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Failure of key water pipeline into Silicon Valley may have exposed wider problems

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Like a car owner whose transmission unexpectedly breaks down and results in a huge bill, Silicon Valley's largest water provider will have to spend at least \$20 million to drain, test and repair a critical water pipeline that failed last summer and may have more hidden problems.

The 8-foot-high, 31-mile-long concrete pipe delivers up to 40 percent of the drinking water for 1.8 million Santa Clara County residents. It moves all of the water that the Santa Clara Valley Water District purchases from the federal Central Valley Project, pumping it from the massive San Luis Reservoir in Merced County through the Diablo mountain range to the Coyote Pumping Plant near Anderson Reservoir in Morgan Hill.

"It is a lifeblood for the valley," said Al Lindauer, division chief of operations and maintenance for the U.S. Bureau of Reclamation, which owns the line.

On Aug. 1, a section of the underground pipe suffered "catastrophic failure," sending 15 million gallons of water into a cow pasture near Casa de Fruta along Highway 152, according to water district staff reports.

At 5:30 that morning, water district technicians at the Rinconada Treatment Plant in Los Gatos noticed a sudden change in pressure. Realizing they had a break, they shut off valves and stopped the gusher within an hour.

The line, installed by the Bureau of Reclamation in 1985, was then shut down for a month while district repair crews dug up and fixed a 24-foot section. The district's conclusion: It failed because mortar on the outside cracked, allowing water to seep in and rust high-tension wires that wrap around the steel and concrete core. Water then rushed through the top of the structurally compromised pipe.

"This pipe is only 30 years old. I would not have expected it to fail so quickly," said Barbara Keegan, chairwoman of the Santa Clara Valley Water District board. "It's not like there was a unique situation. The fact that it cracked and the wires corroded, how extensive is this?"

Although the federal government installed the pipe, which was made by Ameron International in Rancho Cucamonga, the water district is responsible for maintaining it. After the break, district crews found two other sections near the broken part that were also damaged, which led to a \$1.2 million repair bill.

During all of August, one of the most heavy months of the year for water use, the district's water system was perilously limited. Had there been a problem at the South Bay Aqueduct, the other key route for water from the Sacramento-San Joaquin River Delta to come into Santa Clara County, emergency water shortages could have resulted for homes and businesses. The break also disrupted water service to San Benito County, served by a spur line off the huge pipe.

Lindauer said the Bureau of Reclamation report, which had been expected this week, won't be finished for two months.

In the meantime, the water district has drawn up a \$6.8 million plan to drain, inspect and perform possible repairs next year on 8 miles of the line known as the Pacheco Conduit. A similar plan to drain, inspect and repair the other 23 miles of line, known as the Santa Clara Conduit, in 2018 and 2019 is planned. The cost is not yet known, but if it is in the same general range as the first job, it could easily exceed \$10 million or even \$20 million.

Water district officials say the high-pressure pipe, which is 8 inches thick, may have been cracked at the factory more than 30 years ago or damaged during construction.

What may seem like a mundane piece of civil engineering is actually a key part of Silicon Valley's history. Construction of the pipeline, part of a wider project known as the San Felipe Division of the Central Valley Project, brought up to 152,500 acre feet of water — enough for about 800,000 people a year — into Santa Clara County starting in the 1980s. That allowed the valley to accommodate more homes, industry and population growth.

Without the Delta water from the Central Valley Project and the State Water Project, there is not enough water in the local creeks, rivers and underground aquifers to support the county's population, farms and economy.

National experts say the break is symbolic of aging dams, pipes, canals and other water infrastructure that are in distress in many communities.

“We have about 240,000 water main breaks a year in this country. That's more than 600 every day,” said Greg DiLoreto, past president of the American Society of Civil Engineers. “Pipes reach the end of their useful life. It's like having a roof on your house. You can make repairs, but at some point, you have to replace it.”

DiLoreto said it's encouraging that the Santa Clara Valley Water District is launching a full inspection and repair plan for all 31 miles of the critical pipeline.

“We as Americans have to invest,” he said. “If you compare your water bill to what you pay for cable TV or a cellphone and think about how important water is to your life, it begs the question: Are you willing to invest more?”

Paul Rogers covers resources and environmental issues. Contact him at 408-920-5045. Follow him at

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