Enterprise Asset Management

For Capital Project Owners

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What is Enterprise Asset Management?

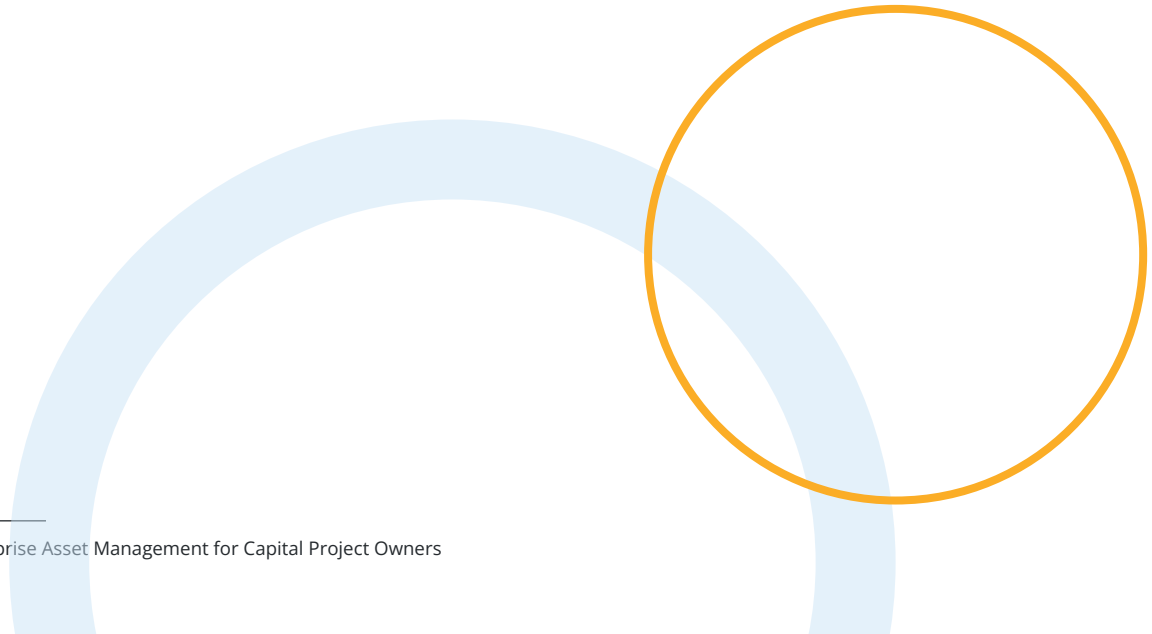
Every organization has an asset management strategy, but most don't have an end-to-end approach. Due to strained budgets, lack of data, legacy systems, and workforce challenges, asset management is performed on an ad hoc basis without a strategic or systematic approach. As a result, assets may be neglected, poorly maintained, or managed on a reactive basis rather than proactively.

To turn things around, owners need to be able to track, manage, and analyze asset performance for the entire asset lifecycle. That is enterprise asset management. It's a formalized, systematic approach to managing the entire asset lifecycle using connected data and workflows.

Key benefits of enterprise asset management

These benefits...	Asset Preservation	Better Record-Keeping	Improved Engagement
Enable you to...	Identify the maintenance tasks and techniques that preserve the lifespan of assets.	Maintain accurate, up-to-date records as required by regulators an internal policies.	Generate real-time dashboards, maps, and interactive tools to communicate with stakeholders.
	Use asset intelligence to predict failures and intervene before they occur.	Empower teams to collaborate with shared data to solve complex challenges, like reducing waste and emissions.	Enable field teams to view asset data and report on their activities in a centralized platform.

Going from ad-hoc asset management to proactive asset management can be like turning around a massive ship. Staff at all levels — field technicians, administrators, supervisors, and directors — need to embrace these improvements. Here's a step-by-step process to help you make the transformation.



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1 Shift to a GIS-centric approach

Implementing an accurate, up-to-date asset repository is the first step to unleashing the potential of enterprise asset management. Using GIS as your system of record enables you to see which assets are in your portfolio and geocode your assets, features, and work activities.

The right asset management platform should allow you to:

- **Understand exactly where assets are located.**
- **Track historical work.**
- **Monitor associated costs.**
- **Establish and streamline workflows.**
- **Schedule preventative maintenance**
- **Create powerful data visualizations and map dashboards.**

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2 Document your process

In order to use technology effectively for enterprise asset management, your processes need to evolve. Start by establishing a firm understanding of where you currently are.

To ensure your documentation process is thorough, take the following steps:

- **Identify and define desired outcomes.**
- **Engage stakeholders to review and refine workflows.**
- **Train employees and encourage them to make technology their own.**
- **Establish a regular schedule for ongoing process review.**

3 Create a system of engagement

GIS-centric enterprise asset management is the stepping stone to better asset intelligence and engagement for everyone — internal teams, investors, partners, and constituents. To streamline information sharing, you can leverage BIM data from the construction phase to populate your GIS system.

- **Geolocate assets:** Tie work, labor, and costs to assets in geodatabase
- **Search by asset class, system, or service:** Enable field crews, financial stakeholders, and users to engage with the data
- **Visually understand asset data:** Use data to optimize strategic approaches

4 Refine your data

Collecting data is just the start. The next step is to refine your data for accuracy, relevance, and usefulness:

- **Assess data quality and relevance, how it's collected, and whether there are any information gaps.**
- **Transform your data into a useful format so it can be shared across technologies.**
- **Determine who will be responsible for maintaining data accuracy.**
- **Establish metrics and calculations for data modeling.**
- **Develop data visualizations to support transparency and decision-making.**

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5 Identify and prioritize risk

With your technology, processes, and data in alignment, it's time to put digital information to work to determine which assets are critical and why. Critical assets require a scoring methodology to identify how and why they might fail.

Use the following metrics to assess risk:

- **Probability of failure (POF) - Sourced from GIS attribute information, maintenance data, and failure histories**
- **Consequence of failure (COF) - Considers the financial, social, and environmental costs of failure, as well as impacts on users**
- **Business Risk exposure (BRE) - Combines POF and COF to understand overall risk**
- **Maintenance strategy effectiveness - Tracks work order activity to understand whether assets are under-maintained or over-maintained**

Periodically review your analysis and make adjustments to account for changes in the POF and COF.

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6 Refine your business process

Adopting a data-driven enterprise asset management strategy isn't set-it-and-forget-it. Each new work activity and lifecycle plan offers a new opportunity to enhance your operations.

To continually improve your approach, consider these four questions:

- **What workflows still need refinement?**
- **Can your budget be fine tuned?**
- **Should the size of your work crews increase, decrease, or stay the same?**
- **Should your levels of service be maintained, enhanced or reduced?**

7 Shift from reactive to proactive maintenance

With a combination of connected technologies, collaborative processes, and staff training, you can shift from reactive to proactive asset maintenance. That's what allows you to stretch your funds further and prevent unplanned downtime. And as you look to adopt innovative technologies like digital twins and artificial intelligence, you'll have the digital foundation to implement them effectively.

Capital Project Owners Can

Modernize Processes and Build Resilience through Enterprise Asset Management

With a diverse portfolio of assets and limited resources for managing them, private owners need to approach day-to-day operations, maintenance, and decommissioning strategically. Failing to take a proactive approach can be costly — every $1 of deferred maintenance results in a **$4 increase in future capital renewal costs**. A comprehensive data-driven approach to asset management is essential to reducing costs and preserving the lifespan of your infrastructure.

However, there are significant hurdles in the way.

Asset Management Challenges

- **Outdated Processes:** Paper-based, manual information-sharing processes create bottlenecks in workflows.
- **Inaccurate, Incomplete Data:** Asset information is often decentralized, making it hard to know what you have, where it's located, and the condition it's in.
- **Boosting Resilience:** As extreme weather events grow more commonplace, proactively maintaining and upgrading assets for resilience is critical.

Better asset management can help you take on these challenges and leverage new opportunities.

Opportunities

- **User Engagement:** Interactive, web-based tools enable you to communicate with users in new ways about the status of your assets.
- **Preventive Maintenance:** Leverage real-time data to inform and execute cost-effective preventive maintenance programs.
- **Knowledge Transfer:** As tenured employees retire, having a comprehensive asset management program prevents knowledge loss

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To take on challenges and opportunities, you need

enterprise asset management

To modernize your assets, you need to modernize the way you operate. You need technologies and processes that provide you with a realistic picture of your asset lifecycle. With data-driven enterprise asset management, you can proactively address the hurdles to productivity, sustainability, cost control, and better performance.

Here's how:

- **Significantly reduce the total cost of ownership.**
- **Identify and implement improvements that make your assets more sustainable, accessible, and secure.**
- **Live up to your commitments to equity, sustainability, and community stewardship.**

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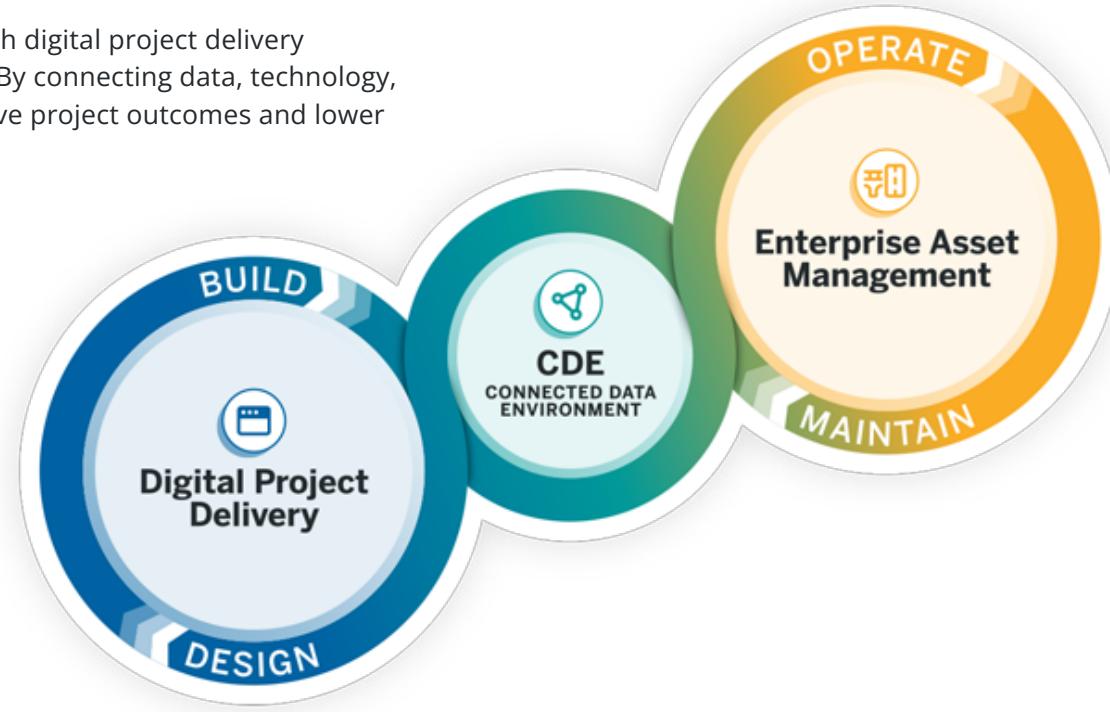
The bigger picture:

Asset Lifecycle Management

Enterprise asset management works best when you combine it with digital project delivery. Once you take steps to digitize the construction process and centralize information in a common data environment (CDE), you can begin to connect all phases of the asset lifecycle, from design and construction, through operations and maintenance. This strategic, holistic approach to infrastructure is known as asset lifecycle management.

Implementing enterprise asset management in conjunction with digital project delivery enables you to take advantage of asset lifecycle management. By connecting data, technology, and processes across all phases of the lifecycle, you can improve project outcomes and lower total asset costs.

Learn more about asset lifecycle management



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