

Vermont Electric Power Company

Customer Success Story

AutoCAD® Map 3D®
Autodesk MapGuide®
Autodesk MapGuide Enterprise®

“When the state of Vermont relies on our service, we must be ready to serve them at all times. Autodesk technology enables us to be online and in service at all hours.”

—Jarrod Harper
Senior Engineering Technician
Vermont Electric Power Company

Online GIS Brings Stability, Security and Safety

Autodesk geospatial software does more than save time – it keeps crews safe



Project Summary

Vermont Electric Power Company (VELCO) is the United States' first electric “transmission only” utility company. VELCO imports and transmits power to Vermont’s 21 electric distribution utility companies. To keep the lights on throughout Vermont, VELCO maintains up-to-date information and ensures that their web-based Control Center is always available.

Using Autodesk geospatial software, VELCO is:

- Saving hundreds of work hours each year
- Tracking field crews quickly and efficiently
- Keeping its data secure and accurate
- Sharing transmission line data and maps with employees companywide

The Challenge

VELCO employees in every department use maps of its transmission system to better perform their tasks. But, when only two GIS professionals knew how to create maps, employees had to request and wait for specific maps. The results were delays, duplicate maps, and stress on the GIS team.

Jarrod Harper, VELCO’s Senior Engineering Technician, saw an opportunity to save the company time and money. “Most employees requested fairly simple maps,” says Harper. “We realized that a Web-based geospatial system could handle map requests

easily and give everyone in the company an up-to-the-minute view of our transmission system.”

In addition to serving up maps, Harper wanted a reliable system that was online constantly. “System disturbances that cause power outages rarely happen during normal working hours. If we lose one of our lines, it could affect thousands of customers,” he adds. “Having a constant online GIS helps get repair crews to the correct location on the transmission line.”

Once VELCO mapped its transmission lines and structures and Vermont’s base map layers were more accessible via the states GIS data clearing house, the Vermont Center for Geographic Information, they were ready to consider GIS options. “We wanted to put GIS on everyone’s desktop – so they didn’t have to wait for maps,” says Harper.

The Solution

Already using AutoCAD to manage its substation and transmission line drawings, VELCO turned to Autodesk reseller Microdesk and Autodesk geospatial software to create its online GIS. After considering ESRI ArcIMS®, Harper and the IT staff opted for the familiar AutoCAD interface. “Compared to other systems, we saw better performance in deploying digital photography with Autodesk MapGuide,” adds Harper. “Displaying orthophotos is a requirement for the system and MapGuide handled it much better.”

Autodesk®

“One of the most important benefits of our Autodesk GIS is system stability.”

VELCO also upgraded to AutoCAD® Map 3D® to create and maintain its geospatial database. Autodesk MapGuide® then shares that data with more than 140 associates throughout the company. “Our system displays diagrams, photographs, easement information and more on a simple, easy-to-understand map. Users don’t have to be GIS experts to know exactly what they are looking at,” Harper says.

Harper also appreciates that he can use many different types of GIS data in the system without translation. The open source Feature Data Object (FDO) technology embedded in Autodesk software enables VELCO to manage geospatial data in its native format. “Not having to translate or convert our data reduces the risk of corrupting it and introducing errors. In the end, it means that our data is more secure, accurate and precise,” he adds.

Stability Is Key

For more than 50 years, VELCO has served as Vermont’s transmission reliability resource. In order to restore service quickly in the event of an outage, the company must know the location of the fault and be able to help the crews find it. To achieve this, the GIS must be available and operational at all times.

“One of the most important benefits of our GIS is system stability,” says Harper. “When the state of Vermont relies on our service, we must be ready to serve them at all times. Autodesk technology enables us to be online and in service at all hours.”

One Step Further For Safety

In 2005, VELCO found yet another use for its online GIS that reflects the company’s commitment to safety. A member of a tree-trimming crew was injured on a right-of-way near the Canadian border. With the nearest mobile phone tower in Canada, the crew’s calls were routed to Canadian emergency operators unable to respond to incidents in the United States.

As a result of a Root Cause investigation of the accident, VELCO decided it needed to track its own crews and contractors working on the transmission system more closely. “I suggested using Autodesk MapGuide as a tool to track field crews. I began storyboarding how the tracking system would integrate into our online GIS,” Harper explains. “We handed the storyboard over to Microdesk to develop it.”

From the time of the accident to deployment, VELCO had a fully functional field crew tracking system in only two and a half months. The final cost was only \$14,000 in development. “Such a low-cost tool is practically unheard of,” Harper adds.

VELCO now requires all crews to check-in with the Control Center when they arrive at their job site. Workers provide their name, location, line and structure number or substation name, the number in their crew, and what type of work they will perform. The system operator enters the information into the system, the latitude/longitude coordinates are extracted from the asset database, the town they are located in is automatically queried and then the information is presented to the system operator in an easy to read form.

Now, if there is an accident, crews are instructed to call VELCO’s Control Center instead of public emergency call centers. VELCO will then contact emergency agencies and use Autodesk MapGuide to direct help to the crew’s location. “To improve Control Center efficiency in protecting crew safety, we created our own emergency number. If a distress call comes in on that number, there is a distinct, loud alert that we treat as an emergency,” Harper adds. “We have not had another accident since 2005, but we are prepared in case we do.”

Subscription Provides Peace Of Mind

VELCO subscribes to the Autodesk Subscription Program and Harper appreciates the peace of mind the program brings to his operations. “Before the

program, we received support only from our local vendor, but now with subscription, we have added direct Autodesk support. When direct support makes sense, we simply contact Autodesk for a quick response,” Harper says. “And, we get all software updates. We know that we have Autodesk’s most current technology available to us.”

The Result

While it is difficult for VELCO to quantify the time saved using its Autodesk GIS, Harper estimates he and his colleagues save hundreds of hours each year using the system. “Now, users can create very specific maps on their own schedule. They have the information exactly when they need it to complete a task, which saves a tremendous amount of time.”

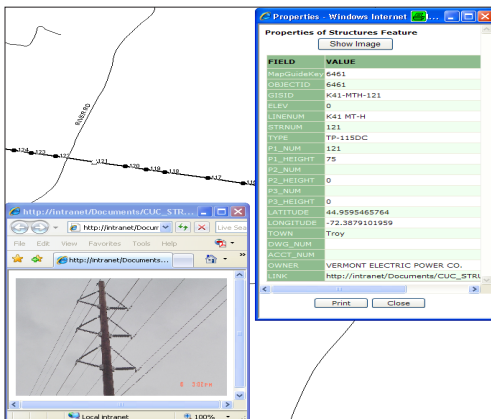
And, VELCO executives are more confident of meeting their safety responsibilities knowing that crews in the field will be easier to locate in the event of an accident on the transmission system.

Future Expansion

In keeping with its role as a reliability resource, VELCO plans to migrate its system to Autodesk MapGuide Enterprise® and make it available to external stakeholders such as state agencies, distribution utilities and Vermont citizens. Depending on the users’ privileges, stakeholders will be able to access more secure information with user names and passwords.

Plans also call for a general site for public use, enabling VELCO to share GIS data, transmission system info and project specifications with its neighbors. “When we propose a new transmission line or substation project, citizens will be able to go online and see if it will be near them,” Harper explains.

To learn more about how AutoCAD Map 3D and Autodesk MapGuide Enterprise are helping companies secure their infrastructures, visit www.autodesk.com/map3d and www.autodesk.com/mapguideenterprise.



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