

# GIS-Integrated Asset Management

System can solve a multitude of data management problems.



*Ten wastewater treatment plants are operated by the Summit County (OH) Department of Environmental Services.*

**S**ituated at the highest point along the Erie-Ohio canal, Summit County, OH, covers 412.8 square miles, and includes the cities of Akron, Cuyahoga Falls, Stow, Barberton, Green, Hudson, Twinsburg, Tallmadge, Springfield Township, and New Franklin. Summit County's Department of Environmental Services (DOES) operates and maintains wastewater collection, transportation, and treatment systems in the unincorporated areas of the county and in certain incorporated areas. DOES owns, operates, and maintains 870 miles of sewer lines, 17,500 manholes, 200 pump station and grinder pumps, and ten wastewater treatment plants.

DOES has three operating divisions—Administration, Engineering, and Operations, each of which has its own distinct function, employs its own work force, and operates with its own county council-approved budget. DOES prepares the sewer bills and col-

lects the user fees and charges for deposit into the county treasury. The funds managed by DOES are enterprise funds and are not dependent upon the county's general operating funds.

accumulated in many different databases, formats, and applications over the years. DOES had over 50 unique, homegrown databases being utilized for work order, asset management, and billing applications. Compounding the problem, the IT applications and databases were physically dispersed across the three operating divisions and locations. This situation made it difficult for DOES to implement a coordinated maintenance plan, assess the correct user fees to cover the cost of maintenance, and ensure that it was complying with GASB 34 reporting.

At the time, all of the county's assets were mapped in a GIS system as ESRI ArcGIS shapefiles ([www.esri.com](http://www.esri.com)). Being in the wastewater industry, the county realized the importance of the spatial component of its physical assets database. It became apparent that GIS should be taken to the operational level by using it as a tool for data integration, but the county had not been using the

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## Business Challenge

Like many municipalities, knowledge about the county's physical assets had

full potential of GIS beyond mapping and inventory.

Further, the IT department did not have the GIS expertise to create an application that would integrate the county's multiple databases with GIS. In 2005 the Summit County DOES began investigating solutions for work order and asset management that integrated seamlessly with GIS and would also integrate its data and application silos onto a common platform.

The county researched a number of GIS-based asset management solutions, and evaluated the products based on the following criteria:

- User interface—look and feel.
- Ease of use.
- Configurability/customization.
- Database architecture.
- Querying and reporting features.
- Seamless integration with GIS.
- Web services/service-oriented architecture.
- Open office compatibility.
- Data linking to other databases.
- Price/affordability.

After evaluating the products and options, and considering the size of the county's operation and budget, Summit County selected VUEWorks™ (VUEWorks, Inc., [www.vueworks.com](http://www.vueworks.com)). "VUEWorks centralized access to all of our physical asset information on a common platform that was easy to use and readily accessible to staff across our three operating divisions," commented Pat Giralt, a database administrator for Summit County DOES. "It provided the capabilities we needed, and supported both the shapefile format and the SDE Geodatabase format, which has allowed the county to add more intelligence to its GIS system."

DOES incorporated or replaced

*According to Pat Giralt, Relational Database Administrator 3, Summit County, OH, "Summit County has been able to extend the usability of its GIS data beyond mapping and inventory by using it as a base for integrating data across our organization with the VUEWorks asset management system."*

many of its databases with VUEWorks. In the Merchant Manhole database, for example, DOES separated manholes, sewer lines, treatment plants, grinder pumps, and pump stations, and each type of asset is now represented with a different color. Sewer lines are also differentiated from gravity and forced main lines. Other information that is now part of VUEWorks and its GIS system are databases for Pump Station Work Orders, which creates work orders for Pump Stations; Pump Station and Plant Alarms; Pump Station inventory; Sewer Maintenance, which creates work orders for manholes and sewer lines; Manhole Inspection; CMOM; Permits; Customer Addresses; and Waste Water Treatment Plants.

Once DOES centralized the data about its physical assets in VUEWorks, it was also able to centralize its maintenance activities, instead of having multiple individuals maintain different databases in different locations.

Centralizing the data also made it possible to eliminate issuing hard copies of work orders. Supervisors are now notified electronically when a work order is issued. Viewing maps and engineering drawings is also faster, and it has eliminated having to search multiple locations for information because it is all available in VUEWorks.

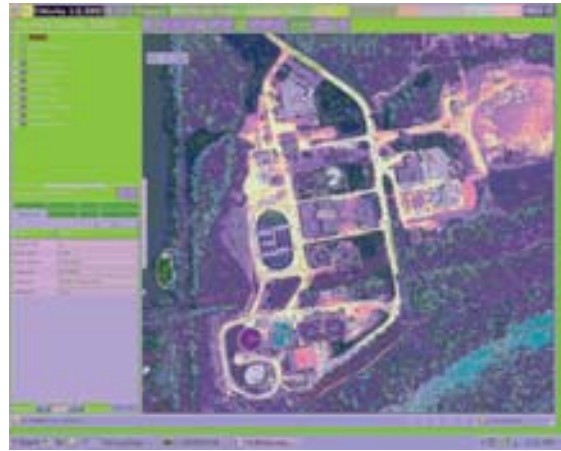
## Lessons Learned

**Implementing your asset management solution in phases ensures a smooth transition.** DOES implemented VUEWorks in several phases, beginning with the Sewer Maintenance Department. Once that was working, the Plants and Pump Station Department was incorporated into

VUEWorks, followed by the Engineering Department. "Since we had a work order system that we had developed in-house before VUEWorks, the transition was not that difficult for our employees," commented Giralt. "We held several training sessions for different groups, and also provided one-on-one training if necessary. Overall, the implementation of our asset management system went very smoothly."

**A well-managed GIS geodatabase should be the core of your information system.** According to Giralt, "Summit County's assets include manholes, pump stations, plants, fleets, etc. Through the years we have been collecting historical data, sometimes redundantly from different sections. We need to manage this asset (i.e., the information about the asset) by looking at our data collection, access, analysis, and reporting. It is important to consider the data as an asset as well—data is useless unless it gives us useful information. Even the GIS itself should be considered, and treated, like an asset. The GIS should be properly designed and maintained to make sure data is secure, accurate, and can be easily accessed when needed not only internally but also externally."

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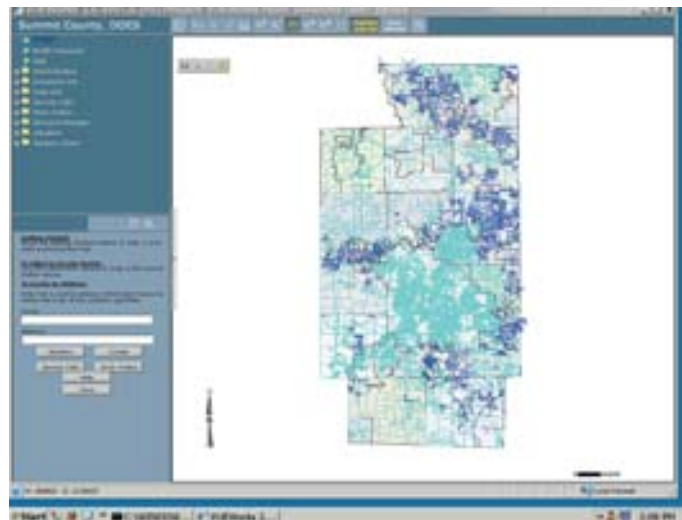


ping and inventory by using it as a base for integrating data across our organization," said Giralt. "With VUEWorks we now use the GIS to maintain, monitor, and manage our assets. In this regard we are getting a better return of our investment in GIS."

By using a comprehensive and structured approach to the long-term management of assets as tools for the efficient and effective delivery of services, Summit County is reaping benefits that include: better decision making in identifying and managing our infrastructure needs, improved regulatory compliance including CMOM, more meaningful financial reporting (GASB 34), improved reliability of our collection system, and cost savings.

"The next step is to motivate managers to implement an integrated finance and operations data through GIS technology in an enterprise level," concluded Giralt.

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*The Summit County (OH) Department of Environmental Services was tasked with the integration of more than 50 isolated homegrown databases in multiple formats and locations as well as increasing the return on its GIS investment.*