



Vermont Land Survey Library

Data, Tools, Considerations

VALA Annual Conference
September 8, 2023
Chaveli Miles
Dylan Broderick

vcgi@vermont.gov

<https://landsurvey.vermont.gov/>



VERMONT CENTER FOR GEOGRAPHIC INFORMATION

VCGI: Background, Programs, and Data

OVERVIEW

VCGI Background

- Parcel Program
- Parcels vs Surveys
- VT Land Survey Library
- Survey Library Use Cases
- Survey Library Demo
- Challenges



Imagery



LiDAR/Elevation



Parcels/Boundaries



Open Geodata Portal: <https://geodata.vermont.gov/>

déjà
vu?

funds to create digital parcel data had to follow the guidelines. Among other things, the guidelines request that municipal parcel maps be separated into three Arc/Info data layers in order to be compatible with the State GIS. The first layer is the "parcel" layer. This layer contains property boundaries and public road right-of-ways only. A second layer, "tax maps," as streams and private right-of-ways. A third layer, "town boundaries," is simply the town boundary derived from the parcels.

Once the guidelines were established, the Center issued an RFP for contractors and selected five vendors that demonstrated the ability to meet the municipal property mapping standards. The Center then put participating towns in touch with contractors and assisted them in issuing RFPs and other facets of project management. By the end of the project, the state had provided funding to approximately 100 towns, covering about two-thirds of the state population, to generate digital parcel layers from their original paper tax maps. (See Figure 4.1)

Although the project has been very successful, several problems were encountered along the way. First, the quality of the towns' paper parcel maps varied a great deal. As a result the project took quite a while longer than initially expected. Second, the Center found that providing the full funding to the towns meant that many invested very little of their own time into the project, thus creating additional sources of delay. The Vermont Center for Geographic Information believes that towns should be asked to match state dollars as a way of increasing their investment in the timely outcome of the project. A third problem relates to maintenance of the data and is addressed in the following section.



Fig. 4.1 Parcel Mapping Availability in Vermont (Courtesy of Vermont Center for Geographic Information)

Maintenance

At present the state has not provided funding for database maintenance, and each town carries the responsibility for maintaining and updating its parcel map database. Unfortunately, because updating is expensive, only some of the towns have dedicated the necessary financial resources to regular database maintenance. The hope is that towns, recognizing the immense value afforded by having a digital parcel map layer, will be able to generate the necessary maintenance revenue in the future.

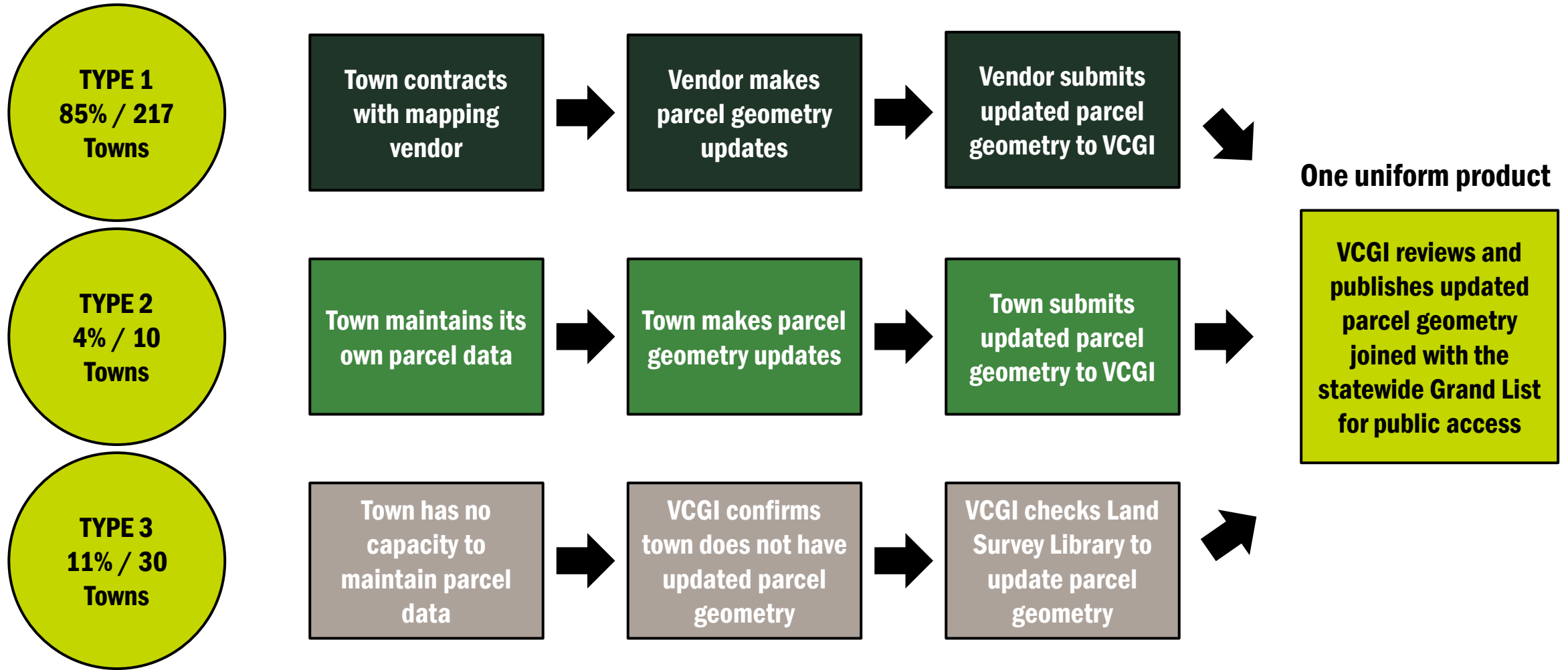
Towns that do maintain their databases use a variety of methods to update their digital parcel data. Some municipalities have in-house GIS systems and continually update the parcel data on an as-needed basis. The sophistication of technology at a town or city could range from

“The hope is that towns, recognizing the immense value afforded by have a digital parcel map layer, will be able to generate the necessary maintenance revenue in the future.”

- Circa 1990's...



Voluntary, Shared Responsibility Model – “Simple” View



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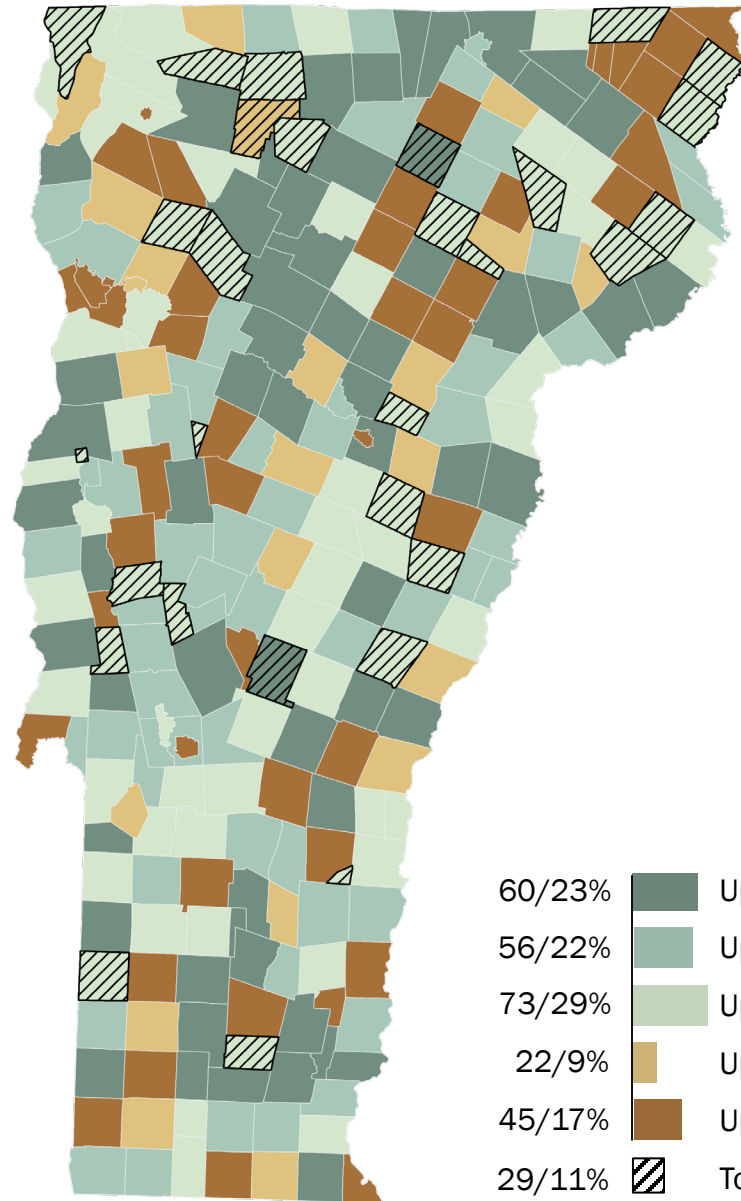
Recent Publish

338,927 Active Parcels
7,756 Unmatched Parcels
40,384 Inactive Parcels

As of 8/23/23



Recency of parcel data geometry



How are parcel updates made?

217 (85%) of towns are maintaining parcel data themselves or with a GIS vendor.

Out of the 207 (81%) towns working with a GIS vendor, three vendors account for 92% of submissions:

- CAI Technologies
- Cartographic Technologies Inc.
- Christine Chamberlain

Approximately 42 towns with a vendor have not submitted updates to VCGI.

In the event a town does not have a vendor and has no capacity to make their own updates, VCGI can make limited updates based on submissions to the Vermont Land Survey Library.

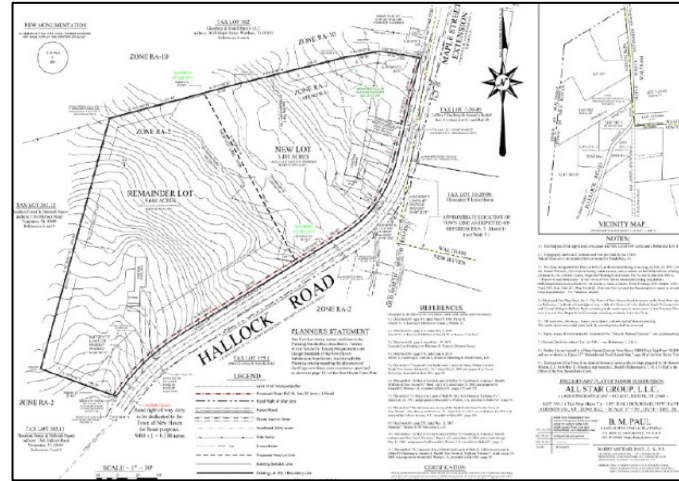
More details on parcel data status by town can be found at the [Town Mapping Status App](#)

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Parcel data are **not** the same as a land survey:

The same 10ac parcel in New Haven as represented in a land survey from 2018 and town's parcel data.



Land Survey

Land surveys provide precise measurements of a property and can include:

- The location of permanent features on the property (i.e., manmade structures, prominent ecological features, fencing, belowground features such as septic tanks)
- Information about the property's suitability for specific purposes (including zoning information)
- Topographic contours
- References to relevant written deeds and existing land surveys
- **Land surveys are the legal means of determining or validating the boundary lines of a property.**



Parcel Data

Parcel data are an index of property ownership:

- Generalization of a property's boundary lines which can be referenced as an approximation of parcel size
- Often derived from multiple sources
- Displays property ownership information from the annual Grand List
- Often viewed in reference to other spatial layers (imagery, E911 points, etc.)
- For reference only and should not be used to determine or validate the boundary lines of the property or for tax assessment purposes



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The Vermont Land Survey Library: Legislation

Effective January 1, 2020 and as stated in [27 V.S.A. § 341](#), surveys are required for property line changes in Vermont. Licensed land surveyors who produce the surveys are to submit a digital copy of them to the library in [.pdf format](#) (see [27 V.S.A. §1401](#) and [27 V.S.A. §1403](#)).

The copies of surveys are for public reference only. The original that typically resides with the municipality remains the official document.



Title 27 : Property

Chapter 017 : Filing Of Land Plats

(Cite as: 27 V.S.A. § 1401)

§ 1401. Acceptance of survey plats; definition

(a) Each town clerk shall accept survey plats for filing and maintain files and indices to files of survey plats in accordance with this chapter.

(b) As used in this chapter:

(1) "Survey plat" means a map or plan drawn to scale of one or more parcels, tracts, or subdivisions of land, showing, but not limited to, boundaries, corners, markers, monuments, easements, and other rights.

(2) "Center" means the Vermont Center for Geographic Information.

(c)(1) Whenever a survey plat that maps the subdivision of a parcel or a change in a parcel boundary is filed for record with a town clerk, the surveyor who created the survey plat shall submit a digital copy of the plat to the Center. The Center shall maintain digital copies of survey plats in a statewide digital repository and make them available to the public.

(2) The failure of a surveyor to comply with subdivision (1) of this subsection shall not void, alter, or invalidate the subdivision or boundary adjustment and shall not render the title to the property depicted in the survey plat unmarketable.

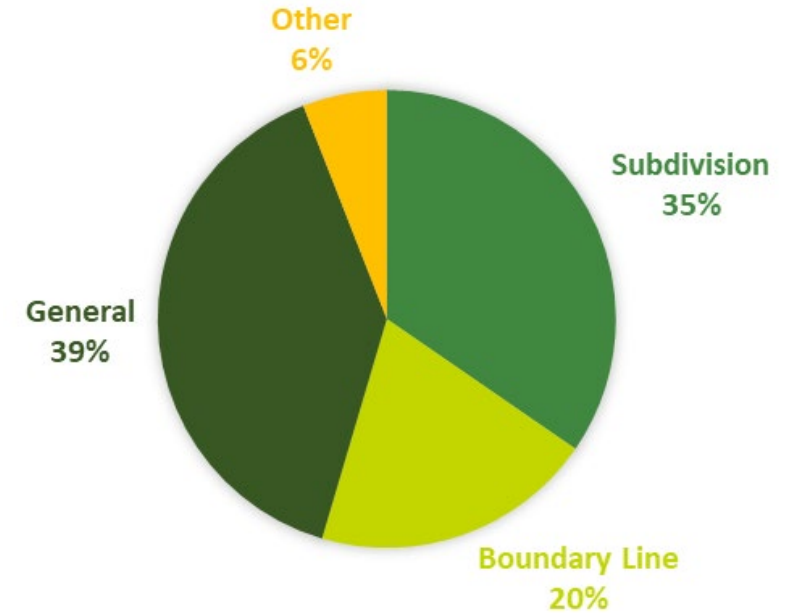
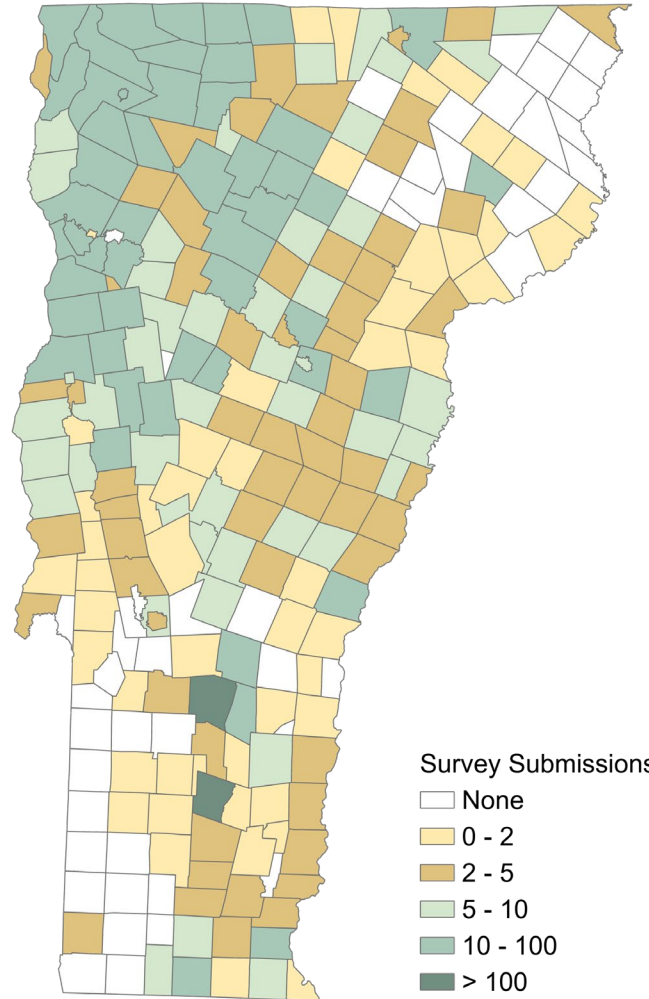
(d) The survey plat filed with the town clerk shall be the official plat of record. (Added 1969, No. 235 (Adj. Sess.), § 3, amended 1991, No. 163 (Adj. Sess.), § 1; 2019, No. 38, § 3, eff. Jan. 1, 2020.)

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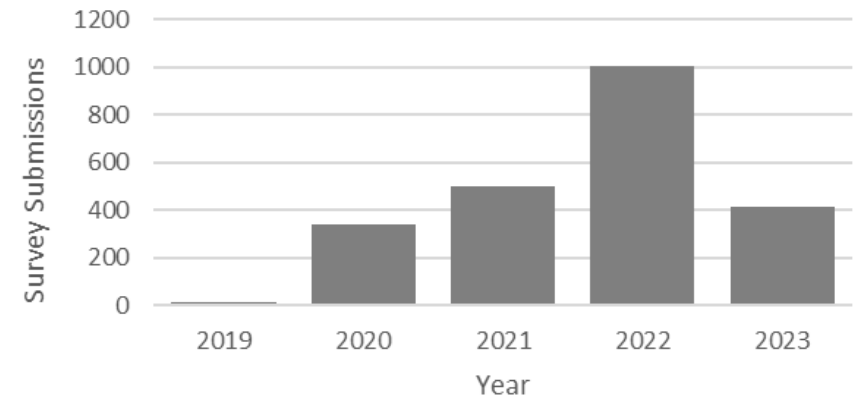
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The Vermont Land Survey Library: Status

2,272 surveys have been submitted since January 2020. Most were performed in or after 2020, but some have been uploaded retroactively.



Most submissions are **general site surveys** and **subdivisions**.



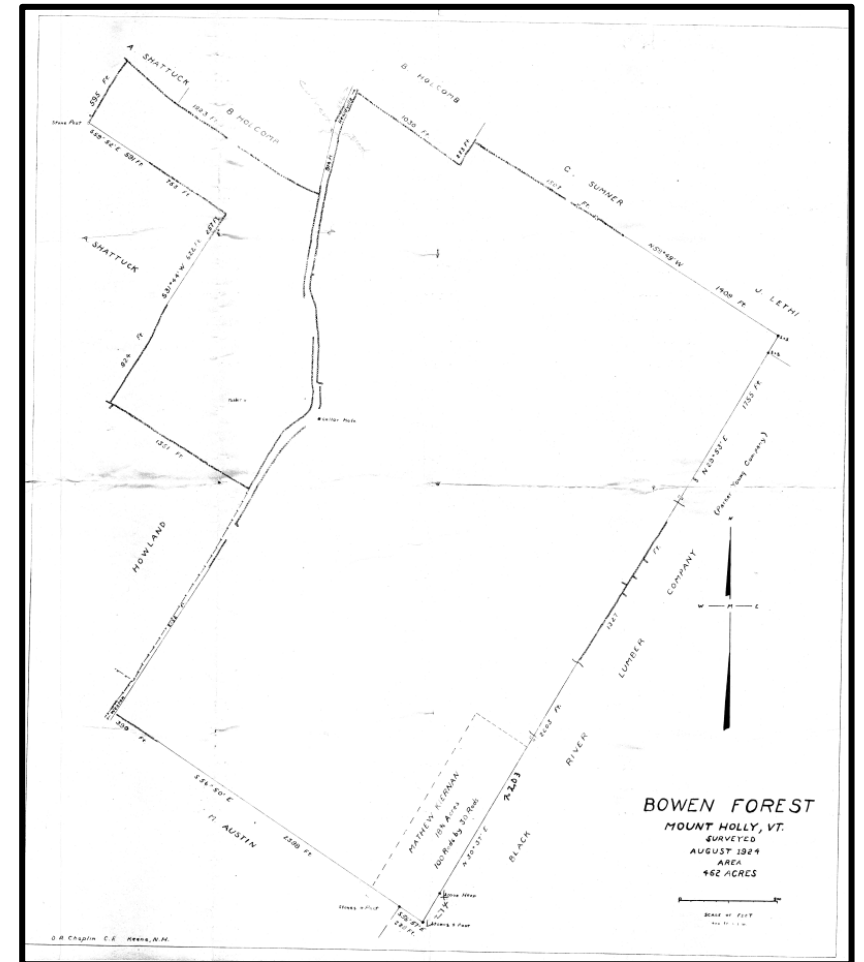
Visit the [Land Survey Library](#)

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The Vermont Land Survey Library: Example Use Cases

- 1 Mapping Vendors may reference the Library as part of a municipal parcel data update
- 2 May be used to conduct preliminary research as part of a title search
- 3 May assist land surveyors with research prior to conducting field work
- 4 May help address boundary discrepancies specifically at town boundaries
- 5 Historic preservation



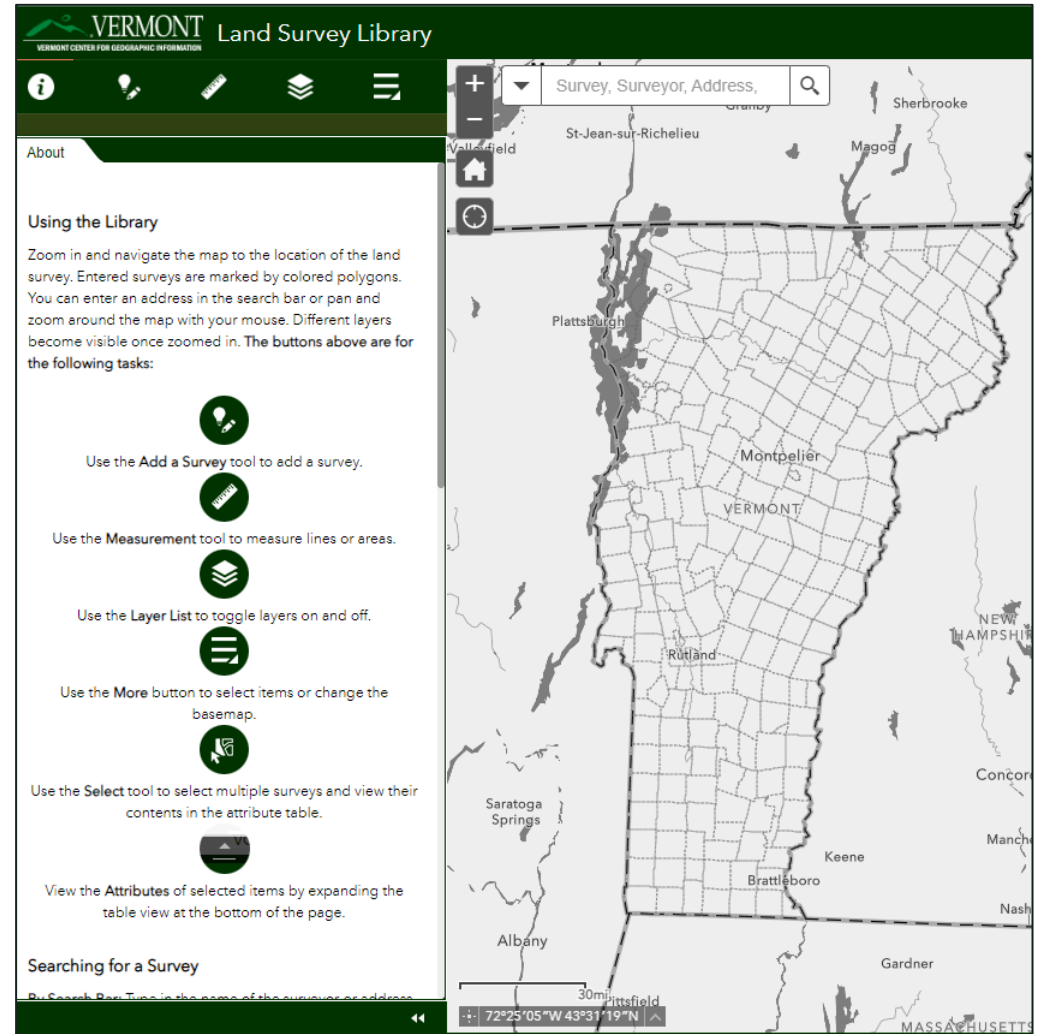
The oldest survey currently submitted to the Library is from 1924 in Mount Holly

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The Vermont Land Survey Library: Demo

- 1 Basic Navigation
- 2 Background Info, FAQs, and Instructions
- 3 Viewing and Downloading Surveys
- 4 Uploading Surveys



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The Vermont Land Survey Library: Challenges

- 1** Inconsistent participation which may be the result of one or more reasons such as:
 - Surveyors not participating or not knowing how to participate
 - Property owners or municipalities not wanting their surveys of their land to be publicly available
- 2** User experience issues with Land Survey Library app (lack of guidance on standard naming conventions which would improve search capabilities)
- 3** Lack of clarity on whether to include unique submissions such as:
 - Surveys of proposed subdivisions that are never completed
 - Submissions with surveys that are difficult to read (older, hand-drawn surveys)
- 4** Discrepancies with parcel data
- 5** Workflow for correcting submission errors and submitting surveys with the same index polygon

New Rules and Tools WITH The Vermont Survey Library

BY DAVID FOX, VCGI

On May 28, 2019, Governor Phil Scott signed Act 38 (House bill H.526). While generally concerned with setting town clerks' recording fees and practices, this bill also creates a digital Survey Library, with the mandate that any change in a Vermont property boundary, either through a boundary line adjustment or subdivision, be documented with a survey plat that is submitted to a digital library that is publicly accessible. This library will be built and maintained by the Vermont Center for Geographic Information (VCGI), and the new requirements go into effect on January 1, 2020.

Where Did this Bill Come From?

This bill is part of a concerted effort across the state to modernize the maintenance of, and access to, Vermont's property and ownership data. As most members of the Society know, we have been working on a multi-year project to develop statewide electronic parcel mapping for all 255 towns in Vermont. This has been a multi-million-dollar effort involving the work of several state agencies, mapping contractors, town officials and many members of the surveying community who have helped the towns develop their tax maps. This effort will be complete at the end of this calendar year.

just is not feasible for individual towns to provide. In a similar way that parcel data is just an index to property ownership, records in the survey library will only be copies of the records held by town clerks – authoritative, sealed copies of surveys will still reside in the town office.

This bill requires that surveyors submit to the Survey Library a plat for any changes to property lines. We discussed extensively who should submit the surveys to the Library. In the end, we – and our surveyor advisors – felt that the surveying community has the best technical expertise to provide clear documentation of their work, and the best understanding of when a survey is changing a property line. This legislation does not require that the entire property be surveyed, only the changed line. We felt that surveyors' professional judgment should be used to determine how much of a property needs to be surveyed to adequately document a changed property line.

We also realize there can be some ambiguity in whether or not a survey will be entered into the municipal records once handed off to a client. Again, we felt that this conversation was best left to surveyors and their clients. We don't expect that all surveys you conduct will end up in the Library – only those that are entered into the land records are required.

When VCGI polled the surveying community, we found overwhelming support for the idea of a survey library: 89% of respondents said a survey library would have high or very high value to them. VCGI is committed to working with the surveying community to make the Survey Library a useful resource for your work.

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The legislation requires only a PDF copy of the survey to be submitted to the Library. The PDF format has been a very durable standard and free viewers are available to the public. Any surveyor making a mylar of a survey for recording in a clerk's office can produce a PDF. No printer is required, and we can avoid taking in scans or reproductions of surveys that may have legibility issues. We don't think this format is going anywhere, but the legislation does allow the Board of Land Surveyors to make changes to the submission format if that becomes necessary or helpful.

We will be happy to take surveys that are georeferenced (or have geographic coordinates noted on the plat) but did not think it was necessary to require georeferencing at this point. As part of the intake process, we will ask for some basic information associated with the plat to facilitate searching and appropriately crediting the plat, but do not intend for the upload process to be burdensome or time consuming.

While this new requirement is focused on keeping property data up to date moving forward, we know the surveying community has a wealth of historically important work that in

Who helped craft the legislation?

We've coordinated closely with the VLS Executive Committee and the Vermont Board of Land Surveying throughout the development of the Survey Library. While the effort to pass this legislation was spearheaded by staff at VCGI, we take direction from a Parcel Advisory Board, which has four state agency representatives, but also representation from the regional planning commissions, Vermont League of Cities and Towns, and a licensed surveyor. We also worked with a technical committee of surveyors to lay out the idea and mechanics of the survey library. When VCGI polled the surveying community, we found overwhelming support for the idea of a survey library: 89% of respondents said a survey library would have high or very high value to them (*The Cornerpost*, Spring 2018). VCGI is committed to working with the surveying community to make the Survey Library a useful resource for your work. We consider surveys to be the cornerstone of the property records in Vermont, and we want to make these valuable resources readily accessible to the broader community.

The Cornerpost (Summer 2019)

Questions?

**WHAT CAN AND CANNOT BE SUBMITTED TO THE LIBRARY?
CHALLENGES WITH ACCESSING OR USING THE LIBRARY? RECOMMENDATIONS?
WHERE TO FIND RESOURCES ABOUT THE LIBRARY?
DIFFERENCES BETWEEN SURVEYS AND PARCELS?
OTHER QUESTIONS OR COMMENTS...? LET US KNOW!**

REFERENCE LINKS

[Land Survey Library app](#)
[Land Survey Library FAQ webpage](#)
[Parcel Program homepage](#)
[Parcel Viewer app](#)
[Vermont Board of Land Surveyors](#)
[Vermont Society of Land Surveyors website](#)





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