

**Report to the
General Assembly by the
Vermont Interactive Technologies
Working Group**

Draft – Dated December 2, 2015

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Background and Legislative Charge

Vermont Interactive Technologies (VIT), formerly Vermont Interactive Television, is a statewide videoconferencing network established in 1988 and overseen by a Coordinating Council appointed by the Governor. The network's remote teaching applications, 17 studios, and mobile videoconferencing systems have been used to support the State's policy of extending learning opportunities to all Vermonters regardless of geographic location.¹

In 2015, as a result of budget constraints and the recognition that other, less costly videoconferencing technologies exist, the General Assembly eliminated long-term funding for the ongoing operations of VIT and, instead, appropriated \$440,000.00 for costs associated with the dissolution of VIT's operations.² It is anticipated VIT will cease doing business on December 31, 2015.

Also in 2015, the General Assembly established the VIT Working Group to study and make findings and recommendations for legislative action regarding VIT and its future; specifically, how VIT's organization or assets, or both, should be used best to meet the needs of the Vermont public.³

Members of the Working Group include:

- Jim Porter, Chair, and Director, Division of Telecommunications and Connectivity, Department of Public Service
- Kiersten Bourgeois, Senior Project Manager, Agency of Commerce and Community Development
- Rob Chapman, Executive Director, ORCA Media
- Paul Costello, Executive Director, Vermont Council on Rural Development
- Justin Johnson, Secretary of Administration
- Representative Kathleen Keenan
- Martha Reid, State Librarian, Department of Libraries, Agency of Administration
- John Sayles, CEO of Vermont Foodbank, Member of VIT Coordinating Council
- Yasmine Ziesler, Chief Academic and Technology Officer, Vermont State Colleges
- Chad Wawrzyniak, Department of Labor

¹ Executive Order No. 74, Dated June 2, 1989.

² 2015 Acts and Resolves No. 26, Sec. 19, and No. 58, Secs. B.1107 and C.104.

³ 2015 Acts and Resolves No. 58, Sec. E.602.1

Summary of Findings and Recommendations

In sum, the Working Group unanimously acknowledges the exemplary level of videoconferencing service that has been provided by VIT for nearly three decades. In gratitude to VIT's great work, and as a pragmatic course of action taking into consideration economic and technological realities, the Working Group has advanced Vermont Video Connect (VVC), a successor network to VIT proposed by the Department of Public Service, as an option for continuing service into the future.

The Group recommends that the General Assembly continue to explore VVC, as further outlined in this report, as a possible videoconferencing network that will benefit Vermonters.

Findings and Recommendations

Since its inception, VIT has operated as an organization with administrative support services provided by the Vermont State Colleges (VSC). Its primary service is room-based videoconferencing at 13 sites with 17 studios throughout the State having on-site, technical staff to support conferences. In addition, VIT offers mobile studio equipment and bridging options to connect to other standards-based videoconferencing systems and services in Vermont and globally.

Five VIT sites are located at and managed by VSC. Another five are located at Career and Technical Education centers (CTEs). The remaining three are located at Brattleboro Union High School; the Department of Labor in Montpelier; and the Senior Citizens Service Center in Bennington.

Funding for VIT has consisted of General Fund and capital construction (bonded) appropriations, along with user fees. From 1990 through 2015, annual General Fund appropriations were made for VIT operations. The initial appropriation was \$353,000.00, growing to \$743,000.00 in 1999, and for the past 15 years, the amount has been approximately \$800,000.00. Over the same period of time, approximately \$3,600,000.00 in capital funding was provided to VIT. VIT has generated annual sales revenue of approximately \$300,000.00.

A recent inventory of VIT assets, based on acquisition costs, indicates that VIT currently owns \$1,932,863.66 in property. (The Working Group did not receive an estimate for the current market value of the assets, which presumably is significantly lower.) The General Assembly requested that the Secretary of Administration and the VIT Executive Director submit a report to the Institutions Committees on the ownership of all VIT property funded in whole or in part by the capital construction act.⁴ That report is due on or

⁴ 2015 Acts and Resolves No. 26, Sec. 34.

before January 15, 2016. In the meantime, no State or private entity may assume ownership of the property until the General Assembly resolves the ownership issue.

VIT users include State, federal, and private organizations. VSC, more specifically, Vermont Tech, is the largest user, representing approximately 85 percent of system usage. VSC is developing its own internal network to meet its videoconferencing needs. The current budget estimate for the one-time transition cost for Vermont Tech's new distance learning setup is \$384,704.00. This compares with about \$150,000.00 annually that Vermont Tech currently pays in user fees to VIT.

Of the remaining 15 percent of users, many are one-time users and some are finding alternatives.

An online survey was sent to VIT users who have used the service within the past three years, requesting information on how they intend to meet their videoconferencing and distance learning needs or otherwise might be affected once VIT service is no longer available.⁵ The VIT clients without established plans for videoconferencing services include:

- Vermont General Assembly (for budget hearings)
- Vermont Public Service Board
- Vermont Department of Public Service
- U.S. Bankruptcy Court
- International Brotherhood of Electrical Workers Local 300
- Plumbing apprenticeship program

The Working Group determined that it should develop a successor network to meet the needs of VIT users who do not have a videoconferencing alternative in place.

The Working Group acknowledged that VIT has offered an exceptionally high level of service which has been of great value to the State and its users, and that any successor network, without sufficient funding, could not match the same high-end, fully staffed conference service.

The Department of Public Service developed and proposed for the Working Group's consideration Vermont Video Connect (VVC) as an alternative successor network to serve the needs of Vermonters.

VVC would consist of a network of locations throughout Vermont through which videoconferencing services would be offered to the public free of charge. VVC would require direct financial support from the State, including

⁵ See appendices for copy of the survey questions and spreadsheet of user responses.

an initial \$120,000.00 investment and an ongoing \$100,000.00 annual appropriation.

The current VIT network offers a very high quality of service in part due to the active intervention of technicians at each site who identify and zoom camera angles to the person speaking. VVC, in contrast, would not require technicians at each site but instead would adopt cameras that automatically identify and zoom to the person speaking. To accomplish this, VVC would use some existing VIT equipment, which would be disassembled at the current locations and moved to the new locations. It would be augmented with motion sensing cameras and mounted on mobile carts in the new host sites and with ceiling mounted microphones. The VVC equipment would be retained and maintained by the State.

VVC would offer an annual stipend of \$4,000.00 to each host site. The host would provide broadband Internet access to support video calls, which require approximately 1 Mbps. The host would store and secure the equipment and provide a point of contact trained on basic equipment operation. The host would make its best effort to provide access to the equipment when requested, including during evening hours, and would use the stipend to cover costs associated with VVC. The host would receive the full \$4,000.00 stipend regardless of actual costs.

The Department of Public Service identified 14 locations that expressed interest in being a host based on the above-referenced terms. It is likely that the Johnson State College site would be replaced by a site yet to be identified in Chittenden County.

Scheduling for VVC would be provided by the Department of Public Service. Upon a user request, Department staff would contact each site to confirm availability and relay such information to the prospective user. Video bridging service would be provided by an Internet-based service provider. The bridging service would place calls out to the remote sites, instead of the host sites having to use the equipment to place calls to the video service. The bridging service would also provide remote monitoring of the equipment at the host sites. In addition, a vendor would provide telephone-based technical support to the host sites and, in case of hardware failure, the vendor would dispatch a technician to the site for equipment replacement.

Additional information on VVC can be found in the appendices.

Appendices

- VIT User Survey Questions
- VIT User Survey Responses
- VVC Concept
- VVC Opportunity
- VVC Comparison of VIT and VVC Sites

DRAFT

User Survey Questions

What is the name of your organization?

What was the primary purpose of your VIT use?

Has your organization identified an alternative to meet your videoconference or distance learning needs after January 1, 2016?

If Yes

What alternative technology or other methods have you identified to meet your needs?

How does this compare to VIT in terms of availability, ease of use for you and your customers, and expense?

If No

What alternative technology or other methods have you considered?

What features of VIT are most difficult for your organization to replace through an alternative technology/method?

What impact will there be on your organization when VIT services are no longer available?

How many times per year did your organization use VIT?

once a year or less

2-4 times per year

5 or more times per year

How many people participated per meeting/class held by you on VIT?

Less than 5

6 to 10

10 to 20

20 to 50

More than 50

How many sites per meeting/class on the VIT system did you use?

One

2 to 6

6 to 10

10 to 17

VIT USER SURVEY

Responses thru Sept. 15, 2015

What is the name of your organization?	What was the primary purpose of your VIT use?	Has your organization identified an alternative to meet your videoconference or distance learning needs after January 1, 2016?	What alternative technology or methods have you identified to meet your needs?	How does this compare to VIT in terms of availability, ease of use for you and your customers, and expense?	What alternative technology or other methods have you considered?
	Government Business/Meeting	No			
StandByVideo	Other Business/Meeting	No			ViDyo, desktop VC superior to Skype NOT FREE anyway, requires equipment on site as well
Vermont Department of Health, APS Health Care	Education	No			Web Ex
IBEW Local 300	Non Profit Business/Meeting	No			We would prefer similar technology that allows multiple location access.
VTAPTA (Vermont Chapter of American Physical Therapy Association)	Education	No			Online webinar (Go-To-Webinar/Meeting style)
Vermont Afterschool	Education	No			Webinars
US Bankruptcy Court-VT	Government Business/Meeting	No			Self hosted with limited access
Vermont Association for the Blind and Visually Impaired	Non Profit Business/Meeting	No			Google Hangout, teleconference
Senate Appropriations Committee (VT Legislature)	Government Business/Meeting	No			Other video conferencing methods
Vermont Association for Justice	Education	No			Live streaming
SASH/Cathedral Square	Non Profit Business/Meeting	No			Skype or Go To Training
IBEW Local 2326	Non Profit Business/Meeting	No			Still investigating
Connexus, Inc.	Other Business/Meeting	No			Skype or FaceTime
Vermont Insurance Agents Association	Education	No			Expanding our webinar and streaming partnerships
Vermont Agency of Transportation	Government Business/Meeting	No			Skype, Webex etc
Vermont Businesses for Social Responsibility	Non Profit Business/Meeting	No			
Episcopal Church in Vermont	Non Profit Business/Meeting	No			Setting up our own technology.
Vermont Public Service Department	Government Business/Meeting	No			Researching videoconferencing options
American Red Cross Chapter G-VT, P.E.O. Sisterhood	Non Profit Business/Meeting	No			videoconferencing
	Education	No			GoToMeeting, Webinar through UVM medical Center Telemedicine, recording a video of a speaker to share with school nurses.
State of Vermont	Government Business/Meeting	No			In face meetings - at strategic geographic locations
VSAC	Education	Yes	Hotel-based meeting	Limits access -- we will offer 2 instead of 6+ locations.	
UVM Extension Master Gardener	Education	Yes	Online webinar software	less expensive, easier to use for organization, may be more difficult for customers	
The VLPA	Education	Yes	We have been forced to move away from current video-conferencing and distance learning technology. We are attempting to establish full day live attendance seminars.	1. Availability of venue sites and space is greatly reduced. 2. The ease of use for both attendees and provider is greatly diminished -- almost to the point of 'hardship' for many individuals. 3. The difference concerning expense is harder to predict, but evidence suggests expenses will increase significantly.	
Continuing and Distance Education at UVM	Education	Yes	Adobe Connect, Blackboard online courses, ITV systems at local public libraries	Library system not high quality, students would have to drive farther, online and adobe connect don't foster the sense of cohort that the program is known for	
State of Vermont	Government Business/Meeting	Yes	Go - To Meeting/Webinar	People will be able to log on from their home computers.	
VR	Non Profit Business/Meeting	Yes	in-house video conferencing	not as easy to use, visual is less clear, having outside groups join is more difficult	
Vermont Tech	Education	Yes	some type of videoconferencing	So far, VIT offered better visibility and better tech support	

VIT USER SURVEY

What is the name of your organization?	What was the primary purpose of your VIT use?	Has your organization identified an alternative to meet your videoconference or distance learning needs after January 1, 2016?	What features of VIT are most difficult for your organization to replace through an alternative technology/method?	What impact will there be on your organization when VIT services are no longer available ?	How many times per year did your organization use VIT?	How many people participated per meeting/class held by you on VIT?	How many sites per meeting/class on the VIT system did you use ?
	Government Business/Meeting	No	web cast meeting space	difficult to reach people throughout the state. will have to have more meetings, where people can't hear each other's ideas, or have one meeting where likely fewer people will attend	2-4 times per year	20 to 50	10 to 17
StandByVideo	Other Business/Meeting	No	Equipment on site and properly provisioned IP connection for videoconference	we will not be able to videoconference with Vermont participants, no other alternatives	5 or more times per year	Less than 5	One
Vermont Department of Health, APS Health Care	Education	No	the quality of the transmission can't be beat	we will need to schedule some in person meetings in lieu of this service, which will be less cost effective	2-4 times per year	10 to 20	6 to 10
IBEW Local 300	Non Profit Business/Meeting	No	Multiple location access.	Communications to members will be diminished. Face-to-face interaction will be limited.	5 or more times per year	20 to 50	2 to 6
VTAPTA (Vermont Chapter of American Physical Therapy Association)	Education	No	Live presentations at host site will be difficult to replace	We can use a webinar service but those dollars will go to an out of state company	5 or more times per year	20 to 50	2 to 6
Vermont Afterschool	Education	No	Interactive nature; participants being able to see each other and talk with one another	It will drastically increase our costs for hosting trainings and participants costs/time to attend trainings	2-4 times per year	20 to 50	6 to 10
US Bankruptcy Court-VT	Government Business/Meeting	No	Multiple sites	More travel for the public to access Bankruptcy court	5 or more times per year	10 to 20	2 to 6
Vermont Association for the Blind and Visually Impaired	Non Profit Business/Meeting	No	Having a face to face meeting	having to pay mileage for staff members to drive further to meetings	5 or more times per year	10 to 20	6 to 10
Senate Appropriations Committee (VT Legislature)	Government Business/Meeting	No		Will have to utilize other video conferencing methods	once a year or less	More than 50	10 to 17
Vermont Association for Justice	Education	No	efficiency, professionalism, cost	we will no longer be able to reach all of our statewide members for impt Spring and Fall continuing legal ed seminars	2-4 times per year	20 to 50	2 to 6
SASH/Cathedral Square	Non Profit Business/Meeting	No	Having the IT support at other sites	This is a huge impact on how we will traing statewide	2-4 times per year	20 to 50	6 to 10
IBEW Local 2326	Non Profit Business/Meeting	No	The travel for people coming from remote areas	Huge inconveniences	5 or more times per year	More than 50	6 to 10
Connexus, Inc.	Other Business/Meeting	No	Video conference quality	Less reliable poor quality meeting	5 or more times per year	Less than 5	One
Vermont Insurance Agents Association	Education	No	Providing education courses throughout the state in multiple locations	Increased costs for instructors and hotels	2-4 times per year	More than 50	2 to 6
Vermont Agency of Transportation	Government Business/Meeting	No	Convenience of location, ADA accessibility, provision for sign language interpretation or ESL translation	Not yet determined	2-4 times per year	20 to 50	10 to 17
Vermont Businesses for Social Responsibility	Non Profit Business/Meeting	No	A sense of connectivity across the state, personalized touches at locations.		once a year or less	20 to 50	6 to 10
Episcopal Church in Vermont	Non Profit Business/Meeting	No	Multiple locations available with room for many people	Not certain	once a year or less	10 to 20	6 to 10
Vermont Public Service Department	Government Business/Meeting	No	Unknown until research is completed	We will need to find an alternative	once a year or less	20 to 50	10 to 17
American Red Cross Chapter G-VT, P.E.O. Sisterhood	Non Profit Business/Meeting	No			once a year or less	10 to 20	2 to 6
	Education	No	tech support at each site; number and location of sites	We have discontinued Grand Rounds for School Nurses	5 or more times per year	More than 50	10 to 17
State of Vermont	Government Business/Meeting	No	Cost effectiveness of holding statewide meetings.	Great staff and travel costs to staff multiple meetings geographically dispersed around the state.	5 or more times per year	20 to 50	10 to 17
VSAC	Education	Yes			2-4 times per year	More than 50	6 to 10
UVM Extension Master Gardener	Education	Yes			5 or more times per year	More than 50	10 to 17
The VLPA	Education	Yes			5 or more times per year	More than 50	2 to 6
Continuing and Distance Education at UVM	Education	Yes			5 or more times per year	10 to 20	2 to 6
State of Vermont	Government Business/Meeting	Yes			2-4 times per year	More than 50	6 to 10
VR	Non Profit Business/Meeting	Yes			5 or more times per year	More than 50	2 to 6
Vermont Tech	Education	Yes			5 or more times per year	20 to 50	2 to 6



VVC: Vermont Video Connect

A successor network to
Vermont Interactive Technologies

VVC Overview

- ▶ **Continue VIT legacy**
 - ▶ Migrate from VIT studios to nearby Vermont Career Training Centers in 17 Vermont towns
- ▶ **Build on VIT base**
 - ▶ Use existing video conference systems including Polycom codecs, monitors, microphones, and cameras
- ▶ **Add updated technology**
 - ▶ Auto-follow camera system
 - ▶ Ceiling mounted microphones
 - ▶ Dual-monitor rolling carts
- ▶ **Sustainable Economics**
 - ▶ Internet-based video conference bridge: no central equipment to maintain
 - ▶ Scheduling and oversight provided by existing State resources: no new state positions



VVC Costs

- ▶ **One-time upfront costs: \$220,000**
 - ▶ New carts, refurbished microphones & cameras will be delivered to CTE centers
 - ▶ Contractor will uninstall, move, & install VIT existing equipment at CTE sites
 - ▶ VT BGS will uninstall and address all remaining VIT equipment
- ▶ **Annual ongoing costs: \$100,000**
 - ▶ Internet-based bridging service
 - ▶ Technical support for equipment at CTEs
 - ▶ CTE stipend support
- ▶ **Governance**
 - ▶ Operation subject to Board oversight
 - ▶ Direct VT State funding allocation



Proposed VVC Network



VVC Topology



Video Conference
Online Bridge Service



17 Vermont Career & Technical Centers

VVC Proposed Equipment



Rolling Carts
Dual-Monitor



Polycom HDX
Video systems

VVC Updated Technology



EagleEye Director
Auto-follow camera system



Ceiling Microphone





The Vermont Video Connect Opportunity

November 2015

Background

- ▶ During the 2015 legislative session, Vermont Interactive Technologies (VIT) was defunded and will cease to operate in its current form on December 31, 2015
- ▶ VIT currently operates studios at 13 locations across Vermont, and has been used by government, education, non-profit organizations and businesses to hold hearings, meetings, and trainings.
- ▶ The legislature created a working group to explore videoconferencing impacts and options post-VIT. At their meeting on October 28, the VIT Working Group voted to endorse a successor videoconferencing proposal called **Vermont Video Connect**, and authorized staff to begin formal discussions with potential partners - career technical education centers (CTE), public libraries, cable access stations, senior citizens centers and planning organizations - all of which are valuable community resources and cover much of the same regions currently served by VIT

Innovative opportunities

- ▶ VIT currently employs technicians to manually operate the codec cameras and adjust microphones at VIT sites; however, new videoconferencing innovations enable sophisticated auto-operation capabilities at a fraction of the cost
- ▶ **Vermont Video Connect (VVC)** partners will reap benefits from this videoconferencing technology - the opportunities are many

Benefits

- ▶ Expanded online learning opportunities at CTEs, including dual enrollment and adult education course offerings
- ▶ Technological capability to interconnect with all VVC partners for trainings, meetings, planning, and information dissemination
- ▶ Enhanced role as a community resource by providing a local venue for statewide hearings on topical issues such as appropriations budget development, education policy changes, siting of renewable generation projects and more

The conceptual proposal

- ▶ **VVC** partners will be provided with codec cameras, monitors, microphones and a mobile cart thus maximizing flexibility at each location
- ▶ Centralized scheduling services provided by the Department of Public Service with each site retaining local control over their room availability
- ▶ Technical support and maintenance of the equipment, as well as training on equipment use, will be managed by the Department of Public Service
- ▶ **VVC** participants will receive an annual stipend estimated to be \$4,000 to offset incidental costs incurred, for example if a staff person stays on for an extra couple of hours to open and close a room where a videoconference is being held in the evening

The transition period

- ▶ Departments within the Vermont Agency of Administration will fund and coordinate the dismantling of VIT studios, and relocation and installation of equipment at **VVC** partner locations*
- ▶ ** Current VIT sites that partner with Vermont Video Connect will not have their studios dismantled.*
- ▶ The Department of Public Service will fund and manage the videoconferencing bridge and will coordinate with other state agencies to market **Vermont Video Connect**

What's next

- ▶ The VIT Working Group will next meet on November 24, 2015 and will receive an update on what organizations have expressed interest in **Vermont Video Connect** participation
- ▶ On December 1, 2015, the VIT Working Group will submit a report with recommendations to the legislature related to the closure of VIT
- ▶ Organizations interested in **Vermont Video Connect** participation will receive regular updates as the process continues and decisions are made

Contact us

- ▶ Please feel free to contact us at any time to learn more about **Vermont Video Connect** and decisions related to its deployment:

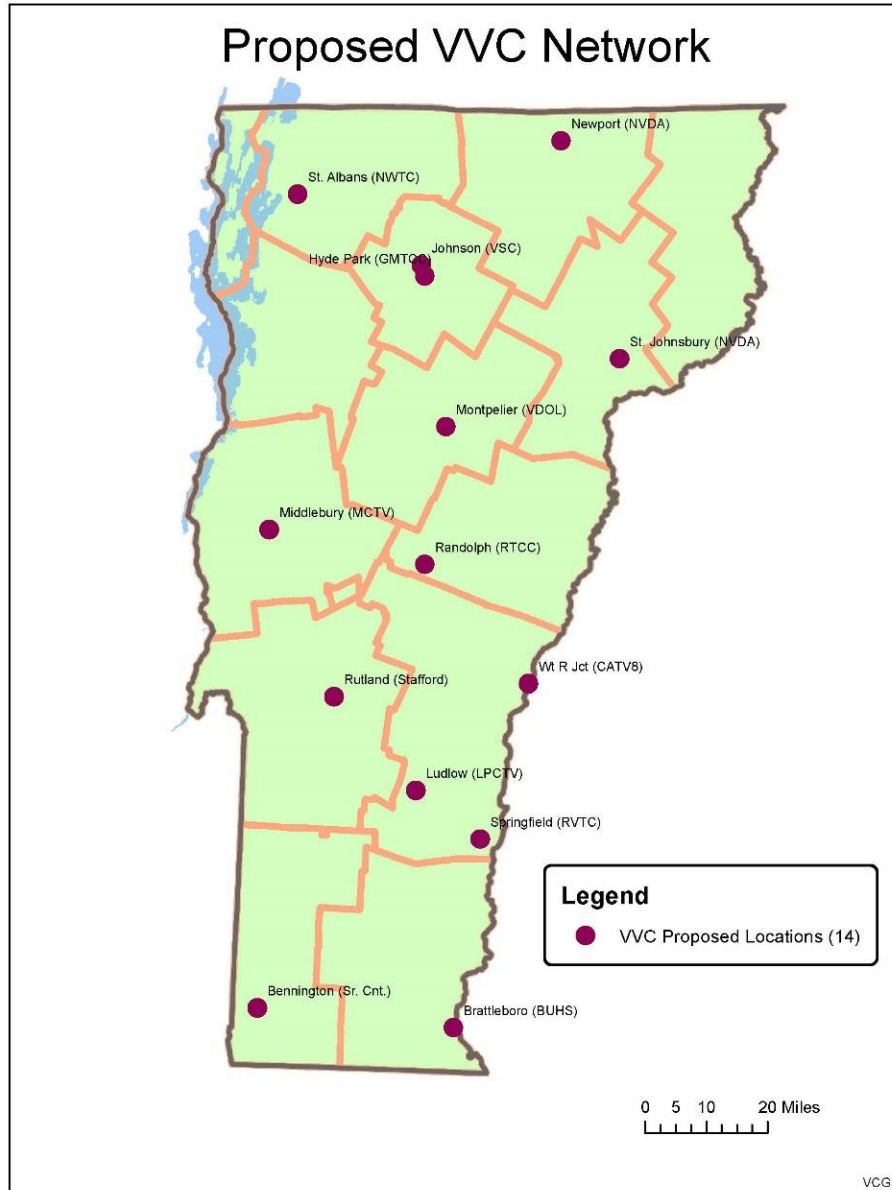
- ▶ Michelle Hughes, (802) 828-3065

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- ▶ Corey Chase, (802) 498-3029

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VVC Future Locations



Current VIT Locations			Future Vermont Video Connect Locations				
Town	Host	Location	Town	Host	Location'	Type	VIT Site
Bennington	Senior Cnt	Bennington (Senior Cnt)	Bennington	Senior Center	Bennington (Sr. Cnt.)	State	Y
Brattleboro	BUHS	Brattleboro (BUHS)	Brattleboro	BUHS	Brattleboro (BUHS)	HS	Y
Johnson	VSC	Johnson State College	Johnson	VSC	Johnson State College	VSC	Y
			Hyde Park	GMTCC	Hyde Park (GMTCC)	CTE	
Lyndonville	VSC	Lyndon State College	St. Johnsbury	NVDA	St. Johnsbury (NVDA)	RPC	
Middlebury	Hannaford	Middlebury (Hannaford)	Middlebury	MCTV	Middlebury (MCTV)	AMO	
Montpelier	VDOL	Montpelier (VDOL)	Montpelier	VDOL	Montpelier (VDOL)	State	Y
Newport	North Country	Newport (North Country)	Newport	NVDA	Newport (NVDA)	RPC	
Randolph	VT Tech	Randolph (VT Tech)	Randolph	RTCC	Randolph (RTCC)	CTE	
Rutland	Stafford	Rutland (Stafford)	Rutland	Stafford	Rutland (Stafford)	CTE	Y
Springfield	RVTC	Springfield (River Valley)	Springfield	RVTC	Springfield (RVTC)	CTE	Y
St. Albans	BFAHS	St. Albans (BFAHS)	St. Albans	Northwest CTE	St. Albans (NWTC)	CTE	
Willison	VT Tech	Willison (VT Tech)					
Wt. R. Jct.	CCV	Wt. R. Jct. (CCV)	Wt R Jct	CATV8	Wt R Jct (CATV8)	AMO	
13 Locations			Ludlow	LPCTV	Ludlow (LPCTV)	AMO	
			14 possible locations				