

SOUTHERN CALIFORNIA SUSTAINABLE LIVING

Winter 2019



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What am I to believe?

By Chris Lancaster
Publisher

Are you like me when it comes to thinking about climate change?

I struggle to know what I should believe when it comes to what or who is responsible for climate change. Both sides of the argument and this issue are noisy, making it difficult to know who is correct and who isn't. As temperatures rise along with temperatures, the public, politicians and policy makers seek to understand.



Chris Lancaster

For example, each week on social media I receive multiple articles that cite empirical data both in support of and in opposition to the causes of climate change. Here are some headlines of articles I received just this week.

- 11,000 Scientists Declare a Climate Emergency (EcoWatch)
- Dozens of Failed Climate Predictions Stretch 80 Years Back (Epoch Times)
- Scientific Consensus: Earth's Climate is Warming (NASA)
- NASA admits that climate change occurs because of changes in Earth's solar orbit, and NOT because of SUVs and fossil fuels (Natural News)
- Climate Change Will Cost Us Even More Than We Think (NYT)
- The Stunning Statistical Fraud Behind The Global Warming Scare (Investor's Business Daily)
- Al Gore's 10 Global Warming Predictions, 13 Years Later — None Happened! (Humans are Free)

Let me say that I am not a denier of climate change. I've lived most of my life in Southern California, and it seems to me that temperatures have risen and droughts occur more often and last longer. But I do acknowledge that climate change,

“...we are all in this together, and we ALL must participate in the solution.”

as a gradual modification of average climate conditions, is difficult to detect and track accurately based on personal experience alone, which is why we turn to other sources.

But what is responsible for our change in climate? Is it because of our use of fossil fuels or the earth's natural solar orbit cycles?

I'm not sure, but what I do know is up until now it appears that solutions to climate change aren't cheap or are not going to come without some

[See Believe, Page 23]



The Regional Recycled Water Advanced Purification Plant at the Sanitation Districts' Joint Water Pollution Control Center in Carson is now up and running. The plant, a joint project of the Sanitation Districts and the Metropolitan Water District, purifies about 500,000 gallons of treated water per day. Currently, treated water is discharged to the ocean.
Photos courtesy of the Metropolitan Water District of Southern California

Agencies Open Innovative Water Purification Demonstration Center Sanitation Districts and Metropolitan Water Hope to Build Nation's Largest Purification Plant

By Elizabeth Smilor
Special Sections Writer

The Sanitation Districts of Los Angeles County and the Metropolitan Water District of Southern California together recently opened a \$17-million water purification demonstration plant. Data from the joint project will determine the viability of a full-scale plant that could eventually provide water for a half million homes.

"Our mission is to convert waste into resources in the most environmentally and economically friendly way," said Sanitation Districts' Chief Engineer and General Manager Robert Ferrante. "Both our agency and Metropolitan have the same goal to develop a new source of water as efficiently and cost-effectively as possible."

The Regional Recycled Water Advanced Purification Center is a demonstration plant that purifies 500,000 gallons of treated water per day from the Sanitation Districts' Joint Water Pollution Control Plant (JWPCP) in Carson. Currently, the wastewater from homes and businesses is treated and discharged to the ocean.

"This project would bring the Joint Water Pollution Control Plant in line with most of our other plants where recycling is near 100 percent," Ferrante said. "At JWPCP we are already converting digester gas into energy to make the plant self-sufficient and recycling solid waste into soil amendments. A full-scale facility would recycle the wastewater that flows into this plant."

[See Agencies, Page 4]



From left, Robert Ferrante, Chief Engineer and General Manager, Sanitation Districts of Los Angeles County, and Jeffrey Kightlinger, General Manager and Chief Executive Officer, Metropolitan Water District of Southern California.

Publisher Chris Lancaster
Editor Elizabeth Smilor
Art Director Christie Robinson
Contributor Michelle Nava
Elizabeth Smilor
Grace Washburn

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“We’re proposing the largest recycled water purification plant in the nation...Our two agencies are very similar in our missions and work ethic. I take pride in the two agencies partnering on such a major project.”

Jeffrey Kightlinger
General Manager and Chief Executive Officer
Metropolitan Water District of Southern California



The public is welcome to tour the recently opened demonstration plant and learn how wastewater is being purified. Individual or group tours are available for anyone age 10 and older. The plant uses membrane bioreactors, reverse osmosis and ultraviolet light to remove bacteria, minerals and other chemicals. A full-scale facility would make the region less dependent on imported water.

[Agencies, from Page 2]

Experts will collect data from the demonstration plant for 15 months in hopes of building a full-scale recycling facility that would produce 150 million gallons of highly treated water, enough to serve more than 500,000 homes. If a full-scale plant is approved, purified water would be delivered through 60 miles of new pipelines to four groundwater basins in Los Angeles and Orange counties, industrial facilities and, potentially, two Metropolitan treatment plants. The groundwater basins supply water to 7.2 million people.

“This project would bring the Joint Water Pollution Control Plant in line with our other plants where recycling is near 100 percent.”

Robert Ferrante
Chief Engineer and
General Manager
Sanitation Districts
of Los Angeles County

“We’re proposing the largest recycled water purification plant in the nation. If you’re doing something of that scale you want to make sure it’s optimized,” said Metropolitan General Manager and Chief Executive Officer Jeffrey Kightlinger. “Our two agencies are very similar in our missions and work ethic. I take pride in the two agencies partnering on such a major project.”

At the project’s ribbon-cutting ceremony in October, several officials spoke about the importance of the plant.

“The rest of the country is in envy,” said U.S. Rep. Grace Napolitano, D-Norwalk, who has been advocating for recycled water for more than two decades.

Irma Munoz, Chairwoman of the Los Angeles County Regional Water Control Board, spoke about her childhood in Los Angeles and her mother’s lessons about saving rainwater.

“Once it’s gone, it’s gone,” Munoz recalled, applauding efforts to conserve and recycle water. “I’m very fortunate to be living in this time to use what I learned from my parents.”

The demonstration plant uses an innovative three-step process to purify the water. First, membrane bioreactors remove ammonia and nitrogen compounds along with other tiny particles. Next, more microscopic materials including bacteria, pharmaceuticals, and salts are removed through reverse osmosis. Finally, ultraviolet light and a powerful oxidant destroy any remaining viruses and trace chemical



compounds. This is the first time in California that membrane bioreactors are being used as a precursor to reverse osmosis.

“We call them advanced treatment processes because it really goes to the next level. They remove the minerals and salts out of the water to create ultra-pure water. Everything has been taken out of it,” Ferrante said. “It gives more flexibility on how you can use water. In the long term, not only are we looking at groundwater basins but at the possibility of raw water augmentation where it goes into Metropolitan’s treatment system and then could go anywhere.”

Public outreach and education are important components during this demonstration phase. The public can sign up to tour the purification center as individuals or families, or in groups of 10-40 people.



Gloria Gray
Chairwoman
Metropolitan
Water District of
Southern California

“Participants will get a heavy dose of science and understanding and see the painstaking way in which we clean this water to incredibly high standards,” Kightlinger said. “We want to make sure there is public acceptance and

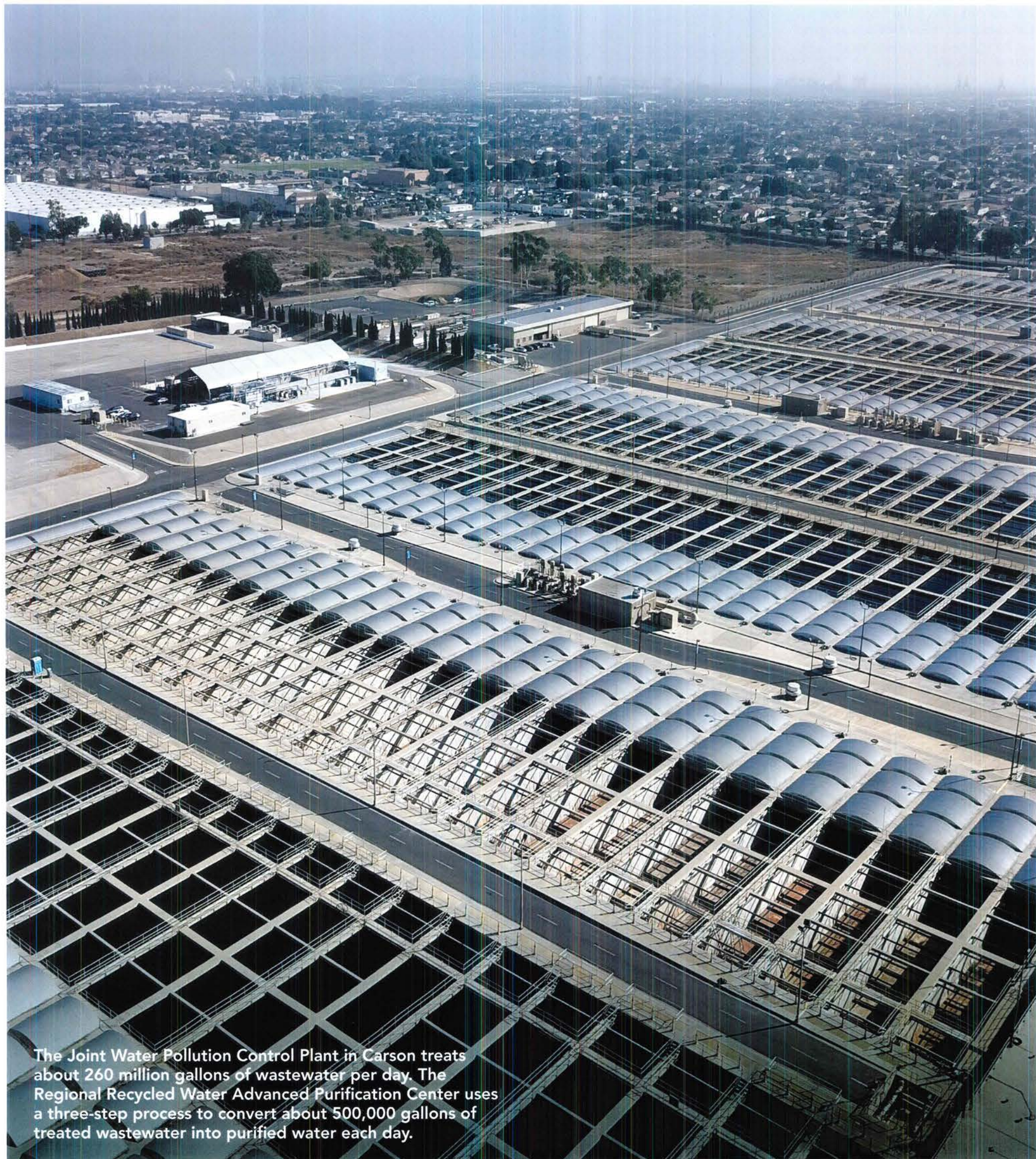
faith in the science behind it that this is perfectly clean water. It is also critical that the public understands that this is worth the investment.”

Tour participants must be at least 10 years old. Tours last about 1 hour and include an informational session and walking tour of the facility.

“The idea behind the demonstration plant is to allow us to demonstrate to the regulators and the public that the water is safe and can be reused after meeting regulatory requirements,” said Ferrante. “It will also help us to design the most efficient process out there that meets the requirements but does so in the most cost-effective way.”

[See Agencies, Page 7]





The Joint Water Pollution Control Plant in Carson treats about 260 million gallons of wastewater per day. The Regional Recycled Water Advanced Purification Center uses a three-step process to convert about 500,000 gallons of treated wastewater into purified water each day.



The new demonstration plant, above and at right, uses a three-step process to turn wastewater into purified water. Data from this plant will be used to meet regulatory requirements for a full-scale facility that could eventually provide water to half a million homes.

[Agencies, from Page 5]

The full-scale facility and its pipeline network would cost \$3.4 billion to build and \$129 million annually to operate, resulting in a water cost of about \$1,830 per acre-foot. The average Southern California household uses about one-third acre-foot of water annually. The full-scale facility would take 8-12 years from approval to design and build, but could begin operation in phases.

Both Ferrante of the Sanitation Districts and Kightlinger of Metropolitan agree a water recycling plant of this scale is worth the investment given that climate change is expected to produce more extreme weather patterns with longer droughts and shorter and wetter periods in between.

“Metropolitan’s job is to make sure that Southern California has a safe and reliable supply of water today and into the future,” Kightlinger said. “We understand that climate change is stressing our imported supplies, so we need to add to it a layer of local supply that is going to be resilient and reliable. This will help do that.”

In addition to climate change, a local water supply could be vital after a major earthquake on the San Andreas Fault as most of the region’s water supply lies on the other side of the fault.

“This project has the dual benefit of creating a new supply and also utilizing existing groundwater basins to store the water for a dry day. It’s a significant project that contributes to water resiliency for all of Southern California,” said Ferrante. “As they say, ‘a rising tide lifts all ships,’ so even areas that don’t get this water directly will benefit because water from other sources will be available.” ■

– Michelle Nava contributed to this article.





North Coast Corridor Program

Improving Transportation and the Environment

By Grace Washburn
Special Sections Writer



The North Coast Corridor Program in San Diego County is literally bridging the gap between infrastructure improvement and ecological sustainability. The \$6-billion program combines highway and rail improvements, including new bridges, along with lagoon restoration and coastal access enhancements.

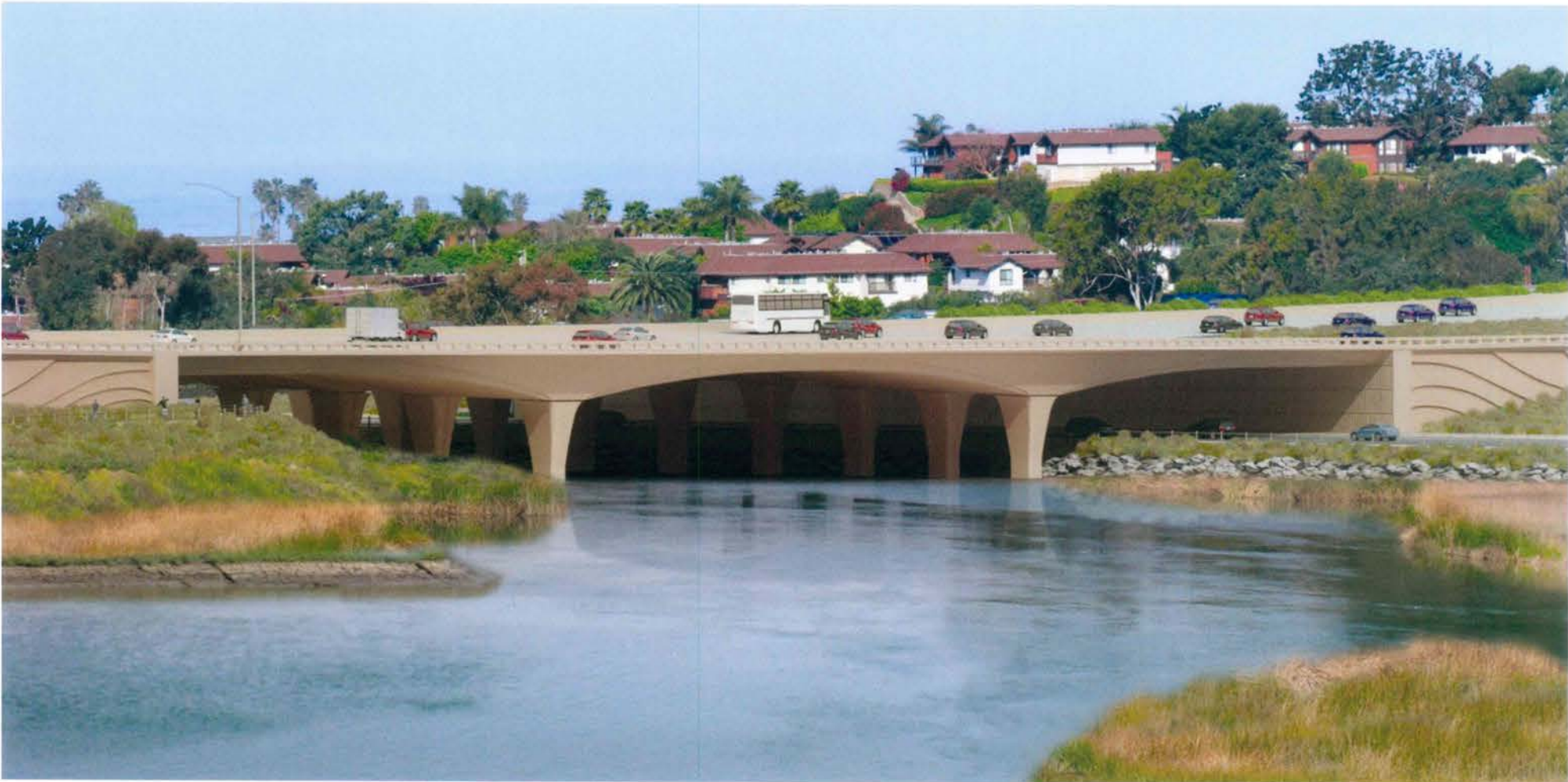
"There are two aspects that make this program different from anything I've worked on before. First, this is an all-encompassing community improvement. And second, everything that is being done has an environmental enhancement component to it," said Skanska USA Civil Vice President Mike Spain.

Construction, which began in 2017, is contracted to a joint venture of three companies: Flatiron, Skanska, and Stacy and Witbeck. The program is paid for through a combination of federal, state, and local funds. The NCC Program is part of Transnet, the voter approved, regional half-cent sales tax for transportation administered by the San Diego Association of Governments (SANDAG).

"We married these two concepts of enhancing our transportation corridors and our ecological system," said Doug Gibson, Executive Director of the Nature Collective. "What I see as a result of this project in the end is a transportation corridor that's looking forward, improving the environment, improving transportation. We've shown that those two things aren't necessarily opposing. They can work together."

The Nature Collective, founded in 1987 as the San Elijo Lagoon Conservancy, aims to preserve the lagoon that is below Interstate 5 and rail lines. A major part of the NCC program is the restoration of the San Elijo Lagoon. Crews have dredged out the lagoon and the rail and highway bridges will be longer to allow for a better tidal flow.

"The lengthening of the bridges did nothing to help the efficiency of the highway. The decision was made to lengthen the bridges to improve the lagoon," Spain said. "If they were not lengthened they'd become choke points and it would really prevent the lagoon from operating the way it should."



The North Coast Corridor Program in San Diego County includes lagoon restoration as well as transit improvements. At left, the San Elijo Lagoon was dredged to restore the habitat. Above, a rendering shows how a new longer Interstate 5 bridge will span the lagoon to allow for a better tidal flow. Below, renderings of new pedestrian paths below the freeway and around the lagoon that will provide better coastal access.

Current construction, which will continue into 2021, encompasses improvements along a 12-mile stretch of I-5 that includes one new carpool lane in each direction, the new bridge, sound walls and ramp improvements. Additionally, rail improvements will include the replacement of approximately 100-year-old wooden trestle bridges over the San Elijo and Batiquitos lagoons and additional sections of double track to accommodate more frequent commuter trains. Finally, in addition to the lagoon restoration, coastal access for pedestrians and bicycles through the communities and lagoon will be improved with new trails and dedicated lanes.

“...improving the environment, improving transportation. We’ve shown that those two things aren’t necessarily opposing. They can work together.”

Doug Gibson
Executive Director
Nature Collective

“When the highway was built it was a very small community. Today, there are more residents and the limited access was affecting their quality of life and the mobility of visitors,” Spain explained.

Finally, the highway bridge is being constructed to accommodate future expansion, so that the lagoon is not disturbed in another 20-30 years. Additionally, the current office site for the program will be converted into a community garden and educational center.

“This is a very special project. There’s not a single motivation,” Spain said. “We want it to be a win for commerce, a win for the environment and a win for overall quality of life.”

[See North Coast Corridor, Page 10]





The NCC Program also includes rail improvements, including the replacement of nearly 100-year-old wooden trestle bridges, shown at right, with new concrete ones as shown in the rendering above. More sections of double track will also allow for more frequent commuter trains.

[North Coast Corridor, from Page 9]

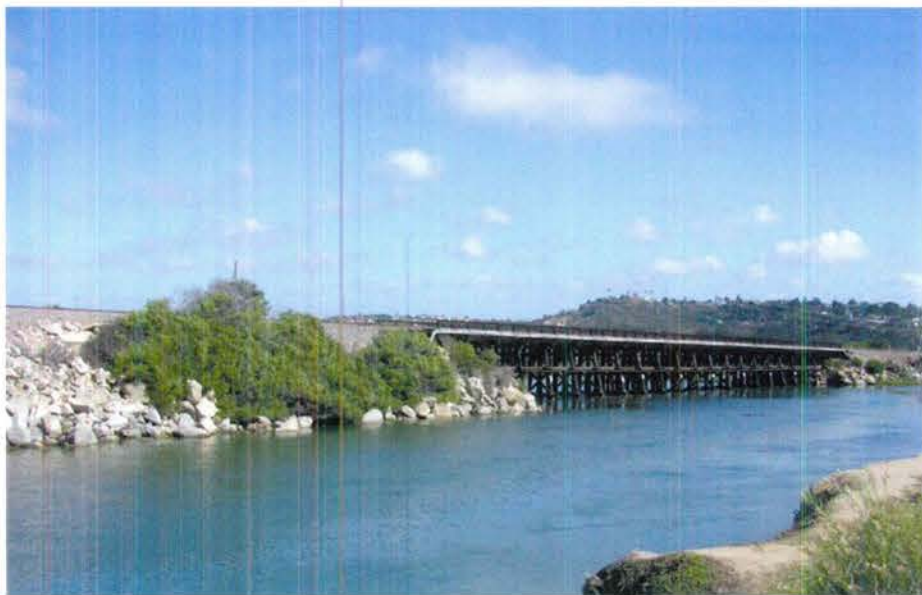
San Diego Project Brings Jobs to the Region

The North Coast Corridor Program is generating a lot of jobs in the area. A standard economic model states that for every billion invested in infrastructure development, 13,000 jobs are created. The current phase of the NCC project is estimated at \$6 billion, so using that formula it will produce about 78,000 jobs from start to finish.

"You can't export infrastructure construction. It supports local businesses and creates jobs in the community. Even the materials are sourced locally," said Spain. "The money spent on an infrastructure project in a particular geographic area, stays in that geographic area."

The Southern California Partnership For Jobs (SCPFJ), which includes 2,700 contractors and 90,000 union workers, advocates for projects to help fix aging infrastructure, while creating jobs and economic growth.

"The Southern California Partnership For Jobs is a good organization that brings together the contractors and organized labor. They put a lot of effort into making people aware of the need for infrastructure and



the benefits of infrastructure improvement," Spain said. "They also help increase the opportunity for jobs in the industry."

SCPFJ's valued partners include the International Operating Engineers Local 12 (IUOE), The Southern District Council of Laborers (LiUNA), and the Southwest Regional Council of Carpenters, Associated General Contractors (AGC) of California, AGC of San Diego, Engineering Contractors' Association (ECA), Southern California Contractors Association (SCCA), and the Building Industry Association of Southern California (BIA). ■

For more information about SCPFJ and to view project videos, go to their website at rebuildsocal.org

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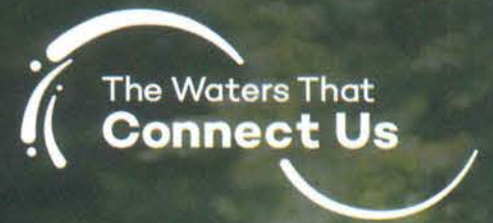


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MainSanGabrielBasin
WATERMASTER



The National Groundwater Association presented its 2019 Groundwater Awareness Award to the San Gabriel Basin Water Quality Authority in recognition of its outreach and educational program. From left with the award: Dr. Richard Shope of the World Space Foundation; WQA Chairman Jorge Marquez; WQA Executive Director Ken Manning; and WQA Project Resource Manager Dan Colby. The award honored Shope's EcoVoices curriculum along with the WQA's efforts to inform the public about the importance of clean groundwater.

Water Quality Authority Receives National Recognition

Groundwater Awareness Award Given for EcoVoices Program and Other Outreach Efforts

By Elizabeth Smilor
Special Sections Writer



The National Groundwater Association (NGWA) presented an Outstanding Groundwater Project Award in Groundwater Awareness to the San Gabriel Basin Water Quality Authority (WQA) in recognition of its public outreach and educational programs.

The WQA was one of three applicants for the 2019 awareness award and the sole recipient. NGWA gave out 16 awards in various categories. The award recognizes the WQA-sponsored EcoVoices program, which has taught 3,000 students annually for the past three years about the importance of clean, local water. The award also was given to WQA for its public outreach, which includes informative articles published in their constituent area.

"The Awards Committee was particularly impressed with the San Gabriel Basin Water Quality Authority's creative approach to implementing a dynamic water quality education curriculum that has reached thousands

of children and brought awareness to the public of water quantity and quality issues in the San Gabriel Valley of California," said NGWA Awards Committee Chair David Lipson. "Effectively communicating complex groundwater concepts and educating non-technical audiences is perhaps the greatest challenge faced by the groundwater profession, and WQA's project is an outstanding example of success in promoting groundwater awareness. We can't wait to see the 'Dr. Hydrogeo' and 'Dr. von Vroom' skit."

NGWA is a community of groundwater professionals working together to advance groundwater knowledge and the success of its members through education and outreach; advocacy; cooperation and information exchange; and enhancement of professional practices.

The WQA has been charged with overseeing the groundwater cleanup of the San Gabriel Groundwater Basin since its inception in 1993. WQA's endorsed projects have been responsible for treating approximately 1.6 million acre-feet of groundwater



Above, industry and community members applaud as the Groundwater Awareness Award is presented to the WQA. Above right, NGWA Awards Committee Chairman David Lipson, left, presents the award to WQA Executive Director Ken Manning, center, and EcoVoices curriculum creator Dr. Richard Shope, right. Below right, Shope talks about the educational program with WQA Chairman Jorge Marquez, center, and Manning. The EcoVoices program introduces the science of the water cycle and conservation through theatrical performances and hands-on activities to area K-12 students.



and removing more than 177 thousand pounds of contaminants from the Basin.

“The Water Quality Authority was established to clean up groundwater throughout the San Gabriel Valley and educate the people of the valley about groundwater contamination and the progress being made,” said WQA Director Ken Manning. “The EcoVoices program is a way for us to educate young people in a way that will have a lasting impact.”

“WQA’s project is an outstanding example of success in promoting groundwater awareness.”

David Lipson
NGWA Awards Committee
Chair

Through theatrical performances and hands-on science expeditions, EcoVoices programs have reached thousands of K-12 students in underserved communities within WQA’s service area. These students gather throughout the year in classrooms and parks to become EcoRangers. They observe ecosystems and keep scientific journals. They laugh as characters such as “Dr. Hydrogeo” and “Dr. von Vroom” explain in a lively skit how chemicals have seeped into our drinking water supply and what is being done to remediate the problem.

The EcoVoices curriculum, designed and implemented by Dr. Richard Shope of the World Space Foundation, focuses on the water cycle, the local watershed, water quality, the role of water agencies, and water conservation. As EcoRangers, K-12 students develop an awareness of their responsibility to sustain environmental literacy as a lifelong learning adventure.

“Water quality issues weigh on the minds of even young children,” said Shope. “A third-grade girl with a concerned look on her face, asked me, ‘will there be enough clean water for us when we grow up?’ I assured her that water quality professionals are working on this 24/7, to make sure we will always have enough for everyone, and that being an EcoRanger means learning and understanding how to become a good decision-maker about how we use water.”

To ensure student participation, EcoVoices engages in outreach to informal educators, teachers, and school districts within 25 cities overlaying the Basin to inform them of the expedition program.

Overall, the EcoVoices Expeditions program has been a tremendously successful and creative avenue for the San Gabriel Basin Water Quality Authority to spread groundwater knowledge and awareness throughout its service area, Manning said. This year-round program is creating the next generation of environmental stewards and water-quality scientists

while spreading the word about our groundwater supply to all those around them in the community.

“We are so pleased to have such an interactive and innovative program being offered in our communities,” said Valerie Munoz, WQA Board Member and Mayor of La Puente. “The partnership between the WQA and Dr. Shope has allowed our students an opportunity to get a hands-on learning experience that will lead them into science and technology as a career. That is exciting.” ■



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Stormwater and Wastewater Agencies Collaborate in Search of New Recycled Water

By Michelle Nava
Special Sections Writer

“...we need to look toward the future and embrace new sources of water. It’s important we make these investments.”
Matthew Litchfield
General Manager/
Chief Engineer
Three Valleys Municipal
Water District

To the lay person, the idea of drinking recycled water that came from a mix of treated wastewater and stormwater is more than a bit uncomfortable. But it’s nothing new to NASA astronauts who have essentially been relying on such technology for decades – and have lived to tell about it.

David Pedersen, the general manager of the Las Virgenes Municipal Water District, knew it would be a hard sell when he proposed a study on such technology to be used as an alternative recycled water source in Los Angeles County. And it was, at first, he said to a crowd of water agency officials gathered for a Leadership Breakfast Meeting in October, hosted by Three Valleys Municipal Water District.

“This is an evolution of collaboration,” Pedersen explained. “We’re moving toward yes. It’s a process that begins with maybe.”

A group of 13 agencies have since said yes to working on the issue. Together, they are halfway through the second phase of a White Paper, and have received funding from the Metropolitan Water District of Southern California’s Future Supply Actions Funding Program.

Phase 1 of the White Paper, titled “Tapping Into Available Capacity in Existing Infrastructure to Create Water Supply and Water Quality Solutions,” was completed in May. Experts studied the feasibility of a “controlled and strategic integration of the existing



Three Valleys Municipal Water District Board Members David De Jesus and Bob Kuhn.



(L to R) Michael Camacho, board member, Inland Empire Utilities Agency; David Pedersen (guest speaker), general manager, Las Virgenes Municipal Water District; Matthew Litchfield, general manager, Three Valleys Municipal Water District; Gloria D. Gray, chairwoman, Metropolitan Water District Board of Directors; David De Jesus, board member and vice president, Three Valleys Municipal Water District; Kathy Tiegs, former ACWA president and board member for Cucamonga Valley Water District; Richard Hansen, former general manager, Three Valleys Municipal Water District.

stormwater system with the wastewater collection system, treating dry-weather urban runoff and ‘first flush’ flows through 21 wastewater treatment plants in Los Angeles County.”

David De Jesus, Vice President of the Three Valleys Municipal Water District Board of Directors and President and Chief Executive Officer of Covina Irrigating Company, said Pedersen’s discussion was an important one.

“It was very timely in that the ability to create alternative supplies of water is going to be critical in the future,” he said. “We need to be adaptable to available water sources for our drinking water supply.”

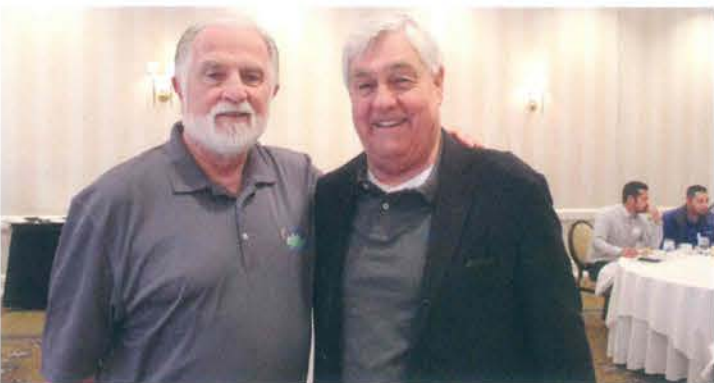
Pedersen said the research so far has highlighted the merits of strategically diverting urban runoff and first flush, as well as the need for more study.

As one of the funding partners for the project, the Three Valleys Municipal Water District is committed to finding other sources of water as changes to the climate continue, said General Manager and Chief Engineer Matthew Litchfield.

“As a district, we need to look toward the future and embrace new sources of water,” he said. “It’s important we make these investments.”

As the population continues to grow, and given there is only a finite amount of water, everyone needs to embrace such advanced technologies that help create water, said De Jesus.

“It’s worked for the astronauts,” he said, “and it is something to consider for the rest of us here on Earth.” ■



Brian Bowcock, board member Three Valleys Municipal Water District and Michael Milhiser, interim city manager for the city of Fontana.



Guest Speaker David Pedersen, general manager of the Las Virgenes Municipal Water District and Three Valleys Municipal Water District General Manager and Chief Engineer Matthew Litchfield.



Laura Santos, board of trustees, Mt. San Antonio College and Lenet Pacheco, board member, Valley County Water District.



1021 E. Miramar Avenue
Claremont, CA 91711
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The Upper San Gabriel Valley Municipal Water District kicked off its 60th anniversary celebration at the annual WaterFest community event in Arcadia Park. Thousands gathered for the festival, which is co-hosted by the Los Angeles County Department of Parks and Recreation. The event promotes water conservation through informational booths and features entertainment for the whole family, including folklorico dancers. At right, Upper District Board Member Al Contreras enjoys the celebration with his extended family. WaterFest has been held for more than 10 years and grows each year.



Upper District Kicks Off 60th Anniversary

Agency Honors Its Festival Partner L.A. County Parks Department



By Elizabeth Smilor
Special Sections Writer

Several thousand community members gathered at Arcadia Park in October for what has become an annual tradition: WaterFest. For more than 10 years, Upper San Gabriel Valley Municipal Water District has hosted this event in partnership with the Los Angeles County Department of Parks & Recreation.

This year was particularly significant for both organizations. Upper District kicked off its 60th anniversary and also honored the parks department for its efforts in promoting water conservation.

"For us it was a big honor. We have a great relationship with Upper District that enables us to disseminate information and show our community members how to conserve water," said Albert Gomez, Assistant Regional Recreation Director for the East County Community Service Agency of the L.A. County Department of Parks and Recreation, which received the 2019 San Gabriel Valley Water Smart Award.

Through interactive exhibits and demonstrations, WaterFest educates residents about the importance of water sustainability, smart water behaviors and outdoor conservation practices. Gomez said public feedback from

the event each year has been positive.

"People really get inundated with a lot of useful information at the festival. I know I've become a 'water nerd' and reduced our household water use," Gomez said. He added that the parks department has worked with

Upper District and other agencies to reduce water use at its facilities through smart irrigation systems and stormwater capture basins.

"It is fitting that we recognize one of our long-standing partners in water conservation awareness. The Parks & Recreation staff have played a key role in WaterFest's success for the past 10 years, not only through the use of their facilities but in promoting water awareness countywide," said Upper District Board President Ed Chavez. "We are also excited to begin Upper District's 60th Anniversary at WaterFest. What better way to share the successes of the past 60 years than with our residents."

"For the last 60 years, our system has served the region very well. Our communities have more people ... using less water. That's a testament to our conservation and education efforts."

Tom Love
General Manager
Upper District

Upper District is a special district formed by the region's voters in December 1959 and was incorporated shortly afterward at its first public meeting on January 7, 1960. It was formed to be a member agency of the Metropolitan



Above left, Upper District Board Members Jennifer Santana, Al Contreras, Ed Chavez, Tony Fellow and Charles Trevino celebrate the district's 60th anniversary. Upper District presented its 2019 Water Smart Award to its festival partner, the East County Community Service Agency of the L.A. County Department of Parks and Recreation. Many community members and dignitaries attended the festival that included mariachi music and folklorico dancers. The parks department's annual cheerleading competition was also held during the October event.



Water District of Southern California to supply the area with imported water as well as capture and store stormwater. Its mission is to consistently meet the region's need for safe, reliable and high-quality water for groundwater replenishment. The District serves nearly one million people in its 144 square-mile service area. Annually, more than 78 billion gallons of water is used in Upper District's service area.

"For the last 60 years, our system has served the region very well. Our communities have more people but are actually using less water than they did in the 1990s. That's a testament to our conservation and education efforts," said Upper District General Manager Tom Love. "As we look to the next 60 years, we can't be complacent and assume we will be fine. We have to consider changes in climate and population."

Highlights at this year's WaterFest included a native demonstration garden, Wyland Foundation's Clean Water Mobile Learning Center, along with folklorico dancers and mariachi performers. Additionally, more than 300 cheerleaders from the Los Angeles County Department of Parks and Recreation participated in a water-conservation themed cheer competition. This year's cheerleading winners

were: the Pamela County Park Cheer Squad in Duarte; San Angelo Park Cheer Squad in La Puente; and the Allen J. Martin Park Cheer Squad also in La Puente.

Gomez said one new addition to WaterFest this year was the culmination of a softball tournament at the event. Next year, he hopes to include WaterFest as a field trip from the department's senior centers. He would also like to see Upper District's water curriculum included in their summer day camps.

"Children can be very influential in changing their parents water habits," Gomez said. "We plan to maintain our relationship with Upper District and want to continue to grow attendance at WaterFest." ■





Plastics: Purposeful and Problematic

The Tremendous Increase in Plastic Use Has Led to an Oceanic Waste Crisis

By Elizabeth Smilor
Special Sections Writer

Plastics are a ubiquitous part of everyday life. You wake up in the morning, make coffee with a machine made from plastic, grab a bagel and cream cheese from plastic containers, and brush your teeth with a plastic toothbrush with paste from a plastic tube. That's just the start of the day.



Jerry Schubel

"The uses of plastics are going up and have been since about 1950. Plastics have transformed the ways that we live, in many ways for the better. They've changed the way that we live," said Jerry Schubel, President and CEO of the Aquarium of the Pacific in Long Beach. "We have a bad habit of trying to demonize everything. Plastics have saved a lot of lives. So, it's not that plastics are bad but some of the plastics we use don't get recycled and they cause damage in the environment because they don't decompose like other materials."

Much of that plastic material winds up in our ocean. In fact, every year we add 8-10 million metric tons of plastic waste to the global ocean. That's the equivalent of dumping one garbage truck full of plastic every minute of every day for a year, according to Ocean Conservancy. As a result, some 700 species of marine animals have been reported to have eaten or become entangled in plastic. According to the National Oceanographic and Atmospheric

Administration (NOAA), plastic debris kills an estimated 100,000 marine mammals annually, as well as millions of birds and fish.

The disposable plastic of everyday life, such as water bottles and plastic bags, has been found in large "garbage patches" floating on the ocean's surface. However, there are hazards beneath the surface as well in the form of fishing nets made from plastic-coated netting and micro plastics, defined as particles less than five millimeters, that is ingested by fish we might eat. Plastic degrades into smaller and smaller pieces, Schubel explains, but it never goes away completely.

"We don't know yet the extent to which these affect our health. We don't expect that they help our health. So, there are a lot of uncertainties," he said. "The idea should be that we stop plastics at their source before they get into the ocean. There are efforts to clean them up in the ocean in the so-called garbage patches. I think that's a fool's errand to try to do that because you can't even begin to remove the 8 million tons that get added every year. So the best thing is to focus on keeping them out of the ocean."

How does so much plastic end up in the ocean? The largest percentage flows into the ocean from the world's largest rivers, two-thirds of which are in Asia. More governments and global non-profits are becoming aware of the problem and taking action in developing nations to improve waste management. However, that doesn't mean we're off the hook here in the United States.



Every year, 8-10 million metric tons of plastic waste is added to the global ocean. Some of that waste can be seen floating on the surface or washing up on beaches. Birds and marine mammals are killed by ingesting or becoming entangled in plastic waste. However, it's the unseen micro-plastic pieces that are the most difficult to clean up and could potentially do the most damage.

Above photo courtesy of the Aquarium of the Pacific in Long Beach

“Plastics are out of place in the environment,” Schubel said. “To a large extent it’s a behavioral problem. If we were all more responsible people we wouldn’t have all this plastic debris in the ocean that captures marine life or they swallow it.”

Schubel says two things need to happen globally to stem the flow of plastics into the ocean. First, everyone needs to reconsider and reduce the use of plastics. Second, we need to alter our “plastics economy” by continuing to develop plastics made not from petroleum but from biodegradable sources such as corn.

The Aquarium of the Pacific, along with nearly two dozen aquariums across the U.S., is setting the example for visitors by reducing the use of single-use plastics onsite. They have eliminated plastic bags and straws and switched to compostable utensils in the restaurant. Schubel expects all plastic bottles will be eliminated from the facility by the end of next year. The Aquarium also hosts educational events such as its Reuse-A-Palooza that was held Dec. 1 and will return on Nov. 29, 2020.

“The idea should be that we stop plastics at their source before they get into the ocean.”

Jerry Schubel
President and CEO
Aquarium of the Pacific
in Long Beach

law limiting the use of plastic straws in full-service restaurants went into effect. However, more comprehensive bans on single-use plastics did not make it through the legislature this year. Nationally, Congressman Alan Lowenthal (D-Long Beach) has co-authored draft legislation to tackle the plastic-waste issue.

“Today we face a global plastic pollution crisis that threatens our waterways, wildlife, and public health,” Lowenthal said in introducing the legislation. “The amount of plastic waste in our communities and the oceans is evidence of the urgent need to tackle this issue, an effort in which the United States is currently lagging.”

Schubel is optimistic as citizens, governments and corporations move toward alternative plastics and a reduction in plastic use.

“I think there’s a lot of movement in the right direction,” he said. “Our most serious issue is climate change. We have to attack these problems in parallel.” ■



KNOW & LEARN

THE BIG PICTURE

Over the past 10 years we have produced more plastic than was produced during the entire last century. Fifty percent of plastic is used once and thrown away. We recover only 5 percent of the plastic we produce. One million sea birds and 100,000 marine mammals are killed annually from plastics in the ocean.

BIG SOLUTIONS

Seek alternatives to everyday plastic use. Support legislation to reduce plastic waste and increase recycling. Buy products made from biodegradable alternatives. Volunteer at a beach cleanup.

FACT: More than 480 billion plastic bottles were sold worldwide in 2016. That’s up from about 300 billion a decade ago. Fourteen percent of all litter comes from beverage containers, not including caps and labels.



SOLUTION: Don’t buy or use single-use water bottles. Instead, carry a reusable bottle with you and refill. Many places, including the Aquarium of the Pacific, schools and airports, have filtered water refill stations. Coffee drinkers: Carry a reusable mug.



FACT: More than half a billion plastic straws are used every day around the world. The U.S. uses 500 million each day, which is enough to circle the Earth 2.5 times.

SOLUTION: Skip the plastic straw. Yes, articulated plastic straws are great in hospitals and needed by some with disabilities, but their use could be significantly reduced. Carry a reusable glass or metal straw, opt for a paper straw, or just skip it.

FACT: More than 500 billion single-use plastic bags are used annually worldwide. That’s nearly 1 million every minute. The useful lifetime of a single-use plastic bag is about 15 minutes. It can take up to 1,000 years for a bag to decompose.



SOLUTION: Carry reusable bags for all your shopping. Also, consider fabric or beeswax-coated cloth for small sandwich bags, vegetable bags and food wrap.

Sources: Earth Day Network, NOAA, Ocean Conservancy, National Geographic

EARTH VERSUS the INVADERS



By Joe Haworth

No, this is not a sci-fi movie review. It's about us. There is a reason we are talking so much about "Sustainability" and it has to do with us. After our initial "invasion" about three hundred millennia ago, somewhere in Africa, we decided to stay! At least, that's the story all those old bones tell.

Homo Sapiens have firmly established their (our) grip on this planet. We also have become very good at proliferating (multiplying) until we have stuffed our ecological niche (most of Earth) to the top. We are at nearly eight billion and not stopping. Yup, there are a lot of us.

But, don't talk about it. Population control is too sensitive! It's known as the "third rail" of politics because it touches on issues like religious beliefs and individual choices about family size. So, I won't talk about it.

However, it has a parallel consequence in the human condition. It used to be called "Keeping up with the Joneses". As in, I want to have one of those "New Things" that the Joneses just got. I noticed the box in her trash barrel.

So let's rush to the inevitable conclusion. Our society has perfected making one of those "New Things" just for you...and delivering it in a day! Instant joy...or is it instant happiness? Oh well, who cares. Too philosophical.

But here's the catch. It's not calculus, it's multiplication. Our lifestyle at its fancy upper end, uses about 30 times the "per capita" resources of the poorest billion people on the planet. If we all want one of those "New Things", we're going to need seven or eight additional Earths to have enough resources to make them for everybody.

Yikes! What a dilemma. The manufacture of the "New Thing" and its ultimate disposal probably means, as just one example, more plastic waste spreading across the surface of the planet. Plastic waste is a perfect metaphor for the problem. It seems to be everywhere. Is there no end to the mess we've made of our commonly shared space on Earth. The land, air and oceans are full of the "debris of our desires."

We have made a mess of our "Commons" (our shared space). We have to try to clean it up or it's going to affect our health, our kids and grandkids. To start, the price of the product, a New Thing, needs to include the full cost of its manufacture, distribution and disposal. But wait, it never has before. Waste cleanup, recycling and disposal are not in the current pricing. We are paying the dues in our health. Today, if we dump some smoke (or carbon dioxide) into the air making that New Thing, who cares.

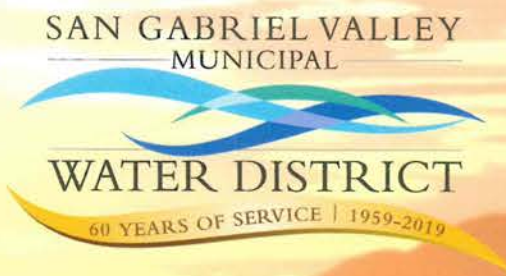
Even Thomas Edison, viewing the black smoke from a new coal fired power plant, noted, "this scheme of combustion to get power makes me sick to think of – it is so wasteful. We live like squatters – burning up the fence for heating – not as if we owned the property." (today's hint: get energy from the sun! Duh!)

So, Sustainability means not making a giant mess just to make a product (or lifestyle) cheaper. It means paying extra now to prevent the huge cost to the environment (The Commons) and to our health. It is time to make our lifestyle more sustainable and less polluting. The cost of cleanup and protecting our health has to be built into the product. Many companies are beginning to design their products with energy efficiency, waste minimization and recyclability built in. "An ounce of prevention is worth a pound of cure". Now that could be a real climate changer. Your grandkids will thank you. ■



Joe Haworth is the Chair of the *Think Earth* Environmental Education Foundation that teaches kids environmentally sound everyday behaviors to help save the planet. *Think Earth's* Grade Kindergarten to Grade 5 curricula is available to teachers and parents online at ThinkEarth.org. It's downloadable for FREE. Over four millions kids in over 100 countries have benefited from the program. **ACT NOW!**

For more information contact Joe at joehaworth@thinkearth.org



60 Years

1959-2019 | COMMEMORATING 60 YEARS OF STEWARDSHIP OF OUR WATER RESOURCES.

*We thank local water agencies and stakeholders from throughout the San Gabriel Valley
for their partnership in managing, developing and conserving our water resources.*

PARTNERSHIPS TO IMPROVE OUR WATER FUTURE

Since 2012 the District has worked with other leading water agencies in the Valley to create the San Gabriel Valley Water Forum, an educational water symposium that engages stakeholders on water policy, resource planning and solutions to the Valley's unique water opportunities and challenges. The 2020 Forum will be held in a new, west Valley location in the spring when Earth Day and Water Awareness Month take place.

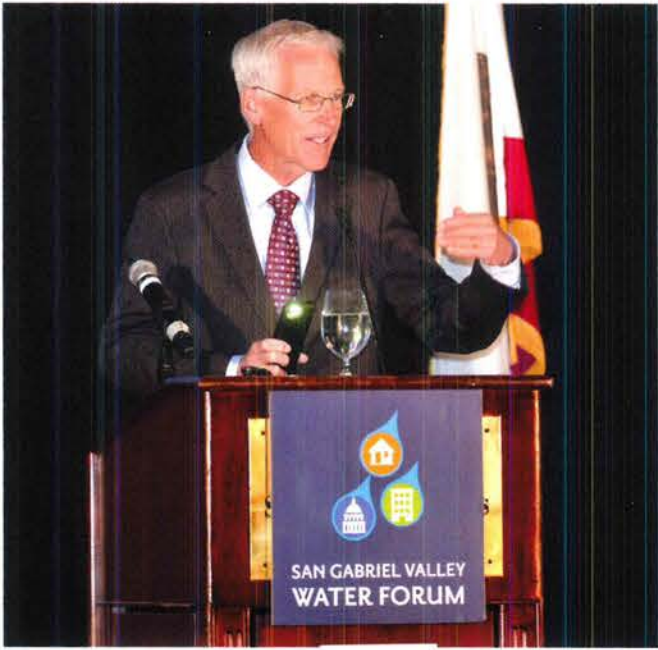
For further information, visit www.sgvwaterforum.com



Opportunities for Water Leadership Community Grant Program

For schools and community groups in Alhambra, Azusa, Monterey Park and Sierra Madre, the District seeks partners to create smart, fun water-wise projects. Grants range from \$200 - \$2,000. For further information, please visit our website or call us.

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KNBC reporter Patrick Healy, above, addresses the community at a recent San Gabriel Valley Water Forum. The biannual gathering features local policy makers and guest speakers discussing issues pertinent to water supply, quality and conservation. The next forum is April 16, 2020.



Water Forum to Focus on the Future

San Gabriel Valley Policy Makers Celebrate Milestones

By Michelle Nava
Special Sections Writer

The San Gabriel Valley Water Forum will return for its biannual gathering in April 2020 with a thoughtful look at the future of the water industry in the San Gabriel Valley.

This year's theme is 2020 Vision: Bringing Our Water Future into Focus. It will commemorate the region's milestones – including major water agency anniversaries – and reflect on the decades-long journey taken by San Gabriel Valley water agencies, through infrastructure construction, drought crises, Superfund sites, water conservation, legislation and ballot measures, technological innovations and more.

The event, created in 2012, prior to a vote on a major water bond and prior to the most recent severe drought, is a collaborative effort by the San Gabriel Basin Water Quality Authority, San Gabriel Valley Municipal Water District, Three Valleys Municipal Water District, Upper San Gabriel Valley Municipal Water District and Main San Gabriel Basin Watermaster. The original and ongoing mission of the Forum is to tell the San Gabriel Valley's story in a media market dominated by Los Angeles news that sometimes ignores the nuances, opportunities and challenges faced in the San Gabriel Valley, thus confusing or not informing local stakeholders.

The message of collaboration and partnerships across all levels of government and business, as well as at the grassroots level, will be a large focus of the day's speakers.

"In the past, water agencies were like islands," said Ken Manning, executive director of the San Gabriel Basin Water Quality Authority. "Now, they can't be. All water agencies need help. We have to work on these issues together."

THE SAN GABRIEL BASIN WATER QUALITY AUTHORITY

Highlights of this year's Water Forum will include a celebration of the 25th anniversary of the San Gabriel Basin Water Quality Authority.

The California State Legislature established the WQA in 1992 to coordinate groundwater cleanup throughout the San Gabriel Valley. Since then, the WQA has helped create 32 cleanup facilities.

Much has been learned in those years, as well, recalled Manning. The original sunset clause of five years, for example, has since been renewed several times, with the latest set to end in 2030. However, that is likely to be extended again as the list of groundwater contaminants continues to grow.

"It may never be over. The goal keeps moving," he said. "Years ago, we thought we only had volatile compounds to deal with."

That list has grown to include perchlorate, rocket fuel and others, just as new technologies have emerged that can detect even smaller particles of toxic substances.

Looking forward, said Manning, the water industry as a whole is tasked with finding new sources of water.

"In the future, water delivered to our customers is going to be from a portfolio of water sources," he said, adding that could include a mix of recycled water, treated or cleaned water, imported water, regular watershed sources and from desalination in certain areas.



Ken Manning
Executive Director

If You Go

WHAT:
San Gabriel Valley
Water Forum 2020

THEME:
2020 Vision: Bringing Our
Water Future into Focus

WHEN:
Thursday, April 16, 2020
8 a.m. to 1:30 p.m.

WHERE:
Hilton San Gabriel
225 W. Valley Blvd.
San Gabriel

WHO:
San Gabriel Valley residents,
policy makers, community
and school leaders,
water industry officials

INFORMATION:
sgvwaterforum.com



Evelyn Reyes
External Affairs
Manager

SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT

It was in 1959 when four cities joined together to form the San Gabriel Valley Municipal Water District, now commemorating its 60th Anniversary, as a way to supply cost-effective and environmentally responsible supplemental water. The District is one of 29 State Water Contractors in California, with the Devil Canyon-Azusa Pipeline at the heart of its operations.

“We’re still in line with our vision of delivering cost-effective imported water to the Basin and establishing water conservation as a way of life,” said External Affairs Manager Evelyn Reyes. “We’ve offered pilot projects, grant programs and school education programs designed to help stakeholders adopt a more water-efficient lifestyle.”



Tony Zampielo
Executive Officer

MAIN SAN GABRIEL BASIN WATERMASTER

It was a court order in the 1970s that created the Main San Gabriel Basin Watermaster.

But “the world has changed a lot since then,” said Executive Officer Tony Zampielo.

So much had changed, that in 2012 the Watermaster brought together all of its partners and had a new assessment done – one that now allows for the purchase and collection of additional water during the wet years.

“We’re buying water in advance of the need and storing it in the ground,” Zampielo said.

During the most recent drought, about 500,000 acre feet of water was pulled out. Only about a half of that has been put back. Zampielo stressed that even though the drought is over, it will take time for the San Gabriel Basin to recover.

Going forward, he hopes continued education campaigns – and attendance at the San Gabriel Valley Water Forums - will re-ignite the cause for conservation and an understanding of the intricacies of the water industry.

“We still need to conserve.”

THREE VALLEYS MUNICIPAL WATER DISTRICT

As the general manager for Three Valleys Municipal Water District, Matt Litchfield said one of the major projects in the works is a partnership with Metropolitan Water District of Southern California and the Main San Gabriel Basin Watermaster. The plan is to buy a certain stake of water that will be generated at the Carson Regional Recycled Water Project – an insurance policy of sorts for years with little rainfall.

Litchfield also noted his agency’s efforts to potentially construct another groundwater spreading connection in the San Gabriel Valley to augment existing imported water deliveries. This connection to MWD’s Rialto Pipeline, titled PM-27, will add another location for groundwater recharge from imported supplies.

Looking forward, Litchfield said, Three Valleys Municipal Water District will also be focused on meeting the demands of California Senate Bill 606, which was signed by the governor last spring. The bill requires water districts to create water budgets for their customers as another tool to bolster conservation.

Education campaigns and public meetings like the Water Forum will continue to be crucial, he said.

“The more people are engaged, and the more knowledgeable they are about water issues, the better it will be,” Litchfield said.



Matt Litchfield
General Manager

UPPER SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT

Also celebrating its 60th anniversary is the Upper San Gabriel Valley Municipal Water District.

General Manager Tom Love said he’s also looking forward to celebrating regional successes. This includes the water conservation campaign that began in the early 1990s. Since 1990, the population has grown, but the overall water use is down.

“I think that’s a tremendous success,” he said.

Love credited the lower water use to behavior changes, as well as new, water-efficient appliances and the growing acceptance of landscaping changes. The Upper San Gabriel Valley Municipal Water District, for example, has issued \$2.5 million in grant funds to homeowners who transformed their landscapes with native and drought-tolerant plants. ■



Tom Love
General Manager

[Believe, from Page 2]

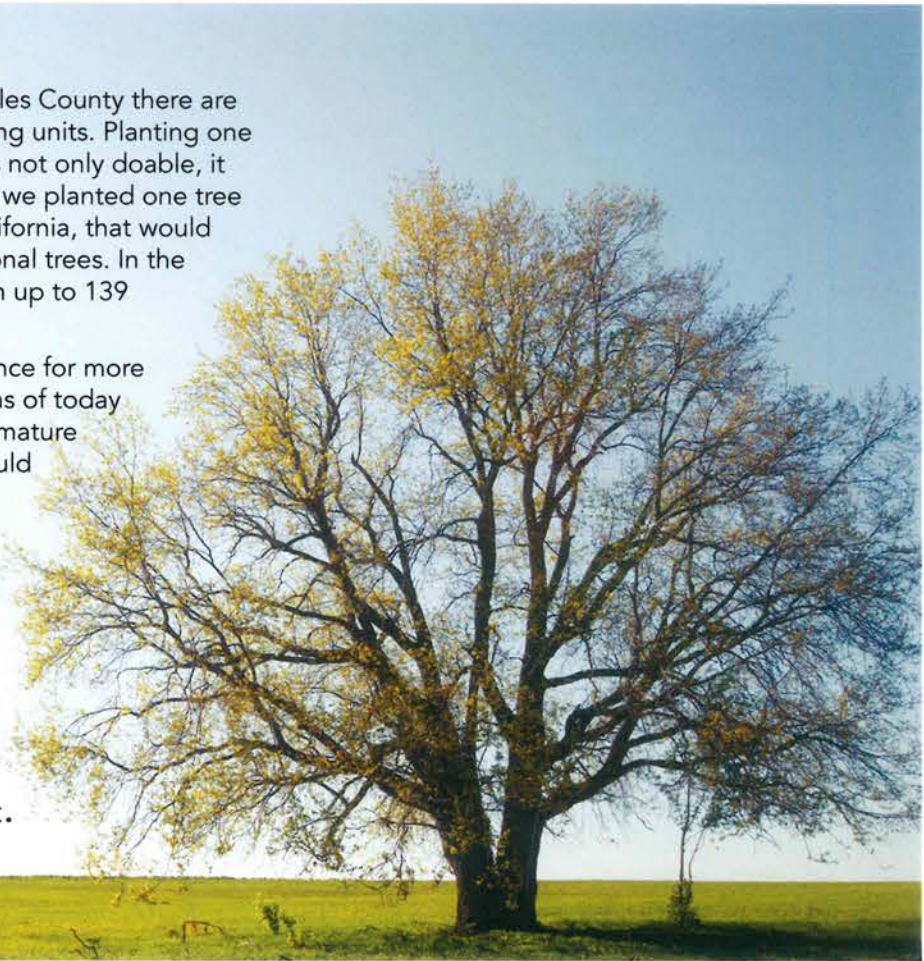
personal sacrifice on the part of each of us. I saw a protester’s sign that said, “The greatest threat to our planet is the belief that others will save it,” which, for me, captures the idea that we are all in this together, and we ALL must participate in the solution.

And then along comes this recent attention-grabbing article from EcoWatch, an environmental online news site. It reads, “Planting Billions of Trees Is the Best Climate Change Solution Available Today.” This article suggests that by planting more than 500 billion trees in six countries (China, the U.S., Russia, Australia, Canada and Brazil), we could remove 25 percent of existing carbon dioxide from the atmosphere.

Planting trees is a climate change solution that doesn’t require that you or I or anyone begin believing in climate change or the need to have the scientific community develop an incredibly expensive future technology to draw carbon dioxide out of the atmosphere. This is potentially an enormous game changer! It is available to us now, and it is the most affordable and cheapest solution possible. Every one of us can get involved.

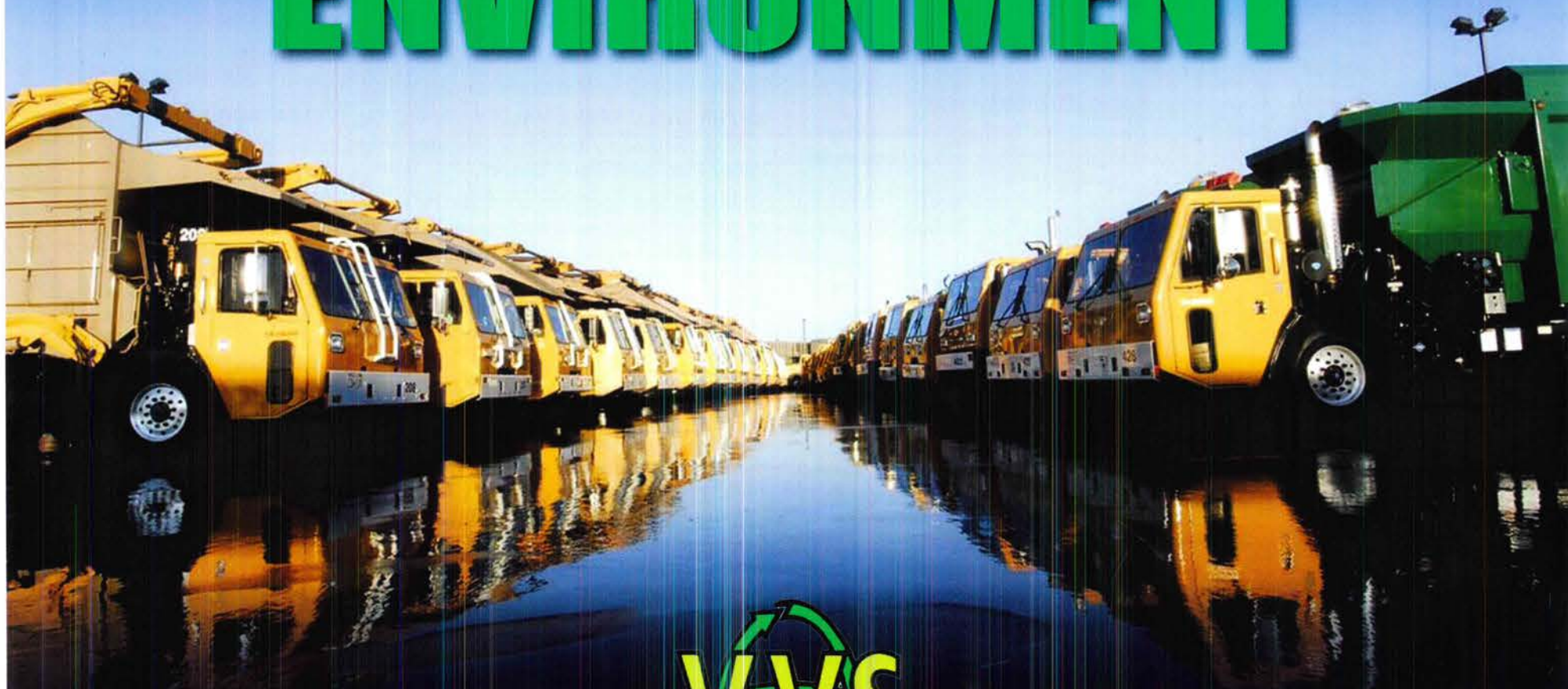
For example, in Los Angeles County there are more than 3.5 million housing units. Planting one tree for each housing unit is not only doable, it would be significant. And if we planted one tree for each housing unit in California, that would add up to 14 million additional trees. In the United States it would mean up to 139 million trees or more!

Trees have been in existence for more than 370 million years and as of today we think there are 3 trillion mature trees on the earth. Who would have thought that perhaps one of the solutions to our complex climate issues is nature herself – the reforestation of the earth? ■



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