

Vermont Culverts Web Application

STONE
ENVIRONMENTAL
100% EMPLOYEE-OWNED

Services / Expertise

Geospatial & Data Solution
ArcGIS Online
ArcGIS Hub Premium
ArcGIS Web App Builder
ArcGIS Dashboards
ArcGIS Field Maps

Markets

Local/State Government
Regional Planning Commission
Municipal Government
Agency of Transportation

Project Location

Vermont - Statewide

Date Completed

2021-Present

Project Owner

Chittenden County Regional Planning Commission

Project ID#

2021115

Project Manager

Warren Rich

Project Team

Warren Rich
Nick Floersch
Paige Gebhardt

Awards & Recognition



2022 Special Achievement
in GIS Award, Esri

VT Culverts



Our Progress So Far

The charts and summaries below provide a high level view of the bridge and culvert data collected and maintained through the VT Culverts platform. For more specific details of a certain municipality/region, scroll down to the VT Culverts interactive dashboard below (dashboard still in development).

Total Number of Culverts -
Statewide

108,218

Total Number of Bridges -
Statewide

2,430

Total Culverts in Urgent, Critical, or
Poor Condition - Statewide

13,481

View of the home page for the VT Culverts Hub site, including the introductory text/image and high-level summary statistics.

VERMONT'S culverts and bridges are essential to the state's transportation systems and overall water quality. Regular maintenance and an overall understanding of the condition of these assets are critical for maintaining transportation resiliency and water quality improvements throughout the state. Vermont's Better Roads and Municipal Roads General Permit (MRGP) programs set standards for regular inspection and maintenance of municipal and state-owned culvert and bridge structures. Regional Planning Commissions (RPCs) oversee this process for municipalities within their respective regions. The state's 11 RPCs required a solution that encouraged collaboration and met each RPC's unique needs as they coordinated compliance efforts with 251 towns and cities. The Chittenden County Regional Planning Commission (CCRPC) enlisted Stone Environmental (Stone) to convert the existing VT Culverts site into an Esri-based solution that utilized ArcGIS Hub, Web App Builder, Dashboards, and Field Maps to successfully complete and track state-mandated culvert inspections. This multi-faceted approach created a user-friendly interface for both stakeholders and the public.

Stone developed a plan with the CCRPC and a working group comprised of staff from five other RPCs to update and replace the existing VT Culverts framework. Combining ArcGIS Online solutions with ArcGIS Hub Premium, the project team recreated and improved the application within a standardized platform that provided ease of access and updated capabilities for anyone regardless of technical web development experience. ArcGIS Hub Premium provides an adequate number of users with edit capabilities, gives each town and/or RPC a higher level of access compared to the public-facing, non-editable Hub site and applications, and provides an opportunity for the 11 RPCs to collaborate within the application specific to the VT Culverts site, as well as for future initiatives. This collaborative environment brings together entities that serve their communities and the state and reduces

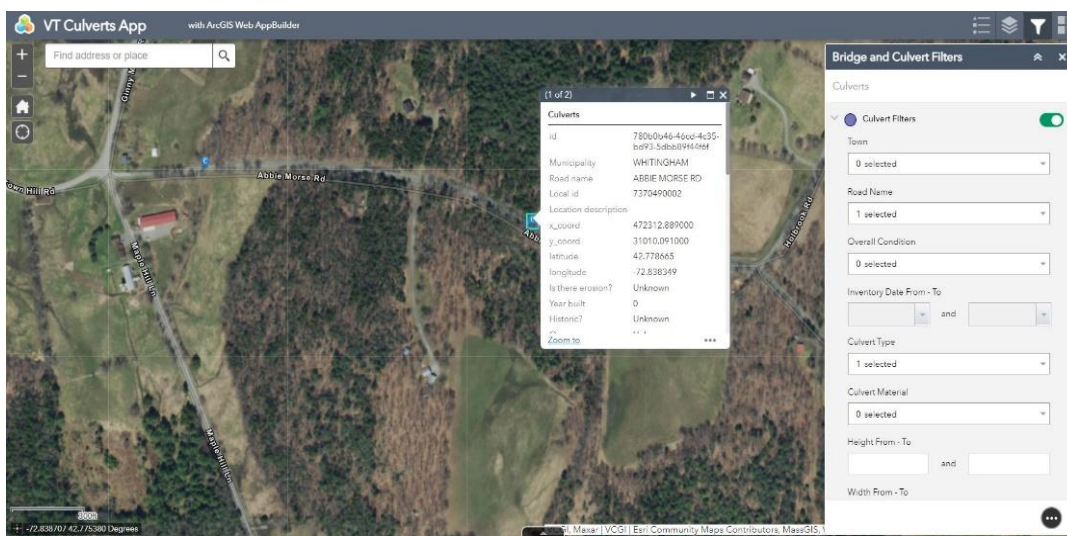
Vermont Culverts Web Application

STONE
ENVIRONMENTAL
100% EMPLOYEE-OWNED

information silos between RPCs. The Hub platform also brings more transparency and openness to the activities of each RPC and the Vermont Association of Planning and Development Agencies (VAPDA). For the VT Culverts application, Hub Premium provides necessary access to datasets, web maps, and web applications for each RPC, their municipalities, or others who collect culvert and bridge inspection data.

While this project is in the development process and not yet finalized, the status of the Hub site and associated applications can be viewed here: <https://vt-culverts-vapda.hub.arcgis.com/>

In 2022, the project received the Special Achievement in GIS (SAG) from Esri.



Screenshot of the public-facing version of the VT Culverts Application.