



# Multi-layered Water Leak & Main Break Detection Measures

## How Cal Water is working to detect leaks and breaks early amid land movement in Rancho Palos Verdes

November 16, 2023

California Water Service (Cal Water) has undertaken a layered approach to detecting leaks and breaks that occur within our system in known landslide areas of Rancho Palos Verdes. These tools work together to help provide a more comprehensive assessment of leaks that may occur, particularly if they are not yet visible above the surface, or to find water main breaks. Together, they are designed to help identify leaks sooner and reduce response times

A main *leak* is defined as a small, slow loss of water. In contrast, a main *break* is defined as an immediate rupture of the pipe, which causes a large amount of water loss that surfaces rapidly. All water systems can reasonably expect to have leaks and breaks. Please note that detection measures do not prevent leaks from occurring and a single method will not detect every leak, which is why we have implemented this layered approach.

### Monitoring devices

At this time, we have installed approximately 65 **leak detection sensors** (also called loggers) on our infrastructure in strategic locations. These can help identify slow, unsurfaced **leaks** as the water flow detected at that point increases over time.

- The sensors can “hear” where a slow leak may be occurring and generate a point of interest.
- These are not designed to detect immediate water main break ruptures.
- The sensors work best with minimal ambient noise and when there is less household water use, usually overnight. For this reason, we have set our sensors to “listen” between 2-3 a.m. daily.
- When a point of interest is identified, based on being heard continually, the location is sent to our crews, who will investigate to confirm whether a leak is occurring. If a leak is found, our crews will repair the leak.
- Due to cellular reception issues on the Peninsula, some sensors may pick up noise before others may.

*For example, the sensors picked up a slow leak from a valve can that was leaking at a few drips per second, and crews quickly responded and tightened the valve.*

We have also installed six **pressure monitors** within the system. These help detect immediate ruptures, or water main **breaks**, that affect water pressure.

- Pressure monitors are designed to notify us when there are sharper changes in water pressure.
- When the monitors detect a drop in pressure, an alarm is sent via phone to our crews, who will respond as quickly as reasonably possible to address the break.

*For example, a main break that occurred in the overnight/early morning hours on Cinnamon Lane and Clovetree Place on November 7 was detected by a pressure monitor. Crews investigated quickly and repaired it.*

### Manual acoustic listening

Surveyors have been walking through Rancho Palos Verdes neighborhoods each weekday, Monday – Friday, to manually listen for potential leaks using highly sensitive acoustic equipment.

- The equipment is designed to identify points of interest, which our crews manually investigate.
- Most of the points of interest have been drips from meter connections, which we tighten or repair.

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- Occasionally, there have been leaks on our smaller water service lines (leading from the main to customers' meters), which we repair, or on customers' private water lines. In those cases, we notify the customers so they can have the appropriate repairs made.

## SCADA monitoring

Our Supervisory Control and Data Acquisition (SCADA) system monitors our water system 24 hours per day, 7 days per week.

- SCADA monitors, collects, and processes information about the system in real time.
- Besides enabling us to remotely control the system to allow our pumps, valves, motors, and other components to operate seamlessly when needed, SCADA alerts our crews when there is a significant change in the system that could be or cause an issue, such as rapid pressure loss that could occur due to a main break.
- Our crews are prepared to quickly investigate any alarms generated by our SCADA system around the clock.

## Visual inspection

Crews are walking our pipeline path along the Burma Trail each weekday, Monday – Friday, to visually look for any indications of a water leak.

We also ask our customers to notify us when they suspect a leak so that we can investigate it. Because our water mains are pressurized, when there is a main break, water surfaces very quickly and visual

inspections are among the quickest and most reliable ways to detect a break. There have been instances of main breaks where our pressure monitors and SCADA system detected the break and residents called in the break, within minutes of each other.

## Beyond these efforts, we:

- Are currently responding to all leaks on a "Code 4" basis, our highest response priority.
- Have secured additional repair crews.
- Are stationing an employee in Seaview 24/7 until further notice.
- Have begun construction on an above-ground water main in the Seaview neighborhood.
- Are planning to replace all of the water mains in the Seaview neighborhood, beginning with the section west of Schooner.
- Are designing the alignment for new water mains in the Portuguese Bend Community Association.
- Will begin the installation of an above-ground main at Cinnamon Lane and Clovetree Place in the Portuguese Bend Community Association area.
- Have moved part of the water main along Yacht Harbor in the Portuguese Bend Beach Club area.
- Are evaluating the appropriateness of main replacement in the Portuguese Bend Reserve.
- Together with engineering and design professionals, continue to assess various pipe materials and construction methods for our water main replacements as part of our infrastructure improvement process.

Get more information at: [calwater.com/rpv](https://calwater.com/rpv)

Report a leak at: (855) RPV-LEAK