GUEST ARTICLE

By John Nichols, Advanced Control Systems

Asset Management Software Solutions for Small Agencies and Rural Water Associations

Part One

Large water and wastewater utilities have been using Asset Management software solutions for years. However, due to the cost and complexity of most offerings, they are out of reach for rural and small agencies.

The good news is that options are now available that make deploying Asset Management software practical for smaller agencies.

What is Asset Management?

As a generic term, Asset Management (AM) refers to any system that monitors and maintains things of value to an entity or group.

When applied specifically to the water and wastewater industries, it is known as Infrastructure Asset Management.

Infrastructure Asset Management

Infrastructure AM is the management of funding, designing, installing, commissioning, operating, maintaining, repairing, modifying, replacing, decommissioning, and disposing of physical and infrastructure assets, with the objective of providing the required level of service in the cost-effectively and safely.

What Is an Infrastructure Asset?

Infrastructure assets are resources with economic value that a public agency owns or controls with the expectation that they will provide future benefit. They are reported on a balance sheet and are acquired in order to benefit the agency's operations.

Infrastructure assets require approved capital expenditures for purchase or major upgrades. Repairs to, and maintenance of, these assets are usually paid for from pre-approved expense budgets.

Some examples of infrastructure assets for water and wastewater agencies are: tanks, towers, pipes/pipelines, wells, lift stations, pump houses/pumps, sanitation equipment, digesters, vehicles, computer and control systems, communications gear, buildings, reservoirs, etc.

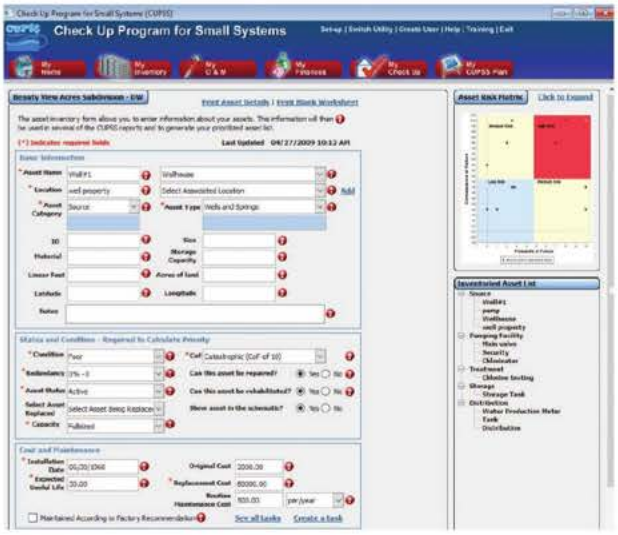
Why Use Asset Management?

As stated above, to "provide the required level of service in the safest, most cost-effective manner."

In the case of fresh water agencies, it means to safely provide sufficient, consistent supplies of clean water to meet the needs of households, industry, medical facilities, schools, fire control, and, in some cases, agriculture.

Wastewater agencies manage assets that convert wastewater into an effluent that can be returned to the water cycle with minimal impact on the environment.

Effective AM practices not only ensure that assets function efficiently for as long as possible without repair or replacement, but that they do so safely for agency employees, customers, and the environment.



Check Up Program for Small Systems (CUPSS) homepage

Why Don't More Small and Rural Agencies Use Asset Management?

Large water and wastewater agencies with big budgets and staffs can make use of commercially available, dedicated AM solutions. Although expensive and complex, they provide the necessary functionality to enable infrastructure assets to perform the required level of service in the safest, most cost-effective manner.

Although smaller agencies, with their limited budgets and staff resources, are often unable to reap the benefits of such systems, there are alternative, lower-cost, and easier-to-use solutions that they can use.

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They are available as stand-alone AM systems, or even as components of SCADA1 systems.

CUPSS

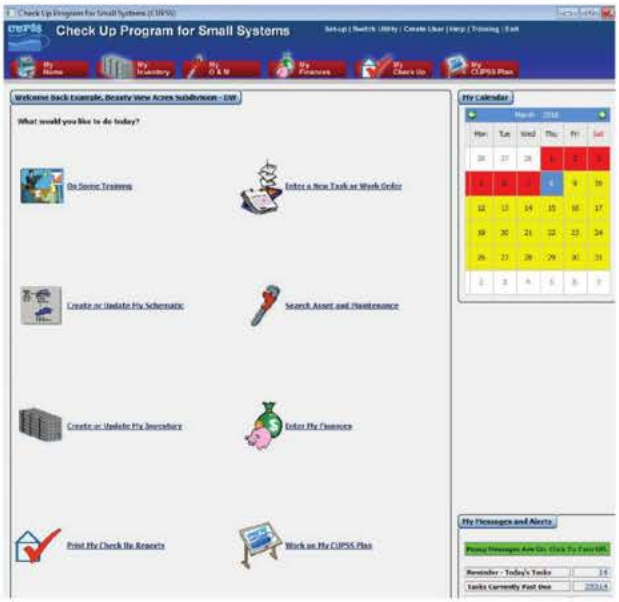
The United States Environment Protection Agency's Check Up Program for Small Systems (CUPSS) is an example of a stand-alone system. It's no cost to acquire and can be implemented by most agency personnel.

From the CUPSS website[2]:

"CUPSS is a free, easy-to-use, asset management tool for small drinking water and wastewater utilities. It provides a simple, comprehensive approach based on EPA's highly successful Simple Tools for Effective Performance (STEP) Guide series. Use CUPSS to help you develop:

- *A record of your assets,*
- *A schedule of required tasks,*
- *An understanding of your financial situation, and*
- *A tailored asset management plan.*

CUPSS was developed in response to a clear need from communities and trainers to package asset management materials in an easy-to-use way."



CUPSS Asset Detail worksheet

Using Asset Management

As mentioned above, AM involves locating, identifying, inventorying, assessing, and maintaining assets.

Assets have attributes that include:

- Location
  - Address
  - Latitude/longitude coordinates
  - GIS mapping location
  - Other description
- Size and/or capacity
- Costs
  - Original
  - Replacement
  - Routine maintenance
- Installation date
- Manufacturer
- Supplier
- Model
  - Serial number
  - Nameplate information
- Condition on inspection date
- Maintenance type
  - Break-fix
  - Calendar-based preventive
  - Condition-based preventive

CUPSS provides the ability for agency personnel to catalog the above attributes.

If the agency doesn't have the staff resources to perform the initial assay and assessment of assets, there are third-party professional appraisal companies and associations that can provide much of the attribute data shown above.

The Idaho Rural Water Association can provide GIS-based asset mapping and other AM services, including CUPSS training.

Maintenance

Once an asset is acquired, installed, and commissioned, proper maintenance is required to ensure its safe and effective operation and longevity.

In the next issue of *The Water Gram*, we will describe the three most commonly employed asset maintenance techniques, their pros and cons, and use cases for each.

About Advanced Control Systems

ACS is celebrating its 26th year providing process automation and SCADA system integration solutions to Asotin County PUD, City of Payette, City of Nez Perce, and scores of other municipalities, agencies, and manufacturers. ACS is the developer of CarefreeSCADA™, a cloud-hosted SCADA application with Asset Management and Preventive Maintenance functionality built in. For info on cloud-hosted SCADA, contact Rick Patton at *rick@advancedcontrol.com*, or go to *http://carefreescada.com*.

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Footnotes:

1 SCADA – Supervisory Control and Data Acquisition – a system used by plant operators to interact with control systems, view and acknowledge alerts, and to record and review historical process data

2 *www.epa.gov/dwcapacity/information-check-program-small-systems-cupss-asset-management-tool*

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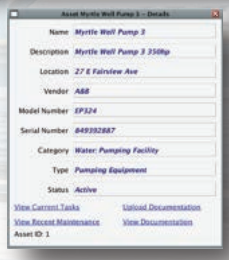
Carefree SCADA

Turnkey water SCADA in the cloud
Water | WWTP | Irrigation
1-208-362-5858
sales@carefreescada.com

Operator Views
- View equipment status in realtime
- Supervisory control from operator views
- View and acknowledge process alarms
- Easy to use

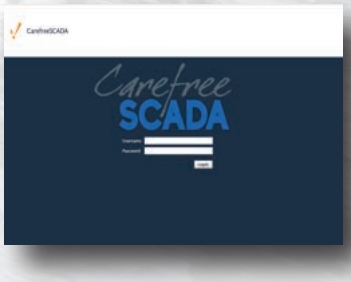
Historical Trends
- Meet regulatory agency requirements
- User-selectable time periods
- Seconds, minutes, hours, days
- Color-coded traces

Asset Management
- Avoid unplanned downtime
- Calendar and condition-based scheduling
- Maintenance work orders
- Easy to use



Mobile Access
- Always be in touch with your plants and processes
- Access your SCADA data from anywhere at any time
- View and acknowledge alarms easily
- Easy and intuitive to use

Cloud Based
- Minimal or no additional computer hardware investment
- Updates automatically
- Low maintenance
- Secure



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