5 Best Practices for Utilizing GIS Data

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Many public works entities have made a large investment into gaining and deploying a Geospatial Information System (GIS) to track their spatial assets, maintain historical records and sustain an accurate inventory.

Whether your organization has utilities, parks and recreation, roads, bridges, signals or facilities, a robust integration between enterprise asset management (EAM) systems and GIS is integral to a long-term, successful asset management plan.

In this white paper, you'll review the best practices for utilizing GIS effectively to maximize its impact on your long-term asset management goals, including the positive impact an integrated EAM system can have organization-wide.

Example

Organization 1 includes seven departments, which all have spatial and non-spatial assets that require monthly and annual preventive maintenance, as well as emergency work. They currently complete all asset tracking in GIS, but are still tracking maintenance and work orders in spreadsheets.

Organization 2 has an enterprise asset management application, but does not have the spatial awareness of their assets and cannot confirm whether they have all of their assets in inventory.

Both organizations have one application that they need to succeed, but by combining the two systems, a robust EAM software system with the spatial tracking an analysis tools provided through GIS, both organizations could streamline their processes, track asset condition and maintenance fully and increase savings in both time and money.

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Understanding how GIS and EAM work together

Many organizations believe that having an EAM system that is fully embedded in their GIS system is optimal for asset management. The problem with this set-up: What happens with all of your non-spatial assets?

In order to maximize the success of your asset management plan, you must ensure that your organization can effectively track all of its assets with the same amount of in-depth life-cycle detail while capitalizing on the spatial functions of your GIS.

From acquisition to disposal, your asset management system must be able to track installation, maintenance, condition, incidents, and rehabilitations for the life of each asset. Because they might change spatially throughout their life-cycle, tracking polygonal, point and linear assets can be completed with a hand-to-hand integration between GIS and EAM. This allows for the in-depth spatial changes to be tracked in GIS while leveraging the robust asset management capabilities of an EAM software system.

Mobile work flows

Understanding how your personnel complete maintenance and ad-hoc work is important when looking at your needs from an asset management perspective. Do some of your departments use map-based mobile applications, such an ArcGIS collector? Or do they use list-based or spreadsheets to track completed maintenance?

Utilizing an asset management software that supports work flows both in the office and in the field would:

- **Decrease** the inconsistency of having multiple software programs throughout the organization

- **Increase** the ability to report consistently on the status of assets whether for local, state, or federal requirements, or for determining capital investment strategies.

For example: AssetWorks Enterprise Asset Management (EAM) software allows each department to identify their workflows and configuration requirements which support differing requirements dependent upon department needs. Need maps? They are available both in the application and on mobile. Want lists? They are available as well in both the application and mobile.

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Timely data when you need it

Syncing data between the two applications allows each database to do what it does best. When investing in an enterprise asset management system, look for a mature maintenance database that supports the lifecycle management functions for any kind of asset specifically designed to help organizations of all sizes manage and maintain their assets—including fleets, facilities, consumables, equipment, property and infrastructure—efficiently and cost-effectively.

With out-of-the-box Esri integration, organizations should be able to capitalize on their investments, by easily adding, editing, and completing asset inventories with the EAM system and updating Esri automatically.

Reporting and data transparency

Due to the increased requirements that organizations become more transparent in regards to citizen inquiries, it makes sense to invest in a system that can be applied against the entire organization making data collection and reporting easy and fast. Being able to send out reports, create dashboards, and publish maps with work order and service request data available for consumers is imperative in today's society. Showing significant completion rates on issues such as pot holes, signage issues, and maintenance can have a positive impact on the community as a whole.

Citizen and stakeholder engagement are two aspects of the transparency requirements publics works organizations must focus on to achieve success. Ensuring that the right information in the right format is available for citizens and stakeholders to view can dramatically impact the operational effectiveness of an organization. Key Performance Indicators (KPIs) to visualize current states or citizen accessible maps to visualize work accomplishment should be available to assist the organization with transparency. Integrating EAM and GIS can assist this process from the standpoint of out-of-the-box KPIs, which are standard in AssetWorks EAM, and published map services that integrate asset maintenance details through the Esri integration.

Example

Organization 1 has a robust GIS application and requires that Stakeholders be notified at least once a month concerning that status of capital projects expenditures, capital project initiatives, critical asset condition, and budget numbers. Some of these requests are for the organization as a whole but some require specific department information.

Organization 2 has a robust asset management application and is required to submit to stakeholders a visual of all of the work that has been completed at the end of each month to ensure that work is being equally distributed throughout the area.

Though both organizations have information in their systems to complete the data request, they need the functionality of the other to display that data in the appropriate format to meet the needs of the audience. **Organization 1** needs KPIs and reports specifically detailed for asset maintenance not spatiality while **Organization 2** needs to display their maintenance data spatially to ensure adherence to equality in the area they service.

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The current requirements for transparency in today's culture means that organizations must be able to communicate information in a multitude of ways from reports to maps to automated emails. Integrating a robust asset management application with the functionality of a GIS allows organizations to support the release of information in many formats to meet the specific needs of their consumers.

Reducing costs and extending useful life

For many organizations that do not have an EAM system, the tendency to fall back on a reactive maintenance plan in response to failures tends to become the status quo. Tracking information in spreadsheets or disparate systems throughout the organization reduces effectiveness and shuts down coordination and planning between departments. One integrated EAM system that can function as the system of record for asset history, maintenance, condition, and life cycle information while integrating with GIS to maintain asset spatial integrity can return the organization to a proactive environment of asset management.

By moving to a proactive approach to asset management, organizations can begin to reduce overall infrastructure costs while also extending the useful life of their assets. This transition can result in significant cost reductions from the decrease in emergency crews and damage costs from failed assets through planning and maintenance scheduling. Organizations typically find that by using a EAM for maintenance schedules and inspections, they decrease the time it takes technicians to perform these tasks and decreases the personnel costs overall based on single employee accomplishment rates increase simply from prior planning of work.

EAM and GIS: The powerful tools your organization needs

AssetWorks Enterprise Asset Management software (EAM) is a comprehensive asset management system that handles all aspects of public infrastructure management, including complex networks of linear and boundary-based assets.

Maintenance workers in the field are often an untapped resource for information on infrastructure assets. With EAM's Esri Integration, the visual, map-based views help to link spatial information with asset management information so you can rest assured that your data is accurate and up-to-date.

To learn more about AssetWorks EAM's Esri Integration, visit assetworks.com/eam.

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