

Water Network Managers: Zero In On What Matters With Satellite Data



Faced with the almost insurmountable task of upgrading aging infrastructure fast enough to serve a rapidly growing population, North American water networks are set to spend more than \$300 billion patching up pipelines over the next ten years. The cost implications of such extensive upgrades are astronomical; owners will be expecting network managers to ensure efficiencies are made, despite many still relying on outdated and unreliable data to inform their operational strategies.

How can water network managers, hampered by insufficient data, truly zero in on what matters and eliminate unnecessary expenditure? It is impossible to deliver a robust upgrade plan that prevents critical asset failure when traditional monitoring methods provide inaccurate or outdated insights.

In order to get ahead of failure before it happens, and maximize operational efficiencies, network managers must gain continuous visibility of all assets. This will allow them to identify the areas of highest risk, and prioritize upgrades based on the likelihood and consequence of failure, rather than relying on arbitrary, age-based assessments or data from a previous survey.

Prioritizing Blind: The Problem With Traditional Monitoring Methods

For many decades, some Water Networks have relied on outdated, sporadic monitoring methods to inform their CAPEX and OPEX expenditure. The resulting legacy of unnecessary pipeline replacement and avoidable breakage has led to leaking profits, increased upgrade costs, and an overwhelming sense of frustration.



The popular practice of subdividing your distribution network into DMAs has traditionally allowed network engineers to focus in on water consumption and loss within specific geographies, however, the insights provided by this approach are not granular or accurate enough to assist network managers in making dynamic decisions about upgrade prioritization. Additionally, the installation of flow meters on distribution mains and boundary valves is now thought to cause issues with hydraulic efficiency and water quality and therefore poses a significant potential risk to infrastructure.

A more modern approach to leak detection is acoustic logging, which involves collecting sound information from a specific area via temporary noise logger installations. This technology can be highly effective as a method of leak detection, but can not help you to predict the likelihood and cost of potential failure, or to gain an overview of your entire network.

The glaring data holes in many water utilities' understanding of their pipeline make it very difficult to create comprehensive network renewal programs or to prioritize resource deployment. Operators have been aware that current monitoring methods are insufficient for quite some time, but it has been unclear until now what the correct solution is.

Zeroing In On The Top 20% of Risks With Satellite Data

With the help of satellite data, network managers are finally able to build a full digital risk profile, remotely assess pipeline condition, and identify the top 20% of pipelines that require urgent upgrade prioritization.

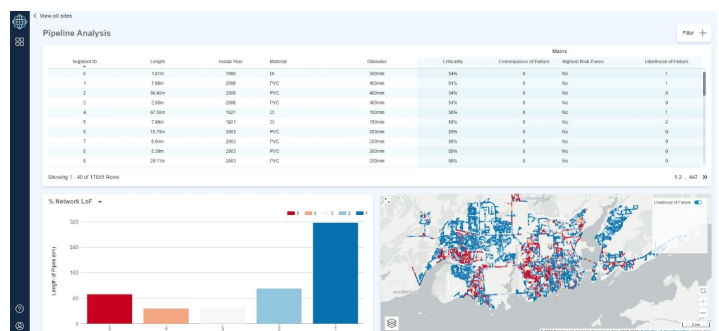
Rezatec's Pipeline Risk Monitoring system is the only solution of its kind that combines leading-edge satellite and other data feeds with the most advanced AI analytics on the market, making it possible for network managers to easily identify high-risk pipeline, optimize ground resource, and proactively plan upgrades in order to get ahead of failure before it happens.

By analyzing the geo-spatial data, Rezatec's AI model creates a Likelihood of Failure (LOF) score for each section of pipeline and generates a Consequence of Failure (COF) metric in USD, which includes both direct and indirect costs. By combining these two metrics, a Pipeline Risk Value (PRV) is provided that identifies the most critical sections of the pipeline. So far, these metrics have proven 10% more accurate than the next best risk model.

Network managers are using the solution to optimize ground resource effort and proactively plan pipeline repair, maintenance & upgrades, based on actionable, accurate data insights.

The Pipeline Risk Monitoring system allows you to:

- ✓ Easily identify the top 20% high-risk pipeline
- ✓ View risk of failure across your entire pipeline in a single dashboard
- ✓ Prioritize investigation and maintenance teams, optimizing ground resource
- ✓ Proactively plan pipeline upgrade, repair, and maintenance
- ✓ Get ahead of failure before it happens



Your subscription provides you with full access to Rezatec's intuitive interactive platform, where you can view your latest reports, generate powerful data visualizations to support your decision making, and view precise failure predictions across the entire network.

If you would like to discuss how our solution can help you to zero in on what matters and get ahead of failure before it occurs, feel free to [request a free demo now](#).



Resources:

<https://www.bluefieldresearch.com/dma-not-dma-smart-water-question/>

<https://www.hwmglobal.com/news/2017/02/28/when-the-well-is-dry/>

<https://www.commondreams.org/views/2019/12/19/looming-us-water-crisis>

https://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1173&context=mae_facpub

https://www.researchgate.net/publication/266171989_Case_Studies_on_Water_Pipeline_Failures_in_the_Active_Zone

<https://www.insidernj.com/press-release/jc-water-main-break-shows-need-fix-old-infrastructure/>

<https://www.theguardian.com/commentisfree/2019/apr/08/us-unsafe-water-crisis-unite-americans>