



California Water and Infrastructure Report

Formerly, the “California Drought (and Flood) Update”

For December 13, 2018

by Patrick Ruckert

Published weekly since July, 2014

An archive of all these weekly reports can be found at both links below:

<http://www.californiadroughtupdate.org>

<https://www.facebook.com/CaliforniaDroughtUpdate>

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"These Paris elites are always talking about the end of the world. Our problem is to make it to the end of the month!"

A Yellow Vest protester in France

A Note To Readers

And so it goes. To quote President John Kennedy, speaking on the first anniversary of the Alliance for Progress, 13 March 1962: “Those who make peaceful revolution impossible will make violent revolution inevitable.”

President Macron of France clearly did not learn from President Kennedy, nor did he see the hand-writing on the wall as he began imposing vicious austerity on the French population and then rubbed it in with increased taxes on fuel to “combat climate change.”

Yes, I know, as some readers complain sometimes, what does demonstrations in France have to do with California water and infrastructure? Simply put, the investment decisions and the structure of the financial and economic system of the nation shall determine what does and does not get built.

A more general statement on this question is the last item in this week's report, under the title: “They're

Telling You Another Crash Is Coming: NOT How To Solve It.”

In This Week's Report

Two weeks of rain and snow in California has relieved the wildfire danger and filled reservoirs. It has also put the snowpack in the Sierras above the average for this time of the year. But, no one is saying that that really means too much this early in the rainy season, one that was delayed anyway.

The Drought Monitor shows a slight alleviation of drought conditions in the state. And since no forecaster will risk his or her reputation giving a definite forecast more than a few days out, we shall just have to wait for what will come.

The ongoing California water wars saw two developments this week that, in the end, do not really mean all that much. The first is another step forward (or backward, if you are a farmer) in establishing the State Water Resources Control Board policy to require unimpaired flows of up to 40 percent to 50 percent in the Stanislaus, Merced and Tuolumne rivers. The Board approved the policy this week.

The second is a further setback to the Governor's twin tunnels under the Delta when the California Department of Water Resources withdrew a crucial certificate required to build them.

Both items are detailed in reports below.

The Oroville Dam Update this week features a report from the Federal Energy Regulatory Commission and its findings that deficiencies in the Oroville Dam Safety reviews were extensive.

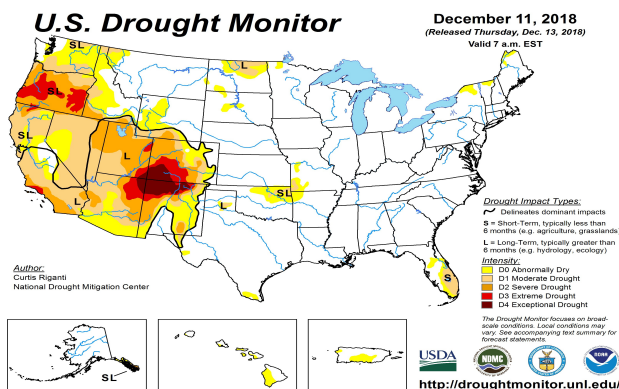
From Oregon, next, is an interesting and telling report that Oregon's water infrastructure has not been upgraded for 100 years. The headline which states that, as you will see in the article somewhat overstates the case. But, irregardless of that, whether it is 100 years or 20 years, the water infrastructure of the West badly needs upgrading, and expansion.

A short report on desalination reports that the Carlsbad plant has now purified 40 billion gallons of ocean water since it went into service in December, 2015.

An update on the serious potential of rationing of water from the Colorado River reports on the Colorado River Agreement Nearing Completion.

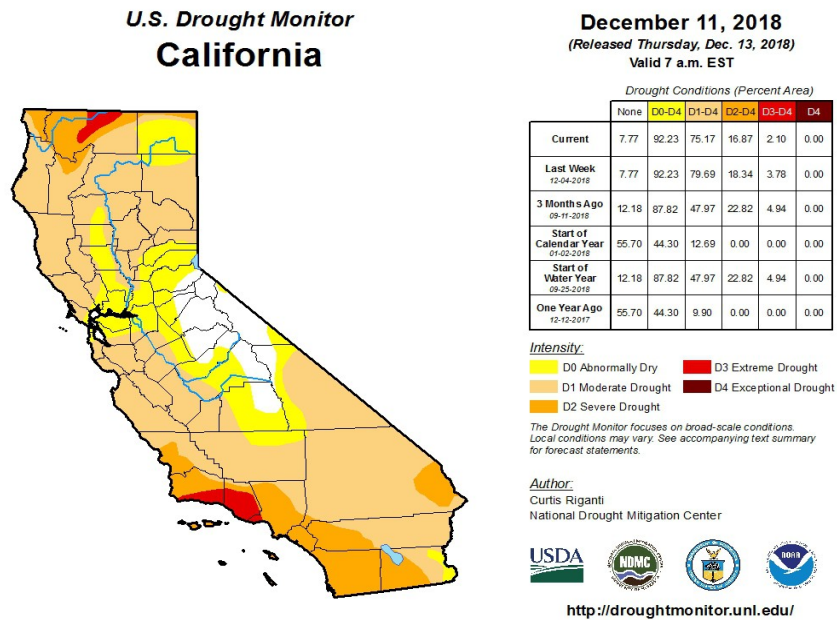
The last section before the Feature is a couple of items on the financial blow-out right around the corner and a report that the Department of Energy is considering the promotion of subsidies (production tax credits or PTCs) for small modular nuclear reactors (SMRs), in order to bring online this technology which is critical for economic development

Drought and the Winter Forecast



As we see above in the U.S. Drought Monitor for the nation, the Southwest, and especially Oregon, remain very dry, with scattered geographical areas in “Extreme Drought.”

In California, nearly two weeks of rain barely moved the percentages of the state in the various intensity of drought. It will take much more this winter to do that.



A wet start to winter brings piles of snow to California mountains and high hopes for water supply

By [Alejandra Reyes-Velarde](#)

Dec 11, 2018

<https://www.latimes.com/local/lanow/la-me-ln-sierra-nevada-snowpack-20181211-story.html>

In a good sign for California’s water supply, the Sierra Nevada has been blanketed by heavy snow thanks to a series of recent storms.

The snowpack measured 106% of average, according to the state’s snow survey taken late last week. That’s more than double the 47% of average measured on the same day last year. The Sierra Nevada is a key source of water for California, which is still recovering from years of drought conditions.

Two storms beginning on Thanksgiving brought up to 2 feet of snow in parts of the northern Sierra, said Emily Heller, a meteorologist with the National Weather Service.

In the southern Sierra, the snowpack was recorded as high as 125% of average. Some areas northeast of Bakersfield reached up to 200% of average levels of snowpack.

Despite the promising start, it’s too early to predict whether it’ll be a good snow year, said Chris Orrock, a spokesman for the California Department of Water Resources.

The snow season starts in December and ends on the first day of April, when experts trek to the

departments across the state.

Southern California is always significantly drier than Northern California. But even the Southland has received a good amount of rain in the last few weeks.

Mount Baldy got 15 inches of snow and Mountain High received 10 to 13 inches, the National Weather Service said. Other areas, such as Wrightwood and Lockwood Valley, got 6 to 8 inches of snow.

Since the start of the water year on Oct. 1, downtown Los Angeles has received more than 4 inches of rain — more than the average amount of precipitation for this time of year and significantly more than last year, when about one-tenth of an inch of rain fell.

Climatologist Bill Patzert said people should remember a drought isn't easily remedied.

"We got a couple of nice little storms and everything looks so refreshed and the air so clean, but we're really behind the curve here in terms of our water supply," he said. "It takes you many years to get into a drought and into these deficit situations, and one wet year is not a drought buster."

Lake Mead in Nevada, for instance, takes 17 years of above-average flow from the Colorado River to refill, so one wet year on the Colorado River Watershed wouldn't do the trick, Patzert said. The same is true for groundwater basins in the Southland, which are at historically low levels.

Patzert said it's also difficult to predict how wet this season will be because of competing natural phenomena.

There's a "wannabe" El Niño in the Pacific Ocean along the equator, a weather phenomenon that can cause a series of subtropical storms to hit California, Patzert said. And in the northeastern Pacific Ocean, there's a "blob" of warm water that in years past has reinforced a drought-worsening ridge of high pressure that diverts storms away from the West Coast and into the central United States.

"It's a rematch of the blob versus El Niño," Patzert said. "Most forecasters are being cautious about January, February and March, which are usually our wettest months."

Developments in Two Fronts in the California Water Wars

Reports on first, the State Water Board's determination to cut back the water to agriculture and even to San Francisco by mandating "minimum flow requirements for three rivers in the San Joaquin Valley. And second, a set back for Governor Brown's two tunnels under the Delta.

Both of these projects or fights will go on for years and nothing will really change in making more water available for the people of California. I have presented here the necessity of reviving the policies of the JFK era of nuclear-powered desalination plants and the North American Water and Power Alliance, and shall not present those here again now.

One would think that the water managers and the water boards especially in the Valley would at some point cease to tolerate these never ending and never productive non-solutions.

Water board imposes flows amid sweeping Delta pacts

Agreements could provide up to 1 million acre-feet, \$1.7 billion for habitat and research.

Dec 13, 2018

[Tim Hearden](#)

<https://www.westernfarmpress.com/regulatory/water-board-imposes-flows-amid-sweeping-delta-pacts>

California's water board late Dec. 12 imposed minimum flow requirements for three rivers that run through some of the state's richest farmland while urging agencies to pursue sweeping proposed agreements with water providers throughout the Central Valley, as regulators seek to improve conditions in the Sacramento-San Joaquin River Delta and its fisheries.

After an all-day hearing, the State Water Resources Control Board approved a motion to require unimpaired flows of up to 40 percent to 50 percent in the Stanislaus, Merced and Tuolumne rivers -- key tributaries to the lower San Joaquin River -- after voluntary agreements with water agencies on two of the rivers proved elusive. Farm groups had implored the board to reject the mandate.

At 7:13 p.m., the board voted 4-1 to approve the flows mandate, with board member Dorene D'Adamo dissenting.

Meanwhile, the board wants to hear more details about conceptual pacts that could provide as much as 1 million acre-feet of new water and up to \$1.7 billion for habitat restoration, scientific research and other costs, according to Department of Water Resources director Karla Nemeth.

Partners would range from the Friant Water Authority, which agrees to send an additional 50,000 acre-feet through the Delta, to Sacramento River water agencies, which would make available 100,000 acre-feet of water by voluntarily fallowing 24,000 acres, says Charlton Bonham, director of the state Department of Fish and Wildlife.

Talks with water agencies along the Stanislaus and Merced rivers have so far failed to produce an agreement, Bonham says.

State water regulators have been working for several years on an update to the Bay-Delta Plan. Currently, flows remaining in the Merced, Tuolumne and Stanislaus rivers can run as low as 10 or 20 percent of unimpaired flow at critical times of the year and range from 21 to 40 percent on average for the three tributaries south of the Delta, water board officials say.

However, farm groups such as the California Farm Bureau Federation and California Citrus Mutual have argued the plan would effectively rescind water rights, and the Almond Board of California has urged state regulators to consider efforts that farmers have already made to save water in their operations.

The unimpaired flows plan for the three San Joaquin River tributaries faced mounting opposition from President Donald Trump's administration and among federal and state lawmakers in both parties. U.S. Bureau of Reclamation commissioner Brenda Burman has threatened to sue the state water board if it devalued the federal government's investment in its water projects.

Kristin White, a deputy operations manager for the Central Valley Project, reiterated the agency's lawsuit threat during the board's hearing while praising the framework of voluntary agreements.

"This framework lays the groundwork for an implementable, improved water management system in California," White says.

D'Adamo contends that some water agencies may conclude they have a better chance joining a federal legal fight against the flows plan.

"The elephant in the room here is Donald Trump," she says.

Motions by D'Adamo to eliminate the minimum flows in June and add flexibility during drought years were also defeated by her colleagues.

State water board demands more water for fish

By [Bettina Boxall](#)

Dec 12, 2018 | 9:10 PM

<https://www.latimes.com/local/lanow/la-me-instream-flows-20181212-story.html?outputType=amp>

In an unprecedented step, state regulators Wednesday adopted standards that would force San Francisco and several big San Joaquin Valley irrigation districts to give some of their river supplies back to the environment.

But they also left the door open to agreements that would significantly undercut those flow requirements — underscoring the winding path that marks any significant change in California water policy.

The vote by the State Water Resources Control Board is by no means the final say on the matter. Settlement discussions will continue next year. And water users have vowed to challenge the flow mandates in court.

Under the new requirements, water districts would have to reduce their historic diversions from three salmon-bearing rivers, the Stanislaus, Tuolumne and Merced. Average flows on the three tributaries of the San Joaquin River now range from 21% to 40% of what they would be without dams and diversions. At times the river beds hold as little as 10% of the natural flow.

Not only would greater river flows improve conditions for struggling salmon populations, they would ultimately boost needed inflow to the Sacramento-San Joaquin Delta, the ecologically ailing center of California's water system.

Many of the water users have diversion rights that date back a century or more. They have fiercely criticized the board plan, which would collectively cost them 300,000 acre feet of supply — or roughly 15% of their total diversions on all three tributaries.

California shifts water from farms, cities to fish. But a Jerry Brown compromise plan isn't dead

By [Ryan Sabalow](#)

December 12, 2018 07:15 PM,

<https://www.sacbee.com/latest-news/article223031605.html>

Despite an epic last-minute compromise brokered by Gov. Jerry Brown, state water regulators voted Wednesday to reallocate billions of gallons of San Joaquin River water from farms and cities to revive struggling fish populations.

After hours of testimony, the State Water Resources Control board voted to deliver hundreds of thousands of acre-feet of water from the San Joaquin watershed to salmon, steelhead and other species that ply the fragile Delta. The vote will eventually take water from Valley farmers, who have blasted the plan as a “water grab,” as well as cities such as Modesto and San Francisco.

The vote probably won't be last word on river flows, however. Earlier in the day, Brown's administration offered a broad, \$1.7 billion compromise agreement under which many cities and farms across the Central Valley would surrender water to the fish and would kick in cash to help the ailing species survive. The money would be spent on building spawning grounds and making other habitat improvements.

Big setback for Gov. Brown's twin tunnels delta water project

Peter Fimrite

Dec. 7, 2018

<https://www.sfchronicle.com/news/article/Big-setback-for-Gov-Brown-s-twin-tunnels-delta-13451160.php>

California Gov. Jerry Brown's call to build a twin tunnel system to move water through the Sacramento-San Joaquin Delta suffered a setback Friday when the California Department of Water Resources withdrew a crucial certificate need to build them.

A crucial certification needed to build two tunnels that officials believe would help solve California's water delivery problems was withdrawn Friday, ensuring that Gov. Jerry Brown's pet water project won't be approved before he leaves office in January.



the Sacramento-San Joaquin River Delta

The California Department of Water Resources withdrew its petition seeking approval of Brown's \$17 billion twin tunnels plan, known as California WaterFix, which would take water out of the Sacramento-San Joaquin River Delta and deliver it to users in the south.

The withdrawal of the petition, known as a Certification of Consistency, means the Delta Stewardship Council won't be voting on the proposal Dec. 20. The Brown administration apparently did not think approval was likely after they were criticized by council staff for, among other things, not providing enough analysis of the effects of climate change on water usage.

The project's opponents called the withdrawal, signed by water resources Director Karla Nemeth, a victory for fish and the environment.

The decision Friday may be a reprieve, but nobody believes the battle is over.

"WaterFix will continue to move forward," said Erin Mellon, the spokeswoman for the Department of Water Resources, in a statement. "We will work with the Delta Stewardship Council to resolve issues related to Delta Plan interpretation and plan to submit a revised certification."

Oroville Dam Update

FERC Panel Finds Deficiencies in Oroville Dam Safety Reviews

By Brett Walton, Circle of Blue

December 10, 2018

After the Oroville spillway failure, hydropower regulators assess the dam inspection process.

<https://www.circleofblue.org/2018/world/ferc-panel-finds-deficiencies-in-oroville-dam-safety-reviews/>

Dam inspectors overlooked technical details during safety evaluations that could have identified structural problems with the Oroville Dam spillway before it broke during heavy rains in February 2017, according to an [assessment](#) ordered by the Federal Energy Regulatory Commission.

FERC assembled an independent, six-person panel to assess the safety inspections that are required every five years for the roughly 2,500 hydropower facilities that FERC regulates.

This is the second time in recent months that FERC's dam safety program has been criticized. In October, the Government Accountability Office, a watchdog agency, [rebuked FERC's safety evaluations](#) for being too narrow and thus not able to identify similar risks across all the dams it oversees.



An aerial view of the damaged Oroville Dam spillway and the huge debris field below it, in a photo taken on February 27, 2017. Photo courtesy of Dale Kolke / California Department of Water Resources

The Oroville review panel looked specifically at inspections at the nation's tallest dam, a state-owned structure on the Feather River in northern California. When the main spillway crumbled in February 2017, it forced the evacuation of 188,000 residents downstream.

The panel's main complaint is that safety inspections were "cursory," not looking deeply into the dam's original design specifications or technical reports about the site's soils and geology.

"Based on our review of the historical Part 12 report record, certain aspects of these reviews were treated as merely updates of existing information, rather than an independent checking of facts and a thorough review of available information and analyses," the report states.

Part 12 is a provision in FERC regulations that requires dam inspections every five years. Oroville Dam was completed in 1968 and had undergone eight Part 12 reviews, most recently in 2014. The inspections are carried out by licensed engineering firms.

The “overall lack of rigor” in the inspections may be a cause for concern at other dams subject to Part 12 reviews, the panel said, noting other dam safety incidents related to deficiencies that went undetected. “Therefore, it should be noted that this oversight appears to be of a systematic or cultural nature that needs to be somehow overcome through direction by FERC to motivate dam owners to dig deeper for a better understanding of their structures and operational risks.”

As for the spillway’s performance, the panel concluded that the failure was due in large part to faulty construction that did not follow initial designs. A number of mistakes were found. Erodible soil was left in place beneath the spillway, anchoring points were too shallow, and the concrete slab that forms the spillway was too thin.

Subsequent inspections did not compare the original designs to what was actually constructed, the report states.

The cost of reconstructing the spillway has climbed to more than \$1.1 billion dollars. State officials expect the federal government to cover up to 75 percent of the tab.

California and Oregon Water Infrastructure

Oregon's water infrastructure hasn't been upgraded for 100 years. Some think it's time to fix that.

- December 12, 2018
- by [Caleb Diehl](#)
- Published in [Energy and Environment](#)
- <https://www.oregonbusiness.com/article/energy-environment/item/18599-water-part-1>

Every summer day in rural Oregon, farmers order up water from an army of “ditch riders,” the bartenders of irrigation. They run between canals, opening and shutting valves to divert the flow to their customers. Somewhere between a quarter to 60% of that precious water evaporates or seeps into the ground before it reaches farms. This isn’t a scene from Oregon circa 1900. It’s Oregon in 2018.

Like other western states, Oregon thirsts for some \$7.6 billion of upgrades to its antiquated canals, dams and wastewater treatment plants. In Central Oregon alone, 1,600 canals need upgrading at an estimated cost of around \$2 billion. To put that in perspective, the landmark [transportation package](#) legislators passed in 2017 funded \$5.3 billion of improvements.

Healthcare, affordable housing and transportation top the agenda at planning meetings. Water, not so much.

“The last time Oregon upgraded its water infrastructure was when Phil Knight was making shoes in a waffle iron,” Bobby Cochran, executive director of [Willamette Partnership](#), told policymakers and business executives last week at an annual economic summit in Portland.

“Almost any day you open a paper it’s talking about how reservoirs are way way down,” says Jed Jorgensen, an energy project manager at [Energy Trust of Oregon](#). “All the research is pointing to a

change in how we see rain and snow accumulating in the state.”



A canal in Alfalfa, near Bend, OR

Low snowpack and persistent drought have taken their toll in the Deschutes Basin. The drought spanned five of the past six years and exhausted the Wickiup Reservoir, southwest of Bend, for the first time in decades. Mike Britton, manager of the basin’s [North Unit Irrigation District](#) says, “this last year was far more extreme than what I’ve seen in the past.”

There’s a simple, if costly, solution to some of rural Oregon’s water woes: put canal water in big pipes under pressure. Oregon is leading the charge among western states with its statewide [Irrigation Modernization Project](#), launched in 2015 by Energy Trust of Oregon and Farmers’ Conservation Alliance. Energy Trust has funded about \$200,000 for 20 districts across the state to begin planning.

Pipes solve the waste from runoff, seepage and evaporation. Districts that have installed pipes have found themselves with a surplus of water that can power micro-hydro systems or be returned to sensitive ecosystems.

The Sisters Irrigation District saved 9 million kilowatt-hours of power after piping almost all of its 63 miles. Farmers Irrigation District in Hood River saved money on energy and tackled two climate issues at once—creating water sources that firefighters used during the 2017 Eagle Creek Fire. Farmers get a more efficient supply of water for their crops, especially important given the recent droughts.

“You’re saving energy,” Jorgensen says, “but you’re also saving that farmer a lot of money.”

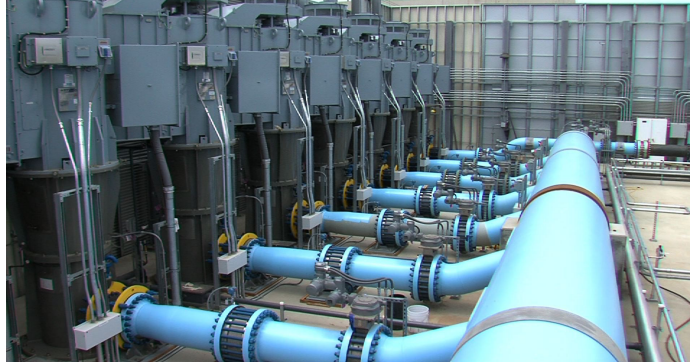
Federal money and state matching funds will prove essential for pushing the costly projects through. The U.S. Department of Agriculture has financed \$30 million of improvements in the Tumalo Irrigation District near Bend. Britton’s district in the Deschutes Basin won \$50 million in federal funding for pipes.

To date, the modernization project has updated around 579 miles of canals across the state with pipes of up to 11 feet wide, making it one of the largest piping projects in the West. Jorgensen says other cities and states are looking for ways to replicate the success so far.

Carlsbad Desalination Plant Purifies 40 Billionth Gallon of Ocean Water

By [Joe Little](#)

December 11, 2018



<https://www.nbcsandiego.com/news/local/Carlsbad-Desalination-Plant-Purifies-40-Billionth-Gallon-of-Ocean-Water-502538451.html>

The newest source of drinking water in our county just reached a major milestone.

Around 100 million gallons of seawater are pumped through the filters at the Carlsbad desalination plant every day. Within about three hours that water is purified and sent to the taps.

After three strong years, the plant just produced its 40 billionth gallon of drinking water. That's enough water to fill a billion bathtubs, or fill every floor of the empire state building, 145 times.

Colorado River Agreement Nearing Completion

7 Southwestern States, Including California, Close to Finalizing Drought Contingency Plan

December 13, 2018, by [Associated Press](#)

<https://ktla.com/2018/12/13/7-southwestern-states-including-california-close-to-finalizing-drought-contingency-plan/>

Water managers from seven Southwestern states that depend on the Colorado River for drinking and irrigation water are getting closer to finalizing an unprecedented drought contingency plan they may have to enact in 2020, officials said Thursday.

The federal government's top water official, Bureau of Reclamation Commissioner Brenda Burman, was expected to urge action by representatives of Indian tribes and government agencies from Arizona, California, Colorado, Nevada, New Mexico, Utah, Wyoming during an address at an annual conference in Las Vegas.

A pact was supposed to be signed by the end of 2018, under threat that the bureau that controls the water distribution levers on the river would impose its own restrictions affecting drinking water to 40 million people and irrigation for crops in arid parts of U.S. and Mexico.

Arizona and Nevada would be the first states to feel the pinch if a shortage is declared as expected next year. Supplies to California also could be curtailed.



A tall bleached 'bathtub ring' is visible on the steep rocky banks of Lake Mead at the Hoover Dam on May 12, 2015 in Lake Mead National Recreation Area, Arizona. (Credit: Justin Sullivan/Getty Images)

After 19 years of drought and increasing demand, the river's two largest federal water managers project a 52 percent chance that the river's biggest reservoir, Lake Mead behind Hoover Dam, will fall low enough to trigger cutbacks under agreements governing the system.

The Lower Colorado River Basin states of California, Arizona and Nevada want to keep Lake Mead behind Hoover Dam above a shortage declaration trigger point by using less water than they're legally entitled to receive.

If the lake falls below that level, Arizona will face a 9 percent reduction in water supply, Nevada a 3 percent cut and California up to 8 percent. Mexico's share of river water also would be reduced.

Colorado, New Mexico, Utah and Wyoming want to keep the surface of Lake Powell above a target level to continue water deliveries to irrigation districts and cities and also keep hydroelectric turbines humming at Glen Canyon Dam.

Lake Powell is currently at 43 percent capacity and Lake Mead is at 38 percent.

Water officials in most of the affected states have signed off on plans in recent weeks, including the key Central Arizona Project irrigation system and the sprawling Metropolitan Water District of Southern California, which serves some 19 million people.

Arizona's plan, unlike other states, still needs approval from state lawmakers. They convene in January.

The Economy and Infrastructure

Former Fed Chair Yellen and Fed Governor Brainard Sharpen Warnings of Debt Crisis

Dec. 11 (EIRNS)—Former Federal Reserve Chair Janet Yellen has warned for the second time in a week of potentially serious trouble in the now-huge mass of debt of U.S. non-financial corporations, much of it unpayable, and implicitly about corporate leveraged loans and junk bonds elsewhere as well. This Yellen warning was sharper than the last, and was headlined in CNBC-TV's lead story this morning, "Yellen Warns of Another Financial Crisis: 'Gigantic Holes in the System.'"

Interviewed before an audience at City University of New York Dec. 10 by economist Paul Krugman,

Yellen said, “Corporate indebtedness is now quite high and I think it’s a danger that if there’s something else that causes a downturn, that high levels of corporate leverage could prolong the downturn and lead to lots of bankruptcies in the non-financial corporate sector. I think a lot of the underwriting of that debt is weak. I think investors hold it in packages like the subprime packages ... the same thing has happened [as before the 2008 crash]. It’s called CLOs, or collateralized loan obligations.”

Yellen said that non-financial corporate loan debt is double what it was in 2007, up to \$9.1 trillion vs. \$4.9 trillion. She said regulators’ powers to address debt panics have been reduced and “are not great in the United States.... So I do worry that we could have another financial crisis.”

Speaking at Peterson Institute Dec. 7, current Federal Reserve Governor Lael Brainard made the same warning on the corporate debt bubble. She proposed that the Fed now trigger the “capital buffer,” an authority given it by Dodd-Frank which would make the largest 20 banks raise their total capital ratio substantially with a special “crisis capital buffer.”

Brainard had already called for it in April. Now at Peterson, according to Bloomberg report, she said strains are growing in the corporate leveraged loan market, with “deteriorating underwriting standards” and money-market mutual funds, which have borrowed from the major banks, own too much corporate debt.

The current capital level of the biggest banks’ averages about 5%, less than the 6% of their total assets which were wiped out in the 2007-08 crash. But there is no telling that the extra capital buffer Brainard is asking the Fed to order, would not be washing away as well in the crash now threatening.

U.S. Department of Energy Study Considers Supporting Modular Reactors

Dec. 11 (EIRNS)—The U.S. Department of Energy (DOE) has finally produced a study cautiously promoting the provision of subsidies (production tax credits or PTCs) for small modular nuclear reactors (SMRs), in order to bring online this technology which is critical for economic development worldwide.

The October 2018 report, “Examination of Federal Financial Assistance in the Renewable Energy Market: Implications and Opportunities for Commercial Deployment of Small Modular Reactors,” constitutes a recommendation to Secretary of Energy Rick Perry. The report, prepared under contract and financing by DOE by authors from Kutak Rock LLP and Scully Capital Services, is posted on the Department of Energy website.

Noting that between 2005 to 2015 some \$51.2 billion was provided in production tax credits and direct development subsidies to wind and solar “renewables,” DOE’s study estimates that \$10 billion in such subsidies over the next six years could get 6 GW of SMR capacity, or 15 SMR projects online, rated at about 400 MW each. These projects would consist in combinations of smaller modular reactor units.

The subsidies, it says, would be aimed to reduce the end-user cost/kwh: To achieve equivalent reductions the government investment in subsidies for SMR would be only about 0.34 cents, whereas the investment for solar/wind subsidies would be approximately 1.08 cents/kwh. The SMRs would require less subsidization because of their very long service life and their estimated 90%-plus online ratio (portion of the time the reactor is feeding power to the grid once commissioned).

Feature

They're Telling You Another Crash Is Coming: NOT How To Solve It

<https://larouchepac.com/20181212/theyre-telling-you-another-crash-coming-not-how-solve-it>

December 12, 2018

The warnings are getting louder. The biggest Wall Street and London-centered banks have "prepared" another financial breakdown for us. The biggest bubble melting down this time may be unpayable corporate debt, but the economic devastation will be the same, or worse. Unless the leaders of the major world economic powers come up with a solution first — a new credit and currency system which generates credit for productive economic growth while letting London-Wall Street speculations go down.

That is our job. The Schiller Institute's President Helga Zepp-LaRouche has spelled this out again, in preparation for its mid-February U.S. national conference for a new institution of FDR's Bretton Woods credit and money system.

There is a countdown underway, she said, to whether the spreading rejection of the "neo-liberal paradigm" — what used to be called "the Washington Consensus," but no more! — will see the victory of the new paradigm the Schiller Institute fights for, and which means a new international system of economic development.

Those escalating signs of another financial meltdown coming are the timer of that countdown. The leaders of at least America, China, Russia, and India must agree on that New Bretton Woods system of productive credit, before their economies can be taken down even deeper than in 2009, by another crash.

Helga LaRouche emphasized the stunning example of France's President Macron — until yesterday the shining star of neo-liberal austerity, ecology, and geopolitical hostility — having had to abandon his neo-liberal agenda within four weeks' of protests supported by the vast majority of French citizens. Germany's imperious Die Welt cried, "Macron's Buckling Before Yellow Vests Pleases Just Italy" — meaning, rejecting economic austerity. This unraveling of the EU system shows, Helga LaRouche said, that the worldwide pattern of protests against the neo-liberal paradigm is continuing, and will not stop.

It may even undo the anti-progress, anti-nuclear, anti-human "Climate Accord." As Helga LaRouche's French colleague Jacques Cheminade reported the remark of one protester in France, "These Paris elites are always talking about the end of the world. Our problem is to make it to the end of the month!"

These unexpected, sweeping changes are occurring in less than the time since the U.S. midterm election. Now, Helga LaRouche asked the big question: Can we get America on board the new paradigm? Will it lead as it must in a new system of credit for technological progress, productivity, new economic infrastructure?

Will it accept China's accomplishment in the Belt and Road Initiative, and join in cooperation? Shortly China will create a new surprise, landing spacecraft on the far side of the Moon, something no other nation has attempted. If you can't beat them there, join them.

The United States is decisive, but the swift changes elsewhere affect it, and President Donald Trump has publicly embraced the rejection of austerity, first in Italy, now in France. [He has to be moved, by Americans, to lead in bringing in a new paradigm.](#)