



**DWP T-shirts  
See page 58**

SERVING OVER 17,000 CITY AND DWP EMPLOYEES

## DWP Team Joins Race for the Cure

■ **'Dream Makers' team to participate in local event Feb. 25. Donations accepted.**

DWP — Eleven DWP employees and family members have formed the DWP Dream Makers Team to raise funds for breast cancer research as part of the local Susan G. Komen Race for a Cure Feb. 25 at the Rose Bowl.

The DWP Dream Makers team includes Evelyn Cortez-Davis, Denise Gardiner, Gayle Glauz, Annette Hernandez, Grace Gonzalez, Tayler Crossley, Diana Salas and family members Nahid

Fatemi, Nastaran Fatemi, Nasimeh Fatemi and Ariana Davari. There have been stories shared, moments of jubilation as milestones are met and



— See *Race for the Cure*, Page 11

## City Facility Hosts Actual Moon Rock

■ **Kara Knack, Friends of the Observatory officer, traveled to Houston to bring back a moon rock for display. Here, she tells her story.**

REC AND PARKS — In October, Kara Knack, Renovation Communications Officer with Friends of the Griffith Observatory, left town. A day later, she came back with a moon rock, destined for eventual display in the renovated observatory.

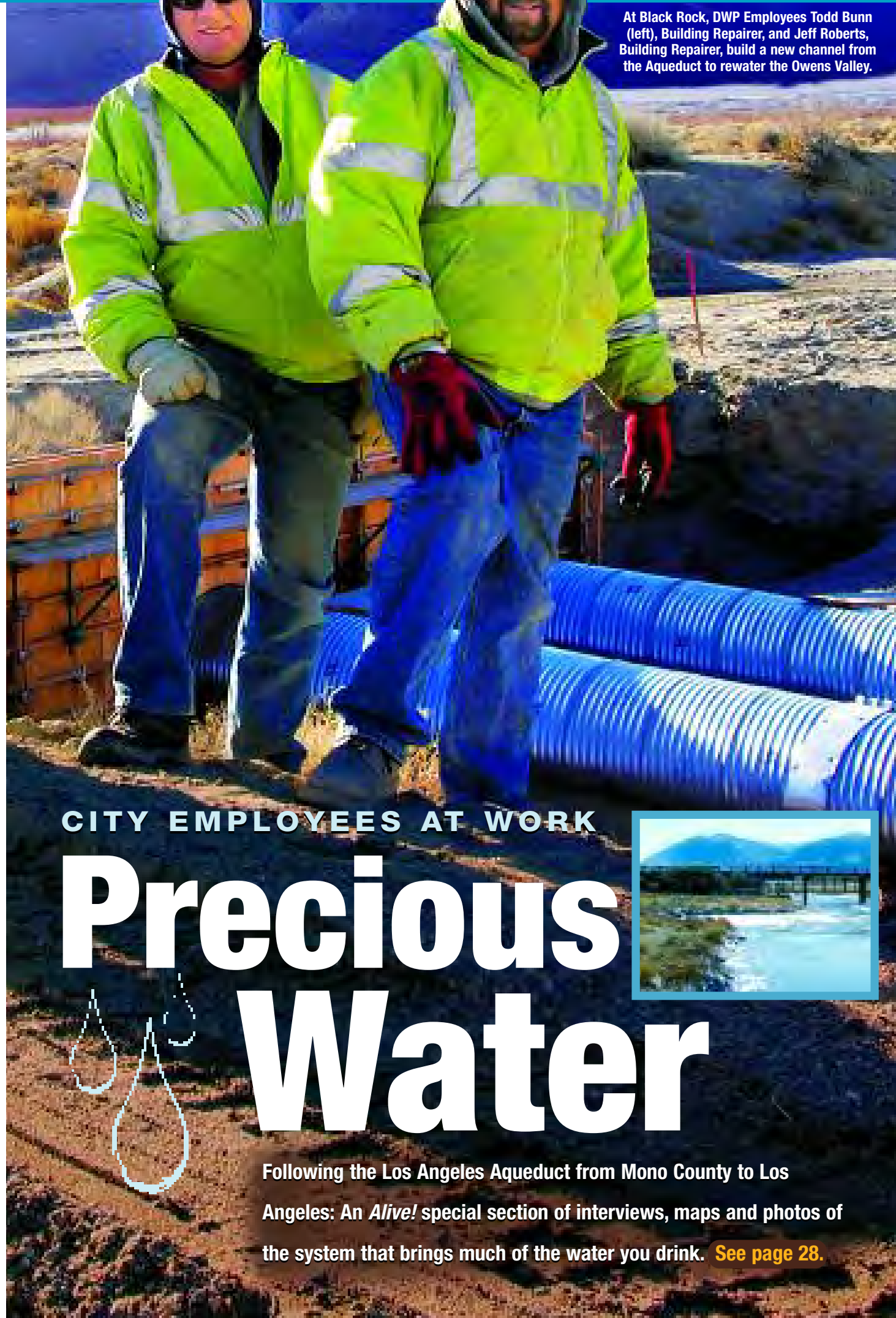
The rock is now one of the Observatory's highlights.

"I was so honored!" she said, standing in front of the rock last month. "It's so wonderful to have our own moon rock. The real joy is that this is here."

Beginning inside is Kara's diary of the trip to pick up the moon rock. It is used with permission of The Observer, the magazine of the Friends of the Observatory.

Turn to page 6 for the account.

— See *The Rock and Me*, Page 6



At Black Rock, DWP Employees Todd Bunn (left), Building Repairer, and Jeff Roberts, Building Repairer, build a new channel from the Aqueduct to rewater the Owens Valley.

CITY EMPLOYEES AT WORK

# Precious Water



Following the Los Angeles Aqueduct from Mono County to Los Angeles: An *Alive!* special section of interviews, maps and photos of the system that brings much of the water you drink. **See page 28.**



City Employees Club of Los Angeles  
350 S. Figueroa St., Suite 700  
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*Be My Club Valentine!*

Club Members call out their sweeties in an *Alive!* special feature. **See page 13.**



## CITY EMPLOYEES AT WORK

In the Eastern Sierra, water meant for Los Angeles is collected in the Upper Owens River, shown here at Benton Crossing Bridge in the Owens Valley. The water then travels south before it is diverted at the Intake (small photo at right), the northernmost facility built by William Mulholland early last century. From Benton Crossing, it will take this water two to four weeks to reach Los Angeles. The water in this photo is about 25 percent of all the water needed by Los Angeles at any given moment.



# Thanks!

*Alive!* wishes to thank the following DWP personnel, who made this story possible:



**Jim McDaniel, Chief Operating Officer, Water Division, for the interview and assistance.**



**Gene Coufal, Manager, Aqueduct Business Group, for coordination.**



**Chris Plakos, Public Relations Manager, Aqueduct Business Group, for escorting *Alive!* on Jan. 18.**

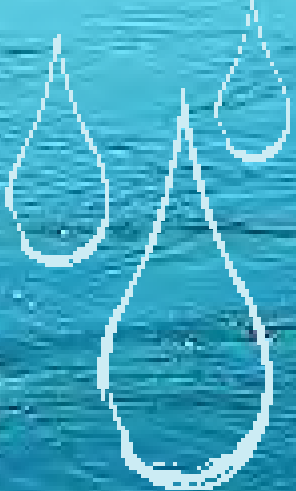
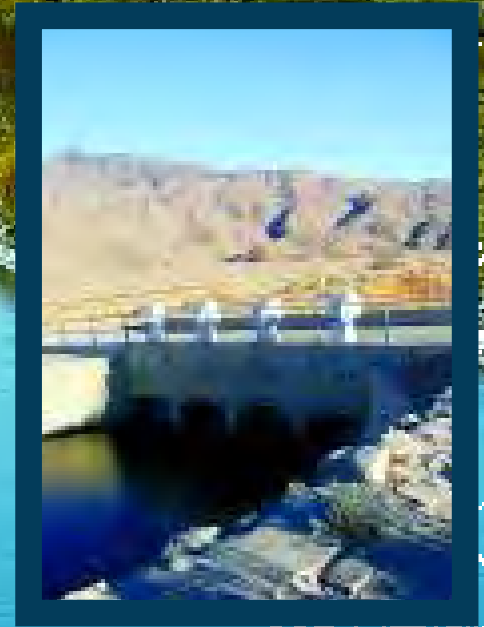


**Abebaw Anbessaw, Civil Engineering Associate, for escorting *Alive!* on Jan. 19.**

THE LOS ANGELES AQUEDUCT

# Precious Water

Ever wonder where your water comes from? Half comes from the Los Angeles Aqueduct, a 330-mile system starting in Mono County and ending in Sylmar. *Alive!* follows the water, all along the way.



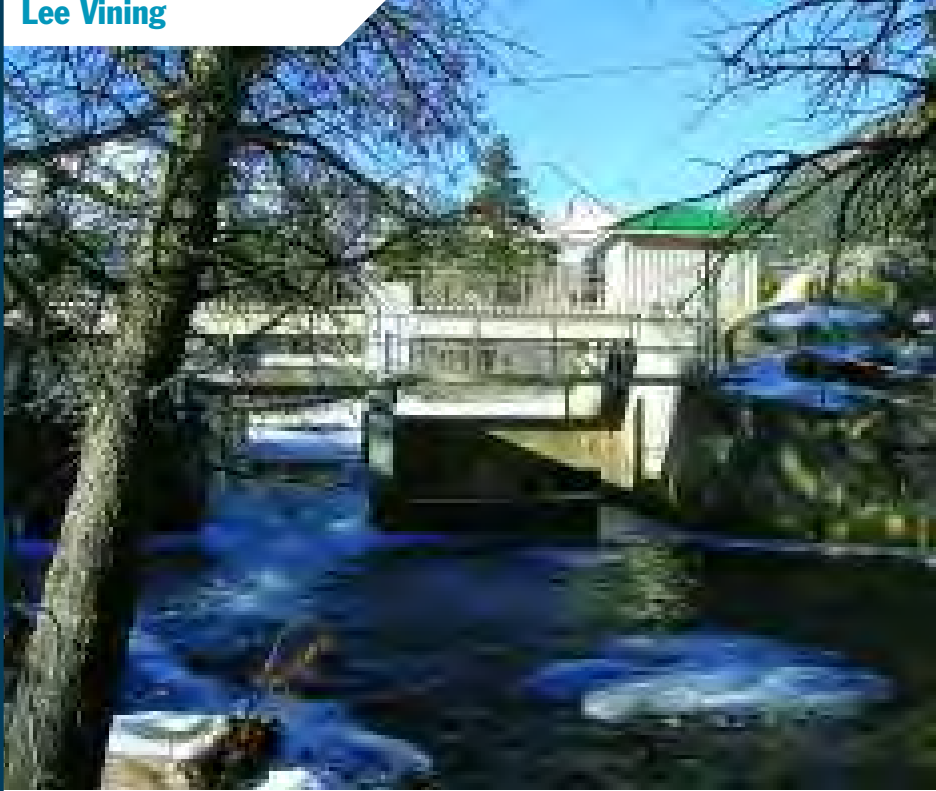


## THE ALIVE! INTERVIEW

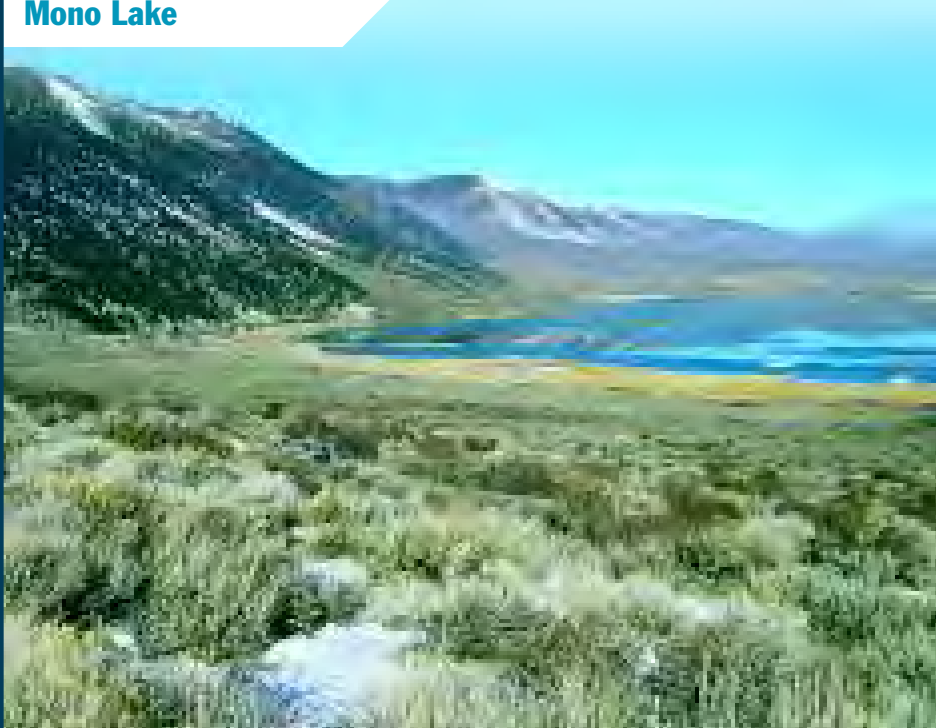
## THE LOS ANGELES AQUEDUCT

## Alive! interviews Jim McDaniel, Chief Operating Officer of the DWP's Water Division, and follows the water from its northernmost point.

### Lee Vining



### Mono Lake



**Alive!:** The Los Angeles Aqueduct: Where does it start? What is the source of the water?

**Jim McDaniel:** Maybe it would be good to back up a little bit. There is the LA Aqueduct, which takes water from a watershed in the Eastern Sierra. Central California and the northern part of the Sierra is a different watershed that drains to the central valley, and that water comes down through the California Aqueduct. And then you've got the Colorado River watershed that covers all those states, from Utah, New Mexico, Arizona, Colorado and a little bit of Wyoming. It all flows down to the Colorado River; the Colorado River Aqueduct brings [that] water to us. These three independent watersheds provide us with a lot of reliability. So, between those three watersheds, all of which the City of LA has access to, we're always in pretty good shape for water compared to a lot of places.

**The crown jewel in our system is our own LA Aqueduct, which brings water from the Eastern Sierra.**

### LEE VINING AND MONO LAKE

**Alive!:** Does the majority of the water we receive come from the LA Aqueduct?

**Jim McDaniel:** It brings about half of our water. It used to bring a little bit more; around three quarters of the water. But a lot of the water in the Eastern Sierra is now being used for environmental mitigation up there. So, we don't have as much water as we used to have coming from the Eastern Sierra. But it still amounts to roughly half of our water, in any given year, comes from the Eastern Sierra.

**Alive!:** All the way from Mono Lake...

**Jim McDaniel:** Lee Vining is actually the northernmost point of origin, where we divert a stream into our system. Lee Vining has a new water gate that we just built. It's one of the diversion points that fed Mono Lake. Under a court order, we are required to release a certain amount of water into Mono Lake, so we had to build a structure there so we could control how much water goes to Mono Lake and how much water goes into the conduits [that head to Los Angeles]. Lee Vining is an open facility, as are most of our facilities. The public can walk right up to them.

**Alive!:** Really?

**Jim McDaniel:** In fact a lot of people like to fish off of them, there's a little bridge there, there's a pond right above there and people are fishing off there all the time. You can walk up there and see it.

**Alive!:** Our water doesn't come from the lake, it comes from the watershed?

**Jim McDaniel:** Right. Because Mono Lake is a salt water lake, it's a saline sink; it's the low spot in that basin. Once it hits Mono Lake, the water is unusable for drinking. The engineers diverted the streams that fed Mono Lake, and there's a cutoff conduit where the streams are diverted into this tunnel. There are about five streams that it diverts.

The big controversy was, "Okay you did that, now the lake is shrinking." The concern was, eventually it's going to dry up. So, the restoration effort was to re-water those streams. So, now those streams that were dry when water was diverted now have been restored and there's water that flows down into Mono Lake. And, we still get some export of water from the Mono Basin, but not nearly what we used to.

## JAMES B. McDANIEL

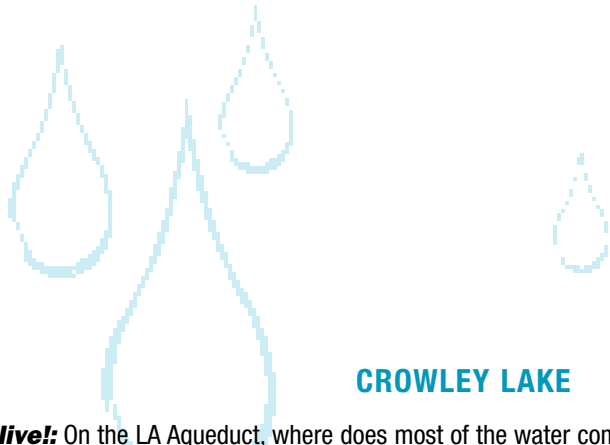


James B. McDaniel is the Assistant General Manager and Chief Operating Officer for the Los Angeles Department of Water and Power's Water System. With more than 24 years' experience in water utility operations and management, he has overall executive management oversight for all water system operations, including production (groundwater and aqueduct), distribution, treatment, pumping, water resources and engineering for the system that serves four million residents of the City of Los Angeles with an annual operating budget of more than \$370 million and a capital program of more than \$3 billion over the next 10

years. The water system serves an average of 600 million gallons of water per day with a dedicated staff of approximately 1600 people.

Other positions held during his career with the DWP include Deputy Assistant General Manager-Water System, Director of Water Quality and Operations, Manager of Water System Operations, Manager of Geotechnical Engineering Services; and various Waterworks Engineer positions managing professional and technical staffs involved in all areas of engineering, planning, resources, conservation and governmental and environmental affairs.

He is a registered Civil Engineer in the State of California, as well as a certified Water Distribution Operator. He is a member of the American Water Works Association, the American Society of Civil Engineers, the Water Sector Coordinating Council, and the Colorado River Board of California. He serves on the Board of Directors of the Association of Metropolitan Water Agencies and as a trustee on the Board of the American Water Works Association Research Foundation. He received his Bachelor's degree in civil engineering from the University of California at Irvine.



### CROWLEY LAKE

**Alive!:** On the LA Aqueduct, where does most of the water come from?

**Jim McDaniel:** Most of it comes from the watershed. Mono Basin is one watershed, and then the Owens Valley itself is a watershed. The break point is just above Mammoth. Just north of Mammoth there is a kind of a high spot: Everything north of that runs into Mono Basin, and everything south of that runs into the Owens Valley. We've got a tunnel that was drilled through that mountain that connects the two.

But most of the water comes from the Owens Valley watershed and Lake Crowley. That is the biggest reservoir up there. A lot of people are probably familiar with Mammoth Mountain because of the ski area. Mammoth Mountain is part of the Owens Valley watershed. In fact, all the snow in the [Eastern] Sierras is going to melt and come down into the Owens Valley watershed.

**Alive!:** What's the Haiwee?

**Jim McDaniel:** It's a reservoir. There are actually two reservoirs there, a North Haiwee and a South Haiwee Reservoir. It's a storage reservoir along the aqueduct. Haiwee is a wonderful feature in the aqueduct in that it allows the water to slow down and go through that reservoir, and the solids drop out. We really count on Haiwee Reservoir to do some of the heavy lifting on that treatment so that we don't have to do it mechanically at the treatment plant.

### THE OWENS RIVER

**Alive!:** Does the Aqueduct go through Bishop?

**Jim McDaniel:** In that part of the system it's the Owens River. And, the Owens River runs just to the east of the city of Bishop and so, in essence, it does run right through there.

### THE GORGE

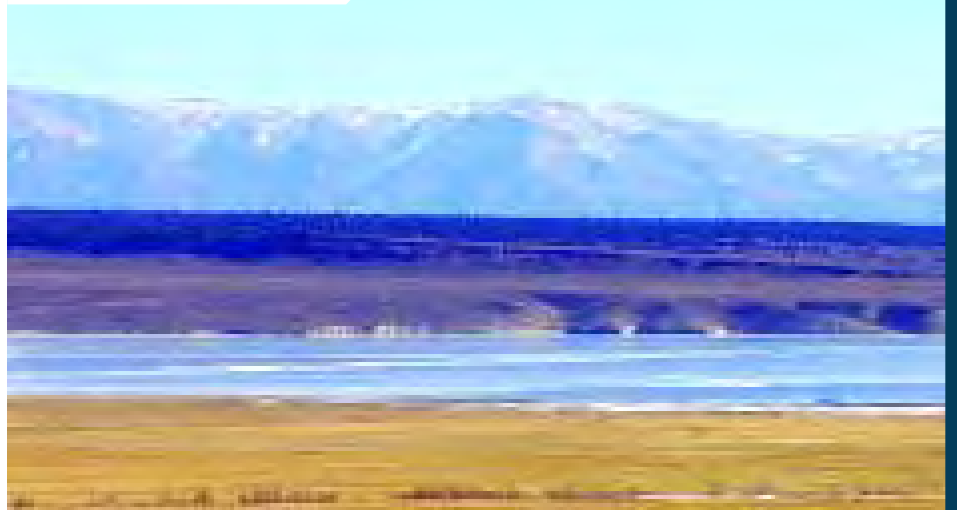
**Jim McDaniel:** Just to the north of Bishop, we have some power facilities. They call them the Gorge Plants. There are three hydroelectric power plants that generate power from the aqueduct water coming down the gorge.

- CONTINUES

### The Gorge Overlook



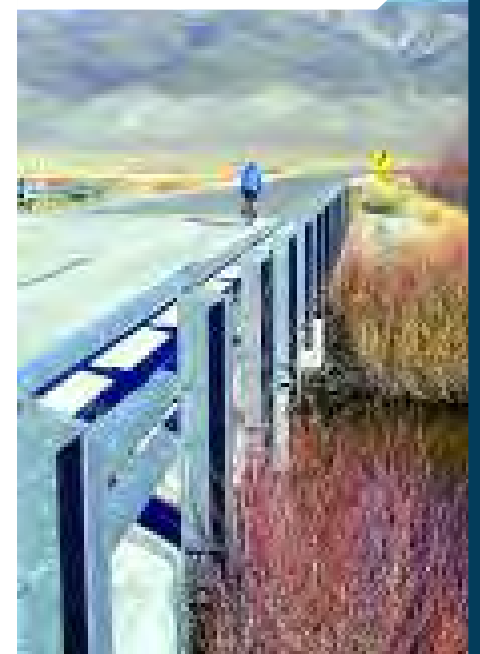
### Crowley Lake



### Owens River, Benton Crossing



### Owens River, E. Line Street



### Owens River, Warm Springs Road



## THE DWP AND THE EASTERN SIERRA

Because of the DWP's excellent land stewardship, the Owens Valley remains one of the last areas in California virtually untouched by pollution and development. Tourism has become the major industry in the Eastern Sierra because of the beauty of the Eastern Sierra and the recreational opportunities offered on DWP and federally owned lands.

The DWP is committed to maintaining the Owens Valley's high quality of life, and the enhancement and protection of the Owens Valley environment, as evidenced by the serious commitments that were made in the 1991 Inyo County-Los Angeles Water Agreement and other sup-

porting documents. The DWP has also spent hundreds of millions of dollars on Owens Valley and Eastern Sierra enhancement and restoration efforts.

As a result of those commitments and other obligations, the DWP now leaves more than one-third of the water it formerly diverted to Los Angeles in the Eastern Sierra to protect and enhance the local environment. This is made possible mainly because of the department's industry-leading water conservation programs, which have resulted in water use in Los Angeles remaining almost the same as it was 20 years ago despite a

population increase of more than 700,000 people.

Over the past several decades the department has undertaken and completed many projects and programs to enhance the Owens Valley. From building a sports complex in Lone Pine that provides baseball fields for the public to planting tree lots and providing land for community parks and other needs up and down the Owens Valley, the department is committed to maintaining the high quality of life in the Eastern Sierra.

Two of the most important enhancement projects currently under way are the Owens Lake Dust Mitigation Project and the Lower Owens River Project (LORP). To control dust emanating from Owens Lake, the

DWP has shallow-flooded and planted grass on almost 30 square miles of the lakebed, using enough water for 200,000 people annually to improve air quality in the Owens Valley. And, an additional 12.7 additional square miles will be flooded in the next several years. The LORP, an environmental enhancement project conceived by the DWP and California Department of Fish and Game biologists in the 1980s, has re-watered more than 62 miles of river channel that has been mostly dry since the early 1900s to provide wildlife habitat and public recreational opportunities, an enhancement project unprecedented in the United States.

- Chris Plakos, Aqueduct Business Group, DWP Bishop





## THE ALIVE! INTERVIEW

## THE LOS ANGELES AQUEDUCT

## The Intake



## Black Rock (Owens Valley)

From left: Clayton Anderson, Maintenance Construction Helper; Todd Bunn, Building Repairer; and Jeff Roberts, Building Repairer; build the Black Rock channel to re-water the Owens Valley.



## The Owens Valley



CONTINUED FROM PREVIOUS PAGE —

## THE INTAKE

**Jim McDaniel:** And then the next main milestone is what they call the Intake. The Intake is the spot where the original Owens River was diverted into an artificially built aqueduct. It's the place where the [Owens] River is going downhill; the water's going downhill, right?

**Alive!:** Right.

**Jim McDaniel:** When [William] Mulholland laid it out, his goal was to get all the water to LA with no pumping. So if you go down too far [in altitude] and then you got a hill, you'd have to pump it back up. So he diverted the water and then he took it off to the side, still going downhill but at much less of a slope. He was able to work it all the way around there.

There's a point where they come together and you have to divert it, so that's this thing called the Intake. There's a historical structure there and a [water] gate, and that's where we had this big ceremony where the Mayor was up there for the re-watering of the lower Owens River. Formerly the part of the river below the Intake was dry; there was no water in it. Well, now there's water flowing in it again.

It's a re-watering of a natural stream course.

## RE-WATERING OWENS VALLEY

**Jim McDaniel:** We're putting this water in the river; remember I said if it goes in the river it's too low. Well, we didn't want to waste that water, so now we're building a pump station that's just about finished. That'll be the only place where we're actually pumping the water. Some of the water might be sent out onto the Owens Dry Lake Project.

When it started out it was something that was imposed on us. "They're making us do that." As time goes on, it's a facility now. It's our facility, we're operating it, we operate the lake, there's a whole bunch of mechanical equipment and we're even building a whole maintenance yard on the lake, just for the people who are working on the lake. It'll be like 60 people assigned full time just to work on the lake.

## TUNNELS

**Alive!:** Are there tunnels?

**Jim McDaniel:** There's the Mono Craters tunnel, where you've got the water coming out of Mono Lake to the Owens Valley. You don't really see a whole lot of the tunnel.

If you imagine there's a hill and a slope, and you want to run an aqueduct you want to notch out the hillside, and then you build a conduit along there. When it's all said and done, you don't really see the aqueduct anymore, so it kind of looks like a tunnel. It goes right through the mountain and connects onto another place. So, there are actually lots of tunnels.

## TWO AQUEDUCTS

**Jim McDaniel:** We have a first and a second LA Aqueduct. The first LA Aqueduct was built in the teens. And, the second aqueduct was built in the 1970s. In the teens, materials were expensive and had to be imported. [But] labor was cheap, so they dug through mountains. You'll find a lot more buried or tunnel sections in the first LA Aqueduct. In the second LA Aqueduct, laborer was much more expensive compared to materials. So you'll find a lot more pipe. Instead of digging through the mountain, they'll run a pipe up one side and down the other side.

[Driving up there, you'll see] white pipe or lighter-colored pipe. That's the second LA Aqueduct; the black pipe is the first LA Aqueduct, and it's due to the kind of coating materials that they put on it to protect the pipes. The first LA Aqueduct is this old riveted pipe. The second LA Aqueduct is welded steel and it's got a more modern paint type coating.

**Alive!:** Is the old one empty?

**Jim McDaniel:** No, they're both used.

**Alive!:** But the second one was just for more volume?

**Jim McDaniel:** The second one was originally built to a), export from the Mono Basin; and b), export additional ground water that they were going to pump from the Owens Valley. Now, we've pretty much lost most of the water from the Mono Basin, and we've got fairly severe restrictions due to concerns over impacts on vegetation in Owens Valley. So, we don't use the full capacity of both the aqueducts. But I don't know what we'd do without them because, when you have maintenance, when you've got a 100-year-old facility and it needs to be maintained, you can't afford to shut off the water to the City of LA while you take that thing down and cement coat it or re-weld a piece on it or something else. With the second LA Aqueduct, you've got some redundancy there. We had an example of that just this last weekend. The second LA Aqueduct had a break in Santa Clarita, about a three- to four-foot rip across the top of the pipe due to the cold weather. And our guys out of [the DWP office in] Mohave came out there and fabricated a piece of steel to go over the top of that.

## ABOUT THE LOS ANGELES AQUEDUCT

## Where does L.A.'s water come from?:

- Los Angeles Aqueduct System (Owens Valley and Mono Basin)
- Local groundwater (San Fernando, Sylmar, Central and West Coast Basins)
- Metropolitan Water District of Southern California (Colorado River and Northern California)

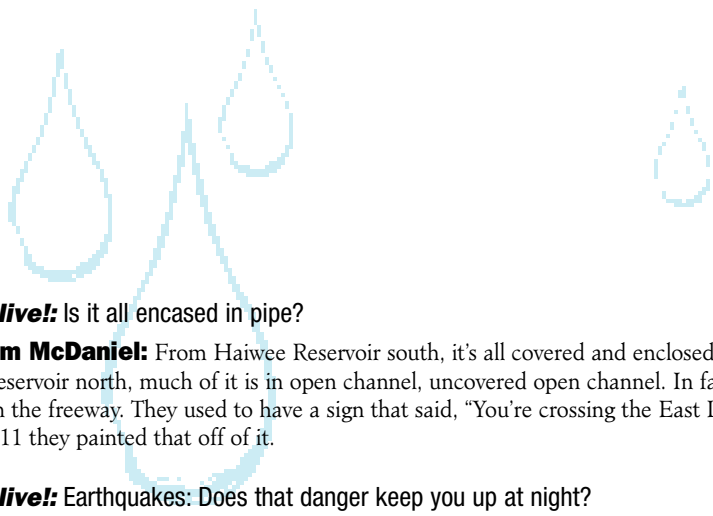
## Interesting facts:

**AQUEDUCT LAND OWNED/ADMINISTERED BY THE DWP:** Approximately 312,000 acres, roughly the same size as the City of Los Angeles

**TOTAL AQUEDUCT LENGTH:** 330 miles

**TOTAL POTENTIAL AQUEDUCT SYSTEM HORSEPOWER:** Approximately 72,900 KW

**AQUEDUCT SYSTEM RESERVOIRS:** 6



**Alive!** Is it all encased in pipe?

**Jim McDaniel:** From Haiwee Reservoir south, it's all covered and enclosed. From Haiwee Reservoir north, much of it is in open channel, uncovered open channel. In fact, you drive across it on the freeway. They used to have a sign that said, "You're crossing the East LA Aqueduct." After 9/11 they painted that off of it.

**Alive!** Earthquakes: Does that danger keep you up at night?

**Jim McDaniel:** We build our stuff to withstand some of the highest seismic standards that we know of, but it's a 100-year-old infrastructure so we worry about it. Up around Mammoth, that whole northern piece of the Owens Valley and where this Lake Crowley is, is called the "Long Valley Caldera." It's an ancient blown volcano, so there's a lot of seismic activity up there. But we have emergency procedures in place, so our folks know how to respond.

### THE CASCADES

**Alive!** And then the Cascades?

**Jim McDaniel:** The Cascades will be as you're coming [into LA]. Now you're all the way back down to the City through Santa Clarita, right where the 14 Freeway joins in with the 5. The Cascades are right there above our treatment plant. That's the traditional end: Lee Vining to the Cascades.

### HONORING THE AQUEDUCT

**Alive!** Is there anything you want to say about the people working for you?

**Jim McDaniel:** All of the employees in the water system realize that we are stewards of this fantastic piece of infrastructure that was built by people who came before us who had great vision and great opportunities. It's an honor and a privilege [to work on it]. People take it very seriously, and we are extremely conscientious and proud of the history that is associated with that.

It makes me feel real good that I've got people who are working for me who have such a connection with the things that they're doing on a daily basis. I can't say enough about all of our employees in Owens Valley as well as in the City. Water is necessary for people's lives, and [the employees] all know that. When there's a callout, there's never a question about people turning out. People talk about the uniform services, police and fire, but our water and power employees aren't any less dedicated. They are out there all the time, taking care of business and making sure when our customer turns on the tap, the water's there for them. People take that for granted and kind of plan it that way. We don't want people worried about where the water's going to come from. We just want to take care of business.

### THE FUTURE

**Alive!** What are the challenges of the future?

**Jim McDaniel:** In the future, one of the things that we're going to be facing is that there's going to be a limit on imported water. The days of doing major transfers of water from one part of the state to the other are pretty much built out. There are probably still some opportunities from agricultural lands that either may not be as productive or may not be as economically viable, and water could be freed up for urban agencies. There's already some of that going on with Imperial Valley and the City of San Diego.

I think the biggest challenge we have is using the water that we have more wisely. We don't recycle as much as water in the City of LA. We have just recently gotten regulatory approval to turn on one of our major recycled water projects in the Sepulveda Basin so we can start watering the golf courses around Lake Balboa with recycled water. We're going to have to look at expanding the use of recycled water considerably in the city of LA.

We do a great job of water conservation, In the last 30 years, we've added about a million people to the population of the City of LA, yet we're using the same amount of water as we were 30 years ago despite going from about 3 million to 4 million. That's a huge statistic and it's due to a lot of work on our part and a lot of programs that we have. But there are even more opportunities out there. We really haven't gotten into the whole outdoor water conservation issue. Typically in residences, a third of the water is used outside the home in landscaping, so we're really looking to push what they call smart irrigation controllers that can sense the weather and turn themselves off when it's raining automatically. There are huge opportunities for water saving there.

And, the other opportunity is storm water. We get quite a bit of storm water in LA, believe it or not, but it comes over a period of 14 days a year. It's huge, and then it's gone. We need to figure out better ways of capturing that water. We have this great ground water basin in the San Fernando Valley; if we can capture more of that water percolated into the ground, then it would be available for us to pump out.

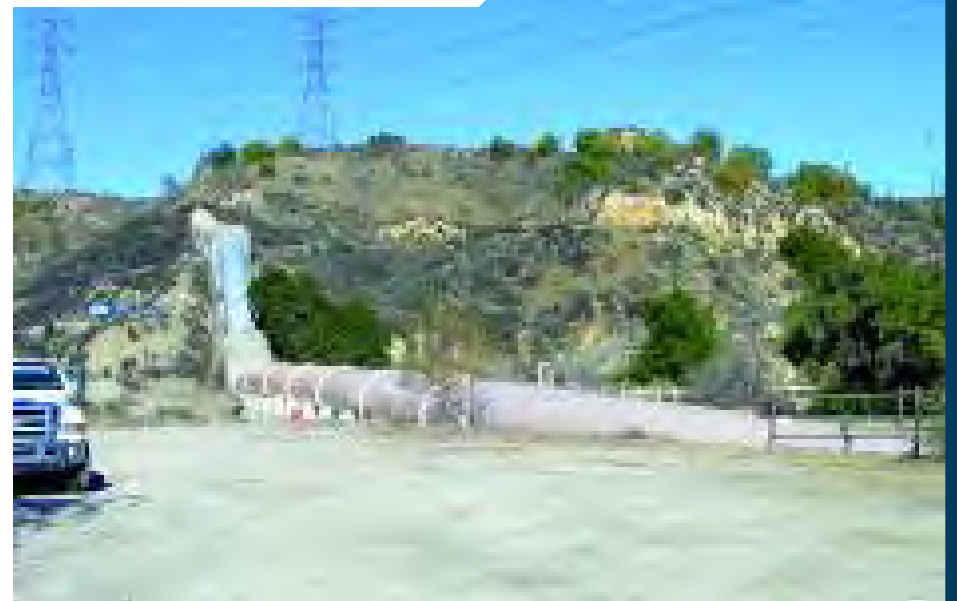
**Alive!** Thank you!

**Jim McDaniel:** Thanks.

### New Aqueduct at Jawbone



### Placerita Canyon



### The Cascades



## LOS ANGELES AQUEDUCT HISTORY

**1905:** \$1.5 million bond approved for the purchase of land and water in Owens Valley

**1907:** Additional \$23 million bond issue approved by a 10 to 1 margin—staking a full 12 percent of the City's assessed value at that time. If a measure requiring 12 percent of the City's assessed valuation were to be presented to Los Angeles residents today, the bond would be worth approximately \$26 billion.

**1907:** Construction begins (Elizabeth Tunnel)

**1913:** Construction completed on first Los Angeles Aqueduct

**1940:** Completion of 105-mile Mono Basin Extension (more than \$100 million)

**1970:** Completion of 177-mile second Los Angeles Aqueduct (\$89 million)