



Photo credit: Stevens County Times

Stevens County, MN left behind the challenges of open source software to embrace the benefits of the Esri platform, achieving its goals of better public service, efficient updates, centralized data, and field mobility.

Stevens County's GIS Technician, Caitlin Christenson, faced a challenge when she came to the County in 2015. The organization's web GIS was based on an open source platform which presented substantial difficulties with its use and administration. Performance was slow, it could not be used on mobile devices, users were required to install add-ins for even basic use, it was reliant on many manual updates, usage could not be tracked, and maintenance was difficult because of the lack of resources for support.

Critically, these factors meant the legacy GIS was preventing the County from reaching its goals for growing its GIS program, which depended on field mobility and real-time public access to data. All things considered, the system was not user-friendly and failed to support public and internal needs.

A new way was needed.

FIRST THINGS FIRST

To support both immediate and long-term goals, a standard enterprise GIS platform and the availability of robust technical support were imperative. Christenson secured support from County Commissioners for moving to an Esri-based system that would deliver better service to the public. Commissioners recognized the project as a valuable investment of taxpayer dollars that would generate better constituent engagement, more efficient internal operations and, therefore, return on investment.

With the help of GIS partner Pro-West & Associates, Stevens County's transformation began.

First, the County needed to deploy the right infrastructure to form a foundation for its new location technology. ArcGIS Server was installed in collaboration with the IT Department, ensuring the ability to efficiently handle the level of public traffic the site experienced, with room for growth.

PROCESSING CHANGE

Fundamental to Stevens County's decision to implement the Esri platform was its ability to transform key daily functions. The parcel update process using the existing GIS consisted of 13 steps and depended heavily on manual tasks in order to serve up accurate data and reports. Multiple opportunities existed for human error, and the whole procedure was time-consuming.

Compounding the inefficiency was the existence of three separate file geodatabases, each managed by a different GIS technician. Ensuring that the most up-to-date version was being used was a delicate process, relying on verifying the status with individuals. A single, centralized source of authoritative data was needed to ensure accurate data was available to users at all times, providing assurance to users that the information they were seeing was correct.

Deploying Esri tools eliminated the problems of siloed data and opportunities for human error. An enterprise geodatabase ensured that data was maintained centrally, with no ambiguity over the correct version. Tasks that had to be performed manually are now automated, ensuring that data and reports always function properly with no wait for a technician to make necessary changes.

The 13-step parcel data update process was reduced to just one step that takes under 30 seconds to complete.

The potential for the Esri enterprise platform to transform more business processes is clear for the County to see. Its mobile capabilities in particular open doors to many more positive changes, for example supporting deploying ArcGIS Online solutions to enable access to data in the field for efficient ditch inspections and tree inventories.

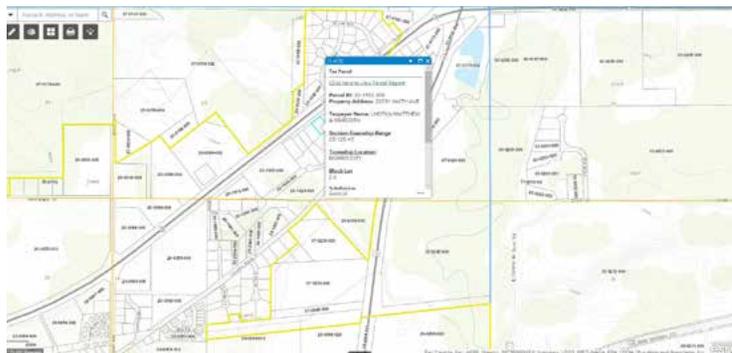
AVAILABLE, ACCESSIBLE, ACCURATE

With the deployment of Esri enterprise tools enabling fundamental changes to internal data management practices at the County, a new way of connecting the public with that data was needed. An ArcGIS Online-based application, [Tax Parcel Viewer](#), offered a solution.

[Tax Parcel Viewer](#) did not require users to install add-ins or have prior technical knowledge to quickly find the information they needed. This, in turn, means fewer incoming inquiries for County staff, since citizens did not experience the same stumbling blocks that were commonplace with the previous system.

Further, the [Tax Parcel Viewer](#)'s mobile capability was critical. With almost two-thirds of internet use in 2018 coming from mobile devices, Stevens County knew that enabling constituents to access land records data from their smart phones was imperative if they were to meet evolving public expectations.

Users are also benefitting from the solution's additional functionalities including tools that allow them to intuitively measure, draw, print, and select from a range of different basemaps for the most meaningful visualization.



Stevens County's ArcGIS Online-based [Tax Parcel Viewer](#)



Stevens County's ArcGIS Online-based [Tax Parcel Viewer](#) showing imagery basemap and parcel ID search.

ENABLING COLLABORATION

Stevens County has a long history of collaboration with the City of Morris. The implementation of enterprise GIS has opened the door to many new opportunities to work together to benefit both organizations and the public.

THEN	NOW
13-step parcel update process	1 step parcel updates
No mobile GIS	Mobile capabilities for public and internal use
Slow performance due to limited infrastructure capacity	Scalable infrastructure - room for growth without sacrificing performance
No information on usage levels	Trackable user statistics to demonstrate ROI and make decisions
Technical challenges for public users	Intuitive applications available on any device

The County is serving up City data via its public zoning map, enabling constituents to efficiently access both County and City data through a single online location.

GROWTH POWERED BY ESRI ENTERPRISE GIS

Stevens County has clear and comprehensive goals for growing its enterprise GIS deployment. With the platform available county-wide, the ready availability of public-facing solutions, and scalable infrastructure support, Christenson worked with departments across the whole organization to identify improvements and transformations that will be enabled by location technology. These include:

- Ability to add more data to maps without concerns about slow performance
- Further collaboration with the City of Morris to eliminate paper maps and conduct a City tree inventory using an internal ArcGIS Online-based solution
- Creating mobile field solutions for inspecting feedlots and tracking spraying projects
- Deploying public-facing maps including ditches, waterfowl protection areas and DNR management areas, and a rental housing license map in collaboration with the County's Highway, Environmental Services, and Housing and Redevelopment Departments respectively

DEMONSTRATING ROI

For any GIS department embarking on a large project, securing engagement from leaders and demonstrating return on investment are critical to its success.

Efficiency improvements have been identified in core processes such as updating and sharing parcel data. The reduction of a 13-step process to a one-step task brings with it room for increased productivity and assurance of accuracy with the elimination of risk. Installation of robust

infrastructure that offers room for expansion means that additional GIS data, integrations and solution deployments will not impact performance or require additional significant funding for proper support.

Constituent engagement has been enhanced with user-friendly tools that allow the public to find answers to their location-based questions wherever they may be on their mobile devices. No longer do citizens have to navigate the process of installing an add-in to access data. This was an obstacle with the previous system that brought the risk of many public users “dropping off” and not finding the information they needed when required to perform this additional task.

Support for decision-making is available based on tracking capabilities. Usage levels of the County’s solutions are trackable, allowing the most valuable applications to be identified. As a result, effort can be invested in areas offering the greatest potential ROI. Of course, tracking also provides metrics for reporting to Commissioners and other stakeholders.

“For others considering implementing an Esri-based enterprise GIS platform, I urge you to go for it. I was nervous of moving forward but it was absolutely the right decision for our organization.”

“Implementing an industry-standard location technology platform means we have abundant support resources, we are providing a better standard of service to our constituents, and our internal processes are so much more streamlined. We know we’re delivering accurate data, every day and getting it to those who need it with much greater ease than before. We are excited to move forward with our plans for growth.”

- Caitlin Christenson, GIS Technician, Stevens County