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California Energy Commission

Demonstrating Innovative Leakage Reduction Strategies with American Water Works Company

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Kevin Mori

Research and Development Division

Energy Efficiency Research Office

Kevin.Mori@energy.ca.gov



Project Overview

- Piping in our water infrastructure is aging and is beginning to leak water.
- The loss of water equates to the loss of embedded energy.
- Leaks are usually found when water reaches the surface.
- American Water Works will demonstrate three leak detection technologies and compare them to one another.



Scope of Technologies

Three technologies being demonstrated:

1. Correlating Continuous Acoustic Monitoring (CCAM)
2. Flow Sensitive Pressure Reducing Valve System (FSPRV)
3. Satellite Imagery Leak Detection (SILD)



Correlating Continuous Acoustic Monitoring (CCAM)

This system involves placing sensors approximately 500 feet apart through a water system that “listen” for vibrations from water leaks. These sensors communicate to the cloud through AMI(advanced metering infrastructure).

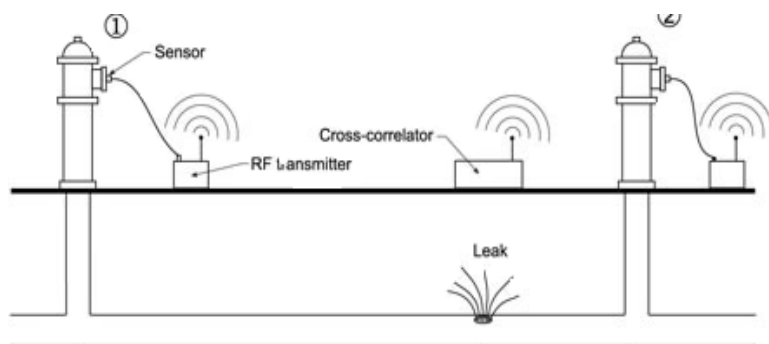


Illustration of how portable units are used for pinpointing suspected leaks



Communication device and CCAM sensor inside hydrant cap



Flow Sensitive Pressure Reducing Valve System (FSPRV)

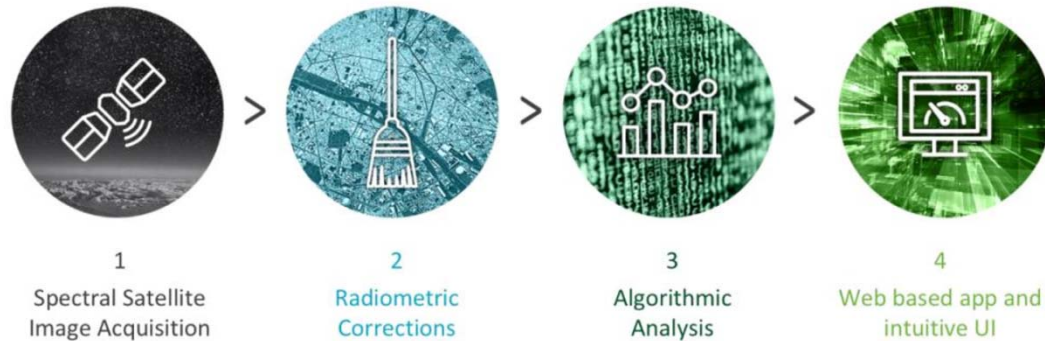
- Combines District Metering Area (DMA) analysis and Pressure reducing valves (PRV).
- DMA is used to evaluate a minimum night flow, and then through data analysis can detect leaks through metrics such as abnormally high night flows.
- PRV's provide dual functionality with the ability to minimize fluctuations in pressure.
 - Prevent pipe breaks: Pressure fluctuations can lead to breaks in water delivery pipelines.
 - Minimize water losses: When leaks are detected a PRV is used to reduce pressure and in turn water loss through that particular section of pipe.





Satellite Imagery Leak Detection (SILD)

- This technology is a process of imagery analysis and analytics that are capable of finding subsurface chlorinated water.
 - No on-site infrastructure is required.





Demonstration Locations

	Location	Technologies
1	Coronado	<ul style="list-style-type: none">• District Metering• FSPRV's
2	Duarte	<ul style="list-style-type: none">• CCAM• SILD• District Metering
3	Ventura	<ul style="list-style-type: none">• District Metering• SILD
4	Baldwin Hills	<ul style="list-style-type: none">• District Metering• FSPRV's• SILD



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More Information

Please Contact:

Kevin Mori

916-327-1475

Kevin.Mori@energy.ca.gov