

A topographic map showing a river valley. A color-coded overlay, likely representing a hydrological or land use model, is visible along the river and its tributaries. The colors range from blue (low values) to red (high values). The map includes contour lines and some black rectangular markers.

VSLS Conference | September 16, 2022

# Accessing GIS Resources at the Vermont Open Geodata Portal

A topographic map showing a river valley, similar to the one in the top image. This image shows a different section of the river, with a color-coded overlay and black rectangular markers. The map includes contour lines and some black rectangular markers.

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[vcgi.vermont.gov](http://vcgi.vermont.gov)

[geodata.vermont.gov](http://geodata.vermont.gov)



# WHAT VCGI DOES

---



## **BUILD**

Foundational  
Datasets  
(Spatial Data  
Infrastructure)



## **LEAD**

Development and  
use of Statewide  
Geographic Information  
System (GIS) and the  
Coordination it Requires



## **EMPOWER**

Data access,  
visualization and  
application. “Helping  
Vermonters visualize  
choice.”





**ENERGY PLANNING**



**HISTORIC RESOURCES**



**WATER QUALITY**



**SERVICE DISTRICTS**



**ASSET MANAGEMENT**



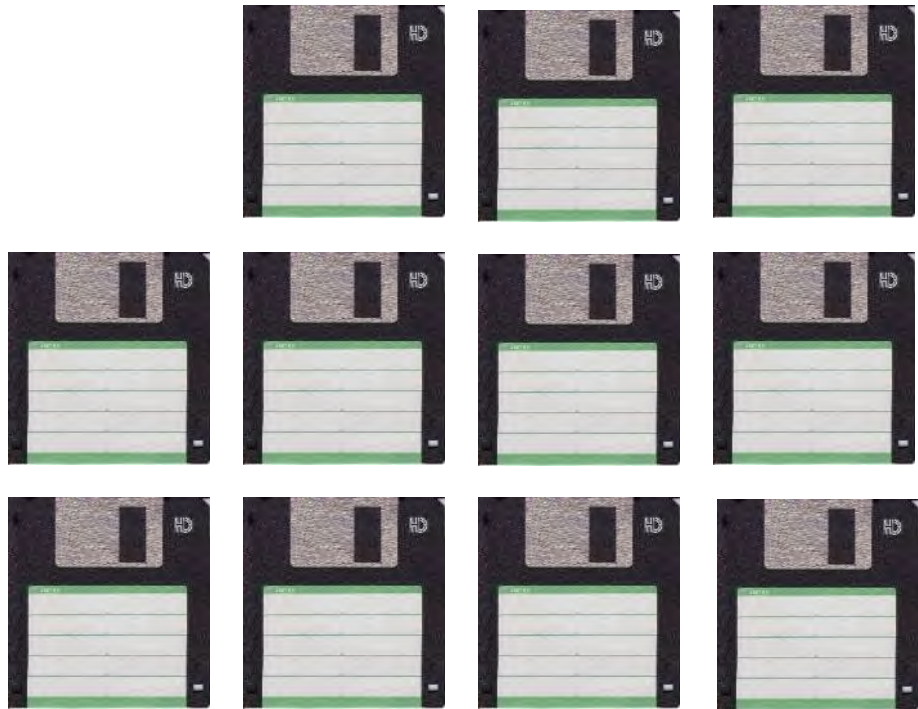
**FISCAL IMPACT MODEL**



**DEVELOPMENT SUITABILITY**



Take Home: Access to spatial information has become an essential service.



1992

geodata.vermont.gov/				Sep 14, 2021 - Sep 15, 2022			
Users	Sessions	Pageviews	Avg. Session Duration				
57,406	103,356	322,551	03:15				
↑ 11.1%	↑ 20.9%	↑ 18.8%	↓ -0.6%				



In 2021:  
**22 partners** published **1075 open datasets** generating an astounding **502,384,064** map server requests.

Portal: In past year, roughly 900 pageviews and 157 unique users/day

\*VCGI server only. Not AGO, etc.

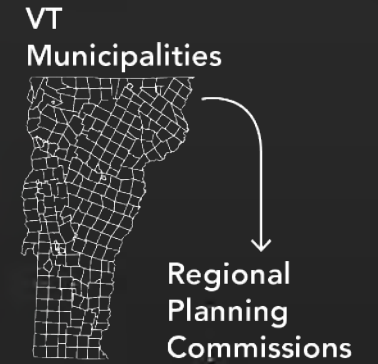
# FEDERATED DATA

DATA DOWNLOAD


SERVICES

APPS

LIKE  
**NETFLIX**  
FOR  
MAPS



State  
Agencies



Vermont  
Open  
Geodata  
Portal

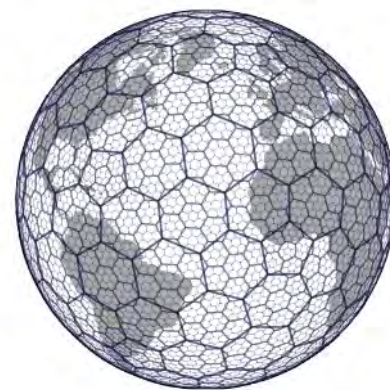


 DATA.GOV

Photo Credit: Taylor Vick



Feature	Raster
Service	Vector
Filter	Query
Attribute	Clip
Field	Topology
Schema	Geoprocessing
View	Geographic Coordinate System / Projected Coordinate System / CRS
GDB	WKID / EPSG
Shapefile	Web Mercator



# GIS JARGON\*

*\*a tiny sample*

Vermont Center for Geographic Information  
One National Life Drive  
Dewey Building 2nd Floor  
Montpelier, VT 05620-2001  
[Email VCGI](#)

[Tim Terway](#), Helpful GIS Professional  
(802) 585-0820

[John E. Adams](#), Director  
(802) 522-0172



VCGI is your source for the State of Vermont's  
geospatial data, information, and activities.

## News and Updates

### NEWS

13 JULY 2022

**Town Boundaries Updated to  
Reflect City of Essex Junction,  
Geographic Area Names and  
Codes Standard Updated**

### DATA RELEASE

23 MAY 2022

**Lake Champlain Basin Lidar-  
Informed Flood Inundation  
Layer Now Available**

### HOW-TO

22 APRIL 2022

**Improving Parcel Data Quality:  
Reviewing Match Status**

[MORE](#)

## Popular Datasets

[Parcels](#)

[Elevation \(Includes Lidar\)](#)

[Imagery](#)

[Land Cover](#)

## Map Applications

[Vermont Interactive Map Viewer](#)

[Vermont Parcel Viewer](#)

[Municipal Parcel Map Status](#)

[Vermont Land Survey Library](#)

[Vermont Orthoimagery Finder](#)

[Vermont Orthoimagery Status](#)

[Vermont Lidar Finder](#)

[Vermont Lidar Status](#)

[See More Here](#)

Footer of most pages at [vcgi.vermont.gov](http://vcgi.vermont.gov)

Data and Programs

Resources

Maps



Partner Agency Maps

Historic Maps

Partners

About VCGI

## PARTNER AGENCY MAPS

VCGI works with multiple state agencies through the [Enterprise GIS Consortium](#), whose own maps and mapping applications are linked below.

### Map Applications

AGENCY / DEPARTMENT	INTERACTIVE MAP	USES
ACCD / DHCD	<a href="#">Planning Atlas</a>	View planning, development, and historic preservation-related spatial datasets.
ACCD / DHCD	<a href="#">Municipal Planning Data Center</a>	View status of municipal plans, bylaws and designated areas through Vermont.
ACCD	<a href="#">Themed Tourism Maps</a>	View lodging, attractions, shops, events, and fun facts around Vermont.
ACCD / DED	<a href="#">Interactive Community Atlas</a>	View businesses in Vermont with 30 or more employees and across a variety of sectors.
AHS / VDH	<a href="#">Local Health Basemap</a>	View information to support local health work in Vermont.
AHS / VDH	<a href="#">Public Health Data Explorer</a>	View public health information, trends over time, and visualize health indicators on a map.
AHS / VDH	<a href="#">Community Profiles</a>	View public health information, trends over time, and visualize health indicators on a map, sortable by different health communities.
AHS / VDH	<a href="#">Environmental Public Health Tracking</a>	View data on air quality, asthma, cancer, climate and health, drinking water, and more, all by location in Vermont.





# Types of Apps













## Using the Library

Zoom in and navigate the map to the location of the land survey. You can enter an address in the search bar or pan and zoom around the map with your mouse. Different layers become visible once zoomed in. **The buttons above are for the following tasks:**



Use the **Add a Survey** tool to add a survey.



Use the **Measurement** tool to measure lines or areas.



Use the **Layer List** to toggle layers on and off.



Use the **More** button to select items or change the basemap.



Use the **Select** tool to select multiple surveys and view their contents in the attribute table.



View the **Attributes** of selected items by expanding the table view at the bottom of the page.

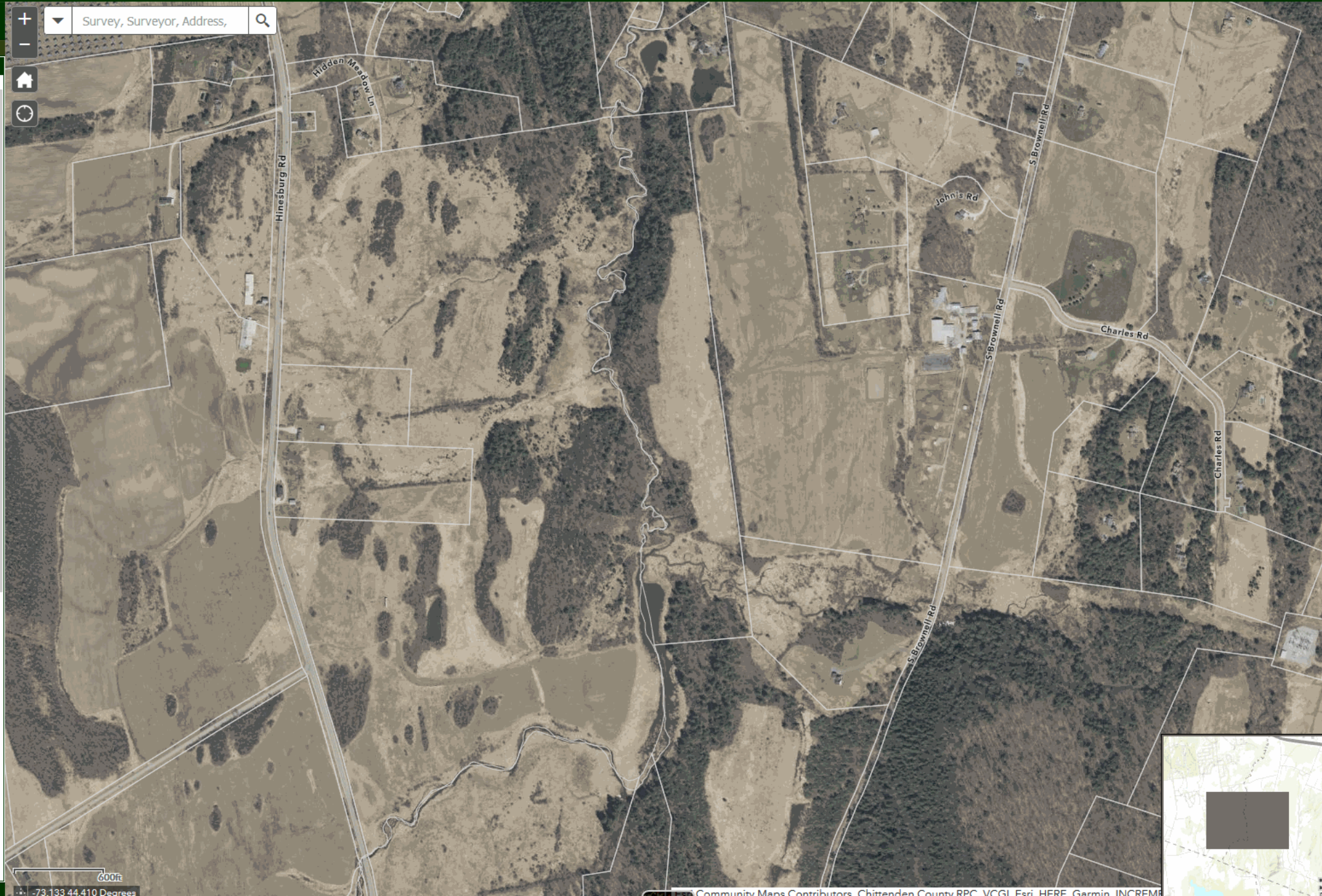
## Searching for a Survey

**By Search Bar:** Type in the name of the surveyor or address of the survey's location

**By Map:** Navigate the map to the general location of the survey and make sure the survey library layer is turned on. You may also filter available surveys by map extent using the attribute table at the bottom of the page.

## Viewing a Survey

Click on a polygon of a survey that you've located on the map. A pop-up window will display with its associated information. **In the pop-up window, click on the linked .pdf in the Attachments field.** This will open the .pdf in a new tab. For example:







Agriculture



Basemap



Boundaries



Climate



Demographic +  
Economic



Elevation



Environment



Geologic | Soils



Health | Public Safety



Imagery



Land Use + Land  
Cover



Recreation



Transportation



Utilities + Facilities



Water

### Search by Agency/Organization

- [VT Agency of Commerce and Community Development](#)
- [VT Agency of Human Services](#)
- [Addison County Regional Planning Commission](#)
- [Bennington County Regional Commission](#)



# Portal Background

Where “open” data has been, where it is, and where it is headed

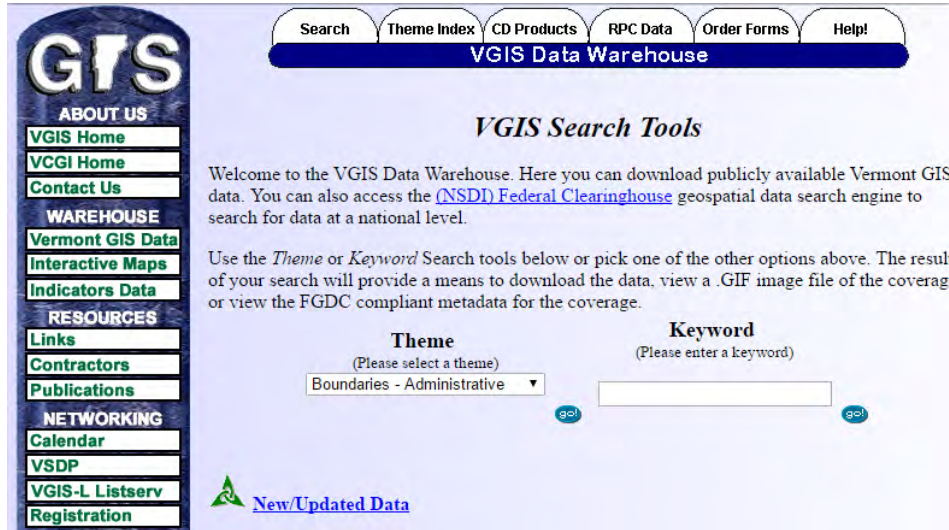


# 30 years of open data

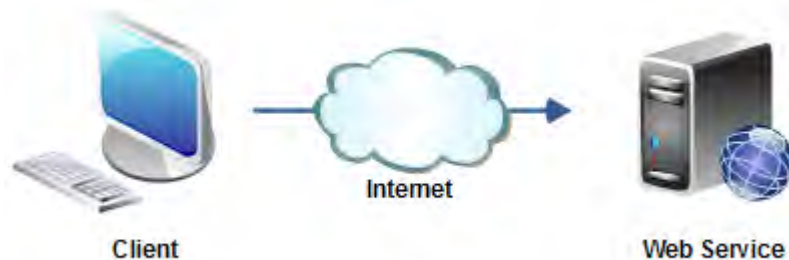
1992



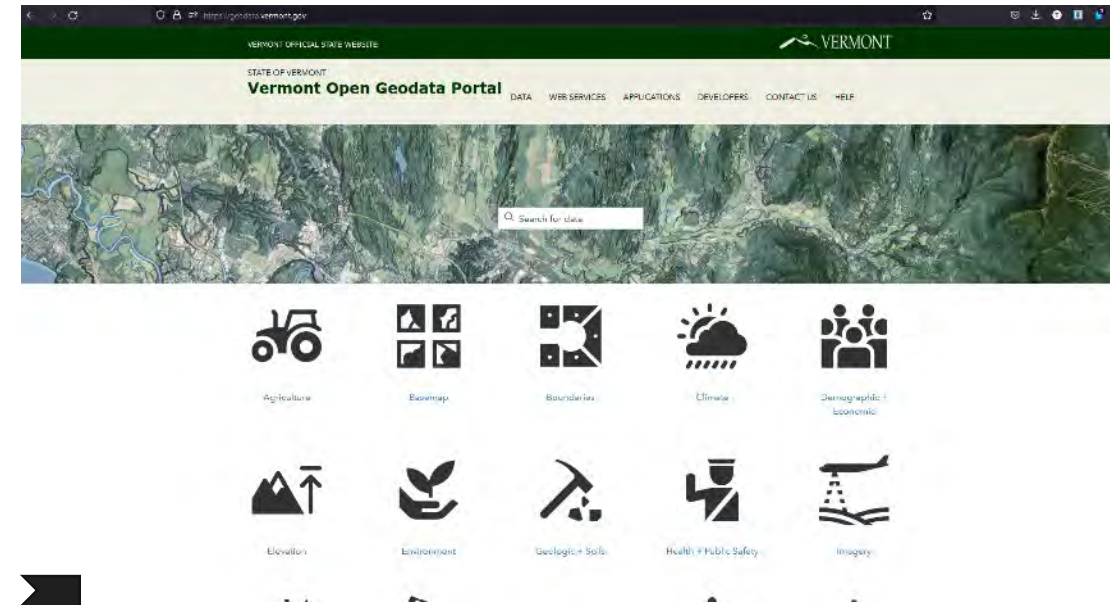
1998



2000s

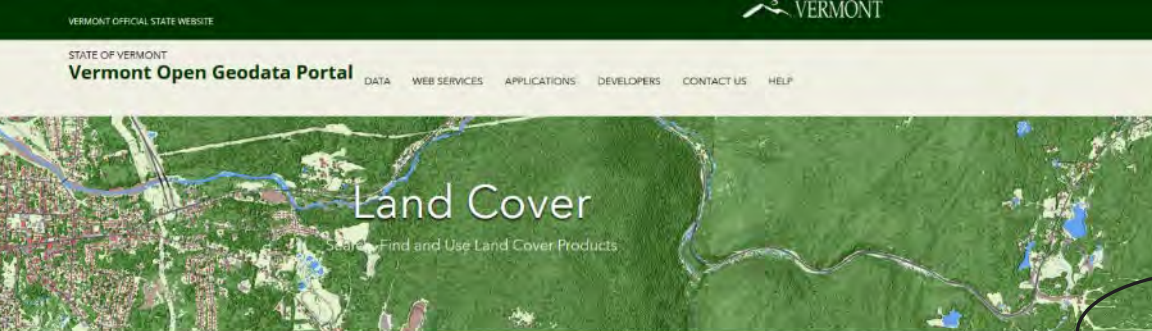


Late 2017 - Present Day



[geodata.vermont.gov](https://geodata.vermont.gov)





# 2020+

**It is now possible to construct  
a Virtual Vermont for reference.  
No floppies needed.**



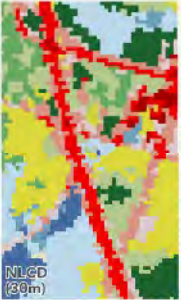
**Land Cover**  
Search, Find and Use Land Cover Products

**Datasets**  
Download Land Cover Products

Vermont land cover data is available from two different efforts: the National Land Cover Database (NLCD) managed by the Multi-Resolution Land Characteristics Consortium (MRLC), and Vermont-specific land cover products created over the years.

For Vermont-specific land cover products including the 2016 statewide 0.5 meter resolution set derived from a combination of 2013 - 2017 LiDAR and 2016 orthoimagery data (see [Report for details](#)), use the data download table below.

For NLCD data of 30 meter resolution with editions every 2-3 years beginning in 2001, see [this page](#).



Product	Resolution (Meters)	Type	Coverage				
1 - 14 / 14							
Year	Product	Resolution (Meters)	Description	Type	Coverage	Download	Metadata
2016	Land Cover	0.5	Vermont Base Land Cover 2016	Raster	Vermont	<a href="#">Download</a>	<a href="#">Metadata</a>
2016	Forest Patch	0.5	Vermont Forest Patch Land Cover 2016	Vector	Vermont	<a href="#">Download</a>	<a href="#">Metadata</a>
2016	Agriculture	0.5	Vermont Agriculture Land Cover 2016	Vector	Vermont	<a href="#">Download</a>	<a href="#">Metadata</a>
2016	Wetlands	0.5	Vermont Wetlands Land Cover 2016	Vector	Vermont	<a href="#">Download</a>	<a href="#">Metadata</a>
2016	Shrublands	0.5	Vermont Shrublands Land Cover 2016	Vector	Vermont	<a href="#">Download</a>	<a href="#">Metadata</a>
2016	Tree Canopy	0.5	Vermont Tree Canopy Land Cover 2016	Vector	Vermont	<a href="#">Download</a>	<a href="#">Metadata</a>
2016	Impervious Surfaces	0.5	Vermont Impervious Surfaces Land Cover 2016	Vector	Vermont	<a href="#">Download</a>	<a href="#">Metadata</a>
2016	3D Buildings	0.5	Vermont 3D Building Footprints 2016	Vector	Vermont	<a href="#">Download</a>	<a href="#">Metadata</a>
2013	Land Cover	Multiple	Mount Mansfield Alpine Tundra 2013	Vector	Mount Mansfield	<a href="#">Download</a>	<a href="#">Metadata</a>
2011	Impervious Surfaces	1	Lake Champlain Basin Impervious Surfaces 2011	Vector	Lake Champlain Basin	<a href="#">Download</a>	<a href="#">Metadata</a>
2003	Land Cover	Multiple	LCU of lands next to VT streams feeding Lake Champlain 2003	Vector	Lake Champlain Basin	<a href="#">Download</a>	<a href="#">Metadata</a>
2001	Land Cover	30	Lake Champlain Basin Land Cover 2001	Raster	Lake Champlain Basin	<a href="#">Download</a>	<a href="#">Metadata</a>
1996	Land Cover	25	Vermont and Lake Champlain Basin Land Cover 1996	Raster	Vermont and Lake Champlain Basin	<a href="#">Download</a>	<a href="#">Metadata</a>
1992	Land Cover	30	Lake Champlain Basin Land Cover 1992	Raster	Lake Champlain Basin	<a href="#">Download</a>	<a href="#">Metadata</a>
1 - 14 / 14							



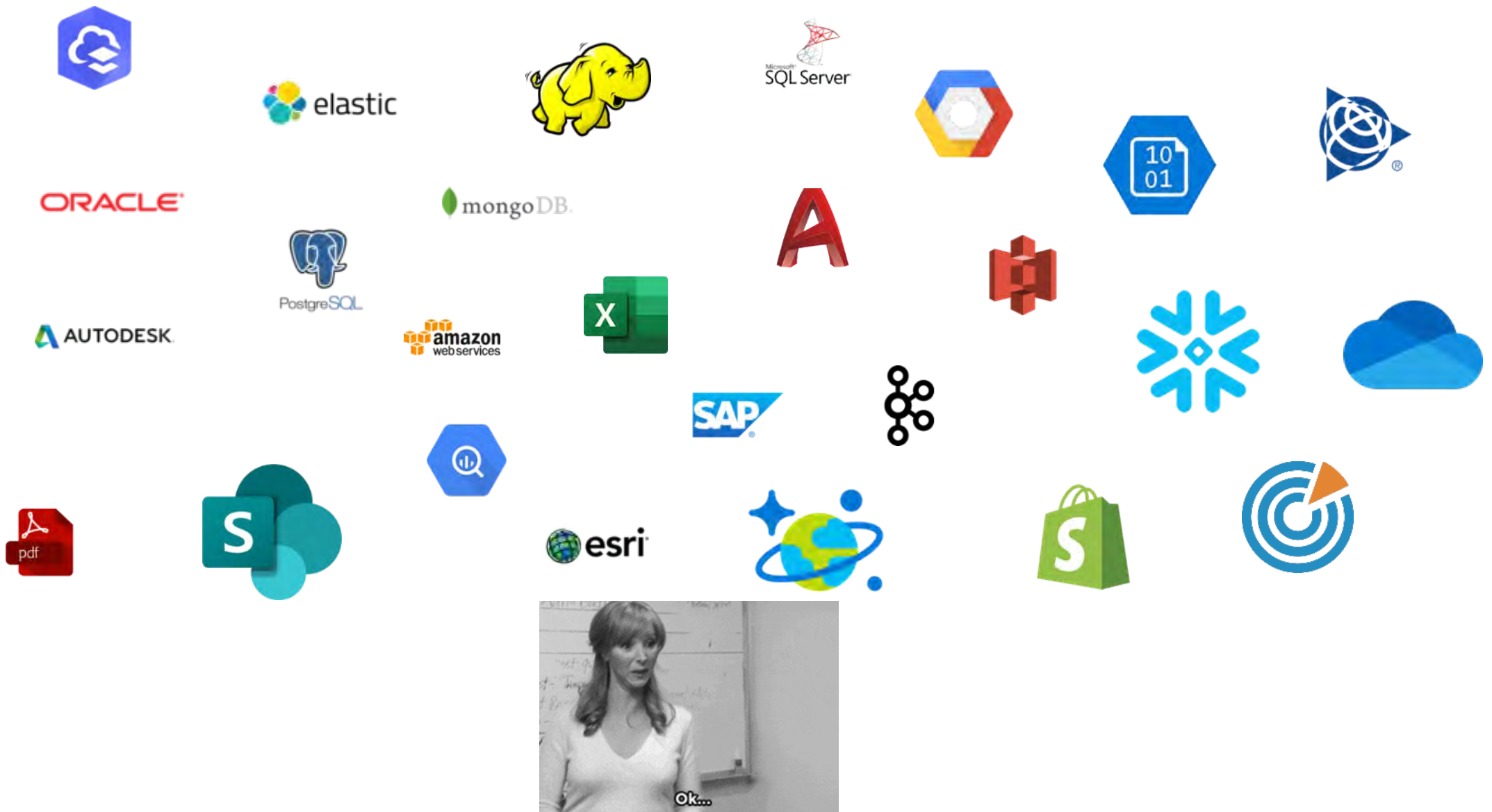
**+ 1' CONTOURS, PARCELS**



**3D Buildings, Topography  
Hydrography  
Orthoimagery  
Land Cover**







# 2022 – datatype/platform soup

There are many. There will be more. Task is thus understanding basics, integration and prep for use.



**GIS  $\neq$  CAD**

(sorry!)

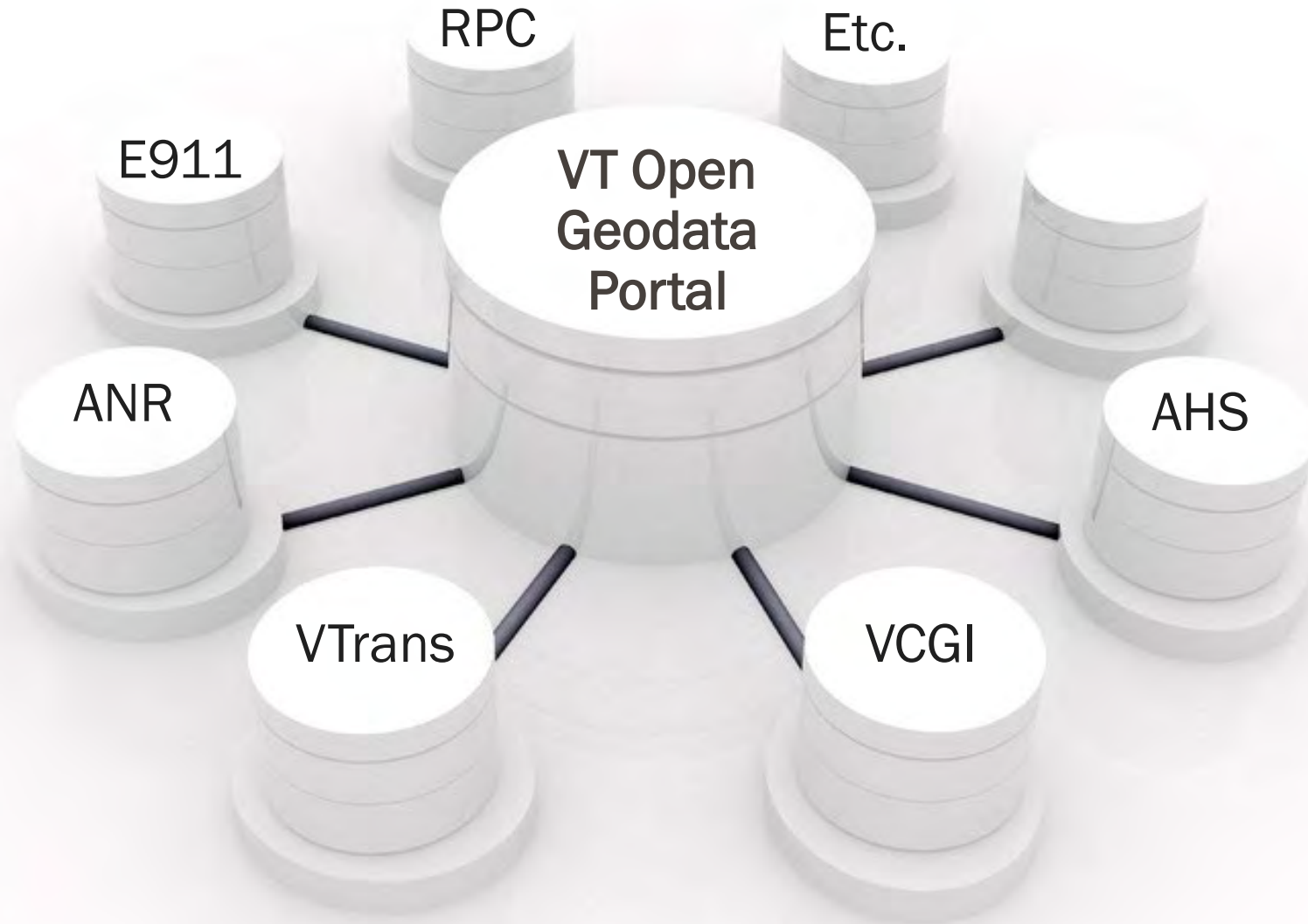


# Portal Publishing

“Federated” Model: Understanding and Finding Data, and Who/How Maintained



# Hub-and-spoke design a.k.a. “federated” model



Still, not perfect.

- No master librarian technical capabilities in current form
- Mixed adherence to data standards (e.g., Naming, tagging, metadata, etc.) – requires regular manual policing
- ESRI runs the platform backend (and changes things often, we’re along for the ride)
- Vector data: Great. Raster data: not so great.
- Hitting ceiling on current portal capabilities as configured
- A head’s up: the portal will change with time, so everything presented here will also evolve!



Current publishers.

## Search by Agency/Organization

- [VT Agency of Commerce and Community Development](#)
- [VT Agency of Human Services](#)
- [VT Agency of Natural Resources](#)
- [VT Agency of Transportation](#)
- [VT Center for Geographic Information](#)
- [VT Department of Public Service](#)

- [Addison County Regional Planning Commission](#)
- [Bennington County Regional Commission](#)
- [Central Vermont Regional Planning Commission](#)
- [Chittenden County Regional Planning Commission](#)
- [Northeastern Vermont Development Association](#)
- [Northwest Regional Planning Commission](#)
- [Rutland Regional Planning Commission](#)
- [Lamoille County Planning Commission](#)
- [Southern Windsor County Regional Planning Commission](#)
- [Two Rivers-Ottawquechee Regional Commission](#)
- [Windham Regional Commission](#)



AllDataDocumentsApps & Maps

FiltersReset1 - 20 of 161 resultsRelevance

tag:nodeVCGI

Content Type

Apply type

☐ Feature Layer

☐ Shapefile

☐ Table

☐ Feature Service

☐ CSV

More

Last Updated

Source

Apply source

☐ VT Center for Geographic Information

☐ gisnvda

☐ Northwest Regional Planning Commission

☐ CentralVTRPC

☐ BenningtonRPC

More

Categories

Apply category

☐ Boundaries

Data

[VT Data - Locations of Surveys Accessible via Vermont Land Survey Library](#)

VCGI | Publisher\_VCGI

Feature layer of locations corresponding to surveys that are produced by Vermont licensed land surveyors and submitted—as .pdf copies—to the Vermont Land Survey Library.Locations are...

Type: feature Layer

Rows: 1,680

Last Updated: September 14, 2022

Tags: Survey Library, isothemeCadastral, isothemeBoundar...

Data

[VT Data - Geographic Area Names and Codes](#)

VI Center for Geographic Information | Services\_VCGI

Tables containing standard codes for various geographic areas. The codes are described in greater detail in the VT Geographic Area Names and Codes Standard. The table preview shows 1 of the...

Type: Table

Rows: 290

Last Updated: July 12, 2022

Tags: vcgi open data, isothemeBoundary, subthemeOther, ...

Data

[VT Data - VT Hydrography Dataset - cartographic extract polygons](#)

VT Center for Geographic Information | Services\_VCGI

(Link to Metadata) VHDCARTO is a simplified version of the local resolution Vermont Hydrography Dataset (VHD) that has been enriched with stream perenniality, e.g., "intermittent" vs. "perennial",...

Type: Feature Layer

Rows: 29,848

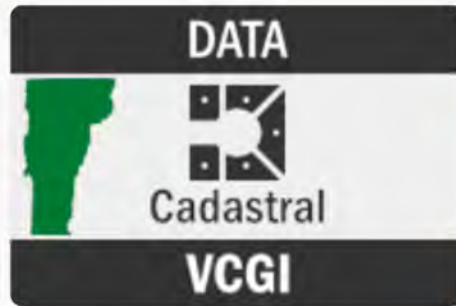
Last Updated: September 24, 2019

Tags: nodeVCGI, vcgi open data, isothemeWater, subthem...



# Portal Content

Anatomy of an Open Data Item



## VT Data - Locations of Surveys Accessible via Vermont Land Survey Library



VCGI -  
VT Center for Geographic Information

View Map

Download

More ▾



### Summary

Locations and information corresponding to copies of surveys that are accessible via the Vermont Land Survey Library.

Feature layer of locations corresponding to surveys that are produced by Vermont licensed land surveyors and submitted—as .pdf copies—to the [Vermont Land Survey Library](#).

Locations are attributed with information such as name of surveyor, date of survey, survey type (e.g., subdivision), and municipality. When the feature layer is opened in ArcGIS Online, the .pdf copies (as feature attachments) can be viewed/downloaded.

Boundaries Property



Looking for something else? See other datasets nearby →



### Attributes (16)

Name	Type	Action
CreationDate	Date or Time	
Creator	Text	
EditDate	Date or Time	

[Read More ▾](#)

You may be interested in

### Details



**Dataset**  
Feature Layer



**January 3, 2022**  
Info Updated



**Weekly**  
Data Updated: September 15, 2022



**January 1, 2020**  
Published Date



**1,684 Records**  
[View data table](#)



**Public**  
Anyone can see this content



**Custom License**  
[View license details](#)



**Relevant Area**



National Geographic, Esri, Garmin, HERE, UNL, ... Powered by Esri

I want to...





# VT Data - Locations of Surveys Accessible via Vermont Land Survey Library



VCGI -  
VT Center for Geographic Information

## Summary

Locations and information corresponding to  
copies of surveys that are accessible via the  
Vermont Land Survey Library.

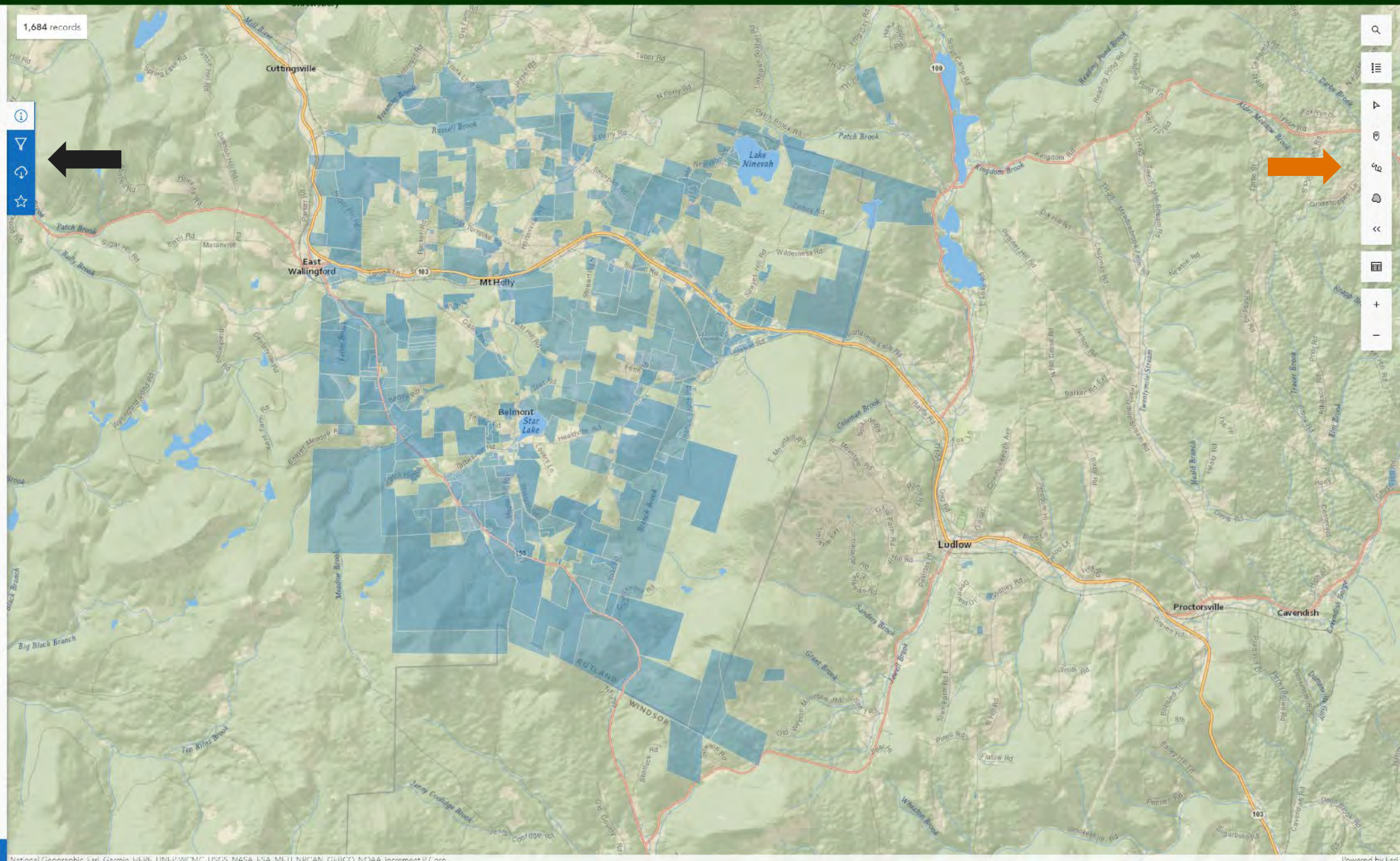
[View Full Details](#)

[Download](#)

## Details

- Dataset**  
Feature Layer
- January 3, 2022**  
Info Updated
- Weekly**  
Data Updated: September 15, 2022
- January 1, 2020**  
Published Date
- 1,684 Records**  
[View data table](#)
- Public**  
Anyone can see this content
- Custom License**  
[View license details](#)

I want to use this



National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.

Powered by Esri

A Vector Dataset / Feature Layer Example: [Survey Library Index Polygons](#)



## Download Options

VI Data - Locations of Surveys Accessible via Vermont Land Survey Library

Toggle Filters: ☒

## 112 records ready for download

Extent of filtered area is used for content where hosted downloads is not enabled.

Creating a new file with your filters will take some time

## CSV

Downloading an updated file may take some time.

[Download](#)

## KML

Downloading an updated file may take some time.

[Download](#)

## Shapefile

Downloading an updated file may take some time.

[Download](#)

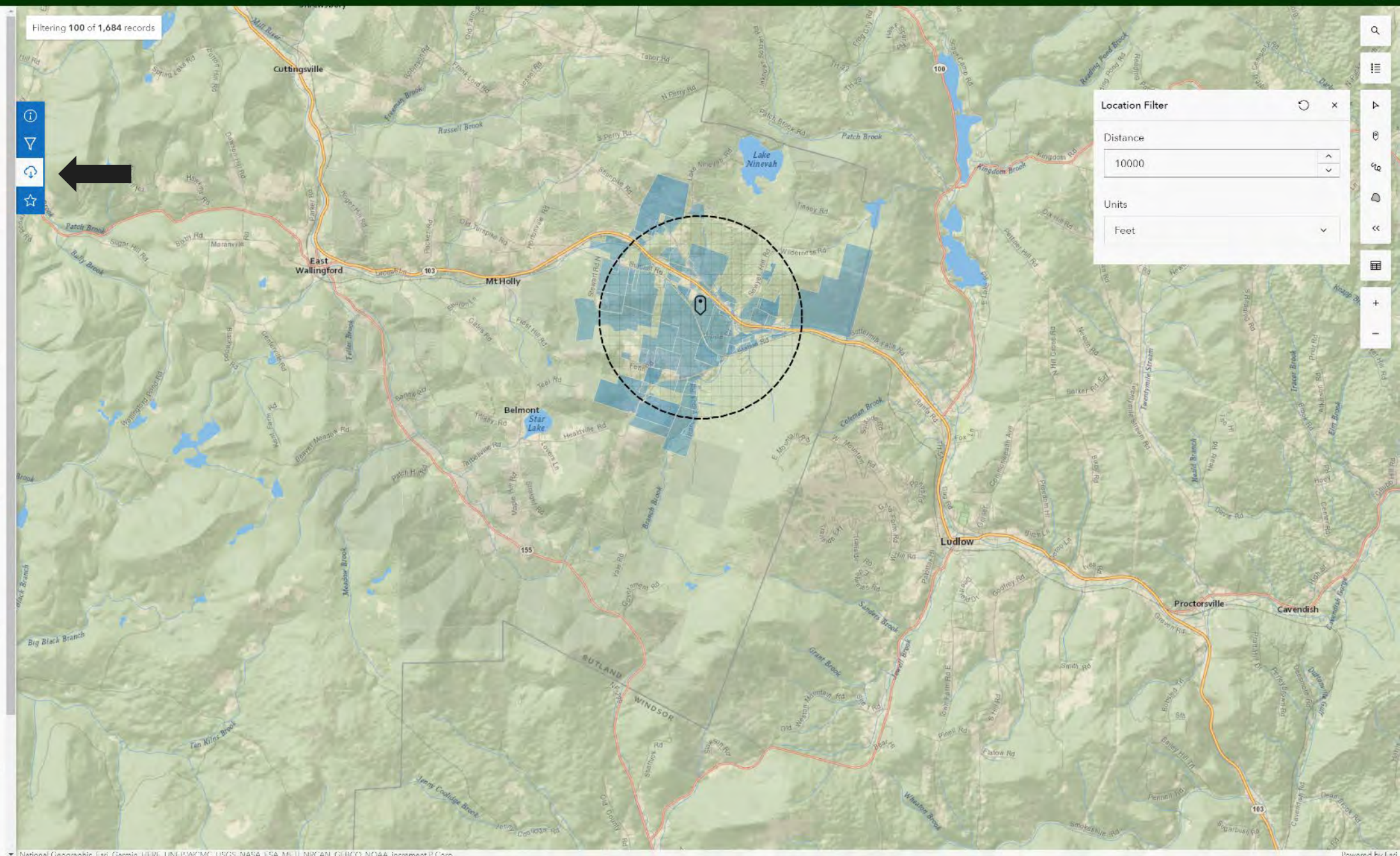
## GeoJSON

Downloading an updated file may take some time.

[Download](#)

## File Geodatabase

Downloading an updated file may take some time.





## Filters

VT Data - Locations of Surveys Accessible via Vermont  
Land Survey Library

Filters

Styling

Filter as map moves ⓘ



Location filter applied

[Remove filter](#)

Select attribute filters (16)

☐ CreationDate  
10/31/2019 to 8/7/2022

☐ Creator  
1 values

☐ EditDate  
10/31/2019 to 8/9/2022

☐ Editor  
1 values

☐ Survey Title  
1,424 values

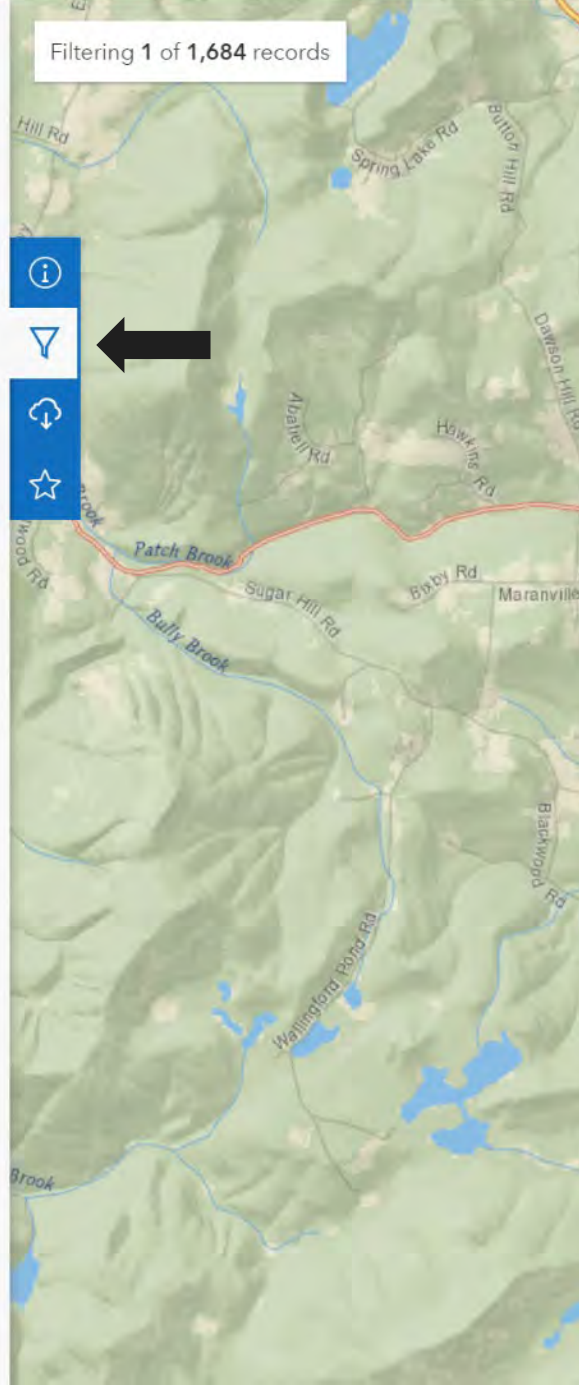
☐ Name of Surveyor  
226 values

☐ Uploader Email  
94 values

☐ Date of Survey  
8/1/1924 to 7/25/2022

☐ Survey Type  
4 values

Filtering 1 of 1,684 records





# Filters

VT Data - Locations of Surveys Accessible via Vermont Land Survey Library

Filters Styling

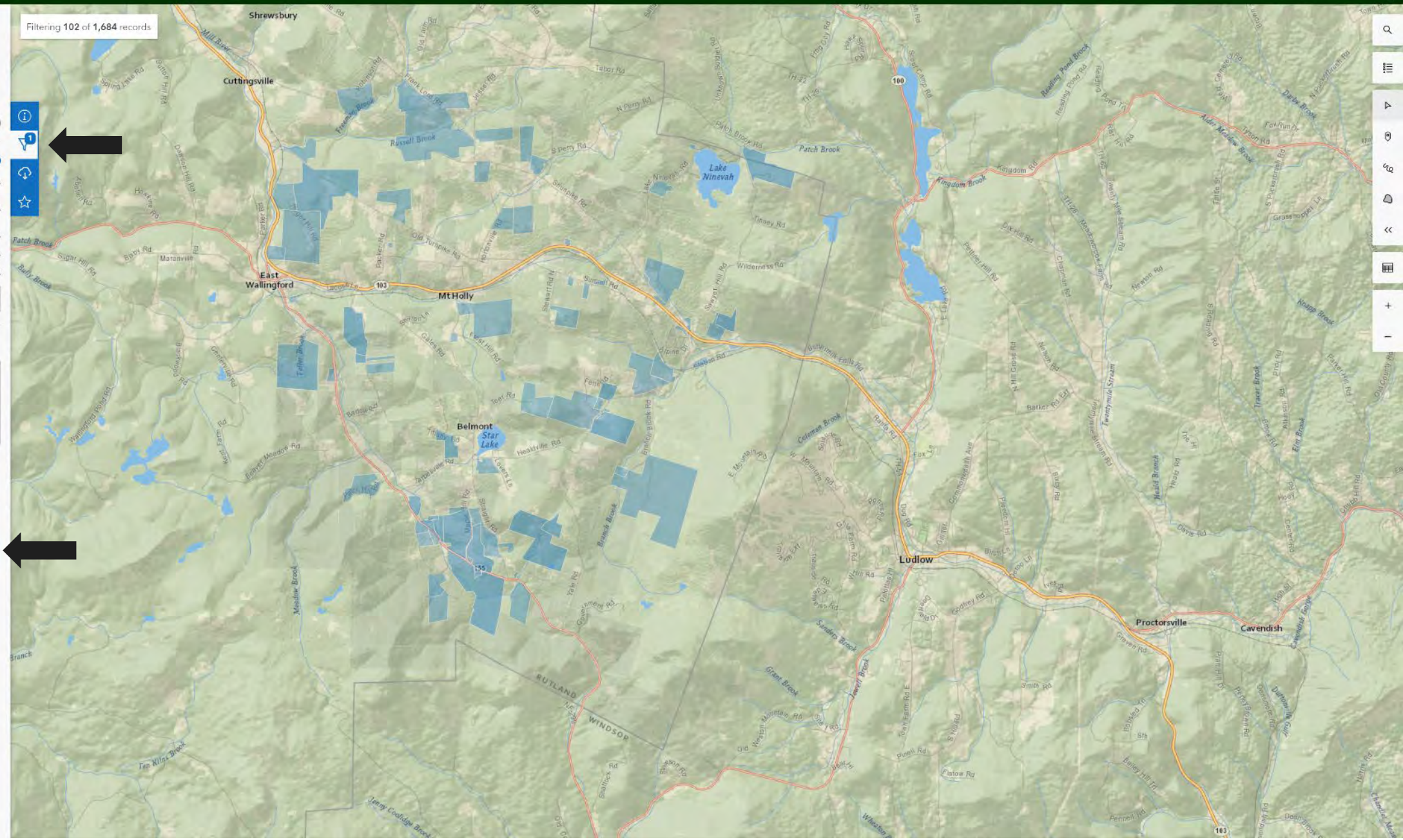
Filter as map moves

- Name of Surveyor
- ☐ Michael Gervais 6.25%
  - ☐ Peter H. Cross, Cross Consulting Engineers 5.99%
  - ☐ Nathan Nadeau 5.79%
  - ☒ Ralph J Michael 5.07%
  - ☐ Ronald L. LaRose 3.88%

Search 221 more values

Select attribute filters (16)

- ☐ CreationDate 10/31/2019 to 8/7/2022
- ☐ Creator 1 values
- ☐ EditDate 10/31/2019 to 8/9/2022
- ☐ Editor 1 values
- ☐ Survey Title 1,424 values
- ☒ Name of Surveyor 226 values



Map navigation controls including search, zoom, and layer management icons.



# VT Data - Locations of Surveys Accessible via Vermont Land Survey Library



## Summary

Locations and information corresponding to copies of surveys that are accessible via the Vermont Land Survey Library.

View Full Details

Download

## Details

**Dataset**  
Feature Layer

**January 3, 2022**  
Info Updated

**Weekly**  
Data Updated: September 15, 2022

**January 1, 2020**  
Published Date

**1,684 Records**  
[View data table](#)

**Public**  
Anyone can see this content

**Custom License**  
[View license details](#)

I want to use this

Showing 25 of 1,684 rows

Close Table

CreationDate	Creator	EditDate	Editor	Survey Title	Name of Surveyor	Uploader Email	Date of S
10/31/2019, 2:00 PM	Publisher_VCGI	3/11/2020, 2:33 PM	Publisher_VCGI	Plat Showing subdivision of l...	Kevin R. Larose	david.n.fox@vermont.gov	7/17/201
10/31/2019, 2:00 PM	Publisher_VCGI	10/31/2019, 2:00 PM	Publisher_VCGI	Preliminary Plat of Minor Sub...	BM Paul	david.n.fox@vermont.gov	8/18/201
10/31/2019, 2:00 PM	Publisher_VCGI	10/30/2020, 8:34 AM	Publisher_VCGI	Lands of John M. & Julie M. E...	Michael Gervias	david.n.fox@vermont.gov	6/5/2017
10/31/2019, 2:00 PM	Publisher_VCGI	10/31/2019, 2:00 PM	Publisher_VCGI	Property Line Adjustment Pla...	Merrill A. Mundell, Jr.	david.n.fox@vermont.gov	2/25/201
10/31/2019, 2:00 PM	Publisher_VCGI	10/31/2019, 2:00 PM	Publisher_VCGI	Subdivision Plat for Ernest N...	Mark Day	david.n.fox@vermont.gov	6/20/201
10/31/2019, 2:00 PM	Publisher_VCGI	10/31/2019, 2:00 PM	Publisher_VCGI	Boundary and Subdivision Pl...	Mark Day	david.n.fox@vermont.gov	3/20/201
10/31/2019, 2:00 PM	Publisher_VCGI	10/31/2019, 2:00 PM	Publisher_VCGI	A Map of Certain Lands of Je...	Kenneth G. Weston	david.n.fox@vermont.gov	6/15/200
12/12/2019, 2:30 PM	Publisher_VCGI	12/30/2019, 9:01 AM	Publisher_VCGI	Subdivision of th Bruce Whe...	George E. Bedard	david.n.fox@vermont.gov	12/7/201
12/16/2019, 10:06 AM	Publisher_VCGI	12/30/2019, 9:00 AM	Publisher_VCGI	Subdivision Plat of a Portion ...	Donald A. Johnson	david.n.fox@vermont.gov	7/30/201
12/16/2019, 10:10 AM	Publisher_VCGI	12/30/2019, 9:00 AM	Publisher_VCGI	Suvery and Subdivision of La...	Tami Bass	david.n.fox@vermont.gov	8/1/2004
12/20/2019, 11:40 AM		12/30/2019, 11:24 AM	Publisher_VCGI	Estate of Adelbert Ames, III	Joseph DiBernardo	joedibo@comcast.net	10/2/201
12/20/2019, 12:57 PM		10/30/2020, 8:34 AM	Publisher_VCGI	Boundary Line Adjustment of...	Keith Van Iderstine	scott@mccainconsulting.com	12/20/20
12/20/2019, 2:17 PM		12/30/2019, 8:57 AM	Publisher_VCGI	Subdivision Plat, Lands of: B...	KML Surveying & Design, PL...	kml.surveying@icloud.com	12/12/20
12/30/2019, 11:07 AM		10/30/2020, 8:34 AM	Publisher_VCGI	Survey and Subdivision of a ...	Keith Van Iderstine	scott@mccainconsulting.com	12/19/20
1/2/2020, 4:21 PM		1/3/2020, 10:00 AM	Publisher_VCGI	Laquerre Subdivision	William R Chase	cdchase@chasesurveyors.com	4/1/2019
1/6/2020, 2:35 PM		10/30/2020, 8:35 AM	Publisher_VCGI	Subdivision For THE CONSE...	Richard F. Lunna	rflunna@gmail.com	11/22/20
1/8/2020, 11:36 AM		10/30/2020, 8:34 AM	Publisher_VCGI	LANDS OF CHAMPLAINSIDE...	Michael Gervias	rob@barnardandgervais.com	11/15/20
1/9/2020, 9:49 AM		1/9/2020, 3:26 PM	Publisher_VCGI	Boundary Line Adjustment Pl...	Mark Day	nicole.snow@tcevt.com	11/19/20
1/10/2020, 10:42 AM		1/13/2020, 8:58 AM	Publisher_VCGI	Survey of Lot 4 & 5 For Wesle...	William R. Creamer	wrcreamer72@gmail.com	11/13/20

# Demo

A Vector Dataset / Feature Layer Example: [Survey Library Index Polygons](#)