

# Asset Management Best Practices

## Maximo in the Water Utilities Industry

Asset Management is vital to the health of the Water Utilities Industry. Its processes guide acquisition, use and disposal of assets to optimize their service delivery potential and to manage related risks and costs over their entire useful life. It facilitates procedures, tools, principals and methods that manage life expectancy and business impact of cost, performance and risk associated with infrastructure assets.

Asset Management's prevailing role is to answer water utilities specific questions to meet service delivery objectives efficiently and effectively, thereby achieving business goals. Successful Asset Management also:

- Ensures assets are suitably used and maintained
- Achieve greater value for money through frequent asset condition evaluations accounting for expected life cycle and historic maintenance costs
- Reduces unnecessary asset acquisitions, managing full costs of owning and using assets
- Focuses attention on results by clearly assigning responsibility, accountability and reporting requirements

EPA recommendations include five basic areas where Asset Management provides significant return when best practices are implemented.

### 1. Determining current condition of assets:

- Assets owned and location
- Assets condition
- Assets useful life expectancy
- Assets present value and replacement cost

Asset management best practices include:

- Creating a complete asset registry that includes location
- Creating asset condition rating systems — may vary for above and below ground assets
- Determining remaining asset life utilizing tools such as industry decay curves
- Determining asset existing value and replacement cost

### 2. Sustaining service levels for critical assets:

- Causes for assets failure and reasons they actually fail
- Probability and consequence of asset failure
- Cost of asset repair
- Other costs associated with an asset failure (environmental, social)

Asset management best practices include:

- Identifying system critical assets
- Conducting failure analysis whenever possible (root cause or failure mode analysis)
- Determining failure probability based on historical asset data
- Analyzing risk and consequence of failure for critical assets
- Establishing a living vulnerability asset/location list

### 3. Minimal life cycle costs:

- Critical asset repair, replacement or rehabilitation costs
- Determine funding sources for asset life cycle management

Asset Management best practices include:

- Establishing cost/benefit of replacement versus rehabilitation for asset types
- Analyzing life cycle costs of utilities asset, especially critical assets
- Deploying labor resources based on asset condition and criticality
- Reviewing asset failure to develop response plans, purchasing guidelines and inventory requirements (was slow response due to non-availability of parts?)

#### **4.Sustainable Service Levels for water utilities:**

- Service Levels established to meet internal and customer needs
- Regulatory requirements for water utilities
- Performance level requirements for water utilities
- Physical capability of water utilities assets

Asset Management best practices include:

- Determining expected internal and customer growth and satisfaction
- Understanding current and expected regulation requirements
- Using service level standards to track system performance over time

#### **5. Determination of best long-term funding strategy:**

- Adequate funding source to maintain assets for required service level
- Sustainable rate structure for system's long-term needs

Asset Management best practices include:

- Reviewing water utilities rate structure
- Considering funding dedicated reserve from current revenues
- Considering financing asset rehabilitation, repair and replacement through other methods such as borrowed fund.

### **IBM Maximo: Solution for a Smarter Water Utility**

IBM Maximo EAM Solution provides a perfect repository for your data, as well as the engine necessary to provide information to support asset management best practices:

#### **1.Determining current condition of assets:**

- Create asset register including location  
Maximo provides ability to create asset register that includes unique asset IDs and asset characteristics such as location. If Maximo is interfaced to a GIS system the asset location can be pulled from maps.
- Develop an asset condition rating systems. This may vary for above and below ground assets  
An asset condition rating system can be entered into Maximo and used to establish a hierarchy of work priorities.
- Determine the remaining asset life by reviewing industry decay curves, etc.  
Monitor the remaining life of asset into Maximo for use in budget predictions and rehabilitation, replacement or repair decisions.
- Determine asset existing value and replacement cost  
Both existing value and replacement cost can be kept in Maximo for strategic maintenance work decisions.

#### **2.Determining critical assets to sustain level of service:**

- Establish a means for identifying system critical assets — numerous tools in Maximo can be used these assets  
Conduct failure analysis whenever possible (root cause or failure mode analysis)  
Failure analysis information can be collected based on verbal information entered into system and via work orders associated with an asset. This information is critical to performing failure analysis using problem, cause and remedy information stored in Maximo.
- Determine probability of asset failure based on historical data  
Historical data collected during work activities is stored in Maximo and can be used to determine if an asset has an imminent possibility of failure or is an infrequently a poor performing asset.
- Analyze risk of failure and consequence of failure for critical assets  
Required data to perform risk and consequence of failure for each asset is stored in Maximo along with the asset's system criticality level.
- Establish and update vulnerability asset/location list  
Varying criteria can be used to identify the vulnerability of system critical assets or location, such as physical location or potential exposure to extreme weather conditions. This information can be captured in Maximo and used in reports or key performance indicators.

### 3. Determine water utilities minimal life cycle costs:

- Plan to move from reactive maintenance to predictive or condition based maintenance  
Maximo facilitates the analysis of all types of maintenance work orders, providing management with statistics about the percentage of work that is predictive rather than reactive.
- Establish cost and benefit of replacement versus rehabilitation for asset types  
By capturing work order types and associated costs in Maximo, the water utilities can generate specific reports/queries that will show cost versus benefits for both processes. This can be further broken down by asset type, manufacturer and other asset characteristics stored in Maximo.
- Analyze life cycle costs of assets, especially critical assets  
Information used to establish asset life cycle cost is captured in Maximo and can be retrieved based on a multitude of criteria such as asset type, individual asset, basin, region, department, etc.
- Deploy labor resources based on asset condition and criticality  
By capturing asset condition and criticality data in Maximo, the water utility can deploy labor resources based on severity of discovered problems. Further, decisions can be made (rehab, repair, replace) before resources are deployed.
- Review asset failure to develop response plans, purchasing guidelines and inventory requirements (was slow response due to non-availability of parts?)  
Water utilities can use the relevant information collected in Maximo to perform asset failure analysis and establish response plans for asset types or other asset criteria. This facilitates the development of purchasing models based on consequence of asset failure (economic, environmental, level of service, asset criticality, etc.) and, in turn, establishes inventory levels for specific parts to ensure assets downtime is not attributed to the non-availability of parts.

In the water utilities industry, IBM's Maximo EAM solution provides vital insight for monitoring and maintaining the health of a water utility system. Implemented correctly Maximo extends the useful life of assets, improves return on investment and defers new purchases. Additionally, Maximo is key to improved management of your physical infrastructure assets, offering insight into your water utilities conditions that you can leverage to make better decisions for all aspects of asset management.

## About Interloc Solutions

Interloc Solutions is a recognized leader in providing innovative Maximo consulting services and industry and product solutions. With years of proven consulting services experience in key industries, we work to provide fast and continual ROI from your Maximo software investment.

Our team of highly experienced technology and business professionals excels at providing comprehensive, reliable solutions to address enterprise asset and service management needs. 100% dedicated to providing Maximo solutions and services for over a decade, Interloc's consulting services team is experienced in implementing, upgrading, and integrating Maximo and related products.

Interloc has two IBM Ready for Tivoli products (Mobile Informer and Interloc Mailer) and has been recognized numerous times by IBM, winning the IBM Tivoli Awards for ISM Library Solution Excellence (2013), Best of Show for Mobile Informer (2012), and Smarter Planet for Consulting Expertise (2012), as well as being a finalist for three other awards in 2013: IBM Tivoli Best of Show for Mobile Informer, IBM Tivoli Best Asset and Facilities Management Award for Consulting Services, and the prestigious 2013 Beacon Award for Best Solution for Optimizing the World's Infrastructure for Mobile Informer.

For more information on managing your water and wastewater assets with Maximo Asset Management please contact Chris Sall, Director of Smarter Water EAM Solutions at Interloc Solution.

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