperate & collaborate to determine what they can provide & what they need to receive. For example, a foreign language teacher at one school uses Interactive video classroom equipment to teach in six simultaneous classrooms in remote locations.	Distance learning equipment must be procured & maintained at remote locations. Teachers have to be aware the equipment exists & must be willing to use it. Utilize Rural Utility Service & other Distance Learning Grants to procure equipment.

## SECTOR ANALYSIS: ENERGY/UTILITIES/TRANSPORTATION

### Current Conditions

- Vermont Electric Coop & Central Vermont Public Service (soon to merge with Green Mountain Power) are in the process of installing smart electric meters.
- Lack of time & expertise on municipal utility staffs to integrate broadband technology at a concurrent pace with large electric utilities.
- Municipal electric utilities that also manage water systems would only see cost savings if BOTH systems could be monitored remotely to save both monitoring trips.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Willingness to adopt new technologies if economics are positive, and if training is available.</li> </ol>	<ol style="list-style-type: none"> <li>1. Low level of training among existing municipal utility staffs.</li> <li>2. Available time is limited for researching &amp; considering transition to new technologies.</li> <li>3. Pressure to keep utility rates low.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Energy &amp; cost savings for customers through real time monitoring &amp; management of energy use.</li> <li>2. Monitoring logistics cost savings for some utilities.</li> <li>3. Service call response efficiencies &amp; improved customer service.</li> <li>4. Time &amp; fuel savings through real time monitoring of traffic conditions, road conditions &amp; public transportation vehicles.</li> </ol>	<ol style="list-style-type: none"> <li>1. Municipally provided utilities face the same suite of challenges as municipal governments themselves.</li> <li>2. Smart meters are more costly than traditional meters &amp; may require replacement more often.</li> <li>3. For very small local/municipal utilities, return on investment of new technology is not more cost effective than traditional technology &amp; practices.</li> <li>4. Radio-telemetry system monitoring is impeded by regional topography in some utility service areas &amp; wireless broadband monitoring could have the same issue.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Maximize adoption of online usage monitoring & billing by larger electric utility customers.	Provide for customers' understanding of how to best take advantage of smart meter services & address concerns that they may have.	Schedule CVPS Smart Power presentations around NEK service area a month or two before installation scheduled.
Encourage telework (incl. web conferencing) options to conserve energy otherwise spent through vehicular travel.	Provide guidance or training on telework options & how to integrate into organizational budgets, policies & workflows.	Identify entities that can provide guidance or models such as <a href="http://www.telework.gov">www.telework.gov</a> or <a href="http://www.officesquaredvt.com">www.officesquaredvt.com</a> .

<p>Support Vermont Public Power Supply Authority (VPPSA) in identifying ways in which aggregating technology adoption could break cost barriers.</p>	<p>Support Vermont Public Power Supply Authority (VPPSA) in implementing technology aggregation savings that have been identified.</p>	<p>Advocate for these measures through the State Legislature, Governor &amp; applicable State Agencies.</p>
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## SECTOR ANALYSIS: HEALTHCARE

### Current Conditions

- Network & data security are major concerns for health practices.
- Broadband is increasingly thought to be essential to the cost-effective distribution of health care services.
- Insurance companies provide online access to customers.
- Tele-pharmacy service being provided in small communities.

SECTOR QUICK FACTS
<ul style="list-style-type: none"> <li>• Northeastern Vermont Regional Hospital (NVRH) has operated a network between neighboring health campus practices for 10 years. This has allowed daily exchange of lab results &amp; electronic medical records between primary care practices, specialist &amp; hospital services.</li> </ul>

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Health practices routinely provide training to keep medical staff current on changes in health information management systems.</li> <li>2. Health care providers (hospitals &amp; clinics) have broadband access.</li> </ol>	<ol style="list-style-type: none"> <li>1. The Blueprint for Health &amp; Medical Home philosophy has been successful, however the health information system to support it has not yet been realized for northeastern Vermont.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Nursing staff sees increasing opportunity to keep current via online training &amp; video streaming.</li> <li>2. Opportunities exist to coordinate with emergency services &amp; education to prevent redundancy in systems &amp; programs.</li> <li>3. Exchange of patient health information to allow for continuity of treatment &amp; elimination of redundancy between medical practitioners.</li> </ol>	<ol style="list-style-type: none"> <li>1. Practices &amp; hospitals face difficult decisions when choosing between current systems &amp; programs &amp; new ones offered by publicly funded programs or competing businesses.</li> <li>2. Frequent health information system upgrades &amp; software or data incompatibility issues are ongoing challenges.</li> <li>3. Significant work remains in making the Blueprint for Health information system exchange functional for northeastern Vermont, allowing practices to receive reports of information as well as distribute them.</li> <li>4. Many patients expect high levels of privacy &amp; security for their personal medical information.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Address patient concerns about privacy & security of their health information.	Establish security confidence w/in the medical data management community.	Recruit trusted voices to convey security of information management practices as well as make understandable explanations of such practice available.

<p>Health data administrators will be positioned to confidently make the best possible decisions for maintaining the security of medical networks &amp; data.</p>	<p>Provide guidance on affordable best practices for maintaining network &amp; data security.</p>	<p>Maintain ongoing evaluation of the performance of systems &amp; practices available to Vermont medical providers.</p>
<p>Health data administrators will be positioned to make the best possible choices between available network systems &amp; programs.</p>	<p>Provide assistance choosing between multiple providers &amp; systems.  Provide specific guidance evaluating choices between networks offered by Vermont FiberConnect &amp; the New England Telehealth Consortium (NETC).</p>	
<p>The Blueprint for Health information system will allow for practices in northeastern Vermont to receive health information from the exchange as well as contribute.</p>		

## SECTOR ANALYSIS: HUMAN SERVICES

### Current Conditions

- High monthly fees, hardware costs, hidden fees, billing transparency, quality of service, & availability are major issues for low-income communities.
- Broadband access may need to entirely replace other purchased telecommunications (telephone, cable TV) in order for those with low incomes to adopt.
- Service agencies often have to gather social benefit application information on paper & then enter it online for clients.
- Financial means & mobility greatly affect the types of strategies that will be needed to facilitate adoption among seniors. Some have means & mobility, some have one or the other, & some have very little. Each group may need to be facilitated differently.
- Seniors accustomed to classroom education & with the means to pay for & travel to a class would benefit from classes.
- Seniors who are not as comfortable with classroom education & may not be mobile would benefit more from one on one learning.
- Most service organizations have broadband access at base office locations.

SECTOR QUICK FACTS
<ul style="list-style-type: none"> <li>• The Area Agency on Aging for Northeastern Vermont is the recipient of a grant that provides iPads to caregivers. The caregivers will be able to access webinars traditionally given as classes requiring them to travel &amp; be away from the elder in their care. Where broadband service is available, the caregiver &amp; elder will be able to use the iPad for other applications, such as social media or conducting household business that would otherwise require a trip out of the home.</li> </ul>

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Youth are apt to be more engaged in technology &amp; broadband at present.</li> <li>2. Seniors may have more time available for transitioning to technology use.</li> <li>3. Seniors who have higher education levels or were exposed to technology later in their careers are more likely to adopt.</li> </ol>	<ol style="list-style-type: none"> <li>1. Many stakeholders geographically distant and/or isolated.</li> <li>2. Reading literacy along with digital literacy challenges.</li> <li>3. Many stakeholders fixed/ low income or living in poverty.</li> <li>4. Age - resistance to change in elderly.</li> <li>5. Some people are unconscious of security threats &amp; therefore highly vulnerable.</li> <li>6. Some people are aware that security threats exist but need the skills to recognize &amp; avoid them to feel comfortable adopting.</li> </ol>

EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Curb negative emotional effects of isolation to which homebound individuals are susceptible.</li> <li>2. Access two way communication required to monitor health &amp; well-being of clients &amp; provide other services without travel.</li> <li>3. Caregivers are a one-on-one channel to seniors. Enabling them may help them &amp; those in their care.</li> <li>4. Tablet devices may be the most intuitive for new digital learners.</li> <li>5. Tablet devices offer mobile solutions for services provided in the field.</li> </ol>	<ol style="list-style-type: none"> <li>1. Ensuring that affordable and adequate service is available.</li> <li>2. Services that are offered for free with more demand than supply often force waiting in line for those services.</li> </ol>

**Goals/Strategies/Actions**

GOALS	STRATEGIES	ACTIONS
Provide online access to vulnerable populations that cannot reach centralized online access points.	Provide a mobile online services center or support volunteers & caretakers that do reach these populations.	Partner with mobile services that already reach these populations (Meals on Wheels, RCT, case managers, visiting nurse, library lending).
Integrate broadband benefits into existing benefits such as Choices for Care or the Lifeline Tax Deduction.	Lobby for administrative and/or legislative action at the State & Federal level.	Identify appropriate advocates.
A suite of approaches will need to be applied to provide digital literacy training to vulnerable populations.	<p>Offer courses for those comfortable with classroom learning.</p> <p>Offer graduated exposure to technology for people who find it completely foreign.</p> <p>Provide technology help “office hours” programs at libraries, senior centers, &amp; other human services centers.</p>	Identify high schools, colleges, and/or technologically proficient volunteers willing to partner with human services providers & offer support for negotiating the terms of such a partnership.
Enable caregivers & service providers with tech skills & tools they can share.	Identify the tools & skills that would be most helpful to caregivers.	Build program plans & identify funding resources.
State Agencies requiring online application for social benefits will support human services orgs & libraries which provide assistance accessing these benefits.	Provide support to allow these organizations adequate staffing & equipment to fulfill their roles.	Evaluate & quantify needs that have been created by online social benefit requirements & provide funding and/or additional agency support to fill those needs.

## SECTOR ANALYSIS: LIBRARIES

### Current Conditions

- Many librarians do not currently have adequate tech support to help them.
- Most libraries are automated or in the process of automating so that they can offer Online Public Access Catalogs, or “online card catalogs.”
- All libraries offer some computers for public access to the Internet & some provide Wi-Fi hotspots.
- Most libraries have some kind of internet presence, such as on Facebook, a website, etc.
- Libraries are under severe pressure to meet the high public connectivity demands created by low home adoption.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Strong demand for services by stakeholders without home/work access.</li> <li>2. Demand for library services via broadband is present from many stakeholders.</li> <li>3. Familiarity with public demands &amp; desires for information.</li> <li>4. Good public meeting space(s).</li> <li>5. Accustomed to role as information provider to people with limited resources.</li> </ol>	<ol style="list-style-type: none"> <li>1. Inadequate websites.</li> <li>2. Not leveraging communication tools &amp; social media.</li> <li>3. Limited or outdated computer networks.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Broadband is an opportunity for libraries to ‘reinvent’ themselves &amp; recapture public interest &amp; support.</li> <li>2. Promote development of a statewide Integrated Library System. This would help all libraries to share information, which would enhance Interlibrary loan &amp; defray costs of cataloging &amp; circulation systems for individual libraries.</li> </ol>	<ol style="list-style-type: none"> <li>1. Very limited budgets.</li> <li>2. Limited staffing, staff time &amp; hours open to public.</li> <li>3. Library staff are not traditionally trained to provide social services support to large volumes of patrons.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Every public library offers basic computer &/or web literacy course at regular dates.	Train the Trainer Courses for Librarians. Roving Digital Literacy Educator. Use local e-teams to promote broadband in towns & regions.	Keep Librarians apprised of Train the Trainer offered by VTA, E-Vermont or Dept. of Libraries. Apply for applicable grant to pay Roving Digital Literacy Educator or e-team.

Technology intern office hours available to assist with technology questions as needed & one on one.	Identify high schools, colleges, interested in providing technologically proficient tutors/interns.	
All libraries have subscription to online reference materials, journals, classes, downloadable e-books, & audiobooks as appropriate to the individual community.	Access these resources from the Vermont Dept. of Libraries, Vermont Online Library, & the Green Mountain Consortium.  Joint purchase of subscription by libraries with budgets not allowing individual subscription.	Identify library representatives to research & negotiate subscription service & terms.
Libraries will have up to date equipment & software for the public to use.	Evaluate library equipment & software needs.	Apply for funding to address deficiencies.
Public has an increased awareness of library as 'community broadband center.'	Community marketing effort.	
All libraries will have updated & informative websites.	Provide libraries with website development assistance similar to that provided for businesses.	Provide guidance for identifying the proper scope of website offerings given available staff resources.

## SECTOR ANALYSIS: MEDIA

### Current Conditions

- Most local newspapers have websites & online subscriptions available, at least one does not.
- Radio & TV stations have websites, use social media.
- Many individuals continue to purchase & subscribe to print newspapers.
- Much of the real-estate market, a primary source of advertising income for newspapers, has turned to online advertising.

### SECTOR QUICK FACTS

- The Barton Chronicle has received a Technical Assistance Grant from Northern Communities Investment Corporation to expand its website. With a goal to drive readership of both online and print content, the Chronicle has developed innovative webpage content and multiple options for advertisers.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Reputation for providing accurate information.</li> <li>2. Familiarity with public demands &amp; desires for information.</li> <li>3. Demand for news via broadband is present among readers, viewers &amp; listeners.</li> <li>4. News media is in the business of keeping up with changing world circumstances.</li> </ol>	<ol style="list-style-type: none"> <li>1. Heavy investment in traditional technologies (print, television, radio).</li> <li>2. Loss of advertising revenue to the Internet.</li> <li>3. Cut backs in staff adding constraints on time for learning/using new technology.</li> <li>4. Uncertainty about how to adapt to changing information market despite awareness that adaptation is critical.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Harness reputation for providing the most accurate &amp; relevant information &amp; carry it into online broadcasting &amp; news reporting tools.</li> <li>2. Provide service of sorting through the overwhelming amounts of information online for what is most valuable.</li> <li>3. Availability of online video &amp; audio for use in conjunction with current websites &amp; traditional media.</li> <li>4. Well trafficked websites still provide the opportunity for advertising revenue.</li> <li>5. Media websites may serve as landing sites for tourists searching a certain geographic area.</li> </ol>	<ol style="list-style-type: none"> <li>1. Continued conversion of clients from traditional media sources to competing online sources.</li> <li>2. Conversion of clients is occurring very rapidly.</li> <li>3. Ongoing staff time/budget limitations.</li> </ol>

**Goals/Strategies/Actions**

GOALS	STRATEGIES	ACTIONS
Regional & local media will have the capacity for creative adaptation to challenges & opportunities of changing information market.	<p>Provide training for staff to adapt rapidly to using broadband news reporting &amp; content production tools.</p> <p>Connect media outlets to fresh or tech savvy perspectives through intern placement or technical assistance similar to that offered to other businesses.</p>	
Increase use of websites by staff & readers, viewers & listeners & also by advertisers to generate revenue.	Use traditional & broadband media to promote each other, promoting organization as a whole.	Provide online purchase of traditional media, hyperlink between all online media sites, utilize new/smaller/other niches for traditional media.
Increase ability of news staff to work remotely.	Develop tools for telecommuting & news reporting from on-site/scene.	Utilize existing employee smartphones, laptops, flipcams, subsidize w/company funding or fund outright. Post more video & audio reports online.
Existing print & video media outlets will promote the use of broadband across all sectors.	Pull together media representatives to discuss broadband & look for mutually beneficial outcomes/initiatives.	

# SECTOR ANALYSIS: MUNICIPAL GOVERNMENT/EMERGENCY SERVICES

## Current Conditions

- Inadequate websites.
- Limited use of available broadband technologies.
- Minimal use of communication tools.
- Social media not widely utilized.
- Mixed technical ability among staff, board, officials, commissioners, & stakeholders.
- NVDA recent switch to new web & email host.
- NVDA in process of redesigning website.
- Infrastructure, bandwidth, pricing & reliability adequate for current utilization practices at NVDA.
- Some communities still on dialup.
- Not all towns with police departments are able to provide in-dashboard computers in every police cruiser.
- Most towns provide radio communication among police officers but not cell phone.

SECTOR QUICK FACTS
• There are 55 municipalities in the northeastern Vermont region served by NVDA. Of those 55, 17 have municipal websites.

## Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
1. Demand for government services via broadband is present from a portion of constituents.	1. Inadequate websites or none at all. 2. Not leveraging communication tools & social media. 3. Low comfort level with some new technologies even if skills to use present.
EXTERNAL	
Opportunities	Challenges
1. Increase participation & engagement with stakeholders. 2. Increase organizational efficiency. 3. Increase transparency. 4. Create value in the municipal planning process by utilizing computer/broadband technology.	1. Limited staff capacities & limited budgets at the local levels. 2. Challenges managing public input & expectations are created by increased exposure via websites, social media. 3. Local opposition can impede emergency telecommunications projects that have greater statewide benefit.

## Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Increase citizen participation & engagement in government through the innovative use of technology.	Research/fund communication tools & leverage social media tools to better engage with audience.	Tie in to social media activity of partner organizations & state government.  Pursue grant funding for demonstration project centered on the innovative use of technology for government.

Increase technology skills among staff & stakeholders.	Offer monthly or quarterly training for any skills relevant to planners/municipal officials, rotating in IT & broadband skills.	Assign NVDA staff member and/or municipal officials to organize trainings, explore possibility of partnering with VLCT.
Increase use of website by both staff & stakeholders.	Prioritize NVDA role in current website redesign, migration & update.	Launch new website in July 2012.
Increase transparency.	Embrace transparency & interactivity on web platform.	Use traditional channels for information dissemination to drive online access of information by the public.
Increase efficiency and/or productivity of organization.	Inventory current software, devices, services employed by each staff member & plan budget & schedule for updates, adoption & training.	Employ technology that passes screens (communications, project management, billing, etc.).
Increase ability of civil employees to work remotely.	Develop tools, policies & work procedures for telecommuting.	Install telecommuting software & provide training for staff.
Increase adoption of mobile broadband technology by field oriented stakeholders (road foremen, public works staff, etc.).	Identify best practices from other communities.	Municipal education outreach effort.
Every Municipal Government has well updated website providing useful information to taxpayers, voters & other stakeholders.	Provide proven low-cost, easy to use options for communities.	Set up a demonstration workshop for local officials.  Provide guidance materials or direction to existing guidance.  Coordinate mentoring between communities which successfully maintain websites & those who would like too.
Municipal E-911 coordinators will be fully trained & scheduled to provide up to date & accurate information for maintenance of the E-911 database.	Impress the importance of this role to Selectboards & Town Administrators.	Develop a case to present including examples of life-saving successes of the e-911 system & any potential liabilities at the municipal level.

## SECTOR ANALYSIS: NON-PROFIT/SERVICES

### Current Conditions

- Small non-profits have limited IT support in house.
- Internet used to conduct research & day to day communications.
- Some non-profits sell goods or services online, a significant portion do not.
- Some non-profits use online channels for publicity & fundraising, a significant portion do not.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Able to be creative with fundraising &amp; marketing.</li> <li>2. Eagerness to adopt new practices if they are more affordable.</li> <li>3. Eagerness to learn about innovative uses &amp; benefits.</li> <li>4. Established partnerships with other organizations.</li> </ol>	<ol style="list-style-type: none"> <li>1. Generally small budgets.</li> <li>2. Staff &amp; volunteer hours &amp; availability are often restricted.</li> <li>3. Lack of expertise for how to best leverage certain technologies.</li> <li>4. In some cases, lack of awareness of magnitude of benefits &amp; opportunities.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Eligible for a great variety of grant programs.</li> <li>2. Broadband offers affordable fundraising &amp; publicity channels.</li> <li>3. Collaborate with &amp; learn from non-profits filling similar niches in far away regions or countries.</li> </ol>	<ol style="list-style-type: none"> <li>1. Public expectations that the organization be as responsive online as many private businesses.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Non-profits will have the skills to manage their online presence & reputations to their benefit.	Provide training & best practices.  Provide evaluation & recommendations of such guidance resources that already exist.	
Non-profits will understand the web & broadband tools to an extent allowing them to fundraise in creative ways.	Connect non-profits to fresh or tech savvy perspectives through intern placement.	
Community service & human services non-profits will play a role in educating people about online safety practices.	Encourage public-private collaboration.	Educate consumers & families about the reality of online risks & promote online safety practices among children & citizens.

# Northwest Regional Planning Commission

## SECTOR ANALYSIS: BUSINESS

### Current Conditions

- Many retail businesses already have a “web-presence.”
- Agriculture-based businesses have begun to embrace new internet technologies. Many area farms have a presence on Facebook and there are two active online farmers markets.

SECTOR QUICK FACTS
<ul style="list-style-type: none"> <li>• Some of the region’s top private sector employers include Ben &amp; Jerry’s, Energizer, Mylan Technologies, St. Albans Cooperative Creamery, VT Precision Tools and Peerless Clothing USA.</li> <li>• Tourism is an important sector of the business economy, especially for the island and lakeshore communities.</li> <li>• Business in the region is supported by the Islands Chamber of Commerce, Franklin County Chamber of Commerce, Franklin/Grand Isle Workforce Improvement Board and Franklin County Industrial Development Corp.</li> </ul>

### Strengths/Weaknesses/ Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Business (manufacturing) will invest its own money if it will lead to success.</li> <li>2. Tourism/marketing sector realizes that technology is important.</li> <li>3. The broadband technology infrastructure is already in place for the large existing manufacturers.</li> <li>4. The agricultural field, by nature, tends to be entrepreneurial. Starting to use technology such as Fairfield’s online farmers market.</li> <li>5. Creative Community/Smart Grid.</li> <li>6. WIB.</li> </ol>	<ol style="list-style-type: none"> <li>1. 30% of the region’s businesses have websites.</li> <li>2. Small businesses are not “ranking” in Google.</li> <li>3. Cell coverage is not complete yet tourists expect to have cell service.</li> <li>4. Some addresses in the region do not show up in GPS.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Regional tourism mobile application.</li> <li>2. Local retail should develop a stronger online presence.</li> <li>3. Commuters to Chittenden County.</li> <li>4. Use technology to go local, instead of global.</li> <li>5. Smart Grid- What can be bundled.</li> </ol>	<ol style="list-style-type: none"> <li>1. Business owners may be “older.”</li> <li>2. How do you attract high tech firms when the infrastructure is not fully built? Chicken and egg scenario.</li> <li>3. Maintaining websites- time and cost.</li> <li>4. Island technology trainings were poorly attended.</li> <li>5. Early adopters are already engaged while others are not.</li> </ol>

**Goals/Strategies/Actions**

GOALS	STRATEGIES	ACTIONS
Tourists visiting the area will be able to learn about and navigate local attractions using their smart phones.	Modernize tourism materials to take advantage of ubiquitous broadband access.	Geocode all regional attractions so they are searchable in Google maps and other online mapping tools.  Create a smartphone application for the Missisquoi Valley Rail Trail.
Small area businesses will be able to be found with a “Google search.”	Identify training needs for businesses.	Work with Small Business Development Center to incorporate Google Search priority onto business development trainings.
Using technology, local agriculture will increase demand for their products.	Work with stakeholders and regional organizations to provide support for agri-business.	Continue to participate in the Diversified Agriculture Working Group and help to identify technology strategies to promote and market products.

## SECTOR ANALYSIS: EDUCATION

### Current Conditions

- At least 9 schools in the region have implemented I-to-I computer initiatives for the entire school or a subset of grades.
- The I-to-I initiatives have been funded by a variety of sources including ARRA Title I & II grants, Microsoft settlement money, the E-Vermont/E-Wish collaborative and the school’s general fund.
- Many schools have received grant funding for technology training of their professional staff and curriculum integration.
- For the 2011-2012 school year, 5 area schools are collaborating with the Virtual Vermont Learning Collaborative, an organization that works with public schools to offer online classes using an online Learning Management System.

**SECTOR QUICK FACTS**

- There are 5 supervisory unions in the region that include:
  - ♦ 20 elementary schools,
  - ♦ 4 junior high/middle schools,
  - ♦ 4 high schools, and
  - ♦ 2 technical/career centers.
- K-12 population in the region is approximately 9,100 students for the 2011-2012 school year.
- The Community College of Vermont (CCV) has a branch location in St. Albans City.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. There is generally funding available for technology.</li> <li>2. Ability to reach many kids early on.</li> <li>3. Kids are bringing the technology to their teachers.</li> <li>4. There is an increased focus on education outcomes and using technology such as E-portfolios to measure those outcomes.</li> <li>5. Many schools are doing one-to-one initiatives.</li> <li>6. Comcast provides broadband internet service for families who qualify for the free lunch program.</li> <li>7. Many Vermont colleges provide online classes/degrees.</li> </ol>	<ol style="list-style-type: none"> <li>1. Looking at technology as a standalone.</li> <li>2. An outdated education model that focuses on training industrial workers.</li> <li>3. Some schools do not have cell coverage.</li> <li>4. Technology can “take over.”</li> <li>5. The remote access learning class from 10 years ago is outdated.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. UVM has facilities that are available to the region’s educators.</li> <li>2. Re-align school budgets to focus on technology.</li> <li>3. Focus on education as a type of economic development.</li> <li>4. Video conferencing can bring resources to more kids.</li> <li>5. Opportunity to teach technology manners/etiquette in school.</li> <li>6. Technology can lead to transformation.</li> </ol>	<ol style="list-style-type: none"> <li>1. Lack of 24/7 internet access for some students.</li> <li>2. Technology changes rapidly, keeping up to date can be costly.</li> <li>3. School boards\decision makers can be resistant to change.</li> <li>4. Making sure staff uses email.</li> <li>5. Training staff.</li> <li>6. Technology viewed as a social toy not as a tool (i.e. cellphones).</li> <li>7. Education field is sometimes viewed as isolated from other sectors.</li> <li>8. Where money is currently allocated.</li> <li>9. Master agreements.</li> <li>10. No higher education in the Grand Isle County.</li> </ol>

**Goals/Strategies/Actions**

GOALS	STRATEGIES	ACTIONS
<p>All students in the region will have access to broadband after school hours.</p>	<p>Expand options and choices for students to have after school access.</p>	<p>Expand Comcast’s program reduced-cost broadband plan to families who qualify for the reduced lunch program, not just the free lunch program.</p> <p>Work with other internet providers to offer reduced –cost broadband plans for families who qualify for the free or reduced lunch program.</p> <p>Provide public spaces, such as public libraries, with internet access to students after school hours and on weekends.</p>
<p>Technology will be fully integrated into K-12 curriculum as appropriate.</p>	<p>All students grade 6-12 will have a dedicated piece of technology (such as an Ipad or laptop) that they can use at school and at home.</p> <p>Ensure schools have the resources to maintain and upgrade technology as it evolves.</p> <p>Provide all students with the opportunity to access a range of courses that are currently unavailable due to a school’s small size or tight budget.</p>	<p>Support efforts by supervisory unions to incorporate technology programs into schools and curriculum and partner with projects and programs as opportunities arise.</p> <p>Support efforts by school boards to incorporate technology upgrades as necessary budget items.</p>

## SECTOR ANALYSIS: ENERGY/UTILITIES

### Current Conditions

- Reporting at the close of 2010, the Vermont Broadband Mapping Initiative (BMI) projected broadband coverage for all of Franklin and Grand Isle Counties by 2013.
- VT Electric Co-op has been hailed as a national leader for deploying their smart-grid technology,
- Both CVPS and VT Electric Co-op offer online tools so customers can monitor their energy usage and help develop conservation strategies.

### SECTOR QUICK FACTS

- There are 8 municipal wastewater treatment plants serving the region and 34 public water systems.
- Electric service areas in the region include Central Vermont Public Service Corp. (CVPS), VT Electric Co-op Swanton Village Electric Dept. and the Village of Enosburg Falls.
- Vermont Gas services corridors within Georgia, Highgate, St. Albans City/Town and Swanton Village/Town.
- Internet service providers include FairPoint, Comcast, GlobalNet, HughesNet Satellite, WildBlue and Franklin Telephone Company along with limited 3G cell service from wireless providers.

### Strengths/Weaknesses/ Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. There has been significant private and public investment in expanding the broadband utility and having other utilities incorporate new technologies.</li> <li>2. Smart Grid-Vermont Electric Coop.</li> <li>3. Utilization of “reverse 911” system to notify clients of power outages.</li> <li>4. In general, more information is available to the consumer than before.</li> </ol>	<ol style="list-style-type: none"> <li>1. Broadband coverage is not yet 100% in the region.</li> <li>2. The cost of broadband (especially higher speed services) is relatively expensive.</li> <li>3. The cost and quality of broadband service varies within the region.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Technology can be using in lieu of driving for services and work.</li> <li>2. Smart cars and other technology driven ways to reduce transportation energy use.</li> </ol>	<ol style="list-style-type: none"> <li>1. Privacy concerns over having an individual’s electricity and other utility usage made public.</li> <li>2. It is more difficult for smaller municipal power grids to adopt new technology.</li> <li>3. Energy is not local, certain changes need to be coordinated at the state/national level.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Customers from all electric providers will be able to monitor usage and manage their accounts online.		

<p>All residents in the region will have access to broadband either at home or at a nearby public hotspot.</p>		<p>Inventory existing hot spots to identify areas in the region that are lacking access.</p>
<p>More employers will offer telecommuting options for their staff to reduce energy consumption.</p>	<p>Review barriers and opportunities with area businesses.</p>	<p>Promote telecommuting as part of Way to Go Week.  Publicize NRPC's telecommuting successes.</p>

## SECTOR ANALYSIS: HEALTHCARE

### Current Conditions

- In 2010, the Northwest Medical Center launched the Meditech System – an enterprise-wide computer system and electronic medical record.
- Get # of physician practices that are working with VITL to instill electronic medical records.

### SECTOR QUICK FACTS

- The Northwest Medical Center in St. Albans City is the one hospital within the region. It is a 70-bed facility employing a staff of over 600 and there are many private physician offices on the hospital campus.
- The Northwest Walk-in Clinic in Georgia provides urgent (but not emergent care) and has both evening and weekend hours.
- The Northern Tier Center for Health (NOTCH) is a Federally Qualified Health Center that provides primary and dental health care on a sliding fee scale. It operates 5 health care centers in Richford, Alburgh, Enosburg Falls, St. Albans City and Swanton. It also offers 2 dental clinics.

### Strengths/Weaknesses/

### Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Electronic medical records focusing on rural providers.</li> <li>2. Increase patient participation in their own care.</li> <li>3. Excellent quality and quantity of care.</li> </ol>	<ol style="list-style-type: none"> <li>1. Low level of awareness for available services.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Opportunity to provide services (such as mental health counseling) online through Skype or other methods.</li> <li>2. Access to expertise not available locally, could help overcome reduce transportation challenges.</li> <li>3. Distribute information about good health practices.</li> <li>4. Health care providers can figure out better ways to communicate with their clients.</li> </ol>	<ol style="list-style-type: none"> <li>1. Resistance from providers to adopting the technology.</li> <li>2. Privacy concerns over access to sensitive medical information.</li> <li>3. Technology may provide better outcomes, but with a different or less personal process—need to balance quality of the experience vs. quality of the outcome.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Area residents will have online access to their medical records and public health information and will be able to better participate in their health care.		Utilize NRPC HUD Regional Planning Grant to identify technology related actions to improve community and public health that will have a positive impact on economic development.
Residents will have access to a broader range of health care choices without having to physically travel outside the region.		
Patients will be able to conveniently schedule appointments after business hours.		Encourage providers to establish on-line scheduling and appointment reminder systems.

## SECTOR ANALYSIS: HUMAN SERVICES

### Current Conditions

#### SECTOR QUICK FACTS

- Northwest Counseling and Support Services (NCSS) is a non-profit human services agency in the region that provides support to children, adolescents and adults with emotional and behavioral problems, mental illness and developmental disabilities.
- Other human service organizations that support elderly and special needs populations include The Franklin County and Fairfield Centers, Franklin County Home Health Agency, Care Partners, Franklin County Caring Communities, Champlain Islanders Developing Essential Resources (CIDER) and Green Mountain Transit Agency (GMTA).

### Strengths/Weaknesses/ Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Quality services are available within the region.</li> <li>2. Vermont 2-1-1 (website and phone service) is a great statewide asset that includes contact information for regional human service agencies.</li> </ol>	<ol style="list-style-type: none"> <li>1. Low level of awareness for available services.</li> <li>2. Broadband access is not available where there is a concentration of high needs.</li> <li>3. There is not a central regional calendar for human service agency activities.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Use broadband and technology to perform better outreach and coordination with clients.</li> <li>2. More online services could remove the stigma of accessing these services. (Similar to the transition to the food stamps transition to debit cards.)</li> <li>3. Broadband adoption could relieve the dependence on transportation to access services.</li> <li>4. Develop of regional calendar of services and events.</li> </ol>	<ol style="list-style-type: none"> <li>1. Significant concerns over privacy- what type of information should be available.</li> <li>2. How should human service agencies interact with children/minors online?</li> <li>3. There is a limit to efficiency when using technology. Agencies will still have to use traditional methods of communication because of broadband access limitations, broadband adoption and personal condition.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
All clients of the human service agencies will have access to online services.		Work with libraries to ensure there are private computer areas, preferably with telephone access.
Transit dependent individuals will be able to schedule rides and review bus schedules online or on a smartphone.	<p>Encourage CCTA to implement “intelligent transportation system” technologies.</p> <p>Encourage CCTA to investigate ways providers can link to CCTA using technology.</p>	Submit suggestions to CCTA as part of the short-range transit plan currently being developed.

## SECTOR ANALYSIS: LIBRARIES

### Current Conditions

- 13 of the 17 public libraries have a website. Some websites only post contact information and hours while others provide access to state-wide databases and electronic/audio books.
- Most public libraries in the region have computers for the public and the majority of sites provide public Wi-Fi access.

### SECTOR QUICK FACTS

- 17 public libraries serve the region.
- The hours of service vary between 15-48 hours per week (winter hours).
- The full-time equivalent (FTE) of staff positions ranges from .13-5.23 positions. Volunteers often supplement paid staff.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Strong connection between school librarian and town librarian.</li> <li>2. Library may be more welcoming place than the school for return learners.</li> <li>3. Has access to families with young children.</li> </ol>	<ol style="list-style-type: none"> <li>1. Difficult to connect to other organizations.</li> <li>2. Rural libraries have limited staff.</li> <li>3. Limited time/resources.</li> <li>4. Physical layout/structure of library may not be conducive to using technology.</li> <li>5. School libraries can be “dinosaurs.” There is variability within the region.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Library as a community resource- a central clearing house for community.</li> <li>2. Provide wrap around services for community.</li> <li>3. Ability to access library virtually.</li> <li>4. Libraries have the option to buy-in to subscription services.</li> <li>5. Opportunity to drive early adoption of technology by lending new technologies (such as ebooks).</li> <li>6. Be a resource to families/individuals with kids.</li> </ol>	<ol style="list-style-type: none"> <li>1. Getting people to the library (can be intimidating or have limited hours).</li> <li>2. Limited funding.</li> <li>3. The librarian is the library.</li> <li>4. The perception that information in a book is correct and information online is all garbage.</li> <li>5. It is very time intensive to teach people new technology.</li> <li>6. People do not know that online library services are available.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Local libraries will have adequate staff to assist the general public with their technology questions.		
“Virtual” community libraries will be open 24 hours a day.	Work with the consortium of public libraries to identify needs and challenges.	Utilize public engagement portion of the HUD Regional Planning grant to support additional technology needs necessary for increased online presence.

## SECTOR ANALYSIS: MEDIA

### Current Conditions

- All 3 print newspapers have a website. *The County Courier* has digital files of current and past issues for sale on their website. *The Islander* provides free digital access to the current and past issues and hosts a local blog. *The Messenger* offers some content online. It also has an active Facebook presence and supports a technology staff position.
- Both public active access television stations have a website that includes detail show schedules and public meeting announcements.
- *Lake Champlain Access Television* offers both live online streaming some meetings and video-on-demand for many others. Recordings from *Northwest Access TV* can currently only be purchased on VHS or DVD.

SECTOR QUICK FACTS
<ul style="list-style-type: none"> <li>• The 3 major newspapers in the region are <i>The Messenger</i>, <i>The Islander</i> and <i>The County Courier</i>.</li> <li>• There are 2 public access television stations that serve a portion of the region. Northwest Access TV serves the communities of Highgate, St. Albans, Sheldon and Swanton. Within the region, <i>Lake Champlain Access Television</i> serves the communities of Fairfax, Georgia, South Hero, North Hero and Grand Isle.</li> </ul>

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Good paper print providers in the region.</li> <li>2. If “connected” to the internet, info is available.</li> <li>3. Instant flood news.</li> </ol>	<ol style="list-style-type: none"> <li>1. There are 3 separate public television stations serving parts of the region. There are areas that do not have any coverage.</li> <li>2. The Saint Albans Messenger is not available online.</li> <li>3. There is no local radio.</li> <li>4. Front Porch forum was difficult to use at first in Grand Isle County because the communities were too small to sustain momentum and provide content individually. (Now Front Porch Forum is a huge success in the Islands with hundreds of families joining and 1-2 newsletters sent out every day.)</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Consolidate public access stations into one station that serves the entire region.</li> <li>2. Provide public television content in online-streaming format.</li> <li>3. Develop a regional or county online forum based on the Front Porch model.</li> </ol>	<ol style="list-style-type: none"> <li>1. Readers expect online media content to be free.</li> <li>2. Retain the value of local news/local connections while adopting new technologies.</li> </ol>

**Goals/Strategies/Actions**

GOALS	STRATEGIES	ACTIONS
All communities in the region will have public access television coverage.	Identify options for coverage in the Champlain Islands and Eastern Franklin County.	Submit comments to Comcast and to the Public Service Board requesting that public access be provided in these areas.
Public meetings will be available online in either a video or audio format.	<p>Encourage public access tv to provide as much content as possible through streaming and/or live streaming.</p> <p>Work with municipalities to encourage posting of video or audio files on municipal websites.</p>	And video or audio content on the NRPC website when available. Highlight in the newsletter successes at the local and regional level.

## SECTOR ANALYSIS: MUNICIPAL GOVERNMENT/EMERGENCY SERVICES

### Current Conditions

- 20 of the 23 municipalities in the region have a website. Bakersfield, Berkshire and Sheldon currently do not have a website.
- The content on the websites vary among the municipalities and can include select board agenda/minutes, zoning bylaws and ordinances.
- Just over half of the municipal websites had current select board minutes posted.
- 5 communities in the region have participated in the E-Vermont Community Broadband Project: Alburgh, Grand Isle, North Hero, South Hero, Isle la Motte, Fairfield and Richford.

### SECTOR QUICK FACTS

- The region includes 23 municipalities (19 towns, 3 incorporated villages and 1 city).
- According to the 2010 Census, the population of the municipalities from 471 (Isle la Motte) to 6,918 (St. Albans City).
- Law enforcement is provided by the following departments: Vermont State, Franklin Sheriff, Grand Isle Sherriff, Swanton Police and St. Albans Police.
- Fire and ambulance services are provided by both professional and volunteer rescue responders.
- St. Albans Central Dispatch is the Public Service Answering Point (PSAP) for the region and handles all 911 calls.

### Strengths/Weaknesses/ Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Municipalities are an organized entity that can raise and expend funds and implement projects.</li> <li>2. Most towns have websites and use at least a limited amount of electronic communication.</li> <li>3. Comcast was providing free broadband installation to municipalities.</li> <li>4. Most municipal business is public—this reduces (but does not eliminate) concerns over privacy.</li> </ol>	<ol style="list-style-type: none"> <li>1. Some municipal staff are reluctant to adopt new technologies.</li> <li>2. Limited staff to update/maintain websites.</li> <li>3. Broadband coverage and adoption has not evolved to where it can fully replace traditional means of communication and documentation.</li> <li>4. Many of the municipalities in the region have low population densities making it difficult to justify municipal investment in new technologies.</li> <li>5. Municipalities are not using media to update constituents.</li> <li>6. Tight municipal budgets.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. There is opportunity to create efficiencies and cut costs (once coverage and adoption issues are overcome).</li> </ol>	<ol style="list-style-type: none"> <li>1. Small communities feel they are unable to advocate for broadband coverage for their constituents.</li> <li>2. Using websites, email and social media does not eliminate public records/notification requirements.</li> <li>3. Resistance of having local tax money going towards technology instead of “physical” infrastructure.</li> <li>4. Distrust of having public information (such as listers data) online.</li> <li>5. Most municipal committees and boards have volunteer representatives who need to use their own personal email for town-related correspondence.</li> </ol>

**Goals/Strategies/Actions**

GOALS	STRATEGIES	ACTIONS
All municipalities will have a functional website with up to date agendas, minutes and other relevant information.		Highlight best practices in the NRPC newsletter.
Public meetings will be available online in either a video or audio format.	<p>Encourage public access tv to provide as much content as possible through streaming and/or live streaming.</p> <p>Work with municipalities to encourage posting of video or audio files on municipal websites.</p>	<p>Add video or audio content on the NRPC website when available.</p> <p>Highlight in the newsletter successes at the local and regional level.</p>
All first responders will have access to up to date 911 mapping information.		Work with the Local Emergency Planning Committee to develop best practice for sharing E911 mapping data.

# Rutland Regional Planning Commission

## SECTOR ANALYSIS: AGRICULTURE

### Current Conditions

- Many new farms that engage in “direct sales” to their customers (often operated by younger farmers) have websites to promote their offerings and update CSA customers.
- A minority of small farms are “ahead of the curve” by maintaining vibrant webpages, updating Facebook, and sending email blasts.
- The Internet facilitates out-of-state sale of products stable enough to ship, such as maple syrup, wine, and cheese. Wholesalers are beginning to use the web to identify and order produce from small farms.
- Farmers rely on the Internet for knowledge and skills; UVM Extension maintains an email listserv.

SECTOR QUICK FACTS
<ul style="list-style-type: none"> <li>• The Rutland Region hosts 8 weekly farmers markets during the summer and fall, and 1 Saturday market throughout the winter.</li> <li>• The summer Saturday market in downtown Rutland draws around 2,000 visitors every week.</li> <li>• In 2007, the USDA reported 658 farms in Rutland County; the median size was 100 acres. The market value of agricultural products exceeded \$35 million.</li> </ul>

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Farmers are business-savvy and adaptable.</li> <li>2. Many farmers recognize the importance of direct communication with customers and understand web’s power.</li> </ol>	<ol style="list-style-type: none"> <li>1. Electronic communications demand the most when farmers have least amount of time (e.g. harvest season, or before major markets).</li> <li>2. Many farms are off the main roads making access to high speed internet a challenge.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. There is a lot of demand for local food and qualified labor. The web can ease sourcing both.</li> <li>2. “Crop mobs” can be organized on Twitter to reach customers, volunteers, and other farmers for an immediate labor surge.</li> </ol>	<ol style="list-style-type: none"> <li>1. Information found on the web must be carefully evaluated for accuracy.</li> <li>2. Electronic sales remove touch and feel of farmer/customer relationship so its potential needs to be evaluated.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Take advantage of Internet to educate farmers, producers, and consumers on best practices.		Continue to operate UVM Extension website as information hub.

<p>Use the Internet to connect wholesalers and consumers to producers.</p>	<p>Make farm information and available product lists easier to access.</p> <p>Expand CSA and wholesale batching services to all parts of the state.</p>	<p>Promote websites that highlight local farms and product availability (this is a rapidly changing thing right now – better not to be too specific about any one site).</p> <p>Build an online counterpart to RAFFL’s Local Grown Guide.</p> <p>Expand or replicate on-line markets to food distributors and supermarkets.</p>
<p>Offer support services for farmers and producers online.</p>	<p>Make electronic services.</p>	<p>Support the continuation of computer and Internet offerings into UVM Extension programs.</p> <p>Designate a community point person or organization for websites and e-marketing.</p>

## SECTOR ANALYSIS: EDUCATION

### Current Conditions

- Broadband is fundamental to higher education operations and instruction.
- Colleges and universities are major drivers for infrastructure improvement.
- Nationally, enrollment in online for-credit courses has risen between 10 and 20% since 2005. More than one in four college students take courses online.

SECTOR QUICK FACTS
<ul style="list-style-type: none"> <li>• The Rutland Region is home to four institutions of higher education: Castleton State College, Green Mountain College, Community College of Vermont, and the College of St. Joseph.</li> <li>• CCV offers 200 online classes, and Green Mountain College has developed three masters programs based on distance learning models.</li> </ul>

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. All students and staff have at least beginner-level knowledge; broadband usage is natural for most college students.</li> <li>2. Campus offices are going paperless to save money and reduce environmental impact.</li> <li>3. Most systems and class materials, including reserve articles, are available online.</li> </ol>	<ol style="list-style-type: none"> <li>1. Electronic communication reduces human element and in-person collaboration.</li> <li>2. Staff and faculty must adopt to changing protocols and standards; increased expectation of immediate responses.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. College application process draws national and international applicants. Video interviews are possible over Skype.</li> <li>2. Distance learning can reduce cost of tuition, increase curriculum options, and reach broader audiences.</li> <li>3. Courses programs taught via the internet provide additional revenue to support existing programs.</li> </ol>	<ol style="list-style-type: none"> <li>1. Institutions that focus on distance learning risk losing identity.</li> <li>2. Students expect materials—and even instruction videos—will be available at personal convenience.</li> <li>3. Data and video-rich applications (for teaching, learning and research, will require growing bandwidth).</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Ensure infrastructure provides institutions sufficient bandwidth.	Plan major bandwidth infrastructure in the state.	Ensure bandwidth expansions identify “critical users” (such as hospitals and colleges) in addition to anchor institutions.
Enable all workers to use computerized timesheets.	Recognize technology skills as fundamental for all staff.	Continue on-going training for new employees.
Leverage the presence of colleges in each community.	Leverage ongoing community outreach and infrastructure.	Utilize college students (and existing mandatory community service) for training.  Expand campus-wire wireless networks into downtown areas.

## SECTOR ANALYSIS: ENERGY/UTILITIES

### Current Conditions

- CVPS maintains a basic website with little dynamic content.
- Live outage reports are available.
- CVPS allows online bill paying with a \$4.95 fee.
- Smart meters are currently being installed at all residential and commercial customers; system will include a customer-interface with usage information from the day before.

### SECTOR QUICK FACTS

- Central Vermont Public Service (CVPS) provides electricity service to all customers in the region.
- Telephone service is provided by FairPoint and VTel. Both companies are heavily investing in providing broadband access as demand for traditionally telephony decreases.
- SoverNet is building a middle-mile fiber network in part of the region.
- The region has no natural gas service. Comcast provides cable television and internet service in select municipalities.

### Strengths/Weaknesses/ Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. With more than 500 employees, CVPS has used broadband technology for decade, including telecommuting and video conferencing.</li> <li>2. Smart grid technology, combined with awareness, may enable demand side management and lower wholesale cost of electricity.</li> </ol>	<ol style="list-style-type: none"> <li>1. Company must revolutionize its electronic connection to customers.</li> <li>2. As a regulated utility, CVPS must ensure all electronic services are accessible and affordable to non-computer users.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. SmartPower data and worker communications are using an extensive statewide data network developed by VELCO.</li> <li>2. VTel and FairPoint have physical infrastructure to capture wireline customers.</li> </ol>	<ol style="list-style-type: none"> <li>1. Consumers increasingly expect the ability to conduct all business online, including paying bills and requesting service appointments.</li> <li>2. Some customers are resistant to smart grid deployment.</li> <li>3. Wireless broadband access threatens existing fixed infrastructure operators.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Ensure affordable access to broadband internet.	Develop multiple means to connect to ensure competitive rates.	Continue to promote wireline and wireless broadband alternatives.  Provide service discounts similar to LifeLine and LinkUp for low-income households.

<p>Enable consumers to take advantage of smart grid information.</p>	<p>Promote aggressive adoption of real-time rates and customer information systems.</p>	<p>Adjust rate schemes to promote real-time pricing and immediate usage data (rather than previous day data).</p> <p>Require utilities to analyze rates so customers can easily compare and choose.</p>
<p>Remove extra cost of paying bills online.</p>		<p>Eliminate extra fee required to pay electric bill online.</p>

## SECTOR ANALYSIS: HUMAN SERVICES

### Current Conditions

- Online applications are available, and promoted, for 3SquaresVT food assistance, fuel assistance, health insurance, and other programs.
- Many clients have no e-mail address and limited computer experience.
- Training programs range widely, including focus on older workers (Vermont Associates) and the disabled (Assistive Technology Program).

### SECTOR QUICK FACTS

- The Agency of Human Services is the largest state government entity.
- The Department of Children and Families reports that nearly 1/3 of Vermonters utilize its services.
- Even non-technical jobs require job applications to be filled out online.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Vocational service providers have experience training clients and have necessary equipment and staff.</li> <li>2. Broadband will enable staff to work with clients remotely, such as providing training without traveling to each client's home.</li> </ol>	<ol style="list-style-type: none"> <li>1. Weekly trip to library for computer use is outdated; daily access now required.</li> <li>2. Limited availability of places offering public internet access.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Growing adoption of smartphones reduces barriers to convenient internet access.</li> <li>2. Technology can reduce feelings of isolation for elderly and disabled populations (especially video calling).</li> </ol>	<ol style="list-style-type: none"> <li>1. Convenient transportation is largest barrier to regular access and training.</li> <li>2. Cultural norms of target populations resist change or required retraining.</li> <li>3. Some don't see practical or personal value in learning skills and consider technology frivolous.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Allow users to adopt broadband on their own terms.		Market broadband use as a choice, not a requirement.  Appeal to users by highlighting personal gains and conveniences.
Train and retrain workers with limited computer skills.		Promote and expand access to classes on basic computer skills specifically for mature workers.  Expand and promote Career.  Readiness training programs that connect Department of Labor with CCV.

<p>Remove hesitations that discourage new users.</p>	<p>Promote technology that is simple and usable.</p>	<p>Provide phone and in-person assistance for online applications for benefits.</p> <p>Maximize usability design on public websites.</p> <p>Require agencies and organizations to maintain current websites.</p>
<p>Enable web access in convenient locations at frequent intervals.</p>	<p>Go to where there are people (similar to book-mobiles).</p> <p>Collaborate with other organizations/events (e.g. Bone Builders).</p>	<p>Create partnerships to develop regular access points at public locations and events.</p> <p>Deploy free downtown wi-fi zones.</p>
<p>Ensure citizens of all abilities can utilize broadband.</p>	<p>Continue to promote adaptive technology.</p>	<p>Recognize that broadband and computers are critical assistive technologies.</p>

## SECTOR ANALYSIS: LIBRARIES

### Current Conditions

- Local libraries serve as the main internet access point for residents without a home or work computer.
- Internet access is the single most important service that libraries provide to their communities.

### SECTOR QUICK FACTS

- The mission of every library is to provide patrons access to information free of charge and free of censorship.
- 174 of the state's 183 public libraries have public internet access. 161 have broadband.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>The vast majority of Vermont's libraries provide public broadband access.</li> <li>Library staff have basic experience assisting patrons use computers.</li> <li>Service is provided free to all patrons regardless of residency.</li> </ol>	<ol style="list-style-type: none"> <li>Internet use demand far exceeds supply.</li> <li>Most libraries have limited hours that do not adequately serve patron needs.</li> <li>Sufficient space and technical support are major concerns. Regular hardware upgrades are a heavy burden on libraries with small budgets.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>Libraries have established a precedent as the primary public access point for the internet.</li> <li>Online training and education sites expand access to information at a reasonable cost.</li> <li>Libraries advance community knowledge and adoption, and reach under-served groups (e.g. poor, elderly, immigrants).</li> </ol>	<ol style="list-style-type: none"> <li>Library funding is among the first category to face public budget cuts, dramatically affecting local capacity to serve patrons.</li> <li>Federal e-Rate funding and discounts (i.e. E-Rate) requires filtering information contrary to libraries' principles of intellectual freedom.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Ensure libraries remain paramount community locus for internet access.	Secure funding for sufficient access, equipment, and trained personnel.	Create municipal standard for library funding akin to primary education.  Make up for cost burden shifted from state agencies to local libraries.
Raise awareness of library's role in contemporary Vermont.	Create advocates for libraries at state and local levels.	Continue statewide campaign for library funding.

## SECTOR ANALYSIS: MEDIA

### Current Conditions

- Local media outlets have accelerated online content.
- Revenue opportunities from online advertising are currently limited.
- Town newsletters are posted online, but many are difficult to locate and disconnected from informal websharing.

### SECTOR QUICK FACTS

- One daily, seven weekly, and seven monthly newspapers and magazines serve the region.
- The Rutland Herald, the region’s daily paper, uses a pay-wall to limit online content.
- Community access television station PEG-TV streams one feed 24/7 and archives past programs for online viewing.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Local media outlets have adopted broadband sooner than other sectors.</li> <li>2. Universal broadband makes it easier to stream live events, including from remote locations.</li> <li>3. Customizable content increases relevancy to the viewer.</li> <li>4. <i>Rutland Herald</i> facilitates crowdsourcing through online chats during major events, such as elections and Hurricane Irene.</li> </ol>	<ol style="list-style-type: none"> <li>1. Publishers and organizations recognize that rapidly changing technology threatens revenue sources and delivery means.</li> <li>2. Community conversations formerly limited to letters to the editor occur elsewhere; free speech can be obscured.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Social networks are becoming the primary information sources.</li> <li>2. The rise of internet news sites encourages citizen-journalists to address local interests.</li> <li>3. Organizations, town government, and the public can submit content.</li> </ol>	<ol style="list-style-type: none"> <li>1. Consumers are increasingly ignoring local news sources in favor of national news websites.</li> <li>2. Consumers expect the news cycle to run 24/7, even at the local level.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Ensure broadband delivers benefits to local communities.	Provide ongoing complimentary funding source as cable television revenue model evolves into broadband.	Provide financial support to PEG-TV as a regional multimedia source serving the entire county.
Encourage all local media to be internet based by 2020.	Promote adoption by traditional media organizations.	Promote media websites equally with other local businesses and organizations.
Ensure local news remains relevant to citizens.	Allow municipalities and organizations have access to video equipment and hosting technology.	Continue to make PEG-TV equipment available to members of the public.

## SECTOR ANALYSIS: MUNICIPAL GOVERNMENT

### Current Conditions

- Websites vary dramatically in content and relevancy.
- Broadband does not serve some rural town offices.
- Minimal use of communication tools.
- No social media.
- Mixed technical ability among staff, volunteers, and citizens.

### SECTOR QUICK FACTS

- Connections between citizens and officials are the medium for governing, and matter more than stale, isolated content available online.
- The web presence of municipalities ranges widely. 20 of the 27 towns in the region have a website; 12 are updated regularly. 26% of the region’s municipal governments have no website.
- Few towns have adopted social networking as a way to directly provide news, events, and emergency updates.

### Strengths/Weaknesses/ Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Town Clerks see websites as useful tools to publicize news and events.</li> <li>2. Pre-formatted websites, such as WordPress templates, minimize time-consuming technical details.</li> <li>3. Many clerk and treasurer functions already require web access.</li> </ol>	<ol style="list-style-type: none"> <li>1. Regular web updates are very time-consuming.</li> <li>2. Websites are fixed and don’t highlight new content or allow special messages.</li> <li>3. Town staff have mixed technical skills.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. General public is increasingly web-savvy and prefers electronic information.</li> <li>2. Once established, website is very low cost.</li> <li>3. Listservs and community newsletters already exist.</li> </ol>	<ol style="list-style-type: none"> <li>1. Newly established websites are difficult to find; there is no standard for addresses or layout.</li> <li>2. Broadband users are increasingly relying on social networking sites (including Facebook pages), rather than traditional webpages.</li> <li>3. Using web as main communications means disenfranchises citizens without computers.</li> <li>4. 4. The internet is only a way to disseminate information. It does not substitute for actually community conversations or generate content.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Reduce clutter directed at town officials and board members.	Coordinate messages to towns.	<p>Make e-mail distribution lists “opt-in” rather than “opt-out.”</p> <p>State agencies should identify a central information dissemination during disaster response and recovery.</p>

Streamline web and e-mail messages.		Establish clear guidelines and norms to promote consistency in broadcast messages (e.g. reply all, etc.).
Maximize efficiency gains from broadband.	Ensure town staff are adequately trained and that every town has a basic web presence.	Make available simple template for municipal websites hosted on VT.gov. Continue training opportunities.
Update state standards and statutes for 21 <sup>st</sup> century technology.		Encourage, but do not mandate, digitization of property records where feasible. Clarify public records law for personal communication by board members.

## SECTOR ANALYSIS: PUBLIC HOUSING

### Current Conditions

- The Rutland Housing Authority has a sound website and recognizes the growing need to serve clients electronically and to provide residents with broadband access.
- One of the four public housing sites in Rutland City has a public computer to serve residents. Additional work stations are being planned.

### SECTOR QUICK FACTS

- Public housing provides a spectrum of rental options for low-income, elderly, and disabled citizens.
- Public housing agencies directly own and manage properties, and provide indirect support for clients renting privately-owned homes.
- Rutland Housing Authority (RHA) provides various resident services, including referrals for other agencies and on-site activities.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
1. Concentrated sites have existing infrastructure. Most affordable units are located in downtown and village areas.	1. Agencies have very limited staff resources to train residents or manage computers. 2. Future clients enter system through website; most come from referrals and advocate network.
EXTERNAL	
Opportunities	Challenges
1. Increased access to technology is critical to moving families out of poverty and into self-sufficiency. 2. Congregant housing sites will play a major role in deploying digital medical records through SASH—Support and Services at Home. It was strongly suggested that Vermont’s 206 affordable housing developments be designated as hubs.	1. Elderly population harbors reluctance due to myths about the technology. 2. There are few formal programs or volunteers available to teach computer literacy. Basic skills are necessary to make it satisfying.

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
For families, make public housing a step along the way to self-sufficiency.	Ensure job-seekers have fundamental computer skills.	Integrate computer literacy into skills training at congregate sites.
Allow residents to take full advantage of broadband.	Increase meaningful training and public access at congregate sites.	Create budget and program for installing and replacing additionally computers at all congregate sites.  Offer regular training with focus on non-job uses, such as communication with family.
Streamline housing search process to improve efficiency.	Digitize statewide affordable housing services.	Ensure each housing agency has a basic website to serve clients/referrers.  Create statewide network for all housing agencies, with connections to appropriate state entities.

## SECTOR ANALYSIS: TECHNOLOGY

### Current Conditions

- The region’s technology specialists recognize fundamental changes in how and where users connect to networks and the internet.
- Local network consultants provide hardware/software advice, system administration, and backup storage.
- Cloud computing services will make traditional networks obsolete by 2020.
- Clients increasingly demand full suite of desktop services from home and from mobile devices.

### SECTOR QUICK FACTS

- Businesses and organizations are embracing new technologies and web-based tools faster than ever before. These include extensive remote access, cloud-based time tracking, and video teleconferencing.
- CCV and the College of St. Joseph offer programs in networking and computer information systems.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Local technology specialists have great situational awareness of trends and future demands by their clients.</li> <li>2. Small and medium businesses require outside assistance for computing and networking needs.</li> </ol>	<ol style="list-style-type: none"> <li>1. Like all businesses, network administrators can be reluctant to change.</li> <li>2. Demanding investments of time are required to master rapidly-evolving technology.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Office environments may still require expertise in selecting appropriate hardware, software, and cloud services.</li> <li>2. Small businesses without integrated websites are a missed opportunity; stores should offer inventory equally online and on-site (e.g. Etsy).</li> </ol>	<ol style="list-style-type: none"> <li>1. Cloud computing and universal broadband will diminish the importance and need of internal networks.</li> <li>2. More user friendly software will lead to much less demand for on-site assistance.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Ensure adequate bandwidth infrastructure capacity to handle cloud services to 100% of all home, office, and mobile devices.	<p>Continue investment in bandwidth “trunk” infrastructure.</p> <p>Encourage providers to update enterprise options; T1 lines are standard but insufficient.</p>	<p>Create long-term statewide plan to ensure broadband technology remains nationally competitive.</p> <p>Consider role of infrastructure installed by regulated utilities (Comcast, FairPoint, etc.).</p> <p>Plan for fiber “everywhere,” copper has severe limitations.</p>
Maximize use of secure cloud computing and networking.		Reduce IT support costs by adopting cloud computing.

## SECTOR ANALYSIS: TOURISM

### Current Conditions

- Nearly every tourist-related business has a basic website.
- Lodging establishments are increasingly providing wireless internet access to guests.
- Tourists are unable to identify all activities and destinations in the region.
- Internet access is now available on Amtrak's Ethan Allen Express.

### SECTOR QUICK FACTS

- The tourism industry is the region's most advanced sector utilizing broadband.
- Maintaining an ongoing connection with previous visitors is critical to their return.
- Tourists expect web connectivity comparable to urban areas.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>Existing tourist-oriented hotels, motel, restaurants, and attractions have basic websites.</li> <li>Local chambers maintain social media presence.</li> <li>Creative Economy Branding group is using Facebook to pool announcements from all sectors.</li> </ol>	<ol style="list-style-type: none"> <li>There is no single source for Vermont tourism information.</li> <li>Chamber and municipal directories do not universally capture all businesses or prioritize/maintain active events.</li> <li>Social media cannot effectively discriminate local residents versus potential tourists.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>Tourists are increasingly using third-party websites and mobile apps.</li> <li>Social media combines push and pull functions; interaction with customers is mutually rewarding.</li> </ol>	<ol style="list-style-type: none"> <li>Websites and directories are not designed for access on mobile devices.</li> <li>Creating a regional tourism app is cost- and time-intensive.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Make the Rutland Region the most welcoming region of Vermont for tech-savvy visitors.	Offer tourists a single starting point on the Internet and on mobile devices.  Eliminate idea that rural Vermont lacks connectivity.	Focus on mobile accessibility.  Integrate the websites of regional chambers, including Killington.  Integrate AllRutland Facebook pages into local businesses.
Ensure local businesses maximize use of social networking.	Establish cultural norm that website is a requirement of every profitable business.	Continue training classes on using Facebook.
Ensure all parts of the region benefit from tourist traffic.	Promote activities and attractions beyond traditional tourist areas.	Take regional approach in marketing Rutland, Killington, and the Lakes Region.

# Southern Windsor County Regional Planning Commission

## SECTOR ANALYSIS: BUSINESS

### Current Conditions

Businesses in the region generally fall into one of two categories. They are either relatively tech savvy, having adopted new broadband technologies into their workflows or they have adopted broadband technologies only as they become necessary. Email is almost universally accepted as the primary conduit for communication and exchange of information with other technologies being quite varied in their adoption.

SECTOR QUICK FACTS
<ul style="list-style-type: none"> <li>• Greatest variation of broadband utilization is within this sector.</li> <li>• Many businesses are using websites, newsletters, and/or social media as advertising outlets rather than newspapers.</li> <li>• While some companies are cutting edge, others are struggling to transition to mainstream technologies.</li> </ul>

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Every business involved in this project has a website that they use to convey business and contact information.</li> <li>2. Every business uses broadband technologies to stay in contact and inform current customers/members.</li> <li>3. Most business owners or managers are very open to using new technologies in their businesses.</li> </ol>	<ol style="list-style-type: none"> <li>1. Minimal budgeting for hardware, software, tech support, and staff training.</li> <li>2. Some businesses were not able to keep the content of their websites or Facebook pages timely or current.</li> <li>3. Many companies stated that they could improve their use of broadband technologies to reach new customers.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. The internet allows businesses in rural areas to reach a much larger potential audience.</li> <li>2. Partnering with other businesses to decrease costs associated with broadband technologies such as advertising or technical assistance.</li> <li>3. Once businesses implement new broadband technologies, they feel that they were well received by the general public.</li> </ol>	<ol style="list-style-type: none"> <li>1. Many customers do not think to look online for information about local businesses.</li> <li>2. It is hard for small businesses to allocate substantial amounts of time or money to broadband related projects as it is often hard to see a measurable return on investment.</li> <li>3. Many businesses did not know where to look to find new opportunities in broadband technology specific to their business.</li> </ol>

**Goals/Strategies/Actions**

GOALS	STRATEGIES	ACTIONS
Educate people about the types of information they can find online.	Use more traditional advertisements to guide people to interactive online content.	Mention websites, newsletters, twitter feeds, Facebook pages, etc. in newspaper ads, business cards, letterheads, email signatures, etc.
Keep websites and social media timely and current.	Decide which technologies are the best fit for your organization.	Choose only as many technologies as can be maintained with fresh and engaging content.
Use broadband technologies to reach new customers.	Increase the ease with which new customers can find businesses on the internet.	SEO, advertising on Facebook or Google ad words, plugging your social media or website in more traditional forms of advertisement.
Maintain superior IT support for your business.	Investigate options and be informed about the different businesses in the area that offer support for broadband technologies.	Ask similar businesses who they have maintain their computer network.

## SECTOR ANALYSIS: EDUCATION

### Current Conditions

Education opportunities throughout the SWCRPC region are primarily centered on standard K-12 classroom education. Many of the schools have been early adapters of broadband technology and technology education.

The River Valley Technical Center in Springfield along with the Vermont Virtual Learning Cooperative are non-traditional schools utilizing both full online classes along with hybrid classes to expand class offerings.

There exist numerous opportunities and programs for schools to take advantage of to increase online offerings from Ed-2-Go to self-interest classes through Vermont Interactive Television.

SECTOR QUICK FACTS
<ul style="list-style-type: none"> <li>Within the SWCRPC region, there are four high schools, eleven elementary/middle schools, a technical high school, the Vermont Virtual Learning Cooperative (online school) and a CCV location in Springfield.</li> </ul>

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>Vermont Virtual Learning Cooperative is a huge asset to RVTC and online education.</li> <li>There exists a statewide model and contract for classes (Ed-2-Go).</li> <li>Many teachers are willing to push and try new technologies in the classroom.</li> <li>Reliable network service from VTel.</li> <li>Dedicated wired access in most academic classrooms.</li> <li>Some school are offering school based email for students through Google (Gmail).</li> </ol>	<ol style="list-style-type: none"> <li>Technical support.</li> <li>Widespread misconception and perhaps fear about the use of computers and technology in education.</li> <li>Regional demographics and the digital divide.</li> <li>A lack of time and resources for keeping current (website, etc.).</li> <li>Lack of training on software and usage.</li> <li>Antiquated network and hardware due to budget constraints.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>Linking opportunities and available courses.</li> <li>Opportunity to reach a greater audience and collaborate with other education providers.</li> <li>Fully utilize available equipment in every school district (online collaboration).</li> <li>Schools offering a 'tech night' in classrooms.</li> <li>Availability of a dedicated workstation for parent grade access in schools.</li> </ol>	<ol style="list-style-type: none"> <li>Greater access throughout the regional school districts.</li> <li>Bridging the digital divide that exists region wide.</li> <li>Limiting the redundancy is course offerings through online collaboration.</li> <li>There is a need for standardize course descriptions statewide.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Develop a more robust and effective marketing campaign for schools and events.	Develop a consistent and constant marketing plan.	Utilize Craigslist, available social media, website, other tools.

Tailoring education to meet 21 <sup>st</sup> century skills.	Utilizing existing resources to identify needs.	VTVLC, customize trainings and education for large employers within the region.
Increase utilization of current technologies and resources.	Outside resources for training, continued support from school administration.	Develop consistent follow-through on technology goals and trainings.
Provide broadband access to school families at a reduced cost.	Identify funding and mechanisms for deployment.	Begin program to bring broadband into homes that are currently underserved.
Integrate technology into non-technical programs such as agriculture, shop, etc.	Create sustained partnerships with organizations that provide non-traditional education.	Identify classes best suited for hybrid format.
Develop independent technology education class.	Identify needed tools for successful class.	Utilize available funding for class.

## SECTOR ANALYSIS: ENERGY/UTILITIES

### Current Conditions

Regional utility efforts within the SWCRPC region vary from statewide utilities such as Central Vermont Public Service to locally owned companies like Ludlow Electric.

### SECTOR QUICK FACTS

- Conduct outreach on public policy concerns.
- Fuel oil and LP gas remain the largest percentage of fuels used for home heating.

In addition to energy production and delivery is the coordination of recycling within southern Windsor and northern Windham Counties. The Southern Windsor / Windham County Solid Waste Management District is charged with coordinating these efforts throughout thirteen towns. The district has provided planning and other services to member towns since 1981.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Broadband is helpful in the state, local, and regional communications.</li> <li>2. Good interactive websites.</li> </ol>	<ol style="list-style-type: none"> <li>1. There exists a downstream lack of communication.</li> <li>2. Need additional trainings for full optimization of websites.</li> <li>3. Lack of education about greater broadband implementation.</li> <li>4. Cost.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Completion of required tasks may be done online.</li> <li>2. Available technologies may create greater efficiency in work.</li> <li>3. Good access available at needed and necessary locations throughout the region.</li> </ol>	<ol style="list-style-type: none"> <li>1. 'Technophobia' or reluctance to accept changes.</li> <li>2. Lack of broadband access throughout region.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Education and outreach for greater broadband implementation.	Identify tools to 'sell' the usage of broadband.	Mandate online usage for required tasks.
Reduce carbon footprint through telecommuting.	Develop telecommuting policy and identify needed hardware and software.	Seek permission from appropriate boards.
Utilize alternative forms of meetings for operators and colleagues.	Increase operators ability and willingness to use broadband.	Buy hardware and software.
Increase education on available online, broadband tools to assist in current job duties.	Identify collaborative tools that will create ease of workflow, greater capacity.	Read and utilize online suggestions.

## SECTOR ANALYSIS: HEALTHCARE

### Current Conditions

Within the SWCRPC region there are two full service hospitals along with a number of clinics, mental health practices and other associated health care facilities. 2010 U.S. Census figures indicate that 44% of the population within the region is currently 50 years or older. With an aging population, the demand for health care services will continue to rise in the coming years.

SECTOR QUICK FACTS
<ul style="list-style-type: none"> <li>• Many healthcare providers throughout the SWCRPC region have broadband technology implemented widely.</li> <li>• Most providers have excellent wireless networks that are utilized by both staff and visitors.</li> </ul>

In addition to local efforts, health care providers within the region are participating members of the New England Tele-Health Consortium which is working to provide a sustainable online healthcare network.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Large healthcare providers have dedicated high bandwidth connections linking offices throughout the region.</li> <li>2. Utilizing available tools for offsite access to email, files, etc.</li> <li>3. Ability and use of statewide videoconferencing capacity.</li> <li>4. Additional functionality and tools are being adopted as available.</li> <li>5. Electronic medical records are utilized throughout the region by providers.</li> <li>6. Bedside documentation being completed through wireless network.</li> <li>7. Paperless order entry forms.</li> <li>8. Achieving meaningful use by providers.</li> </ol>	<ol style="list-style-type: none"> <li>1. Latency in available lines creates slowdown in workflow.</li> <li>2. Some providers are still using paper records.</li> <li>3. There remains concern over privacy and broadband adoption in healthcare.</li> <li>4. Transition to paperless environment is difficult initially across an organization.</li> <li>5. Common wifi problems including security of network, etc.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. New England Health Care Consortium is designed to bring together organizations.</li> </ol>	<ol style="list-style-type: none"> <li>1. Access at home for rural physicians to complete paperwork.</li> <li>2. Protecting network from attack but not limiting user access.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Providing access to staff at all locations.	Identify areas of limited access.	Coordinate with broadband providers in the region to bring greater access to critical facilities.

Ability to complete necessary work from home.	Identify areas of limited access.	Coordinate with broadband providers in the region to bring greater access to underserved areas.
Move into day to day usage of available broadband technology.	Create additional opportunities from broadband usage in everyday work environment.	Prioritize broadband usage throughout the economic sector.
Keep current is usage of available technologies.	Continued training for staff and all end users.	Make training available to those interested.

## SECTOR ANALYSIS: HUMAN SERVICES

### Current Conditions

There are many human service organizations within the region and they are primarily dedicated to helping youth, the elderly, and their caregivers.

These organizations often function as non-profits and are often very good at reaching out to their current members with newsletters and email updates. These organizations are often large enough to require a shared network or server and can often have trouble finding adequate support for their technologies.

### SECTOR QUICK FACTS

- Human service providers in our area use broadband technology to stay in close contact with their members.
- Human service organizations are striving to define an appropriate role for internet based technologies in fundraising and solicitation of donations.
- These organizations are generally tech savvy and forward thinking in their approach to technology.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Excellent communication with members and those they provide services too.</li> <li>2. Strong use of broadband technologies to engage and involve people in their programs.</li> <li>3. Human service organizations are generally very good at using broadband to get their message and news events out to the media through press releases and pictures.</li> <li>4. Organizations are using broadband technologies to apply for grants and to find new grants for which they may be eligible.</li> </ol>	<ol style="list-style-type: none"> <li>1. Relatively little innovation in their use of broadband technologies.</li> <li>2. Little time or staff dedicated to broadband related activities.</li> <li>3. Interruption of broadband service severely impacts those that rely heavily on email or other broadband communication in their business (VoIP in some cases).</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Organizations involved in VTel's outreach programs found them to be a very helpful resource in adopting broadband technologies.</li> <li>2. Maintaining several lists of email contacts would provide an efficient way to stay in contact with the different groups they serve.</li> <li>3. Organizations that have adopted new broadband technologies have seen a positive response from the community.</li> </ol>	<ol style="list-style-type: none"> <li>1. Like many other sectors, human service providers have a hard time finding ways to innovate in their field and are unsure of where to look for examples of what can be done.</li> <li>2. Multiple organizations have cited a lack of quality IT support.</li> <li>3. For organizations that serve the very old or very young, certain broadband technologies are not well utilized by their members (think twitter account for a senior center).</li> </ol>

**Goals/Strategies/Actions**

GOALS	STRATEGIES	ACTIONS
Use broadband technologies to increase participation in human service programs.	Create opportunities for citizens to learn about services and become motivated to be more involved in programs.	Develop engaging programs using email, newsletter, Constant Contact, social media, and interactive websites.
Increase donations using broadband technologies.	Define the appropriate place for online communication in soliciting donations from new and prospective supporters.	Develop and implement a strategy for solicitation of donations or membership using broadband technologies.
Use broadband technologies to reach targeted audiences.	Develop email contact lists that can be used to target different members of their organizations (board of directors, donors, constituents, local businesses, etc.).	Use mailing lists to send messages tailored to different audiences.

## SECTOR ANALYSIS: LIBRARIES

### Current Conditions

Libraries are important providers of broadband access for residents within our region, with one library reporting over 1,500 broadband usages per year by patrons. Librarians cite job hunting and applying for government services to be the top tasks performed online.

### SECTOR QUICK FACTS

- Robust use of Websites, widely used by the local community especially the calendar of events.
- Good broadband connectivity due to downtown locations.
- Above average technology adoption and use by staff.

Many libraries in our area are transitioning to online automation and remote hosting of their catalog by companies such as Library World including applications for smartphones that allow users to search their entire collection and access real time data.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Adequate technical capacity among staff members.</li> <li>2. Staff are open to new uses/applications of broadband in their organizations.</li> <li>3. Serve as points of access for broadband in the community-free wifi.</li> <li>4. Allows for access to Vermont’s Universal Classes.</li> <li>5. Many libraries have moved to an online card catalog system.</li> <li>6. Good staff awareness of technology and trainings available.</li> </ol>	<ol style="list-style-type: none"> <li>1. Limited resources make increased broadband adoption difficult.</li> <li>2. Inadequate technical support in some cases.</li> <li>3. Lack of hardware restricts access for library members.</li> <li>4. Need for creating awareness of available resources through public education and development of appropriate social media.</li> <li>5. Re-start public education technology classes.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. High community involvement and usage of services.</li> <li>2. Increasing broadband availability may increase traffic through additional sources, including e-Vermont.</li> <li>3. Taking advantage of the e-rate / Fiber Connect.</li> </ol>	<ol style="list-style-type: none"> <li>1. Multiple websites make it difficult to look for community events in one place.</li> <li>2. Existing latency is wireless network.</li> <li>3. The current e-rate does not apply to internet costs.</li> <li>4. External socio-economic barriers put a heavy demand on library internet usage.</li> <li>5. As wireless becomes more widely available, there is less demand for service at the libraries.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Increase usage through the acquisition of additional hardware (computers).	Seek additional funding through donations, grants, and budgeting.	Purchase and install hardware including wifi access points and necessary furniture.

Increase traffic on library websites.	Create or better maintain library websites to make them more user friendly and engaging.	Train staff using Vermont universal classes and have them add content.
Increase library membership and donations.	Implement an easy online method for becoming a member or donating to the library.	Investigate the cost and technical difficulties associated with using PayPal or other online services.
Provide public access to broadband.	Target individuals who may be otherwise unable to connect to the internet due to social or economic barriers.	Continue to improve the wifi signal within each library and the number of computers available to the public.

## SECTOR ANALYSIS: MEDIA

### Current Conditions

Media within the SWCRPC region consists of several newspapers, radio stations, and local access television. Newspapers range from small to medium sized with many existing entirely online.

Media organizations within the region provide important and useful content for other organizations broadband technology efforts.

SECTOR QUICK FACTS
<ul style="list-style-type: none"> <li>• There are many local media sources including print newspapers, public access television, radio, online papers, and bloggers.</li> <li>• Media organizations fall into two categories: web-based companies who avoid the high overhead associated with print and videomedia and more traditional media organizations who are using broadband technologies to reach a much broader audience with their content.</li> </ul>

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Local media organizations do a good job providing very localized news to the area.</li> <li>2. Local media sources are a good outlet for public involvement.</li> <li>3. Small size of many media organizations allows them to be more nimble and flexible in their adoption of broadband technologies.</li> </ol>	<ol style="list-style-type: none"> <li>1. Small media organizations do not have the ability to fund extensive online campaigns.</li> <li>2. The industry is often focused on daily creation of new content rather than in depth stories that would provide more useful content for others to link to.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Broadband gives rural media organizations the ability to reach a national or even global audience.</li> <li>2. A larger audience may increase membership and donation fees as well as advertisements.</li> <li>3. Partnering with similar organizations to combine forces for stories that cover several towns or counties (similar to associated press).</li> </ol>	<ol style="list-style-type: none"> <li>1. No one place for folks to look for a local news source (news clearing house).</li> <li>2. Many individuals are not aware that they can find local news online or are hesitant to transition to a paperless news source.</li> <li>3. Small organizations can often take on too many different outlets for their media (blog, videos, website, social media, etc.) and can have a hard time keeping them all relevant.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Provide local news coverage to rural towns that are not represented by larger news corporations.	Use broadband technologies to reduce overhead and operating costs of small media organizations.	Identify reporters in rural towns who can produce content for online consumption.
Increase the general public's knowledge of local media sources.	Create social media presence to increase public awareness.	Develop a plan to make it work that is not overly time consuming.

Provide a forum for public involvement in current events.	Use broadband technologies to foster public comment and involvement in local events and projects.	Utilize social media and comment boxes on websites and blogs to facilitate conversation.
Increase membership and revenues.	Use broadband technologies to allow citizens to more easily subscribe and donate to media organizations.	Develop interactive websites that allow citizens to become members or donate online.

## SECTOR ANALYSIS: MUNICIPAL GOVERNMENT/EMERGENCY SERVICES

### Current Conditions

Many towns and emergency service providers throughout the region currently offer town maintained websites utilized for the posting of meeting agendas, minutes, notices, etc. While some may use available technologies (Facebook, website, etc.) for community discussions, there is not ubiquitous adoption throughout the sector.

#### SECTOR QUICK FACTS

- Wide discrepancies from town to town in terms of broadband use and implementation.
- Topography is a limiting factor throughout the region for widespread use.
- Cost, training and availability are the largest limiting factors.

Emergency service providers are primarily focused on the development and adoption of a widespread communication system. There is a great need for redundancy in communication, especially during atypical events.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Current ability to maintain websites and use as a resource for meeting agendas, minutes, etc.</li> <li>2. Use of both public and private online forums for the exchange of ideas.</li> <li>3. Facebook place pages.</li> <li>4. Current abilities and comfort with common technologic applications.</li> <li>5. Broadband creates greater job ease and functionality.</li> </ol>	<ol style="list-style-type: none"> <li>1. Lack of knowledge on available products and implementation measures.</li> <li>2. Lack of broadband access throughout region.</li> <li>3. Lack of ability to apply new technologies as they become available.</li> <li>4. Difficult to find IT support within the region.</li> <li>5. Expense of greater broadband implementation.</li> <li>6. Overcoming reluctance to move outside of current comfort levels.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Develop and maintain more engaging websites.</li> <li>2. Taking advantage of available resources to reach a broader audience.</li> <li>3. Use online tools to host public meetings and feature documents, etc.</li> <li>4. Creation of interactive mapping tools.</li> </ol>	<ol style="list-style-type: none"> <li>1. Lack of cell service statewide.</li> <li>2. Topography limits infrastructure deployment.</li> <li>3. Training for staff to develop comfort level with new technologies.</li> <li>4. Regional demographics limit ubiquitous adoption due to age and socio-economic barriers.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Utilize additional resources to reach a broader audience for events.	Identify forums for greater public engagement.	Contact available outlets to request involvement.
Make better use of current websites.	Educate staff on functionality of websites and maintenance.	Read through current content to ensure accuracy and up.

Create ability for greater communication capacity between towns and residents.	Identify the necessary tools required.	Keep contact information on website current.
Move away from face to face to communication in meetings.	Greater use of technology in public meetings.	Purchase necessary hardware/software.
Greater technology implementation at all levels (smart phones, laptops).	Research opportunities for greater technology involvement.	Attempt to incorporate new technology into everyday use.
Create ability for telecommuting.	Develop and adopt telecommuting policy.	Increase available connections to make technological needs available.
Increase technical capacity throughout sector.	Identify training gaps and develop plan to meet current needs.	Increase training opportunities for staff at opportune times and locations.
Create or adopt policy for the public archiving of information.	Determine the legality of necessary information.	Implement plan for reducing paper records, develop greater ability to securely store and access records.
Increase use and presence of social media.	Generate content appropriate and suitable for social media outlets.	Publish content onto Facebook, website, and others.
Greater training on increased used of current software for staff.	Identify commonly used programs and training needs for greater use.	Develop a plan for training implementation.
Create greater access to affordable software.	Find available low cost solutions for greater software distribution.	Purchase software as needed.
Expand the potential for new technology (i.e. satellite).	Investigate the feasibility of each source.	Determine regionally what is most effective and cost-effective.
Develop seamless transition between communication sources (redundancy).	Investigate the uses of broadband for constant communication.	Train department staff on creating smooth transitions during emergencies.
Create a system for the effective utilization of available resources.	Investigate a single conduit for emergency communication.	Discuss as agenda item at LEPC 3 meetings in 2012.
Creating ability to provide data and updates remotely.	Identify the needed hardware and software.	Develop training process for implementation.
Ensure broadband consistency during atypical events.	Identify current inadequacies across response departments.	Develop training plan to ensure consistent level of ability.

## SECTOR ANALYSIS: NON-PROFIT/SERVICES

### Current Conditions

Broadband utilization varies widely across this sector due to the many different types of nonprofit and service organizations in our region.

The greatest use of broadband technology within nonprofit organizations continues to be in their communication and outreach efforts. Nonprofits are using the internet to market their organizations, conduct surveys, in their communication and outreach, and store or backup their data.

SECTOR QUICK FACTS
<ul style="list-style-type: none"> <li>• Wide variation in adoption of broadband technologies.</li> <li>• Generally quick to adopt new technologies but funding or maintaining projects long term can be an issue as staff and board members change.</li> </ul>

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Staff is generally tech savvy.</li> <li>2. Use of social media and mobile technology is above average.</li> <li>3. Nonprofits are very good at keeping their board and members well informed using internet based communication such as email, newsletters, and services such as constant contact.</li> </ol>	<ol style="list-style-type: none"> <li>1. Similar to other sectors, there is often minimal allotment of time or funds for the adoption of new broadband technologies.</li> <li>2. In some instances, there is a lack of broadband usage and support from those who are served by non-profits.</li> <li>3. Many organizations are interested in increasing their utilization of broadband technologies but are unsure where to start or how to get help.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Greater outreach on all available platforms would increase visibility, public participation, and funding opportunities.</li> <li>2. Use of broadband technology may increase organizations' eligibility for certain grants.</li> </ol>	<ol style="list-style-type: none"> <li>1. Regional socio-economic barriers can be prohibitive to wider broadband usage.</li> <li>2. Lack of high speed internet service in the region is often cited as a concern but this trend is diminishing with greater access.</li> <li>3. Folks are not in the habit of using broadband technology to access information related to non-profit organizations.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Promote non-profits and their missions through the use of broadband technologies.	Increase public awareness of available online resources.	Use traditional media sources to reach citizens who are unaccustomed to using broadband technology and inform them of the ways they can use the internet to interact with your organization.

<p>Increase support base of nonprofit and service organizations.</p>	<p>Use broadband technology to market the organization and solicit donations or membership.</p>	<p>Develop and implement an email or newsletter campaign to inform citizens of how the nonprofit is benefitting the community and how they can help.</p>
<p>Increase funding for the organization and streamline the grant writing process.</p>	<p>Investigate available online applications for current grants and identify new grants for which your organization may be eligible.</p>	<p>Transition to online grant applications wherever possible, especially for grants that are awarded annually or periodically.</p>

# Two Rivers-Ottawaquechee Regional Commission

## SECTOR ANALYSIS: BUSINESS

### Current Conditions

- Mix of comfort level and skill in using computers and the internet.
- Many businesses are using social media to their advantage.
- Towns that lack broadband access are struggling to keep existing businesses and attract new ones.
- Some businesses have developed websites, others still have not.
- Businesses are conflicted about telecommuting. Some have already developed telecommuting policies for employees, while other businesses have shied away from the model. In general, telecommuting is increasing.
- Proliferation of home-based businesses in areas that have broadband access.

### SECTOR QUICK FACTS

- 58% of small businesses in the U.S. do not have a website.
- Small businesses can create a website for free with the help of Google staff in Vermont. To learn more, visit: <http://www.gybo.com/vermont/>.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Younger generation of workers is more likely to be proficient in computer and internet literacy.</li> <li>2. People with broadband access at home can 'telecommute' to work on a daily basis or in the event of an emergency.</li> <li>3. Staff with broadband access at home can ensure smoother operations during a crisis (for instance, if the worksite is flooded).</li> <li>4. Free access to some business products and tools. Ex: e-mail, accounting services, social media for advertising, the creation of your business' website, etc.</li> <li>5. Ability to expand customer base beyond Vermont.</li> <li>6. Ability for faster, more direct communication between producer and consumer.</li> </ol>	<ol style="list-style-type: none"> <li>1. Some older businesses are struggling to transition into the digital age.</li> <li>2. IT support is expensive.</li> <li>3. Keeping up-to-date with technologies requires considerable staff time and money.</li> <li>4. Website design is not mandatory in most high school or college curriculums, thus many business students graduate into the workforce without such skills.</li> <li>5. A slower internet speed can mean that some online tasks take longer, leading to lower productivity on the part of a worker, and a decrease in income. (If one wishes to stay competitive, she or he must charge similar rates as their competitors with faster internet connections).</li> <li>6. Some businesses in designated downtowns do not have functional websites. This can detract from the ability of a downtown to develop its online presence, without which a town can become less attractive as a 'destination' for visitors/tourists conducting online vacation searches.</li> </ol>

EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Ability to market one’s business for free (i.e. Facebook).</li> <li>2. Better, faster communication with clients.</li> <li>3. Expanding pool of customers.</li> <li>4. Ability to conduct business from anywhere (including one’s home or during a trip to another country).</li> <li>5. Ability to transmit and receive large amounts of data quickly.</li> <li>6. Ability to refine business skills through free, online webinars.</li> <li>7. Expanding access to information, and increasing ability to share resources with other entities.</li> <li>8. Ability to manipulate data quickly and learn from mistakes, trends, etc.</li> </ol>	<ol style="list-style-type: none"> <li>1. Customers are mixed in terms of digital literacy, requiring businesses to offer multiple avenues for purchasing products, customer service, etc. This can be inefficient in terms of time and money.</li> <li>2. Staff members are mixed in terms of digital literacy, requiring special training for some.</li> <li>3. Staff members are mixed in terms of their ability to access information via broadband from home. This can create an unequal playing field in the work environment if employers rely on after-hours communication with staff.</li> <li>4. Difficulty of staying current with ever-changing technologies.</li> <li>5. Difficulty of finding one ‘catch all’ IT support person.</li> <li>6. Legal documentation for the business community is increasingly found online.</li> </ol>

**Goals/Strategies/Actions**

GOALS	STRATEGIES	ACTIONS
Enhance capacity for Vermont based businesses to succeed.	<p>Increase knowledge of and access to trainings on topics like social media marketing, QuickBooks, web design, etc.</p> <p>Develop telecommuting policy to be implemented in the event of an emergency.</p>	
Enhance ability of visitors to conduct business while staying in Vermont.	Keep up-to-date lists of public access points and publish them.	<p>Create an inventory of public access points (including locations &amp; schedules).</p> <p>Advertise universal broadband access through Regional Chambers of Commerce, the Vermont Department of Economic, Housing, and Community Development, and the Vermont Department of Tourism &amp; Marketing.</p>

<p>Create (or enhance) a vibrant online presence for designated downtowns.</p>	<p>Develop designated downtown-wide trainings for business owners and staff.</p> <p>Coordinate web design with all designated downtown businesses through Regional Chambers of Commerce.</p> <p>Debate whether creating a public Wi-Fi network in the downtown area will bring new business, or detract from existing ones.</p>	
<p>Increase telecommuting at workplaces.</p>	<p>Educate employers on benefits and drawbacks associated with telecommuting.</p> <p>Show how to design an effective policy that is tailored to the unique needs of a specific business.</p> <p>Provide existing model policies for employers to review.</p>	<p>Identify leadership for a trial 'Telecommuting Month' at the Regional Planning Commissions.</p>

## SECTOR ANALYSIS: EDUCATION

### Current Conditions

- Not all public K-12 schools have broadband access.
- Many schools (including K-12, college, and adult education) have integrated the use of computers and the internet into classroom work and homework.
- The ‘Digital Divide’ is an increasing problem (the gap between students who have computer and broadband access at home, and those who do not). The ‘Digital Divide’ creates an unequal playing field among students.
- Some K-12 public schools are providing each student in select grades or classes with a personal computer or netbook.
- As an ‘e-Vermont’ community, Bridgewater received support from the Vermont Council on Rural Development (VCRD) to develop its municipal website and digitize archives at the Old Bridgewater Historical Society.
- Teachers and administrators are increasingly using e-mail and blogs to communicate with students’ parents.

SECTOR QUICK FACTS
<ul style="list-style-type: none"> <li>• In 2003/2004 there were a total of forty-seven K-12 educational facilities within, or serving, the region.</li> <li>• The Two Rivers-Ottawaquechee region is home to many higher education institutions, including: Vermont Technical College, Vermont Law School, and Community College of Vermont.</li> </ul>

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Schools are well positioned to instruct children and adults in digital literacy.</li> <li>2. Schools are sometimes eligible for grants from the federal government or from private foundations to enhance computer infrastructure.</li> <li>3. Public schools (both K-12 and higher education) with computer labs are a community asset.</li> <li>4. Most schools have an IT person on staff.</li> <li>5. Younger teachers are usually proficient in computer and internet skills.</li> <li>6. Some schools allow students to live anywhere in the world while participating (via broadband) in classes located in Vermont.</li> </ol>	<ol style="list-style-type: none"> <li>1. Some students do not have access to a computer and/or broadband connection at home.</li> <li>2. Difficulty of staying current with rapidly changing technology (this requires a significant time commitment from teachers).</li> <li>3. Designing a network that allows students to access educational resources, while shielding them from inappropriate content.</li> <li>4. Some teachers did not grow up with computers or broadband, and need additional training.</li> <li>5. Difficulty of combatting plagiarism or cheating given students’ access to the internet in class (via cell phone) or while at home.</li> </ol>

EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Increased educational resources and opportunities.</li> <li>2. Ability to hone digital literacy skills that are essential in the job market.</li> <li>3. Ability to participate in classes taught at other schools located far away. This contributes to a more 'level playing field' for students who go to school in lower-income districts with fewer course offerings. This also helps adults pursue continuing education while balancing life's competing priorities (work, home, and school).</li> </ol>	<ol style="list-style-type: none"> <li>1. Negotiating with insurance companies to cover damage done to computers by students while off-campus, such as at home.</li> <li>2. Ensuring that the digital divide does not adversely affect students' ability to learn and achieve in school.</li> <li>3. Ensuring that the digital divide does not socially isolate students who are at opposite ends of the technological spectrum.</li> <li>4. Ensuring that every student graduates from K-12 with a certain level of competency in computers and internet use.</li> <li>5. Ensuring that every student has broadband access, regardless of whether a school 'opted out' of receiving a fiber connection.</li> </ol>

**Goals/Strategies/Actions**

GOALS	STRATEGIES	ACTIONS
Ensure that all students have sufficient access to a computer and high-speed internet, enabling them to perform well in school.	<p>Encourage schools to apply for grants to update computer infrastructure.</p> <p>Consider a laptop lending program for students who lack computer hardware at home.</p>	
Expand definition of 'literacy' to encompass computer and internet skills. Set digital literacy standards for students and teachers.	<p>Ensure that digital literacy is included in state education policy, goals, and the K-12 curriculum standards.</p> <p>Offer 'booster' classes for students that need to improve their tech skills. Likewise, these courses should be available to teachers as well.</p>	
Ensure that students are protected from online bullying.	Observe best practices at other schools for combatting online bullying.	<p>Create an anti-bullying policy that covers online conduct.</p> <p>Review the policy often with students to ensure that everyone understands the policy and the consequences of a violation.</p> <p>Post signs that encourage students to report any harassment they experience.</p>

<p>Increase public (non-student) access to computers and broadband in public schools.</p>	<p>Research existing examples of schools in Vermont that allow non-student access to computer labs and digital literacy classes.</p> <p>Research how internet providers can help schools design for safety, by opening up certain types of websites and programs for specific users.</p>	<p>Talk to school administrators about success stories, such as the computer classes and drop-in sessions at the Randolph Technical Career Center.</p>
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## SECTOR ANALYSIS: ENERGY/UTILITIES

### Current Conditions

- The Two Rivers-Ottawaquechee region includes TransCanada facilities, GMP-CVPS and Washington Electric Coop, several small private water companies, and municipal water and wastewater.
- Significant upgrades were recently completed to our region’s largest wastewater facilities in Quechee and White River Junction.

SECTOR QUICK FACTS
<ul style="list-style-type: none"> <li>• Smart grid meters are slated to be installed at most Vermont residences by the end of 2012.</li> <li>• “‘Smart grid’ is an upgraded electric system that uses fiber optic cable and digital technology to relay information back and forth between the utility and various components of the electric grid.”</li> <li>• The smart grid will allow for two-way communication between the consumer and utility, sending information to the utility about demand in-real time, and allowing the consumer to make more informed energy use choices.</li> </ul>

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Many locally managed providers.</li> <li>2. Most systems are not bonded.</li> </ol>	<ol style="list-style-type: none"> <li>1. Infrastructure upgrades are needed.</li> <li>2. Training is needed for skilled employees to upgrade their Supervisory Control and Data Acquisition (SCADA) and other technical skills.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Outreach and education on public needs.</li> <li>2. Future upgrades can be planned to accomplish smart growth techniques.</li> <li>3. Smart grid conservation can be implemented with broadband access.</li> </ol>	<ol style="list-style-type: none"> <li>1. Public takes for granted and doesn’t understand critical needs.</li> <li>2. Impacts on community (construction, rate structure) of the needed upgrades.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Encourage conservation of natural resources.	Use integrated IP tools to accomplish this.	For instance, encourage smart metering.
Upgrade infrastructure.	Plan upgrades using usage data.	Apply for feasibility studies through federal grants.
Secure digital training opportunities for energy/utility managers.	Explore integrated web tools to meet this goal.	Research and publicize webinars to upgrade SCADA, Geographic Information Systems (GIS), and management skills.

## SECTOR ANALYSIS: HEALTHCARE

### Current Conditions

- Many hospitals and clinics in the TRO region have already switched over to utilizing digital records, or are in the process of making that transition.

### SECTOR QUICK FACTS

- Gifford Medical Center (Randolph, VT) and Dartmouth Hitchcock Medical Center (Lebanon, NH) are the two major hospitals serving residents in this region.
- Many doctors' offices are adopting electronic health record systems in response to government incentives.
- As of March 2012, incentive payments had been issued to 116 eligible professionals and four hospitals across Vermont.

### Strengths/Weaknesses/ Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Ability for doctors to assess patients remotely on an as-needed basis (for instance, a specialist at home could look at x-rays of a patient in the emergency room).</li> <li>2. Medical records are legible.</li> <li>3. Several doctors can simultaneously access and input data in the same patient's account, theoretically allowing for faster, better coordinated care.</li> <li>4. Staff can easily see the schedule of all providers in the hospital and whereabouts of all patients.</li> <li>5. Continuing education is easier to pursue.</li> <li>6. Digital access to medical references is convenient and much cheaper; access from home allows medical students/hospital interns to continue research from home.</li> <li>7. Digitized records have made billing easier.</li> <li>8. Greater uniformity of patient records.</li> </ol>	<ol style="list-style-type: none"> <li>1. Less 'face time' with patients because doctors are staring at a screen or typing.</li> <li>2. Privacy issues concerning patient information.</li> <li>3. Software programs that carry medical records can be difficult to navigate. This is time consuming in general and risky when a doctor is in a time-sensitive situation with a patient.</li> <li>4. Inputting data is time consuming and tedious.</li> <li>5. Not all doctors and nurses have broadband at home, making it difficult to work remotely if necessary.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Increased patient access to specialists during their off-hours (for example, in the event of an emergency).</li> <li>2. Increased patient-doctor communication options (i.e. e-mail).</li> <li>3. Ability to remotely monitor patients who might be difficult to transport, such as the elderly or those with disabilities. (Note: remotely checking up on a patient is not intended to replace an in-person visit.)</li> <li>4. Ability to graph data (i.e. laboratory results, blood pressure, etc.) in quick and reliable fashion to monitor an individual's health trends.</li> </ol>	<ol style="list-style-type: none"> <li>1. Ensuring that charts stay organized (the tendency with digital records is to have too many notes, which makes it hard to find important information).</li> <li>2. Ensuring that software 'short cuts' (copy/paste/protocols) do not misrepresent the truth.</li> </ol>

**Goals/Strategies/Actions**

GOALS	STRATEGIES	ACTIONS
Ensure privacy of individual’s digital medical records.	Investigate privacy policies at local hospitals and standards at the state level.	Advocate for change if necessary.
Encourage continuity of care for patients through digital means of communication.	Encourage doctors and nurses to continue maintenance care for patients from a distance when possible: via telephone or e-mail access. Note: This is not intended to replace necessary in-person visits.  Research existing examples of this kind of policy in action.	Report findings of research at local medical conferences.
Ensure that doctors are well trained in balancing computer and face time during appointments with patients.		Work with local medical schools, as well as hospitals and clinics, to provide this type of training where it is lacking.

## SECTOR ANALYSIS: HUMAN SERVICES

### Current Conditions

- Human services organizations often work with vulnerable populations (those less likely to have broadband access), including lower-income residents, people who live in remote rural areas, those with disabilities, and the elderly.
- Some organizations offer free public computer and internet access.
- These organizations often offer digital literacy classes/workshops.

SECTOR QUICK FACTS
<ul style="list-style-type: none"> <li>• “52 percent of Americans in households with annual incomes of \$50,000 or below have broadband at home, compared with 87 percent of those in households with incomes above that level.”</li> <li>• “Senior citizens (those over the age of 65) continue to trail the national average in broadband adoption with a 35 percent broadband-at-home penetration rate.”</li> </ul>

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Ability to help close the ‘Digital Divide’ by offering free public internet access and digital literacy classes.</li> <li>2. Free or low-cost opportunities for patrons: educational and communication resources, citizen engagement opportunities, etc.</li> </ol>	<ol style="list-style-type: none"> <li>1. Difficulty finding and paying a ‘catch-all’ IT person. (IT consultants are expensive and tend to be too specialized to provide solutions to all computer/ internet issues.)</li> <li>2. Difficulty maintaining the privacy of internal staff documents while also allowing the public to use the same internet connection.</li> <li>3. Lack of funding to purchase infrastructure and adequately staff computer labs and classes.</li> <li>4. Difficulty of staying up-to-date with changing technologies.</li> <li>5. Mix of skill levels among staff in terms of digital literacy.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Ability to empower vulnerable populations with computer and broadband access.</li> <li>2. Ability to promote digital literacy. Topics include: e-mail, popular software programs, job searching, resume building, and more.</li> <li>3. Ability to help patrons find additional public access points and free or low-cost digital literacy trainings.</li> <li>4. Increase citizen participation in the community by introducing patrons to websites for local and state government, the closest library, as well as neighborhood listservs like <a href="http://www.frontporchforum.com">www.frontporchforum.com</a>.</li> </ol>	<ol style="list-style-type: none"> <li>1. Difficulty of keeping up-to-date with changing technology.</li> <li>2. Difficulty of finding the funding (both in terms of hardware and staff time) to provide patrons with the best digital access and education.</li> <li>3. Helping patrons fill out applications for government services.</li> </ol>

**Goals/Strategies/Actions**

GOALS	STRATEGIES	ACTIONS
Connect patrons with additional local opportunities to practice computer and internet skills.	<p>Increase patrons' knowledge of existing opportunities.</p> <p>Increase patron's knowledge of available assistive technologies for computer and internet use, and how to access them/where to find them. For example: larger keyboards, magnifying programs for the desktop, etc.</p>	<p>Publish information on public access points and trainings in a highly visible location, preferably close to the public computer area, if the organization has one.</p> <p>Work with disabled patrons and the staff at VocRehab Vermont to determine which assistive technologies would be most helpful for computer and internet use, and then borrow these for a trial period. If patrons find the technologies useful during the trial period, the organization should attempt to purchase such technologies.</p>
Help patrons stay connected with friends and family around the globe.	Educate patrons about different ways they can stay connected to friends and family around the globe and foster opportunities for them to learn how to do so.	<p>Create a physical place within the organization where patrons can utilize programs like Skype.</p> <p>Create free e-mail accounts for patrons who do not have one and teach them how to use it.</p> <p>Connect patrons with <a href="http://www.frontporchforum.com">www.frontporchforum.com</a> and encourage them to read about their neighborhood and participate in the conversation.</p> <p>Connect patrons with illnesses or disabilities to online support groups by using an online search engine to find them.</p>
Decrease stress on human service organizations as some of the only 'digital literacy providers.'	Encourage public schools to open their computer labs after-hours for drop-in sessions, as well as structured trainings that are free and open to everyone.	<p>Organize a meeting with local school administrators and staff at human services organizations to discuss ways to expand digital literacy learning opportunities.</p> <p>Advocate for increased funding for human services organizations to provide broadband access and classes.</p>

## SECTOR ANALYSIS: LIBRARIES

### Current Conditions

- Free public access points (computer and broadband).
- Generally underfunded.
- Increasing demand by patrons for access to computers and internet.
- Not enough staff or infrastructure to meet demand.
- Infrastructure at some libraries is outdated.
- Librarians do not have access to consistent IT support.
- Influx of patrons requesting help after State of Vermont put some government services applications online only and told applicants to fill them out at libraries. Additional funding for libraries was not provided.
- Libraries lack resources for continued professional education on technology and technology training methods for librarians.

### SECTOR QUICK FACTS

- In the U.S. “Forty Percent (**40% or 30 million people**) of public access technology users used library computers and Internet access for employment or career purposes. **Among these users, 76 percent used library computers to search for jobs, 46 percent worked on their resumes, and 23 percent received training related to their jobs or professions.** An estimated 3.7 million people were actually hired for positions for which they applied using library computers or wireless networks.” (Emphasis mine.)

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Libraries have established reputations as portals of free and uncensored information, as learning centers and as community centers.</li> <li>2. All services are free to patrons, including computer and broadband access.</li> <li>3. Opportunity to promote ‘digital literacy’ as patrons seek help filling out applications, searching for jobs, or learning a new online skill.</li> <li>4. Individual libraries have active support structure in the VT Department of Libraries.</li> <li>5. Graduate level library science programs now offer significant training in digital literacy. Accordingly, many younger librarians are well versed in technology.</li> <li>6. Libraries are re-inventing themselves as they incorporate modern methods of communication and learning.</li> </ol>	<ol style="list-style-type: none"> <li>1. Difficulty of keeping pace with ever-changing technologies.</li> <li>2. State increasingly relies on libraries to facilitate the online application process for government services, but does not provide funding.</li> <li>3. Outdated infrastructure (lack of funds to upgrade).</li> <li>4. Due to financial constraints, libraries lack all kinds of eContent. For instance, Vermonters have long hold lists for downloadable eBooks and Audiobooks; Many online resources and databases (ex: online Auto Repair manuals, online Legal Forms, etc.) are not available; Currently, there are no downloadable music or movies available via the library lending model for Vermonters (although such vendors exist).</li> <li>5. Limited hours of service to the public.</li> <li>6. Lack of statewide coordination for IT support to libraries.</li> <li>7. Perception that libraries are antiquated hurts chances for increased funding.</li> <li>8. Generally underfunded.</li> </ol>

EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Opportunity to reinvent image as modern community centers that promote many ways to read, research, learn, and communicate.</li> <li>2. New image could generate greater funding.</li> <li>3. Ability to offer free computer and broadband makes libraries well suited to combat the ‘Digital Divide.’</li> <li>4. Greater availability of online educational resources to the community.</li> <li>5. Ability of smaller libraries to offer the same online educational resources (those that are free, at least) as larger ones.</li> </ol>	<ol style="list-style-type: none"> <li>1. Difficulty of obtaining more funding.</li> <li>2. Developing better communication between libraries and the state, regional, and local agencies that are referring potential governmental/social services applicants to libraries.</li> <li>3. Streamlining online government applications so that they are intuitive and utilize the same user-friendly format.</li> <li>4. Finding the time/staff to stay current with ever-changing technology.</li> <li>5. Securing reliable state-wide IT support. This might be a partnership between the VT Dept. of Libraries and the VT Dept. of Information &amp; Innovation.</li> </ol>

**Goals/Strategies/Actions**

GOALS	STRATEGIES	ACTIONS
Better coordination/ communication between State agencies offering online applications for government services and libraries.	<p>State agencies should notify libraries whenever they direct citizens without internet access to fill out government forms at the local library.</p> <p>State agencies should provide instruction and resources to librarians who will be helping patrons fill out government forms.</p> <p>Standard formatting should be used by agencies in creating applications for government services.</p> <p>State of Vermont should increase funding to libraries.</p>	
Ensure that the public is aware of all public access & digital literacy training opportunities in their community.	<p>Create an inventory of public access points (including locations &amp; schedules), as well as digital literacy trainings in each town, and in surrounding towns.</p> <p>Brainstorm prominent places to advertise the inventory, such as on <a href="http://www.BroadbandVT.org">www.BroadbandVT.org</a>, or in the local newspaper, on bulletin boards, at town offices and libraries (near computers).</p>	
Make it easier for librarians to answer patrons’ questions about computer hardware and software, including trouble shooting.	<p>Provide time and opportunities for librarians to attend professional development education on technology trends and technology training.</p> <p>Design a FAQ list for all Vermont librarians.</p> <p>Clearly delineate those subjects and questions that are within the scope of librarians’ work, and those that are not. Communicate this to all librarians in the state.</p>	

<p>Coordinate free computer and internet access for the public by utilizing existing infrastructure.</p>	<p>Inventory existing public infrastructure in the community.</p>	<p>Talk to public school administrators about opening computer labs for free time or structured computer/internet literacy classes during after-school hours for non-students.</p>
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## SECTOR ANALYSIS: MEDIA

### Current Conditions

- Many local newspapers offer their services online, some for free, while others require a paid subscription.
- Many local newspapers feel it is necessary to offer online news in order to compete with national media outlets.
- Reporters who are visiting or living in the region need broadband in order to efficiently upload their stories/photographs/video to editors.
- This area has a thriving media, which includes regional and local newspapers, purely online news or event sources, and community listservs.
- Anecdotal evidence suggests that dailies have been harder hit (with reduced profits) than weeklies by the emergence of free access to online news.

### SECTOR QUICK FACTS

- News in the Two Rivers-Ottawaquechee region is covered by several local media outlets, all of which have an online presence, including: the Randolph Herald, the Valley News, the Vermont Standard, the Rutland Herald, and more.
- As of summer 2012, Bridgewater was the only Two Rivers-Ottawaquechee town utilizing Front Porch Forum (FPF), an online chat service for neighbors to share news and ideas. For updates on towns that are participating in FPF, go to: <http://frontporchforum.com/about-us/service-area>.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Increased flexibility for staff to upload material from anywhere.</li> <li>2. Ability to hire and keep in close touch with reporters who are located far away.</li> <li>3. Ability to conduct research more easily and quickly.</li> <li>4. Diversified audience, especially when news is printed in multiple formats: hardcopy and online.</li> <li>5. People who move away can keep up-to-date on their hometown news.</li> </ol>	<ol style="list-style-type: none"> <li>1. Newspapers must digitize or risk becoming obsolete, which can be expensive. For example, a newspaper may need to provide digital literacy training for staff, hire a web designer and IT specialist, and purchase monthly internet service.</li> <li>2. A slower internet connection can translate into economic disadvantage for reporters. (One reporter interviewed noted that certain tasks requiring downloading or uploading take him five times longer than it would for another reporter with a fiber connection).</li> <li>3. Difficulty of competing with national media outlets who can afford to post free online news. This is especially hard for 'dailies.'</li> <li>4. Stories are time sensitive.</li> </ol>

EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Ability to strategically offer different information and images in various formats (hardcopy v. online). For example, local newspapers can post hundreds of photographs online from a single event, whereas they will print only one or two in hardcopy.</li> <li>2. Ability to track consumers' interests via Google Analytics, and subsequent ability to create a better product.</li> <li>3. Increased advertising revenue from companies that want ads in both hardcopy and online versions of a newspaper.</li> <li>4. Leveling of the playing field for reporters (anyone with internet access can post a story or picture).</li> </ol>	<ol style="list-style-type: none"> <li>1. Deciding whether a newspaper should continue in hardcopy only, switch to digital only, or utilize both forms of media.</li> <li>2. Cost of keeping pace with technology (monthly internet fee, hiring an IT support person, designing the website, updating computers, etc.).</li> <li>3. Time necessary to make informed decisions about how to present news (<i>ex: Which content should be in what format?</i>).</li> <li>4. Changes in advertising price structures in terms of hardcopy v. online.</li> </ol>

**Goals/Strategies/Actions**

GOALS	STRATEGIES	ACTIONS
The successful transition of local and regional newspapers and magazines into the digital age.	Increase communication between managers of different local and regional newspapers and magazines.	Organize a forum where smaller local and regional newspaper and magazine managers and staff can share tips on digitizing, and ask/answer each other's questions.
All reporters and photographers who live in Vermont have access to broadband at upload/download speeds that are comparable with their competitors.	Talk to Vermonters who work in media about their specific needs and then generate a plan.	<p>Create an inventory of people who are working in the media and their broadband technology needs (including when, where, and what speed is necessary).</p> <p>Meet with State officials at the Vermont Telecommunications Authority (VTA) to discuss the inventory and generate actions that will help meet these needs.</p>

## SECTOR ANALYSIS: MUNICIPAL GOVERNMENT/EMERGENCY SERVICES

### Current Conditions

- Emergency services providers’ use of technology varies widely between towns. Some use e-mail only occasionally, and rely primarily on radio communication while in the field. Others utilize e-mail, social media (ex: Facebook), laptops, and cell phones.
- In non-emergency situations, cell phones are used regularly for communication by town officials, emergency services workers, town road crew members, and others.
- Some technologies are cost prohibitive for towns. Others can afford certain technology investments, but costs are considered unjustified based on the benefits.
- During a statewide emergency, such as tropical storm Irene (2011), regional emergency services providers, disaster relief coordinators, and town officials need to communicate with Vermont Emergency Management (VEM). VEM uses DisasterLan (DLan) as its principal mode of communication. DLAN is a real time application that provides access to GIS maps, weather patterns, pictures of infrastructure, hazardous material information, etc. DLAN can also be used to send/receive email and voicemail. It is a secure system, therefore only registered users can access it.
- In non-emergency situations, VEM uses Facebook, twitter and other online communications tactics; all are monitored by the Public Information Officer (PIO) in Waterbury.

SECTOR QUICK FACTS
<ul style="list-style-type: none"> <li>• The Snelling Center for Government has helped towns across Vermont develop their municipal websites. To view their toolkit, go to: <a href="http://e4vt.org/programs/e-vermont/services/scg">http://e4vt.org/programs/e-vermont/services/scg</a>.</li> <li>• Many residents used social media to communicate and organize in response to Tropical Storm Irene. For example, Royalton’s residents created the website: <a href="http://operationreviveroyalton.com/">http://operationreviveroyalton.com/</a>.</li> </ul>

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Average age of first responders is young, therefore most are digitally literate.</li> <li>2. Ability to convey information and data more quickly while ‘in the field’ to hospitals, police, and other emergency service providers leads to more consistent, efficient, and effective approach to resolving a crisis.</li> <li>3. Ability to use handheld Personal Communication Systems (PCS) as phones, cameras, walkie-talkies, texting devices, video players and internet computers.</li> </ol>	<ol style="list-style-type: none"> <li>1. Mixed comfort level with digital technology. Training for some is necessary.</li> <li>2. Expense of technology and tight town budgets.</li> <li>3. Lack of universal cell phone coverage makes emergency management stressful and inefficient.</li> <li>4. Most town officials lack experience with DLAN.</li> <li>5. DLAN depends on considerable bandwidth and universal cell service to transfer data, which has not yet been achieved.</li> <li>6. Difficulty using DLAN during Tropical Storm Irene (2011). Common complaint centered on problematic, non-intuitive interface.</li> </ol>

EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Ability to communicate information and data reliably and quickly helps minimize the impact of disasters and avoid emergencies. For example, the ability to send warnings from the field to the community.</li> <li>2. Greater security in transmitting sensitive information (victim’s name, patient condition, etc.) by cell phone than non-scrambled radio.</li> <li>3. Ability for town officials to provide greater transparency by posting meeting minutes, agendas, and other documents online.</li> <li>4. Enhanced capacity for regional communication between local governments (rather than being limited to immediate neighboring towns).</li> </ol>	<ol style="list-style-type: none"> <li>1. Lack of wireless and high speed connection in some rural areas can prevent emergency workers from sending critical information to hospital before patient arrives.</li> <li>2. Inconsistency in cell service and internet access creates inconsistency and inefficiency during field operations.</li> <li>3. Benefits of certain technologies are not always immediately apparent to town officials or emergency services providers.</li> <li>4. Ensuring continuity of computer software between town offices across the region.</li> <li>5. Securing adequate digital literacy training for all town officials.</li> </ol>

**Goals/Strategies/Actions**

GOALS	STRATEGIES	ACTIONS
Ensure that digital technologies are consistent and reliable between towns, regions, and the state (Vermont Emergency Management).	Increase communication between towns and the state (possibly through the Local Emergency Planning Commissions (LEPCs) and Vermont Emergency Management).	<p>Advocate for universal broadband access and cell service throughout the State of Vermont.</p> <p>Towns &amp; State should review the performance of different technologies during Tropical Storm Irene (2011), decide ‘what worked and what didn’t,’ and develop a universal technology action plan for the next disaster.</p>
All first responders and town officials have achieved a certain level of proficiency with digital technologies.	Determine a base level of digital proficiency for first responders in Vermont, and then work to ensure everyone achieves it.	<p>Survey the use of different technologies in first responder scenarios.</p> <p>Work with first responders and Vermont Emergency Management to determine a sufficient base level of digital literacy.</p> <p>Plan trainings and classes to ensure that all first responders in Vermont achieve this base level of digital literacy.</p> <p>Investigate preexisting conferences or events that could incorporate digital literacy trainings. For example: annual Town Officers Education Conference (TOEC).</p> <p>Apply for grants to upgrade digital infrastructure as necessary.</p>

## SECTOR ANALYSIS: NON-PROFIT/SERVICES

### Current Conditions

- Many kinds of services are increasingly available online.
- Newsletters or updates from non-profits are increasingly sent via e-mail, significantly reducing costs.
- Most non-profits now have a website and multiple means of contact: phone, e-mail, and/or online comment form.
- Broadband access has allowed fundraising to take place online (donations via credit or debit card).

SECTOR QUICK FACTS
<ul style="list-style-type: none"> <li>• The Two Rivers-Ottawaquechee Regional Commission (TRORC) used to send its semi-annual newsletter to recipients by USPS mail only. In recent years, many subscribers have requested a digital copy instead. As of May 2012, TRORC sent its newsletter via e-mail to approximately 580 subscribers.</li> </ul>

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Internal staff communication is much easier and faster with broadband.</li> <li>2. Scheduling is much easier with online software applications.</li> <li>3. Broadband access at home has made telecommuting easier and improved employee's quality of life.</li> </ol>	<ol style="list-style-type: none"> <li>1. Non-profits are now expected to have functional websites and quickly respond to any e-mails or online comments they receive.</li> <li>2. Maintaining a website, hardware, and IT support can be costly.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Faster and easier communication with target audiences.</li> <li>2. Fundraising campaigns can stay active year-round by using website to appeal to potential donors.</li> <li>3. Universal broadband at home and work will enable live, real-time participation in meetings from a distance.</li> </ol>	<ol style="list-style-type: none"> <li>1. Cost of 'keeping up' with technology.</li> <li>2. If unable to hire an IT person, regular staff can become increasingly engaged in time consuming website maintenance.</li> <li>3. Learning about new social marketing opportunities and deciphering which are best for your organization's needs.</li> </ol>

### Goals/Strategies/Actions

GOALS	STRATEGIES	ACTIONS
Ensure that all non-profit organizations that want to have a website can access the proper tools and information to create one at an affordable cost.	Research trainings and workshops for non-profits and publicize them. For instance, find out if google helps non-profits create websites for free.	Publicize tools/resources.
Ensure that local non-profits have access to trainings and information regarding online fundraising.	Research existing training opportunities.	Publicize tools/resources.

# Windham Regional Commission

## SECTOR ANALYSIS: BUSINESS

### Current Conditions

- Wireless spots exist in the more populated towns, such as Brattleboro, Wilmington, and Rockingham.
- Farmers in region have viable maple sugar product businesses.
- Building a Better Brattleboro (BABB) is working to attract the creative economy.
- Awareness of how important high speed access is to drawing customers, tourists, and new permanent residents to region.

SECTOR QUICK FACTS
<ul style="list-style-type: none"> <li>• Apps providing localvore, artisans, restaurants, B&amp;Bs, recreation, etc. are needed to draw people off of I-90 into the towns in our region. Otherwise they blow right past us as they head to the mountain towns.</li> </ul>

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Downtown Brattleboro is a Special Assessment District which has a State and Federal tax credit program for downtown properties.</li> <li>2. Knowledge and skills sets to have automated systems with web cams for monitoring maple sugar tanks.</li> <li>3. Using website and/or Facebook presence to market operation/farm reaching potential vendors/buyers from outside of the immediate region.</li> </ol>	<ol style="list-style-type: none"> <li>1. BABB has no incentives for business start ups to be located in the downtown.</li> <li>2. The agriculture community, farmers, have no exposure to what avails them, if they are not exposed to how Internet access can help their business model they will never tap into it.</li> <li>3. Farmers have very little if no extra time to market themselves. They work hard and long hours which leaves no time to be creative.</li> <li>4. For farmers, social networking sites can cause major time constraints.</li> </ol>

EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Vermont draws on the 2<sup>nd</sup> home owner population coming from metropolitan areas as a sense of place for the “creative class”, people who have intellectual professions, (as defined by Richard Florida).</li> <li>2. For farmers, advertising can be done via other businesses in the community, or through temporary locations such as farmers markets.</li> <li>3. Travelling businessmen come to the region to conduct business as long as they have high speed Internet access.</li> <li>4. When large groups of businessmen are lodging here, Holiday Inn Express will send large groups to local eateries.</li> <li>5. Travelers searching for lodging in this region, will research online to see if the hotel/motel has high speed Internet before choosing to stay.</li> <li>6. Word of mouth through social networking draws tourists.</li> <li>7. Robb Family Farm gets orders from all over the world because of website presence.</li> </ol>	<ol style="list-style-type: none"> <li>1. Downtown living in Brattleboro is socio-economically undesirable.</li> <li>2. Perception that space in downtown Brattleboro is limiting.</li> <li>3. Travelers searching for lodging in this region, will research online to see if the hotel/motel has high speed Internet before choosing to stay. This is a threat to lodging that does not have the access.</li> <li>4. Lack of cell service is a major threat to the region for both tourists and travelling businessmen.</li> </ol>

**Goals/Strategies/Actions**

GOALS	STRATEGIES	ACTIONS
BABB is working to build up the Main Street Model and to ultimately utilize smart phone technology by having an APP that is specific to Brattleboro (events, shopping, restaurants, lodging, etc.) for not only tourists but for also for residents. Overall goal is get people to come to downtown Brattleboro to be customers, to live there, and for tourism. To build up the Main Street Model on the 2 <sup>nd</sup> and 3 <sup>rd</sup> floors with businesses and living space.	BABB is planning to hold a conference with strategists who understand how to draw the “creative class”, and to determine solutions to shortfalls with this recruitment. This would be a community-wide effort using local Marlboro College graduate school and other entities in town.	Create flex space for 2 <sup>nd</sup> home owners who need to have an office space for 2 days a week. Space can be created at the second or third floor levels of Main Street.
For farmers, improvements and effectiveness of messaging - to have the business come up on mobile apps for travelers searching for localvore, maple syrup, and ice cream stand, etc.	Town of Brattleboro can help business by cleaning up image of exit 1. That intersection is used for people to pull off I-91, get gas, and then get directly back on I-91. The image of the town at that location does not draw the traveler to the town center. There is no signage leading them to the historic center of town. The Town needs to put forth a marketing effort that creates Brattleboro as a “sense of place.”	Working with property owners and providing business incentive packages.

## SECTOR ANALYSIS: DIVERSE COMMUNITIES

### Current Conditions

- Migrant workers use Skype to communicate with family back home.
- The deaf community use Skype to sign to one another in addition to using a related technology, known as Web-based relay service, to communicate with hearing people through third-party operators and interpreters via text and webcams.
- Diverse communities also need unique web portals that are “real and safe,” not available to the general population, but instead provide access to real-time communication for specific needs if you are deaf/hard of hearing, disabled, or have a developmental disability, etc.
- Devices such as cell phones have the greatest use, more so than desktop computers. Voice-over IP can be used by individuals whose employment is located outside of Vermont making it possible for them to be perceived as if they are “in-the-office” to customers, vendors and co-workers.
- Webinars with chat rooms were cited by persons with developmental disability as a great way to learn.
- People representing VT Migrant Education said specialized learning programs for Math and English are accessible online.
- Farmers are using internet to do research and educate themselves via online classes as well as communicate with one another through online communication tools like blogs and online collaboration tools like the UVM Extension Apple IPM (Integrated Pest Management) Network.

### SECTOR QUICK FACTS

- Skype prevails as an Internet based technology that is used by diverse communities.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Self-advocacy groups - good at working with resources to help themselves, such as the Green Mountain Self Advocates.</li> <li>2. Awareness of benefits of using high speed and wireless technology.</li> <li>3. Interested/willing to learn what they need to know to use technology.</li> <li>4. Awareness of safety and security issues they face as diverse and vulnerable people.</li> </ol>	<ol style="list-style-type: none"> <li>1. Lack of teachers to provide computer literacy courses – and teachers who are relevant to what specific groups need to learn, such as the elderly or disabled.</li> <li>2. Lack of support by agencies to get the teachers and/or programs. Presently most people rely on friends and/or family to teach them what they need to know.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Making software developers aware of the kinds of applications that would be used by a community of people who have very specific Internet needs.</li> <li>2. For farmers to advocate for their immigrant workers.</li> <li>3. Teaching people the skills to advocate for themselves, to be able to recognize various resources.</li> </ol>	<ol style="list-style-type: none"> <li>1. Lack of economic interest to invest time or money to help diverse and vulnerable communities or individuals.</li> <li>2. Human and social interest is also lacking toward these groups of people.</li> <li>3. Costs for hardware and software.</li> </ol>

**Goals/Strategies/Actions**

GOALS	STRATEGIES	ACTIONS
To empower diverse/vulnerable populations to advocate for themselves.	Helping diverse/vulnerable populations realize the various resources they can use to self-advocate– such as community centers with computer access to Skype, webinars, web portals, etc.	For people to go to the homes of diverse/vulnerable populations and teach them computer literacy one-on-one.
To make the Internet more equitable and to increase usage of technology for all purposes.	To create a greater sense of advocacy –by joining groups of people together to achieve a common good.	Creating an environment to learn, for both groups and individuals (some environments are perceived to be more trusting because of familiarity).

## SECTOR ANALYSIS: EDUCATION

### Current Conditions

- Many modes of web-based technologies are used by all levels of the education sector.
- Skype is used for interviewing new staff and to talk to other schools in Vermont.
- Scopia is a video conferencing tool used by educational institutions.
- Sharepoint allows for a collaborative workspace for administrative use.
- Virtual high school is used for students to do work from home.
- Power School is a web-based application that includes a parent portal so parents can view their child's progress.
- Brattleboro Union High School (BUHS) is planning to start using Google apps for education if there is enough bandwidth to support it.
- It is at the teachers discretion at BUHS how they will use the Internet in their classroom for teaching purposes, homework assignments, and communication with students. If a teacher is particularly proficient, they may use the online communications tools more.
- Most students at BUHS have electronic portfolios and the school hosts student led parent conferences.
- If a student at BUHS does not have a laptop, the school has a lending library for student use.
- Landmark College is moving toward making all of their classrooms "Smartboard" equipped. In using the web-based education tool "Moodle," Landmark College increased its usage from 10% to 80% over the past three years.

### SECTOR QUICK FACTS

- Bandwidth is an issue at all schools because at certain periods of the day, such as lunch hour, its use for social networking puts a strain on current capacities.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Current access is adequate.</li> <li>2. Educational staff in general is tech savvy and confident with technology.</li> <li>3. Landmark College includes teaching technology literacy as one of their top five educational goals.</li> <li>4. Adequate training is provided both externally by software vendors, then internally.</li> </ol>	<ol style="list-style-type: none"> <li>1. Landmark College recently needed to upgrade bandwidth demanding a large cost to the college.</li> <li>2. Some teachers take more time to become proficient with new technology.</li> <li>3. Early adoption is not always met.</li> <li>4. Learning how to integrate the tool of technology into the education process, rather than it <u>being</u> the education process.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Bandwidth is like a social and economic currency – if you have the bandwidth, you can compete.</li> <li>2. At the higher education level, offering of bundled degrees where students write their own programs sampling classes from more than one academic institution that can only be achieved via online education using a consortium of schools. Schools able to offer courses online using web-based technology require robust speed, will be able to offer their institutions as part of this consortium.</li> </ol>	<ol style="list-style-type: none"> <li>1. Convincing tax payers to increase school budgets to pay for increased access.</li> <li>2. Being able to communicate the argument properly to the school, that by signing on, it is good for the whole town.</li> <li>3. Lack of technology is a detriment for keeping young people in the region.</li> </ol>

**Goals/Strategies/Actions**

GOALS	STRATEGIES	ACTIONS
For educational institutions, the challenge going into the future will be learning new ways to hold a students attention in the traditional classroom setting. For example, rather than forbidding students to use palm held technology, learn ways to leverage the usage.	Ensuring teachers are always more literate in the technology than the students they are engaged with teaching.	Training for teachers.  Issuance of “tech stamps” worth a designated number of hours, much like food stamps that are worth dollars -- for students who need temporary access.
Increase Fluency and Literacy of computer usage for all ages.	Education via K-12 students to adults.	Child/parent night at school where child teaches parents or grandparents how to use the Internet.

Note: There exists a new kind of culture which supersedes the traditional needs, food/lodging/clothing, of the past. It is noticed that more often than not, a young person needing traditional needs has a smart phone, and the monthly plan to go with it. The need for the digital culture seems to override other basic needs.

## SECTOR ANALYSIS: ENERGY/UTILITIES

### Current Conditions

- Increasing energy efficiency is a major movement in the efforts to reduce the energy needs of the state.
- Increasingly high costs of heating and transportation fuels are making residents and business owners within the Region more acutely aware of their energy use.
- Utility cost and usage data is becoming increasingly available online to customers and potential customers. Residents of the region need to be able to access this data easily to make informed decisions about their energy use.
- CVPS is in the process of installing Smart Meters throughout the state, of which a major benefit comes from customers being able to access their energy use information online.
- The transportation sector is the largest energy use sector in the State and could be greatly impacted by broadband access through increased access for GPS monitoring and coordination for freight, and telecommuting options for employees.

SECTOR QUICK FACTS
<ul style="list-style-type: none"> <li>• According to the 2010 American Community Survey, an estimated 14.6% of the residents of the Windham Region are now working out of state, which is up from an estimated 7.8% of residents in 1980. Increased broadband access for telecommuting could significantly reduce total commuting distance, and overall transportation energy use, for residents employed out of state.</li> </ul>

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Projects like CVPS's Smart Meter program are providing more immediate and accurate energy use data to Regional customers.</li> <li>2. Downtown centers, like Brattleboro, that offer access to broadband give residents with access the ability to telecommute to work on a part-time or full time basis, reducing their transportation energy use &amp; cost.</li> </ol>	<ol style="list-style-type: none"> <li>1. Lack of access to broadband internet will diminish the success of projects like the Smart Meter program, with customers unable to access the benefits of increased information availability.</li> <li>2. Inadequate service speeds in rural areas and even the villages in the Region make the option for telecommuting to work difficult or impossible.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. New initiatives by energy providers are helping residents and businesses owners make more informed decisions about their energy use, supporting efficient decision-making.</li> <li>2. GPS-based, live tracking of freight moving throughout the region can help business owners transport goods more energy efficiently.</li> <li>3. Internet based sites like NextBus provide live information on public transportation arrival/departure times and could help bolster ridership of public transportation a more rural region like Windham Region.</li> <li>4. The high standard of living throughout the Region makes it attractive to individuals who have the option of telecommuting through their employer.</li> </ol>	<ol style="list-style-type: none"> <li>1. Terrain and lack of cell service in the Region reduces the successful use of GPS based internet sites.</li> <li>2. Delivered fuels, like fuel oil and propane, are not traditionally tracked and provided in live updates online.</li> <li>3. Because broadband access is limited throughout the Region, employers in the Region are not setup for providing the option of telecommuting to their employees.</li> </ol>

**Goals/Strategies/Actions**

GOALS	STRATEGIES	ACTIONS
<p>Providing simple, comparable data about energy use will help users (residents and business owners) in the Region make more efficient and cost effective decisions about their energy consumption.</p>	<p>Building on the CVPS model of providing live, easy to use information to the customer, applications can be developed to help the average user monitor their energy use in real time.</p>	<p>Work with other local utilities to develop user friendly applications that help consumers understand their energy use, and where inefficiencies are taking place.</p>
<p>Develop a regional atmosphere conducive to provide telecommuting options for all residents.</p>	<p>Provide more awareness &amp; acceptance of this option for employees within the Region.</p> <p>Improve broadband access to areas that could serve as telecommuting hubs while access is improved throughout the region.</p>	<p>Create regional telecommuting hubs/ work spaces that serve more rural areas.</p> <p>Work with local businesses to determine their needs for establishing efficient telecommuting options.</p>

## SECTOR ANALYSIS: HEALTHCARE

### Current Conditions

- Brattleboro Memorial Hospital (BMH) is currently set up with adequate bandwidth and predicts they have enough for growth for several years.
- Presently only 20% of BMH’s current bandwidth capacity is used.
- Internet is used in numerous ways. Doctors and nurses use sites to research pharmacology. Human Resources uses the Internet to track job applications, OBGYN uses an Internet based scheduling application.
- Remote satellite offices and internal offices are connected to BMH via Internet based software for accessing of patient files. Data is pushed to several different vendors outside the hospital including the State to process insurance and billing, as well as a deaf/talk system that provides remote translation services for hearing impaired and for language translation.

SECTOR QUICK FACTS
<ul style="list-style-type: none"> <li>• Vermont State currently rolling out a new application - Health Information Exchange (HIE) which will provide connectivity between all healthcare entities in the State.</li> </ul>

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Healthcare providers are already technologically savvy.</li> <li>2. BMH chooses to have control over their Internet stored information on site, rather than using an offsite facility such as an ftp or “cloud storage” site.</li> <li>3. BMH presently has excellent bandwidth capacity and can continue to expand for a few years.</li> </ol>	<ol style="list-style-type: none"> <li>1. The umbrella hospital policies would need to be reconsidered and agreed upon by the hospital board, for Internet based communications to become an acceptable format of communication and care between providers and patients.</li> <li>2. Costs of growth, when the time comes, will be a challenge for BMH.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Most entities needing to connect to healthcare are already connected.</li> <li>2. Concern to be able to connect between patient and provider remotely is not at the forefront right now.</li> <li>3. Health Information Exchange (HEI) – State is charged with providing connectivity between all healthcare related entities for easy transfer and passage of patient files across the Internet.</li> </ol>	<ol style="list-style-type: none"> <li>1. Recruiting doctors is a large part of the hospital program and southern Vermont has trouble attracting healthcare providers who have just recently graduated from med school. Typically this region attracts middle-age and older providers who possibly are not as willing to embrace new methods in web-based applications of healthcare that might include remote service via Internet usage.</li> <li>2. Younger physicians may be familiar using more advanced technology than is provided by rural community hospitals which might deter their interest in working here.</li> </ol>

**Goals/Strategies/Actions**

GOALS	STRATEGIES	ACTIONS
<p>To work with new and current employees to keep them abreast of Internet based applications for the purpose of advancing healthcare services.</p>	<p>Making healthcare more accessible from the home.</p>	<p>Electronic medical records system that allows both doctors to retrieve them online as well as patient – using a secure/ confidential access system.</p> <p>Subsidizing of Internet access at Senior and Youth Centers.</p>

## SECTOR ANALYSIS: HUMAN SERVICES

### SECTOR QUICK FACTS

- High costs of hardware and software is an issue, particularly for non-profits.

### Current Conditions

- Webinars are used on occasion for business purposes.
- Ability to Skype would be very beneficial because it would save time and mileage for staff by communicating and participating with state wide and regional agencies, eliminating the time driving to meetings.
- The current gaps existing between agencies are inconsistency of levels of technology (hardware and software). This poses a problem because agencies have to communicate regionally.
- “ServicePoint” is a database used for homeless programs. Many agencies across the region use it, but for instance, Chittenden County does not use that particular software, and they happen to be the most populated. Using ServicePoint simplifies entering and aggregation of data for clients.
- Capacity of having information readily available when working with a client is key, because it lessens the need for perpetually repeating basic questions, such as asking DOB, SS#, etc. Notes can be added real-time into the system for reference by another staff person while using the software concurrently.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Most all youth are computer literate, or cell phone savvy.</li> <li>2. Staff is computer literate.</li> <li>3. ServicePoint database for homeless populations interfaces real time with everyone who has a user license.</li> </ol>	<ol style="list-style-type: none"> <li>1. Chittenden County does not use ServicePoint database.</li> <li>2. Adding a new user license to ServicePoint costs money.</li> <li>3. Customizing ServicePoint database for particular agency use costs money.</li> <li>4. Monthly service charges for youth to have access to Internet or cell phones.</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. IT staff hired through the Balance of State continuum of Care and paid by a grant to the Dept. of Mental Health provide “data report cards” to users of Service Point so that staff can see how well they enter data. Reinforces staff to do well in addition to causing awareness of importance of accuracy and completion of data for each client.</li> <li>2. The Boston office of Volunteers of America, a national organization, is working with Drop In Center to role out ServicePoint early, which will help everyone understand the bigger, regional picture of homelessness via that application.</li> </ol>	<ol style="list-style-type: none"> <li>1. Grant funding is often determined by the levels of accuracy entered into the ServicePoint database. The baseline score that has to be met goes up every year because of ease of technology, so if an agency does not have the technology it makes it more difficult to achieve the baseline scores.</li> </ol>

**Goals/Strategies/Actions**

GOALS	STRATEGIES	ACTIONS
<p>To have PDAs that work in the field, real time. If a case worker came across a homeless person living under a bridge, they could access that person's file, type in notes, etc. Same would be true for home visits. A great deal of time can be saved if staff has electronic access to files with enough memory and speed to avoid duplicating of efforts -- by first writing notes by hand and then having to transfer notes back at the office into the computer.</p>	<p>To gain more funding for hardware/software and to be trained to use it by outside consultants.</p>	<p>Train workers how to use hand-held devices in the field.</p> <p>Provide hardware and software to youth in their homes for academic purposes.</p> <p>Case workers, to work via telecommuting to save and money.</p>

## SECTOR ANALYSIS: LIBRARIES

### Current Conditions

- Brooks Memorial Library in Brattleboro has had access to the worldwide web since 1994, therefore having a long standing presence of providing access of information to the public outside the physical walls of the library.
- The public can utilize Brooks’ wireless technology on any personal mobile device or I-pad.
- The DSL line is used by staff and public users at staff and public access terminals.
- Brooks has a Facebook presence, Reference Blog and Twitter account. The Director of the library uses his own Twitter account to retrieve most current literary information circulated by colleagues.
- Access to Brooks’ library collection is available on the web using e-resources which includes a variety of materials – e.g., databases of journal articles, interactive language learning databases, e-books, full-text databases and eLearning tools.

### SECTOR QUICK FACTS

- 162 Vermont Public Libraries have high speed Internet.
- 154 provide wireless service.
- 1003 public access workstations in VT public libraries.
- 17,166 Internet uses per week.

*The above information comes from the Vermont Department of Libraries, Vermont Public Library Statistics 2010-2011 report.*

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Libraries have a tangible wealth in that they own the hard copy books, which can be loaned over and over again.</li> <li>2. Brooks has had access to the worldwide web since 1994, therefore having a long standing presence of providing access of information to the public outside the physical walls of the library.</li> <li>3. In spite of economic downturns, Brooks has preserved a professional staff trained in library science.</li> <li>4. Brooks has staff with longevity in the community, therefore knows community interests and library needs.</li> <li>5. Brooks commitment to life-long learning is a good fit in assisting people who need help with understanding technology, if resource are available.</li> </ol>	<ol style="list-style-type: none"> <li>1. Size of e-book collection is relatively small having only approximately 800 titles.</li> <li>2. Temporary weakness for Brooks is that their e-book collection is not compatible with Kindle, but this will change by January 2012.</li> <li>3. Parameters/systems for downloading e-books, procedures for checking them out online and returning them online is not user friendly between vendors, library and public.</li> <li>4. The physical space of Brooks Memorial Library is near capacity with no room for expansion within the existing envelope.</li> </ol>

<b>EXTERNAL</b>	
<b>Opportunities</b>	<b>Challenges</b>
<ol style="list-style-type: none"> <li>1. Self-publishing is becoming more common, and the lines between traditional publishing and “vanity” publishing are blurring – whether this is an opportunity or threat for libraries is unsure, but the important thing is that libraries need to know this when they select materials.</li> <li>2. Consortium of VT libraries will use Opensource software to create a state wide library catalogue and Brooks will be actively participating.</li> <li>3. Downturn in economy is showing increased usage of library and need for electronic resources.</li> <li>4. Libraries have a real impact on bridging the digital divide by helping patrons apply for jobs online, and in doing so helping them become more computer literate.</li> </ol>	<ol style="list-style-type: none"> <li>1. When the public purchases an e-book, most contracts allow them to loan it only once. They never own a hard copy that can be loaned numerous times.</li> <li>2. Some publishers are uploading backlists of e-books for free, such as certain textbook publishers.</li> <li>3. Library will lose patrons from rural towns that are not capable of downloading e-books or using the electronic resources as the technology moves more in that direction.</li> <li>4. Rules and procedures dictated by private vendors for e-books creates frustration and ultimately drives away some patrons.</li> </ol>

### Goals/Strategies/Actions

<b>GOALS</b>	<b>STRATEGIES</b>	<b>ACTIONS</b>
To have educational systems in place for both the staff and users of technology of e-books, e-audio and universal class.	To have life-long learning programs available.	Provide lectures and workshops.
To make the library an increasingly more vibrant center for culture and learning so that people are not just using the library to borrow books, but to engage in all forms of information gathering.	To maintain and promote children services and story time.  Outreach made to market library services through the region.	Provide a mobile library vehicle unit that travels to various parts of the region provided computer stations with high speed access capabilities.

## SECTOR ANALYSIS: MEDIA

### SECTOR QUICK FACTS

- All forms of media, print, television and audio; must embrace electronic applications to stay competitive.

### Current Conditions

- While radio has traditionally been the source of communication in this region, fewer and fewer people own transistor radios, which may be the only source of local news in a power outage.
- Radio is the typical portal to “breaking news” – emergency news will open up a mic on any station, and can interrupt any program at any time.
- Radio personalities realize they need to constantly keep up with any new technology to stay in business.
- Social media is the ever increasing channel to breaking news as information, photos and videos are posted on Facebook, Twitter and other forms of social networking technology.
- Social media has drastically altered the way breaking news is now received, by both the general public and professionals.
- What is known as ‘backpack journalism’, where journalists went into the field with a laptop and camera, has now changed to using an iPhone.
- In many cases, the current Smart Phones have better cameras than an actual traditional camera.

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Social media serves as an adjunct to professional media, ProAm (Professional Amateur).</li> <li>2. In emergency situations, radio can interrupt anything – “open up a mic.”</li> </ol>	<ol style="list-style-type: none"> <li>1. In using social media portals, radio stations must be creative in leading their audience back to the original source (radio station or website) so the audience is exposed to the advertisers.</li> <li>2. Knowing how to present information on web-based portals so it doesn’t come off seeming like “junk.”</li> </ol>
EXTERNAL	
Opportunities	Challenges
<ol style="list-style-type: none"> <li>1. Amateurs are on the scene to record breaking events and providing their news to Facebook.</li> <li>2. Delivering news on Facebook in a way that will steer audience back to newspaper or radio.</li> <li>3. This region is a Shangri La for stories, particularly longer stories for the print media.</li> <li>4. Older population and many rural people in this region want their news in the traditional format, by reading newspapers or listening to the radio – keeping the traditional delivery of media in demand.</li> </ol>	<ol style="list-style-type: none"> <li>1. News provided by amateurs must be carefully scrutinized before reporting on it –ProAm (Professional Amateur) verification.</li> <li>2. Public has moved to an ‘on demand’ form of communication. They want news when they want it – causing reporters to spend time communicating with individuals in addition to creating the regularly scheduled broadcasts.</li> <li>3. Streaming and podcasting radio requires expensive equipment.</li> <li>4. If newspapers became web only, print would lose ¾ of their audience in this region.</li> <li>5. Digital divide in rural areas – many people don’t have Internet.</li> <li>6. By comparison to other counties, VPR is widely listened to in Windham County vs. other radio stations.</li> <li>7. Keeping people’s interest - lifespan of stories has to be much shorter.</li> </ol>

**Goals/Strategies/Actions**

GOALS	STRATEGIES	ACTIONS
<p>Since the sources for news has changed to include web-based social media and online video feeds, newscasters and print media have to anticipate constant evolving technology that offers new sources, keeping up with that technology, and the challenge of filtering the truth from fiction that may be more prevalent as a result of social media. This also poses challenges in realizing how to continue to make money using all the new sources as it applies to media.</p>	<p>Using social media, such as Facebook/Twitter more successfully as a “news feed” for all media.</p>	<p>Constant usage of social media in order to stay abreast of the most current communication trends.</p>

## SECTOR ANALYSIS: MUNICIPAL GOVERNMENT/EMERGENCY SERVICES

### Current Conditions

- Documentation is a critical component with all entities of emergency services.
- Ability to record information electronically while in the field will become State mandated for EMS by 2013 to be re-licensed.
- Proper filing of emergency service requirements such as, equipment, deployment of personnel and volunteers is necessary to receive reimbursements from federal and state agencies.
- The ability to record this information in “real-time” provides accuracy and savings of man hours versus doing it after the incident, sometimes from memory.
- VEM uses DLAN (DisasterLAN), a real time application that enables the user to see images including; GIS maps, weather patterns from NOAA, current pictures taken of infrastructure or building hazards/damage at the place and time of the event.
- DLAN can only be effectively used with mobile data terminals (in the field) if there is wireless cell and high speed coverage.
- Windham County Sheriff’s Office uses Facebook and twitter to disseminate and push out information as quickly as possible to the general public.
- VEM uses Facebook and twitter which is monitored by the Public Information Officer (PIO) in Waterbury. WebEx is used extensively by Rescue Inc. to do videoconferencing for both education/training and for communication.
- For training to be effective, it is critical that there is face-to-face communication and that the trainee can see visually -- for example, the proper way to connect equipment with technology while in the field.

SECTOR QUICK FACTS
<ul style="list-style-type: none"> <li>• Presently, videoconferencing for emergency personnel training is only available at a location on Canal Street in Brattleboro. The capability to tether laptops to Blackberrys, while in the field, is another essential application of high speed and wireless access used by emergency personnel. As of now, the capacity to do this tethering is spotty and unpredictable in certain places in the southeast region of Vermont.</li> </ul>

### Strengths/Weaknesses/Opportunities/Challenges

INTERNAL	
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Average age of 1<sup>st</sup> responders is young, therefore most are already comfortable using technology relating to computers, hand-held devices, electronic data transfer, and entering information electronically.</li> <li>2. Emergency management facilities realize the future advent of technology and are installing infrastructure now that will be compatible with it.</li> <li>3. Blue Tooth protocol is already able to connect to accessories.</li> </ol>	<ol style="list-style-type: none"> <li>1. Lack of availability of funds to purchase new equipment which is necessary to take advantage of new technology.</li> <li>2. Some rural 1<sup>st</sup> responder entities have employees or volunteers who are computer illiterate.</li> </ol>

EXTERNAL	
Opportunities	Challenges
<p>1. Vermont Communications Board (VCOMM) grant funding can be used to purchase new equipment.</p>	<p>1. Lack of wireless and high speed in rural areas prevents EMS to send hospital critical information electronically before patient arrives. (for example, north on Rt. 30)</p> <p>2. Lack of cell coverage forces EMS to disturb residences, at times, in order to access landlines for emergency calls. (north on Rt. 30)</p>

**Goals/Strategies/Actions**

GOALS	STRATEGIES	ACTIONS
<p>Major goal of all emergency personnel is to provide the equipment and training of the equipment, in order to document electronically. There also needs to be redundancy in the telecommunication systems, so if one provider goes down, another can be used.</p>	<p>Cost is key. If there is an open market of providers, they will have to be very competitive, otherwise emergency personnel will only be able to afford the lowest bids.</p> <p>Sampling/surveys can be done with regional LEPC to determine level of buy-in by all local emergency personnel across the sector.</p>	<p>To close the digital divide – using grant funding to purchase equipment (mobile data terminals and high end radios) and same grant funding to identify people to do orientation and training of software and equipment.</p>



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