

Stormwater Capture: California's Untapped Water Supply

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When it rains in California, millions of gallons of water runs down city streets, into storm drains and out to the Pacific Ocean. But with the state in its fourth year of drought, it can't afford to waste it. Some cities are capturing that rain by soaking it up like a sponge. Amy Quinton reports from Sacramento on what may be California's next big "untapped" water supply.

It's a busy morning in a San Fernando Valley neighborhood. On Elmer Avenue people are hopping in their cars and garbage trucks are making their rounds. Look to the northeast, you can see mountains.

Eileen Alduenda is with the Council for Watershed Health.

Alduenda: "Those are the mountains where it all starts. Those are the San Gabriel Mountains. The historic watershed had water moving through those mountains and straight down Elmer Avenue into the Paseo."

The Paseo is an alley at the end of the street. She and ecologist Chris Solek know a lot about how water moves through this valley when it rains.

Solek: "The watershed is still there but what's changed is the surface has become completely impervious."

Decades ago homes were built, roads were paved and now 40 acres of concrete funnel water down this one block of Elmer Avenue. So when it rains, the street becomes a stream and it floods.

Solek: "So all the water is coming down on a hard surface because it has nowhere to go and in a natural system it has the chance to slow down, spread out and sink in."

It becomes groundwater, which the city and the rest of the state desperately need in a drought. But urban areas in California have spent decades engineering a landscape to send water away as quickly as possible. Five years ago, Elmer Avenue became LA's first residential test site to instead treat water as a scarce resource that should be captured.

Solek: "This is where it all starts at Elmer Avenue."

Chris Solek takes me to what he calls the upstream end of the avenue and points to what looks like a typical storm drain in the sidewalk. But what's underneath makes all the difference.

Solek: "Typically catch basins are concrete so the water just runoffs, directly into the storm drain system, and it goes to the ocean. In this case a soft bottom allows water to percolate, to infiltrate the soil and augment that groundwater."

Colorful drought tolerant plants line the sidewalks. And it isn't just pretty landscaping. These are bioswales - "ditches" – engineered to slow down water so it soaks into the ground to mimic a natural landscape. Under Elmer Avenue there's more - an engineered system that allows water to filter through layers of soil.

Solek: "So when they did the Elmer Avenue project they had to excavate and open up the street and actually put these things into the ground and then repave the street."

Permeable driveways also help sponge up water. Chris Solek says in two years, the street was able to capture enough water to supply up to 66 households daily. That's 32 acre feet. The Elmer Avenue pilot project helped spark a similar project just a few miles away.

Art Castro: "So this is our traditional greenstreet project"

Art Castro is a civil engineer with Los Angeles Department of Water and Power. He's on the Woodman Avenue median, a bioswale that's collecting rainwater from the surrounding 120 acres.

Castro: "The whole thing is 3500 feet long, three-quarters of a mile and this captures roughly 55 acre feet a year."

Castro is a big proponent of stormwater capture, but he says the highest hurdle is cost. The Elmer Avenue project cost two and a half million dollars. Woodman cost three. Castro says LADWP needs to capture much more stormwater either to survive a drought or deal with a future of more intense storms. There's a nearly \$30 million project in the works.

Castro: "We're going to have 16,000 acre feet per year, that's roughly 80,000 homes per year that we could potentially supply."

\$200 million is available in last year's water bond to get small and large projects like these off the ground. A Pacific Institute study found that capturing stormwater in San Francisco and Southern California alone could provide up to 600,000 acre feet of water a year, enough to supply about 1.2 million households.