NEWS CLIPS

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Drinking water problems, fire intensify Harvey crisis

Flooding takes its toll on critical infrastructure

John Bacon and Aamer Madhani USA TODAY
Ventura County Star 9/01/2017

Cars drive through flooded streets from Tropical Storm Harvey on Thursday in Orange, Texas.

GERALD HERBERT/AP

HOUSTON Floodwaters knocked out the water system in Beaumont and prompted a chemical fire in Crosby as weary southeast Texas struggled Thursday to regain some form of normalcy almost a week after Hurricane Harvey roared into the region.

In Houston, firefighters began a block-by-block search for survivors in some of the city's most devastated areas. In Port Arthur, officials tapped city dump trucks to expedite rescues.

"We continue to push the lifesaving operations; we continue to evacuate people out of areas where the rivers have receded," said Brock Long, head of the Federal Emergency Man- agement Agency. "This mission is going to continue."

In Beaumont, 100 miles east of Houston, flooding knocked out the main and secondary sources providing water to the city of more than 100,000. Officials said they won't know the extent of the damage or how long repairs will take until floodwaters recede.

The Neches River isn't expected to crest until Saturday, and City Manager Kyle Hayes was scrambling to procure enough bottled water to avert a crisis. The Salvation Army was handing out water by the case while it lasted.

Baptist Beaumont Hospital shut down, airlifting and driving almost 200 patients to other facilities. Christus St. Elizabeth hospital remained open but urged residents to come only if there was a "critical, life-threatening medical need."

In Crosby, 25 miles northeast of Houston, chemicals sparked flames that spewed black smoke from the Arkema Inc.

plant. The plant was flooded when more than 40 inches of rain fell in the area.

When the plant lost power and backup generators also failed, chemicals requiring refrigeration warmed up and began

to “degrade,” Arkema executive Richard Rennard said. One of nine canisters burned, and the others likely could face the same fate, Rennard said.

Authorities evacuated a 1 1⁄2- mile area around the plant. One Harris County sheriff’s deputy was taken to a hospital after inhaling fumes, and 14 others drove themselves to the hospital as a precaution, the Sheriff’s Department said. All were released hours later.

Sheriff Ed Gonzalez said that the smoke was not toxic and that he saw no danger to the community.

In Rockport, where Harvey slammed ashore last Friday as a Category 4 hurricane, Vice President Mike Pence visited a church and spoke with survivors.

Wash our hands of the statewide water tax

COMMENTARY /// California's water
The Acorn 8/31/2017

As the Sacramento legislative session reaches the home stretch, state lawmakers are pushing for a sweeping new tax on tap water that would affect all Californians.

The Las Virgenes Municipal Water District board of directors has had a long-standing policy of opposing any statewide "water tax" and other legislation that would transfer local ratepayer funds to Sacramento, which is the intent of SB 623 by Sen. Bill Monning.

The bill was amended last week to include a statewide tax on water aimed to provide funding for safe drinking water to disadvantaged communities.

LVMWD supports the intent of the bill, but is opposed to using a tax to raise money.

"We support measures to ensure everyone in California has access to clean, safe drinking water, but the proposed tax on tap water is not the way to do it," Glen Peterson, LVMWD board president said.

As proposed, the bill would mandate local water agencies to collect an initial 95-cent per month water tax on most customers' bills and funnel it to Sacramento.

The tax on businesses and those with larger connections would be substantially higher, up to $10 per month.

Beginning in 2022, unelected state officials in Sacramento could increase the tax to generate two times the estimated funding needed, an amount they also determine, without approval by the legislature or voters.

LVMWD believes there are better options to fund this statewide priority that would serve and protect residents and communities in need.

Existing and proposed statewide bond funds; a proposed assessment on fertilizers, which can contaminate drinking water sources; federal safe drinking water funds; and state general fund revenues could all be used for this purpose.

The Association of California Water Agencies and water agencies throughout the state have also expressed opposition to the bill unless it is amended to remove the water tax.

Visit theACWAinformational web page for the public at www.acwa.com/no-water-tax.county.

This opinion was submitted by the Las Virgenes Municipal Water District board of directors.

Storm’s effects on chemical sites unknown

By Ralph Vartabedian
LA Times 9/01/2017

CROSBY, Texas — The pounding rains of Hurricane Harvey washed over the conduits, cooling towers, ethylene crackers and other esoteric equipment of the nation’s largest complex of chemical plants and petroleum refineries, leaving behind small lakes of brown, foul-smelling water whose contents are a mystery.

Broken tanks, factory fires and ruptured pipes are thought to have released a cocktail of toxic chemicals into the waters. Explosions that released thick black smoke were reported at the Arkema Inc. chemical plant, where floods knocked out the electricity, leaving the facility outside Houston without refrigeration needed to protect volatile chemicals.

Meanwhile, emissions into the air have soared as the petrochemical industry shut down and then started up chemical operations, a cycle that causes an uptick in releases.

The potential health problems were magnified by overflowing sewers, inoperative treatment plants and the residues of animal waste, including carcasses.

Nobody is sure how much long-term health impact, if any, will result from the tidal wave of toxins and bacteria that swept through the nation’s fourth largest city.

Exhaustive investigations by the Environmental Protection Agency and the National Academy of Engineering after Hurricane Katrina, in which floodwaters languished in New Orleans for about six weeks, showed that toxic concentrations and the resulting exposures were too low to cause significant long-term health problems.

That festering flood caused a stench for weeks that left soldiers gagging for air as they flew helicopters 2,000 feet over the city. The Army Corps of Engineers had to pump the water out of New Orleans, much of which lies below sea level.

A report by the National Academy of Engineering in March 2006 said the floodwaters contained elevated levels of contaminants. The inorganic compounds were below drinking-water standards.

The EPA took 1,800 samples of residue and soil from across the New Orleans area after Hurricanes Katrina and Rita and found that generally “the sediments left behind by the flooding from the hurricanes are not expected to cause adverse health impacts to individuals returning to New Orleans.”

The situation is far different in Houston, where the floodwaters are receding much faster. But because Houston is much more industrialized, Harvey could have a much larger potential for leaving a toxic trail.

Without question, air emissions rose significantly during and after the storm, said Elena Craft, a toxicologist and senior scientist at the Texas branch of the Environmental Defense Fund.

The industry shutdown and startup cycle released 2 million pounds of pollutants, equal to 40% of all the emissions from 2016, Craft said, based on reports the industry made to the Texas Commission on Environmental Quality. “In a few days, we have had months of exposure,” she said.

Marathon Oil, for example, reported to the state that rain had pounded the roof of a storage tank so hard that it tilted, exposing gasoline to the air.

The emissions reports also included such carcinogens and suspected carcinogens as benzene and butadiene.

Craft said that sewage treatment plants in Beaumont went off line. A pipe carrying anhydrous hydrogen chloride was compromised in La Porte. Harris County’s 26 federal Superfund toxic waste sites may have been affected, including one that contains dioxins from a former paper mill along the San Jacinto River.

The fire at the Arkema chemical plant in Crosby released organic hydrogen peroxide, which officials said is an irritant but not toxic.

Tommy Newsom, who lives about 7 miles from the plant, said he felt fine but wondered what other chemicals might be involved. “Who knows how much of what they’re telling us is true?” he said.

“I think the wind’s in my favor,” said Newsom, a 60-year-old port worker, pointing to Texas state and U.S. flags at the entrance to his housing development.

Jennifer Sass, a senior scientist with the Natural Resources Defense Council’s health program, said the situation in Houston is a perfect breeding ground for hepatitis and tetanus.

“The flood is so large and slow-moving and the area is packed with dirty industries that are poorly regulated. Because the oil and gas industries down here are not as safe, we are concerned those toxins and chemicals are leaking,” she said.

Texas regulators urged caution.

“Floodwaters may contain many hazards, including infectious organisms, intestinal bacteria, and other disease agents,” the Texas Commission on Environmental Quality said in a statement. “Precautions should be taken by anyone involved in cleanup activities or any others who may be exposed to floodwaters.”

The American Chemistry Council said its members are in constant communication with state and federal regulators about the status of their operations. It said that “an unprecedented response effort” was warranted, “including that by local industry.”

'Get out now!' Public warned as Harvey strains Houston's dams and levees

Rescue worker Adam Caballero carries CaroLine Kirkpatrick through an Omni Hotel as mandatory evacuation orders went into effect after the Addicks Reservoir overflowed. (Robert Gauthier / Los Angeles Times)

Laura J. Nelson and Matt PearceContact Reporters
LA Times 8/30/2017

Swollen with days of record rainfall from Tropical Storm Harvey, a 70-year-old dam overflowed and a levee leaked Tuesday, sending water coursing into nearby neighborhoods in Houston and a southwestern suburb.

Despite controlled releases by the U.S. Army Corps of Engineers, the water level of Addicks Reservoir in northwest Houston rose past the dam's gates for the first time in its history, rising more than 10 inches past the spillway. The neighboring Barker Reservoir also was at risk of overflow.

In Brazoria County, in the southwestern corner of greater Houston, rainwater began to ooze through a levee and into the Columbia Lakes subdivision, prompting county officials on Twitter to warn residents to "Get out now!!"

The levee, which is maintained by the subdivision, was "temporarily patched" several hours later, County Judge Matt Sebesta said in an interview.

“We’re hoping that it will hold,” said Sebesta, the county’s top government official. “But water will still be very high in that area, so there is a chance it will come over the top of the levee.”

More than 100 subdivisions across the region are under voluntary evacuation orders due to flooding, and the number is expected to rise. Some neighborhoods are expected to receive 50 inches of rain during Harvey — as much as Houston sees in a typical year.

On Monday, the corps began releasing water from the Barker and Addicks facilities and into the Buffalo Bayou.

But by Tuesday, the Addicks Reservoir had filled, and water was pouring at an uncontrolled rate over an emergency spillway. Water was also flowing around the back of the wedge-shaped reservoir into the neighborhood.

That created the risk of eroding the sides of the reservoir, which would increase spillage, said Don Riley, the retired chief of civil works at the Army Corps of Engineers.

“I would pray that rain stops,” Riley said.

Despite the releases, the water line at the Barker Reservoir was rising faster than expected. The reservoir is still expected to overflow, corps officials said — though exactly when is unknown, because both reservoirs’ gauges flooded Monday night, said Jeff Lindner, Harris County’s flood control meteorologist.

The corps had assured the public before the storm that there was little chance that the dams would overflow.

“There goes another prediction,” said Robert Bea, an emeritus professor at UC Berkeley’s civil engineering department who investigated the failure of levees during Hurricane Katrina. “It is a very risky situation.”

Tuesday afternoon, Dave Cervera, 45, stood on the Barker Reservoir dam and took a long look toward his neighborhood, which he had just evacuated.

In front of him was the bayou, which had risen out of its banks and flooded his neighborhood, Briarhills. Trees, machine shops and industrial buildings stood immersed in water, with homes barely visible beyond.

"I'm not expecting anything left after seeing this,” Cervera said.

I'm not expecting anything left after seeing this.— Dave Cervera, Harris County resident

Before the corps released the water, Col. Lars Zetterstrom, Galveston District commander, defended the action in a statement: “If we don’t begin releasing now, the

volume of uncontrolled water around the dams will be higher and have a greater impact on the surrounding communities.”

Some subdivisions would see flooding, Zetterstrom said, but Addicks and Barker should continue to perform “as designed,” preventing the flooding of downtown Houston.

Farther downstream from the dam’s release point, bystanders gathered at intersections to look at the water. The area mostly lacked the dramatic rescue scenes elsewhere in the Houston area. The releases of the reservoirs were not visible to them. It just looked like another flooded street.

"I'm not happy about it," Christina Kelley, 41, an Army veteran and a resident of a downstream neighborhood, said of the reservoir releases. "But I trust the Corps of Engineers.... They're trained people that know what they're doing and they have our safety at heart."

The Addicks and Barker dams were considered among the world’s longest when they were conceived after disastrous floods in 1929 and 1935.

When they were built, more than 70 years ago, Addicks and Barker occupied vacant fields far from the city center. But Houston’s sprawl has long since enveloped both structures, surrounding them with suburban neighborhoods.

The twin reservoirs remain dry about 90% of the time and are designed to send runoff and rainwater coursing into the Buffalo Bayou — away from downtown Houston and the Houston Ship Channel.

Several years ago, the corps designated Addicks and Barker as “extremely high risk,” citing specific concerns about the water release structure and the ends of the dams.

Last year, corps officials assured residents that Houston was not “in imminent danger of flooding” from either dam.

A $75-million effort to replace the aging dam gates is less than 15% complete.

Authorities who oversee Lake Conroe, another reservoir, also had to decide whether to release water. The San Jacinto River Authority had opted not to release water from the lake in advance of Harvey because it could have caused flooding before the storm, spokeswoman Ronda Trow said.

But by Monday, the authority had no choice but to open the floodgates, sending 79,141 cubic feet of water into north Houston every second.

In Brazoria County, officials remained on edge. The rural and suburban county borders the Brazos and San Bernard rivers, which were swollen with rain. Parts of the county had been under a mandatory evacuation order since Sunday morning.

By Tuesday afternoon, the San Bernard had risen to more than 14 feet over flood stage, and the Brazos reached nearly 11 feet over flood stage.

“Waters will rise faster,” Sebesta said. “They will accelerate through the flood plain faster. People need to be prepared to go.”

Editorials

Schools must be forced to test for lead

Ventura County Star 8/30/2017

School safety may be on the minds of many parents as their children head back to classes this month in Ventura County, but here's a question they may not have pondered yet: Is the water at their child's school safe to drink?

The nonprofit, nonpartisan CALmatters. org journalism group produced an excellent story this month on the issue, specifically on the problem of lead in school water. If you've followed the horrendous situation in Flint, Michigan, you know lead is a neurotoxin that can cause developmental and brain damage, especially in young children, and no amount is considered safe.

Reuters this year obtained data from the state Department of Public Health that showed children in 29 California neighborhoods had been exposed to levels of lead similar to or even greater than in Flint. And high levels have been found in school water fountains and taps across the state, including San Diego and Los Angeles.

California did not ban the use of lead piping and solder until 1985. Service lines that bring water from street mains into buildings also may be older and contain lead.

Our state passed a law last year to eliminate lead service lines, but it's not enough. In February, amid what it called "growing evidence of pervasive lead contamination in schools' drinking water," the CALPIRG watchdog group launched its Lead-Free Schools campaign.

Count us fully on board. If we cannot send our children to school every morning knowing the water they will drink is safe, then our public school system has failed us in the most basic of services.

Assemblywoman Lorena Gonzalez Fletcher, D-San Diego, has introduced a bill requiring all school districts to test their water for lead and fix or cap any contaminated source. AB 746 was overwhelmingly supported by the Assembly and now awaits Senate action. We urge our state senators and Gov. Jerry Brown to approve this important legislation as quickly as possible.

Currently, water testing is voluntary for school districts. A California Water Boards program offers free testing for public schools, but Gonzalez Fletcher says less than 10 percent have taken advantage of that, CALmatters reported.

Letters

Oppose new tax on water

In our region, safe water flows reliably to homes, schools and businesses every day. But residents who live in rural, low-income communities face a different reality.

Several disadvantaged communities in remote or agricultural areas do not have access to safe drinking water, which may contain nitrates and arsenic.

As members of the Las Virgenes Municipal Water District Board of Directors, we recognize the severity of the problem and the need for effective solutions, including funding, to bring clean, safe drinking water to those communities.

Currently in Sacramento, Senate Bill 623 by Sen. Bill Monning, D-Carmel, seeks to address safe drinking water for disadvantaged communities. Las Virgenes supports the intent of the bill.

However, as the end of the legislative session approaches, despite already going through two policy hearings, the author has inserted language to impose a statewide tax on residential and business water bills. Monning calls the bill the “Safe and Affordable Drinking Water Fee.”

Make no mistake, however. It is not a fee. It is a tax.

A tax on water is the wrong approach to address the problem. Taxing Californians for something essential to life does not make sense. As drafted, future increases in this tax would bypass constitutional safeguards, would not require legislative approval, and revised tax amounts would be set by unelected state employees.

A better approach that Las Virgenes can support would be to use dollars from the state’s general fund, general obligation bond funds, and the proposed new assessment related to fertilizers, which can contaminate drinking water sources.

Please contact your state Assembly member and senator to share your thoughts on this important issue.

Glen Peterson, Agoura, and Charles Caspary, Hidden Hills

Ventura County Star 8/30/2017

Sewage spill came from U.S.

THE U.S. was the source of a 212,000-gallon sewage spill into the Tijuana River channel, the U.S. International Boundary and Water Commission confirmed. (Peggy Peattie San Diego Union-Tribune)

By Sandra Dibble
LA Times 8/29/2017

SAN DIEGO — The initial report by the U.S. International Boundary and Water Commission told of a 212,000-gallon spill from Mexico into the Tijuana River channel.

But four days after the incident, the group issued a rare retraction Monday.

The flow “was the result of a U.S. discharge,” Steve Smullen, San Diego operations manager for the commission, said in an email. The commission is the U.S. branch of a binational agency charged with monitoring and reporting any renegade flows into the Tijuana River channel.

The majority of such spills have come from Mexico. The incidents have led to closed beaches, as the water often carries sewage and other contaminants from Tijuana into San Diego and eventually the Pacific Ocean.

In an interview Monday, Smullen said: “I kind of jumped the gun” by sending out the initial report of the spill, which occurred early the morning of Aug. 23.

The flow did not come from Mexico but from the San Ysidro Port of Entry, which is undergoing a massive renovation. The San Diego Regional Quality Control Board issued a permit to the U.S. General Services Administration to discharge water into the channel as they “try to maintain ground water low enough to where they can do their excavation,” Smullen said.

The GSA, which is overseeing the project, has been treating any water that is discharged into the river, as stipulated in its permit, Smullen said.

Smullen said that before issuing any reports of spills, he checks with the commission’s Mexican branch. Although his staff was aware that the spill did not come from Mexico, Smullen said, “I wasn’t informed about it, so I made an assumption, and it was not a good thing to do in this case.”

sandra.dibble@sduniontribune.com

Dibble writes for the San Diego Union-Tribune.

Area ranks eighth for sustainability

Survey: Thousand Oaks/Oxnard/Ventura made big progress toward positive development

MIKE HARRIS
Ventura County Star 8/29/2017

The Thousand Oaks/Oxnard/Ventura metropolitan area ranks eighth among the 100 most populous such areas in the nation in terms of progress toward sustainable development, according to a new survey by a group that works with the United Nations.

The Sustainable Development Solutions Network has been operating since 2012 under the auspices of the U.N. Secretary- General. With offices in New York, Paris and New Delhi, the organization says it mobilizes global scientific and technological expertise to promote practical solutions for sustainable development.

It released its first U.S. cities sustainable development goals index, “Achieving a Sustainable Urban America,” Aug. 10. The index ranks the country’s 100 most populous metropolitan statistical areas for progress in achieving 16 such goals. The goals were agreed to by the U.S. and 192 other nations in 2015, according to the report.

“America is the world’s richest large economy, with the world’s leading technologies and institutions of higher learning,” the index’s executive summary states. “Yet, the U.S. is falling behind other countries on a range of indicators relating to quality of life, economic opportunity and environmental management.

Santos Marquez, a laboratory supervisor for the city of Thousand Oaks Public Works Department, walks up to the second digester at the Hill Canyon Wastewater Treatment Plant. The Thousand Oaks/Oxnard/Ventura metro area has been ranked high in a new survey for sustainability efforts. The Hill Canyon plant is an example of those efforts. JUAN CARLO/THE STAR

“Nowhere is this problem more apparent than in American cities, which are home to 62.7 percent of the domestic population,” the summary, written by the group’s communications head, Michael Shank, says. “Sustainable development goals are an opportunity to address many of America’s challenges while building on America’s great reservoirs of dynamism and talent.”

The study’s lead author, Mihir Prakash, said “the index should help city governments design better policies to improve aspects of sustainability. So, this is basically a tool for that.”

The 16 goals are no poverty; zero hunger; good health and well-being; quality education; gender equality; clean water and sanitation; affordable and clean energy; decent work and economic growth; industry, innovation and infrastructure; reduced inequalities; sustainable cities and communities; responsible consumption and production; climate action; life on land; peace, justice and strong institutions; and partnerships for the goals.

The Thousand Oaks/Oxnard/ Ventura metropolitan statistical area ranks eighth overall with a score of 53.98, which means that it’s 53.98 percent of the way to achieving the goals, according to the index.

The San Jose-Sunnyvale-Santa Clara area ranks first overall with a score of 61.04.

The Baton Rouge, Louisiana area ranks last overall — 100th — with a score of 30.47.

The Los Angeles-Long Beach-Anaheim area ranks 30th overall with a score of 48.14.

In terms of progress towardachieving specific sustainable goals, the Thousand Oaks/Oxnard/ Ventura area ranks second in the nation for zero hunger, ninth for affordable and clean energy and nine for decent work and economic growth.

It also ranks ninth for reduced inequalities and eighth for responsible consumption and production.

The Thousand Oaks/Oxnard/ Ventura metropolitan area is not in the top 10 metro areas for 11 of the goals including no poverty, good health and well-being; quality education; gender equality; clean water and sanitation; industry, innovation and infrastructure; sustainable cities and communities; climate action; life on land; peace, justice and strong institutions; and partnerships for the goals.

The mayors of Thousand Oaks, Oxnard and Ventura said they were pleased that the area was ranked so high overall.

“Sustainable development and environmental stewardship are top Thousand Oaks City Council and community priorities,” said the city’s mayor, Claudia Bill-de la Pena. “We are proud to have our efforts recognized, and our ranking by this metric speaks to the exceptional quality of life that our community enjoys.

“From our state-of-the-art wastewater treatment plant to our clean air and water, access to open space, and community partnerships that drive robust economic opportunities, we will continue to work with our businesses and residents to ensure a sustainable future,” she said.

Oxnard Mayor Tim Flynn said, “we are very pleased and excited to be a national leader in achieving sustainable development goals for our residents.”

Flynn said the city’s sustainability efforts include its Groundwater Recovery Enhancement and Treatment advanced water purification facility, a number of hybrid and compressed natural gas vehicles in its fleet, LEEDcertified buildings and its designation as a Tree City USA.

“As mayor and a member of the City Council, it is great to have an independent group make this assessment and provide recognition for our efforts,” he said.

Flynn said he was especially proud that the Oxnard/Thousand Oaks/Ventura area was ranked second nationwide in progress toward achieving the zero hunger goal and ninth in working to achieve the decent work

and economic growth goal.

“It shows we are making great progress in helping our residents prosper,” he said.

Ventura Mayor Eric Nasarenko said “it’s an honor to join Thousand Oaks and Oxnard as one of the top 10 metropolitan regions in the United States for sustainable practices. The recognition underscores Ventura’s and the region’s exceptional quality of life and our commitment to progressive environmental and economic opportunities.”

Ventura’s environmental sustainability efforts include “green streets,” which are permeable surfaces that enable rainwater to enter the soil rather than run to the ocean through storm drains, Nasarenko said.

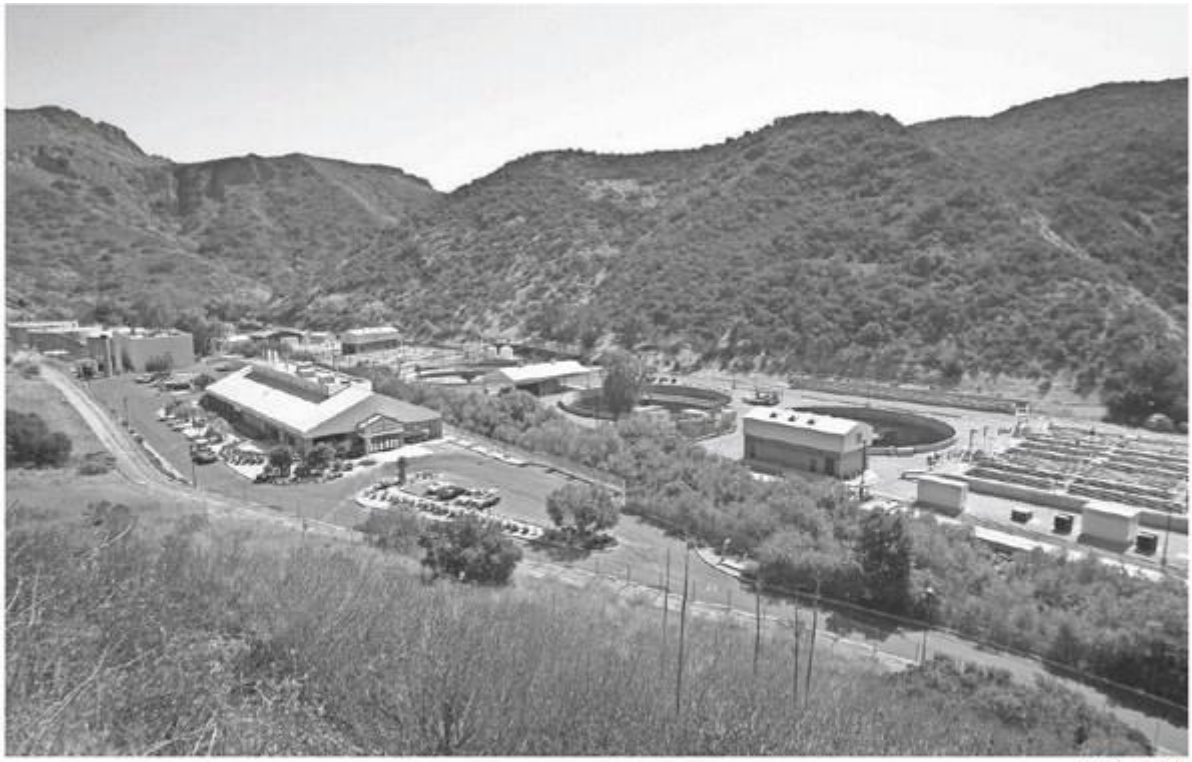
“The city irrigates its golf courses using reclaimed water and feeds many of its trees and city parks with recycled water transported on storage trucks,” he said.

Ventura is expanding its use of dedicated bike lanes and pathways through its Bicycle Master Plan, and recently became the first Ventura County city to label itself “Bicycle Friendly,” he said.

“The city also remains committed to new economic ventures in the tech sector,” he said.

Santos Marquez, a laboratory supervisor for the Thousand Oaks Public Works Department, checks on the engine that makes power through the methane gas they collect at the Hill Canyon Wastewater Treatment Plant. JUAN CARLO/THE STAR

Santos Marquez, a laboratory supervisor for the Thousand Oaks Public Works Department, looks over the solar panels at the Hill Canyon Wastewater Treatment Plant. They installed 2,783 panels at the facility to create half of the plant's power. JUAN CARLO/THE STAR



STAR FILE PHOTO

Thousand Oaks' Hill Canyon Wastewater Treatment Plant is cited by Mayor Claudia Bill-de la Peña as an example of the city's sustainability efforts, which have been recognized in a new report by a group that works closely with the United Nations. The report also lauds the sustainability efforts of Oxnard and Ventura.

Thousand Oaks' Hill Canyon Wastewater Treatment Plant is cited by Mayor Claudia Bill-de la Peña as an example of the city's sustainability efforts, which have been recognized in a new report by a group that works closely with the United Nations. The report also lauds the sustainability efforts of Oxnard and Ventura. STAR FILE PHOTO

Time bombs in the water system

MICHAEL HILTZIK
LA Times 8/27/2017

For the Metropolitan Water District, which serves 19 million residents of Southern California, the wake-up call sounded in December 1999.

That's when a water main on the outskirts of Irvine suffered a catastrophic blowout, spilling 5 million gallons and shutting off service to some 700,000 residents of south Orange County, some for more than a week. Although the blowout was later ascribed to "operator error," it exposed some fundamental weaknesses in the MWD system and prompted the district to undertake a closer inspection.

The district found hundreds of leaks and breaks, which it blamed on premature deterioration in the prestressed concrete cylinder pipeline. That was just the beginning. So-called PCCP throughout the MWD system — at least 100 miles of the 160 miles of pipe made from the material — has been judged suspect and possibly in need of repair or replacement.

The first phase of that program was launched by the MWD board on Aug. 15 with the approval of a nearly $40-million project to install steel pipe to reline 4.5 miles of PCCP under the streets of Long Beach and Lakewood. The work is scheduled to begin in September and take seven months to complete. A second phase of relining on the same trunk line will be presented to the board for approval next summer.

The MWD expects to spend as much as $2.5 billion on the task over the next 20 to 25 years, but that only opens a window on the magnitude of the infrastructure reconstruction facing water systems all over the country. Repairing or replacing PCCP mains nationwide could cost $40 billion, according to a technical assessment produced in 2008 for the U.S. Environmental Protection Agency and the American Water Works Assn. Modernizing the nation's aging water infrastructure, including ancient iron pipelines common in downtown parts of older Eastern cities, could cost many billions more.

In California, that task includes building the controversial delta tunnels to convey water from Northern to Southern California. The tunnels and associated works are estimated to cost more than $16 billion, of which the MWD would pay 26%, adding $2 to $3 a month to the average residential water bill. The project is still uncertain, with litigation and doubts from water users and agencies around the state among the obstacles.

We've written recently about the impact that infrastructure spending could have on water affordability in coming decades. But one often-overlooked aspect of the issue is how decisions taken in the past can reverberate down through the decades.

The problems caused by PCCP are a good example. The pipes, made from steel tubing wrapped in concrete and steel reinforcing wire, often were used for high-capacity, high-pressure water lines. As a result, their failures could be catastrophic and costly. Reports of pipe failures "can be sensational, particularly where the resulting flood damage provides spectacular footage for the 10 o'clock news," observed the 2008 study.

Experts also noted that even limited deterioration could lead to major trouble. "It takes only one bad pipe section to generate a significant pipeline failure," a 2012 engineering study warned. That's what happened in the 1999 blowout, according to the MWD: Had the line not been already weakened by corrosion, it might have survived the operator error that resulted in the blowout.

PCCP lines have been a cause of increasing nervousness among water system managers since the 1990s. That's when the consequences of changes in standards for the lines in the 1970s became apparent.

When the MWD started installing PCCP lines in the 1970s, according to Gordon Johnson, the district's chief engineer, they were considered virtually interchangeable with steel pipelines. "We bid them against each other, and took the one that was the lowest bid," Johnson told me.

Both were expected to last 70 to 100 years. But while the steel pipelines are still mostly "as good as new," Johnson says, "PCCP just doesn't have the same life."

The problem appears to be the liberalization of manufacturing standards in the early 1970s, just as the MWD started using the material. Perhaps complacently, engineering organizations promulgated liberalized standards for PCCP, incorporating reinforcing steel wires that were stronger, but also thinner. Those wires turned out to be more vulnerable to corrosion and brittleness than expected.

"They thought they'd come up with a new technique that would be cheaper," says Jeffrey Kightlinger, general manager of the MWD. The reality is that the lifespan of PCCP from that era is about half that of steel pipe.

"When the standards changed, you came into pipe that was more stressed than before," says Graham E. C. Bell, a coauthor of the 2008 study. The majority of catastrophic PCCP failures have been traced to pipes of the 1972-1978 vintage, when the eased standards were in effect. By the early 1980s, manufacturing standards had been tightened up considerably.

Some engineers say PCCP is still a good pipeline material in many circumstances. “Some owners swear by it because it performs very well,” says Michael Higgins, an executive at Pure Technologies, which assists utilities in assessing the condition of their mains, and a coauthor of the 2012 paper. The overall failure rate is less than 4%, he says. But PCCP pipes tend to fail suddenly and catastrophically, creating dangerous conditions and outsized disruption.

According to Bell’s study, overpressure leads to cracks in the concrete coating, which allows water to enter the pipe from the surrounding soil and corrode the reinforcing wires, which break and in turn allow water to corrode other components of the pipe. Steel pipes tend to spring leaks, which can be patched; “the failure mode of PCCP is usually sudden,” the study said.

The PCCP problem is most acute in the East, in part because the region was served by a now-defunct New Jersey company that allegedly manufactured some of the most troublesome lines. In 1997, Pinellas County, Fla., won a $10-million judgment over a 13-mile PCCP line that was installed in 1978, failed in 1979 and exploded again during a 1980 pressure test and twice more by 1994 — all at pressures well below what the line had been built to bear.

The Maryland suburbs of Washington have been particularly beleaguered by 350 miles of concrete mains “ prone to exploding without warning,” the Washington Post reported in 2013.

The MWD, to be sure, says it already had become wary of concrete pipelines when the Irvine blowout occurred — the district had stopped using the pipe in the mid-1990s, after the first string of failures emerged, including several ruptures in San Diego County mains in the 1980s and 1990s. But the already-installed pipes remain underground, like time bombs.

How Ventura will save 10M gallons of water

‘The drought really opened people’s eyes’

ARLENE MARTINEZ
Ventura County Star 8/26/2017

Jake Coffman, an operator for Ventura Water, checks the Neutral Output Discharge Elimination System on Tuesday. The system collects water used to flush pipes that normally would run into the street and be wasted.

As the drought continued its march and Ventura residents increasingly cut usage, it didn’t sit right for many to see water gushing uselessly into the street.

But there it was, a necessary part of the process to keep drinking water pipelines clean and free from particulates — gallons and gallons of water being flushed via fire hydrants. Many people complained to the city.

That process has begun to change. Instead of water hitting city streets bound for storm drains, it will be caught, filtered and sent back into the system. The savings per year could be huge.

“We estimate at a minimum 10 million gallons a year, and it could be much more than that,” said Joe McDermott, Ventura Water’s acting general manager.

The process can be found in a $495,000 truck carrying the Neutral Output- Discharge Elimination System. Called NO-DES for short, the system works by capturing the water that would have gone onto city streets, filtering it and then pushing it back into the system.

A hose attached to one hydrant takes the water, while a second hose attached to a different hydrant returns it.

In the first week of training in July, the system saved roughly 650,000 gallons of water, McDermott said. There are other benefits, too. When pipes were flushed under the old method, some customers reported drops in water pressure and discoloration. It was harder to judge water quality.

NO-DES reads the water's turbidity, with clearer water signaling a higher quality. If it's found to be especially high in particulates, the system can add more chlorine, said Ventura Water spokesperson Craig Jones.

Jones called it a more "surgical approach" than had been used previously.

Chris Wilkinson said he got the idea for what would eventually become NO-DES shortly after graduating from high school in the late 1970s. His first day of work at a California company involved flushing out hydrants. At that time, water was so cheap, it didn't make sense to move to anything costlier.

A couple of decades later, the cost of water had skyrocketed and conserving water had become top of mind.

Fewer than two dozen agencies actually own the units, as Ventura does, but more than 100 have utilized the service, said Wilkinson, NO-DES founder and president.

Three things are driving the interest in NODES.

"The first thing is drought, and the second is water quality and the third thing is cost," he said. McDermott estimates a gallon of water saved under the system costs twotenths of a cent. The city in recent years has been working to diversify its supply, including connecting to state water and potable reuse, but officials frequently point out that the cheapest water comes through conservation.

Fresno bought its first NO-DES truck in 2015 and soon will be the first

city with two. That will allow the city to better flush more than 1,800 miles of pipeline, said Bud Tickel, Fresno's water system manager. It moves slowly and is time-consuming, but overall "it works great," he

said. Tickel esimated it saved roughly 133,000 million gallons in one year. Fresno has 266 groundwater wells, leading to lots of particulates in pipes, he said, adding that it meets all state requirements for water standards. "The drought really opened people's eyes, including municipalities like us," Tickel said. Earlier this week, a truck parked on a street in east Ventura, where the water quality tends to be worse because of the area groundwater. A slow dribble escaped from the truck, perhaps two to three gallons per minute. That compares to the roughly 500 gallons that used to escape under conventional water flushing. Even that water may be captured eventually and used on area landscaping, McDermott said.

And the process takes longer, which translates into staff time. But the water savings, coupled with the ability to ensure a higher level of water quality, make the process worth it, city officials say.

The city will use traditional flushing when the truck is not available or in times of emergency. It won't be nearly as often.

"This is a big game changer," McDermott said.

Alexander Gonzales, an operator for Ventura Water, demonstrates the old way of flushing a fire hydrant. JUAN CARLO/THE STAR

California giving rivers more room to spread

ELLEN KNICKMEYER ASSOCIATED PRESS
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SAN FRANCISCO - After more than a century of building levees higher to hold back its rivers, California took another step Friday toward a flood-control policy that aims to give raging rivers more room to spread out instead.

The plan, adopted by the flood-control board for the Central Valley, a 500mile swathe from Mount Shasta to Bakersfield that includes the state's two largest rivers and the United States' richest agricultural region, emphasizes flood plains, wetlands and river bypasses as well as levees.

Backers say the changing strategy will better handle the rising seas and heavier rain of climate change, which is projected to send two-thirds more water thundering down the Central Valley's San Joaquin River at times of flooding.

The idea: "Spread it out, slow it down, sink it in, give the river more room," said Kris Tjernell, special assistant for water policy at California's Natural Resources Agency.

Handled right, the effort will allow farmers and wildlife — including native species harmed by the decades of concrete-heavy flood-control projects — to make maximum use of the rivers and adjoining lands as well, supporters say.

They point to Northern California's Yolo Bypass, which this winter again protected California's capital, Sacramento, from near-record rains. Wetlands and flood plains in the area allow rice farmers, migratory birds and baby salmon all to thrive there.

For farmers, the plan offers help moving to crops more suitable to seasonally flooded lands along rivers, as well as payments for lending land to flood control and habitat support.

Farmers, environmental leaders and sporting and fishing groups joined in praising the plan Friday, a rarity in California's fierce water politics. "Savor the moment," Justin Fredrickson of the California Farm Bureau joked to the flood board.

Five years in negotiation, the flood proposal moves away from "two overarching themes in the history of our flood management. One has been build the levees bigger and get the water out" to the ocean. "Another theme has been don't talk to each other," said Rene Henery, state science director for the Trout Unlimited conservation organization.

California's Central Valley before Western settlement annually transformed into an inland sea in the rainy season. Settlers

transformed the valley, building levees along the Sacramento and San Joaquin rivers to create land for farm fields and cities.

The state doesn't have the funding for the nearly $20 billion in projects envisioned by the plan, including thousands of acres of proposed new wetlands along the San

Joaquin. But the outline is meant to guide work and funding, including $89 million the state announced for Central Valley wetlands earlier this week.

In this Feb. 15 photo, a load of rocks is dropped to patch a crater as repairs are made on the Tyler Island levee near Isleton. RICH PEDRONCELLI/AP

Crews shore up a section of levee along the Sacramento River in the south Sutter County town of Verona on Feb. 14. CHRIS KAUFMAN/THE APPEAL-DEMOCRAT VIA AP

In this Feb. 15 photo, a load of rocks is dropped to patch a crater as repairs are made on the Tyler Island levee near Isleton. RICH PEDRONCELLI/AP

LVMWD Board Members Oppose Statewide "Water Tax"

In the final stretch of the legislative session, state lawmakers are pushing a sweeping new tax on tap water that would affect all Californians.

The Las Virgenes Municipal Water District (LVMWD) Board of Directors has had a long-standing policy principle to oppose a statewide "water tax" and other legislation that would transfer local ratepayer funds to Sacramento, which is exactly the intent of SB 623 by Senator Bill Monning.

The bill was amended early this week to include a statewide tax on water aimed to provide funding for safe drinking water to disadvantaged communities. LVMWD supports the intent of the bill but is opposed to the approach to fund the need.

LVMWD Board President Glen Peterson said, "We support measures to ensure everyone in California has access to clean, safe drinking water, but the proposed tax on tap water is not the way to do it."

Vice President Charles Caspary added, "Taxing a resource that serves a basic human need sets a very troubling precedent. And, doing so without the public's knowledge only makes matters worse."

As proposed, the bill would mandate local water agencies to collect an initial $0.95 per month water tax on most customers' bills and funnel it to Sacramento. The tax on businesses and those with larger connections would be substantially higher, up to $10.00 per month. Beginning in 2022, unelected state officials in Sacramento could increase the tax to generate two times the estimated funding needed, an amount they also determine, without approval by the Legislature or voters.

Taxing a resource that serves a basic human need sets a very

LVMWD believes there are better options to fund this statewide priority that would serve and protect residents and communities in need. Existing and proposed statewide bond funds; a proposed assessment on fertilizers, which can contaminate drinking water sources; federal safe drinking water funds; and state general fund revenues could all be used for this purpose.

The Association of California Water Agencies and water agencies throughout the state have also expressed opposition to the bill unless it is amended to remove the water tax. ACWA has created an informational webpage for the public: www.acwa.com/no-water-tax.

Las Virgenes Municipal Water District provides drinking water to the cities of Agoura Hills, Calabasas, Hidden Hills, Westlake Village and adjacent unincorporated areas of Los Angeles County.