



## CASE STUDY

# Western Virginia Water Authority and Itus Digital Work Together on APM Plan

Team Uses "Rapid Start" Program and Gains Key Insights in Less Than Seven Hours.

Watersheds, not local government boundaries, determine water resources and wastewater service. In 2004, the water and wastewater operations of the City of Roanoke and Roanoke County consolidated to become the [Western Virginia Water Authority](#). Today, it now provides water service to over 62,000 customer accounts and wastewater service for more than 56,000 accounts.

Its mission is to protect and manage essential water resources by delivering quality water and wastewater service to its customers. But the organization's vision is to enhance the community's well-being and quality of life. And one way to achieve this goal is through the effective use of technology and innovative water management practices.

## INVESTING IN APM

In alignment with their goal of effectively using technology, [Western Virginia Water Authority](#) decided to evaluate an Asset Performance Management (APM) program. Getting an APM initiative off the ground historically has been challenging and can take months for companies. So, they decided to work with [Itus Digital](#) for assistance and guidance in best practices.

Specifically, they wanted to:

- collaborate on operational and maintenance strategies for critical assets,
- integrate several disparate data sources,
- analyze data sources,
- generate new insights that could validate and enhance future operating and maintenance actions.

## WORKING TOGETHER

[Itus Digital](#) and Western Virginia Water Authority's teams worked together to outline the key business goals for the asset performance management program. Specifically, they reviewed standard APM work processes and established the project definition and timelines.

The next step for the team was to identify and evaluate assets that had premature failures and increased maintenance expenses. Together, they uncovered early indications of machine wear and failure risk by reviewing historical data and analyzing operational parameters. Using the [Itus Digital solution](#), the team had a structured approach for generating insights quickly.

## AT A GLANCE Challenges

- Understand asset wear in the context of operation
- Ability to integrate and analyze data sources
- Improve asset performance
- Contain maintenance costs
- Early detection of failure risk

## Benefits

- Improved asset health and operation
- Decreased in unexpected downtime and maintenance costs
- Ability to leverage the solution across more assets.

## EVALUATION OF APM PROCESSES

As a result of this work, the teams discovered that a pumping station from the Water Authorities service area was experiencing premature degradation of assets. Consequently, the unexpected maintenance costs and downtime made the pumping station a priority.

With specific use cases and assets identified, the combined team:

- assessed available operational data sources,
- reviewed current asset maintenance plans,
- identified potential analytical approaches



## IMPLEMENTING THE ITUS DIGITAL SOLUTION

Next, Itus Digital provisioned the solution for the Water Authority. In parallel, the Water Authority team gathered historical data streams from their current SCADA, Maintenance Management, and Energy Management systems. Then they uploaded the data and built digital asset twins. Together, the team implemented Asset Twins and ran historical simulations to identify key trends, conditions, and deviations from normal operational and maintenance plans. Also, they analyzed specific characteristics such as excursion frequency, duration, and severity. Everyone suspected that these factors were the source of machine degradation.

## WHAT THE ASSET TWINS UNCOVERED

The [Itus Digital solution](#) gave the teams an integrated view of the pumping station's maintenance and operational data. Also, it highlighted key deviations that correlated with significant maintenance events. Best of all, the platform validated that the team's changes to the operating and maintenance plans aligned with improved machine health and good runtime periods. The team discovered potential analytical approaches from this work that they can use on existing data sources. These insights allow them to proactively assess operational conditions that will introduce unplanned downtime to pumps.

## THE RESULTS

The Itus Digital solution is currently available to the Water Authority for their continued analysis and evaluation of pumping station assets. This work will enable them to determine additional use cases for analytical techniques with their operational and maintenance systems and data. More important, the [Itus Digital Rapid Start Program](#) was initiated and completed in less than seven hours of actual engagement and primarily conducted via six virtual meeting sessions. The approach provided the Water Authority with a low-risk opportunity to evaluate critical steps associated with the Asset Performance Management process. Further, it offered an understanding of how their organization could leverage these techniques as they continue to grow their asset management program.