

The Miracle Workers

When asked what an “emergency” looks like at Oro Valley Water, Peter immediately responds that an emergency is when any single customer is at risk of losing water service.

Peter’s answer shows the philosophy by which he oversees Oro Valley Water: “We are oriented to serving our customers. That’s why we exist.”

It’s amazing to think how we take for granted the thing that is most important to life: water. (And in one of the most arid population centers in the world, to boot.) If even a single person in OV cannot turn on the tap, the entire Utility mobilizes to solve the problem right away.

Rallying the Troops

Peter explains that the most typical type of emergency that affects a customer's water service is a water main break. Once water staff are aware of a break, they immediately deploy additional water operators and engineers to determine how many customers will be affected, and for how long.

Once this information is known -- usually within 30 minutes -- utility field staff begin knocking on doors to notify the affected customers that there will be an interruption in water service and for a certain amount of time. While field staff are busy taking care of the “boots on the ground” work, the Utility’s administration team ensures that the Town’s Management is aware of the situation.

Almost without exception, water service is restored within eight hours. If water service cannot be restored within that time window, Utility staff will keep the affected customers informed and provide bottled water as necessary.

OV Water: Many Surprises

It was a great surprise to read [Peter’s article](#) and discover that water usage is actually going *down* in OV. In fact, on a per capita basis, water usage has been plummeting in OV for over 25 years.

It was also amazing to learn that OV Water is dedicating a significant amount of its water allotment from the Colorado River to replace the groundwater that is pumped in accordance with the state’s 1980 Groundwater Management Act.

“The good news” explains Peter “is that the reduction in groundwater pumping almost has us at a sustainable groundwater pumping level. Since the reduced groundwater pumping, several wells have shown recovery in that the groundwater levels are rising. Further reduction of groundwater pumping will further improve the aquifer levels.”

The Big Dry Out?

OV has been planning for a hotter and drier future.

The reduction in water resource availability that the Western States are currently experiencing has been planned for. They even have a plan for the worst-case scenario (what Peter jokingly refers to as the “zombie apocalypse” scenario).

When you are responsible for making sure that everyone in the community has ready access to good-quality water, you need to be ready for whatever Mother Nature throws your way.

“Most water professionals in Southern Arizona are planning for a 20-40% cut in allocation [from the Colorado River],” says Peter. Even with a 40% cut in allocation, our Utility would still have enough water to deliver to customers in OV. However, the Town’s growth potential would be limited unless other sources of supply were obtained.”

The Utility’s ultimate fallback position is the availability of groundwater. If all other sources of supply were lost, the Town would have a Designation of Assured Water Supply from the Arizona Department of water resources (ADWR). What this basically means is that the ADWR has determined that Oro Valley has a minimum of 100 years of water supply if all other sources were lost.

The Unseen World of Water

It takes a staff of 40 to keep the taps flowing. On any given day, about half of the staff is out in the field, working on OV Water’s extensive facilities. “For the size of our utility we have a lot of infrastructure.”

One of the engineering challenges of delivering water in OV is that there is such varying topography. OV Water must serve customers from the lowest elevations bordering the Cañada del Oro Wash, all the way up to customers living in Stone Canyon. The elevation change from the lowest point in Oro Valley’s service area to the highest point is over 1,000 feet.

“Meanwhile we have to maintain a narrow band of pressure [20-70 psi] for customers,” Peter explains.

To serve the varied elevation of its service areas, OV Water uses a series of pumps (called “boosters”) and reservoirs. In essence, the Utility pumps water from a lower elevation to a reservoir 105 feet higher in elevation. From this higher reservoir another booster station pumps the water to another reservoir 105 feet higher than the previous reservoir. In between the reservoirs is a pressure zone that is optimal for customer use.

This “hopscotch” design of lifting water to progressively higher zones allow for consistent water pressure at all elevations. This is the reason why you have water service even during power outages: The reservoir above your home maintains a consistent water pressure for your pressure zone.

“Water is All I Know”

Peter is about as local as it gets in OV.

“I grew up here. The house I grew up in is about three miles from where I work. I remember when there was only the Highlands Mobile Home Park and the Oro Valley Country Club. My dad and I used to ride dirt bikes, fly model airplanes, and shoot guns in the desert before any one was here.”

After attending U of A and becoming a licensed engineer in the state of Arizona, Peter started his career at Tucson Water in 1999 (“Once the world of municipal water works opened up to me, I just loved everything about it.”) He went on to work with Oro Valley Water, until the head of the Utility was planning to leave.

“I thought: ‘when the next guy takes this job, I’m going to help him make this a great place.’ And then my colleagues told me I should apply. They saw something in me I couldn’t see.” The rest is history. “I have my dream job and I am blessed to be in the position I am, in the community I grew up in”.

Peter and his wife have two children: a son at Immaculate Heart HS, and a daughter at U of A. “I’m homegrown. We are stakeholders in the OV community. All my chips are on the table. There’s no Plan B. If what I do now does not work out, I don’t know what else I would do. Water is all I know.”

The Miracle of The Tap

OV Water maintains a massive infrastructure for water delivery that we take for granted when we turn on the tap. The Utility maintains 12 reservoirs, 26 pump stations, and 385 miles of water distribution mains.

(This is not to mention the larger Colorado River infrastructure, which explains how a drop of rain in Wyoming can end up coming out of your faucet in OV.)

Indeed, the pristine and austere desert that we all know, and love is wonderful when you have an endless supply of fresh, drinkable water (not to mention air conditioning, cars, and all the amenities of modern life.). It would be a very different story if we were transported back to a time before people.

Without modern water delivery infrastructure, Oro Valley would have been a no-fly zone. “Without water, there are no people,” says Peter.

The Santa Cruz River is the only natural source of water in the region. In fact, the [Hohokam tribe](#) was able to colonize the area by using the first canal-based water delivery system in North America. With that foundation, they went on to [settle the banks of Rincon Creek](#) in today’s Saguaro National Park.

Today, if you stacked up all the water that is provided to OV residents each year, it could cover a football field and stand as a column of water almost two miles high! This is a miracle of modern engineering.

And we just turn on the tap, taking OV's high-quality drinking water (sweet groundwater is mixed in with the hard water from the Colorado River for the best tasting water.)

"Our job is to make the magic happen," says Peter.