



# California Water and Infrastructure Report

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

For April 25, 2019

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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*“The new 'Moon-Mars' directive by President Donald Trump, committing the nation to an accelerated return to space, is the necessary spirit for the space-age mobilization required to respond to the severe flooding and food production emergency now playing out in the Missouri-Upper Mississippi River Basins. That spirit will enable us to deal with the vast damage, and also act to create a new, modern platform for higher productivity in the Midwest and nationally. From immediate flood relief, to a full build-out of needed water management, new rail lines, nuclear power, and other infrastructure in the center of the continent, and population growth, not depopulation, in these rural counties—this is the right disaster response.”*

*From: “Midwest Flooding Is National Emergency: Space-Age Mobilization Required”*

## A Note To Readers

The fundamental question that neither the President nor any members of Congress has an answer for is how trillions of dollars of the necessary infrastructure-building that “everyone” says is required is to be funded. Thus, even if Nancy Pelosi does meet with the President, as she said she will, next week to discuss an infrastructure bill both can agree on, not much is likely to actually get done.

That funding question is addressed in the last two sections of this week's report: “Credit for Infrastructure,” and the feature this week: “Infrastructure Means a Total Economy Policy.” The

principle must be: Infrastructure is not an “add-on,” but the fundamental foundation of a healthy economy. It is from that later item that the quote at the beginning of this report originates.

## **Also in This Week's Report**

Percy Shelly's poem *Ode to the West Wind*, concludes: “*O Wind, If Winter comes, can Spring be far behind?*” Winter has come and gone and Spring is upon us. So the weather has changed.

The good news is that the abundant Colorado River snowpack will definitely delay the need for rationing of the waters of the river and reservoirs.

The California “Water Wars” continue with almost pointless maneuvering by everyone involved. What occurs with this or that action, law suit, regulation, makes little difference in supplying the people of the state far into the future with water. This week the governor squares off against President Trump, and the farmers complain about the allocation from the Central Valley Project.

Returning to a topic that has been neglected for several months, an array of articles on desalination begins with the proposed Huntington Beach plant that will be a match for the Carlsbad plant, built by Poseidon Water, and has been pumping out fresh water now since 2015. Then several articles on technical issues provide a view that known problems, like cost and saline disposal, have solutions. Also, the state of California is funding some projects.

“Credit For Infrastructure” presents how to generate credit for building infrastructure, based on the historical precedents of President Abraham Lincoln's “Greenback” policy and the use of the Reconstruction Finance Corporation by President Franklin Roosevelt in the 1930s.

The final section is our Feature, which is an extended excerpt from the article in the *Executive Intelligence Review* for April 26, “*Midwest Flooding Is National Emergency: Space-Age Mobilization Required.*” While reporting on the Midwest flooding that is devastating half-a-dozen states right now, what could have been done and must be done now is the focus. The Continental water management policy of the North American Water and Power Alliance from the 1960s is also highlighted.

## **Weather and Climate**

It changes.

### ***Death Valley hits 106 as scorching temperatures sweep across southwestern US***

*By Kyle Elliott, AccuWeather meteorologist*

*April 25, 2019*

<https://www.accuweather.com/en/weather-news/heat-wave-to-bake-southwestern-us-this-week/70008074>

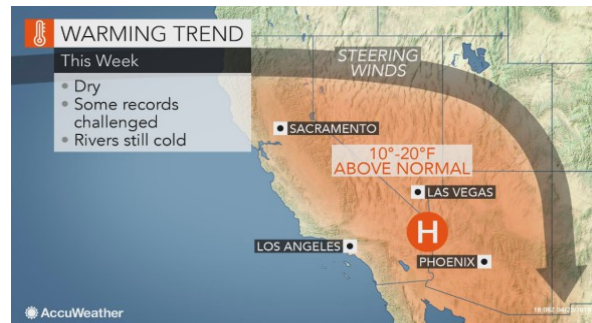
*After a seasonably mild first three weeks of April, residents across California and much of the southwestern United States are enduring the first significant heat wave of the year.*

*A ridge of [high pressure](#) will continue to strengthen across the Southwest late this week, pushing temperatures into the 90s and even 100s in spots.*

*“During Wednesday afternoon, widespread highs in the 90s F scorched California's Central Valley and the deserts of Southern California, Nevada and Arizona,” AccuWeather Senior Meteorologist Kristina*

*Pydynowski said.*

*She added that temperatures may reach or exceed 100 F in the desert communities from Palm Springs, California; to Phoenix late this week.*



*Temperatures are forecast to soar to within a degree or two of the record high of 96 degrees, set back in 1946, in Las Vegas on Thursday.*

*Death Valley, California, surged above the century mark Tuesday, with a recorded high of 102 F. While not a record, it was still above the normal of 93 for this time of year. The high temperature of 106 on Wednesday is forecast to repeat on Thursday.*

## ***Colorado River basin reservoirs benefit from heavy snowpack***

*By [The Associated Press](#) |*

*April 24, 2019*

*FLAGSTAFF, Ariz. — Reservoirs around the Colorado River basin are in good shape after an exceptionally wet winter.*

*The largest reservoirs, Lake Mead and Lake Powell, are expected to be more than half full this year. They haven't been near capacity since 1999 when drought took hold of the region.*

*The worst levels of drought have now disappeared from much of the basin that takes in seven Western states. It's a dramatic turn from this time last year when parts of Utah, Colorado, New Mexico, Arizona and California were extremely or exceptionally dry.*

*Nevada and Wyoming also rely on water from the Colorado River.*

*U.S. Bureau of Reclamation hydrologist Shana Tighi said Wednesday that one good year won't erase drought concerns. But she says it buys time for long-term planning.*

## **And Once Again: California's Water Wars**

Resuming our coverage of the California Water Wars, we begin with the conflict between the governor of the state and the Trump administration. While the President does not have a comprehensive long-term policy for how to provide water to California, or even the entire southwest, for 50-100 years into the future (which no one now in government does either), Governor Newsom does represent leadership at its worse, being merely an opponent of the President, and having himself nothing really new to offer.

Also in this section are complaining articles from the agricultural sector about the current management of the existing water resources. While justified, their complaints have been made for years and nothing

short of a grand plan for bringing new water on line by NAWAPA and desalination, plus building more storage for the years when precipitation is good like this year.

## ***Gov. Gavin Newsom hits back at Trump in new fight over who controls California water***

*By [Ryan Sabalow](#) and Dale Kasler*

*April 22, 2019*

*<https://www.sacbee.com/news/politics-government/capitol-alert/article229484604.html#storylink=cpy>*

*Gov. Gavin Newsom's administration is taking unprecedented steps to combat President Donald Trump's [efforts to ship more water](#) to his agricultural allies in the San Joaquin Valley.*

*Saying Trump's water plans are scientifically indefensible and would violate the state's Endangered Species Act, the state Department of Water Resources on Friday began drawing up new regulations governing how water is pumped from the Sacramento-San Joaquin Delta to the southern half of the state.*

*The move sets the stage for another confrontation between Trump and Newsom over the future of California's water supply and the fish that live in it. Already, the state has sued the Trump administration more than 45 times over issues ranging from immigration to climate change.*

*State officials believe the Trump administration's plans will hurt the Delta's fragile fish populations — and could lead to water supply cuts to the 25 million Californians who receive drinking water from the state's pumps in the estuary. The Trump administration has argued that the pumps can be opened wider without harming the endangered fish.*

*The issue revolves around the delicate arrangement between the State Water Project and the federal government's Central Valley Project, both of which pump water south from the Delta.*

*The state traditionally defers to the federal government on environmental rules in the Delta. For the first time, with its announcement Friday, the state is drawing up its own rules — throwing down a legal gauntlet that could force the federal government to comply with state laws.*

*The move is a response to the Trump administration's decision in February to fulfill the president's 2016 campaign promise that he'd be "opening up the water" for Central Valley farmers who'd been victimized by what he called "insane" environmental rules protecting fish.*

*On Feb. 5, the federal Bureau of Reclamation began the process of reinterpreting the scientific "biological assessments" that are used to set pumping restrictions to keep endangered fish species from being harmed by the pumps.*

*The Trump administration didn't hide its intent to effectively change the outcome of those scientific assessments: "Maximize water supply and delivery" for irrigation districts that belong to the Central Valley Project.*

*On Friday the state made its own move. It began the process of drawing up new rules for the State Water Project, and how it draws water out of the Delta.*

*Because the state and federal Central Valley Project pumps work in tandem, the state could trigger a legal showdown if the state's move ends up formulating stricter rules, as many experts believe. The key issue would be whether the U.S. government would have to comply with state law.*

*"It has not been legally tested," said Barry Nelson, a Bay Area consultant and policy advocate for environmental groups.*

*The state's response isn't just about protecting fish. It's also about protecting the State Water Project's share of Delta water supplies. State officials are worried that increased pumping by the federal government could force the State Water Project to reduce its deliveries out of the Delta to compensate for the federal government's ramped-up pumping. The state project's biggest customer is the Metropolitan Water District of Southern California, which serves 19 million residents.*

### ***Dams are full, but farmers aren't seeing it. What gives?***

[Wayne Western, Jr.](#)

April 18, 2019

<http://sjvsun.com/ag/dams-are-full-but-farmers-arent-seeing-it-what-gives/?fbclid=IwAR294lyK4xekhv-PestZ7-pFueLtI4PWdmZelAFzphWlmzWf-SSh-5u5fTQ>



Shasta Dam

*Yesterday, the United States Bureau of Reclamation [announced that water allocations to south-of-Delta Central Valley Project farmers increased from 55 percent to 65 percent](#) of their total contractual agreements.*

*Just so we all understand the current state-of-play in water:*

*First, the statewide average snowpack is 162 percent of average for this time of year.*

*Second, major dams have been in flood control mode and are now awaiting a huge snowmelt.*

*Third, Shasta Dam – the cornerstone dam of the CVP that supplies farmers who now will receive 65 percent of their contracted amount – is 106 percent of average and just under 90 percent full for this time of year. As most would say: it's full!*

*In 2017, south-of-Delta CVP agricultural contractors received a 100 percent allocation in mid-April.*

*At that time, statewide average snowpack was 164% of average, or a near-mirror image of today.*

*The same numbers, two years apart, lead to 35 percent less water allocated.*

*It's hard to pin the blame on a lack of expectations in forecasting. The California Department of Water Resources water supply forecast summary for April-July shows every single river listed well over 100% of average.*

*In fact, the lowest forecast on the list of rivers is 130 percent of average, with the highest being 180 percent.*

*Simply put: we have snow and we have water.*

*In the next 24 hours, over 200,000 acre-feet of water will flow through the Delta. We will capture 2.4 percent of this water.*

*That means 97.6 percent of this water is headed to the ocean. This fresh water will mix with salt water.*

***Since 1990, south-of-Delta CVP agriculture contractors have seen a 100 percent allocation four times.***

***The years were 2017, 2006, 1998 and 1995.***

***In 16 of those 20 years, their allocations have been at 50 percent or less with more than half of those years occurring after the current biological opinions were established.*** (emphasis added- PR)

*The argument for common sense water management and storage continues to make itself.*

## ***Westlands officials disappointed by water allocation announcement***

By [JULISSA ZAVALA Staff Reporter](#)

April 23, 2019

[https://hanfordsentinel.com/news/local/westlands-officials-disappointed-by-water-allocation-announcement/article\\_458f49ec-86b2-5ef4-8de2-9315e62ba4c3.html](https://hanfordsentinel.com/news/local/westlands-officials-disappointed-by-water-allocation-announcement/article_458f49ec-86b2-5ef4-8de2-9315e62ba4c3.html)

*HANFORD — While all other Central Valley Project contractors' allocations were previously increased to 100% of their contract totals in recent months, the Bureau of Reclamation announced Wednesday that agricultural districts South-of-Delta will receive only 65% percent of their historic water allocation.*

*Westlands Water District is the largest agricultural water district in the U.S., made up of more than 1,000 square miles of farmland in western Fresno and Kings Counties. The roughly 40,000 acres in Kings County are used to grow permanent crops like almonds and pistachios.*

*In light of current hydrologic and reservoir conditions, district officials said this minor increase in water allocation is “astonishing.”*

*“This announcement begs the question, what has to happen before south-of-Delta farmers served by the Central Valley Project can get a full supply?,” said Thomas Birmingham, general manager of Westlands Water District's.*

*Since Oct. 1, 2018, the beginning of the current water year, California has experienced abundant precipitation — so much so that the 2018-19 water year is now classified as wet.*

*Additionally, storage in every CVP reservoir used to supply south-of-Delta CVP agricultural water service contractors was more than 100% of average for that date and remain in flood control operation.*

*Birmingham said reduced allocations in this type of water year needlessly increases the amount of overdrafted groundwater basins and makes it nearly impossible for farmers to effectively plan their operations.*

*Westlands officials said this allocation demonstrates the consequences of “ineffective and unchecked” biological regulations issued under the Endangered Species Act.*

## **Desalination**

It has been some months since we have reported on desalination, so below are a variety of articles that have appeared relatively recently. Space limitations require that they all be severely excerpted. They appear in no particular order.

The desalination plant in Carlsbad which went on-line four years ago, continues to provide about 7% of the water required by San Diego. *Poseidon Water*, which owns and operates the plant, continues to push for a similar plant in Huntington Beach.

### ***Research Reveal 85% of Orange County Voters Support a Desalination Plant in Huntington Beach***

***Eighty-four percent also express concern about water shortages in Southern California, with more than two in five noting they would consider moving out of Orange County if the issue continued to persist***

April 22, 2019 11:00 ET | **Source:** Poseidon Water

<https://www.globenewswire.com/news-release/2019/04/22/1807387/0/en/Research-Findings-Reveal-85-of-Orange-County-Voters-Support-a-Desalination-Plant-in-Huntington-Beach.html>

HUNTINGTON BEACH, Calif., April 22, 2019 (GLOBE NEWSWIRE) -- *Poseidon Water* today released the findings of “Assessing Perceptions and Impact of Water Supply Resources,” a survey examining 1,000 registered Orange County voters’ perceptions and attitudes about water supply, conducted by [Wakefield Research](#).

#### ***Solutions-Oriented Approach***

When it comes to solutions, 88% of respondents have a somewhat favorable to extremely favorable opinion of seawater desalination and 85% support a desalination plant being built in Huntington Beach specifically. Many voters believe Orange County would benefit in multiple ways from a seawater desalination plant, primarily by having a reliable water source, regardless of drought (70%) and reduced dependence on imported water (63%).

According to Orange County Water District Director Cathy Green, “The proposed Huntington Beach Desalination Project is the single largest source of new, local drinking water supply available to Orange County. Desalination is a cost-competitive, regional insurance policy against the unrelenting effects of climate change.”

### ***Desalination: It’s time to provide Californians with a reliable, resilient water supply***

<https://www.whittierdailynews.com/2019/02/15/its-time-to-provide-californians-with-a-reliable-resilient-water-supply/>

By [Barbara Boxer](#)-- Former U.S. Senator from California  
February 15, 2019

*As Californians, I believe we must look west to the Pacific Ocean, where seawater desalination offers a proven, climate change-resilient solution. No longer do we need verification from Israel, the Middle East and Australia, where desalination facilities have literally helped save lives and fend off debilitating droughts due of climate change. Now, we can look much closer to home — in San Diego.*

*I join Atkins in advocating for the Huntington Beach Desalination Project, which will provide 50 million gallons of fresh drinking water per day, restoring our aquifers and ensuring residents’ needs are met under the conditions that will continue to be brought on by climate change.*

## ***illuminating Water Filtration Could Reduce The Energy Cost Of Desalination***

[Natalie Parletta](#)

Contributor

April 11, 2019

<https://www.forbes.com/sites/natalieparletta/2019/04/11/illuminating-water-filtration-could-reduce-the-energy-cost-of-desalination/#597a743d2984>

*By revealing the molecular structure of membranes used to convert seawater to drinking water, researchers may have shed light on how to improve the membranes' permeability and reduce the high energy cost of reverse osmosis.*

*Reverse osmosis is the primary technique used for desalination. Globally, the method produces 25,000 million liters of fresh water every day, according to the International Water Association.*

*Reverse osmosis uses a thin polymer barrier layer to create a semipermeable membrane. To investigate the membrane's molecular structure, the researchers used extremely bright x-ray beams, say co-authors Ocko and Benjamin Hsiao from the Brookhaven National Laboratory and Stony Brook University in the U.S.*

*During reverse osmosis, Ocko and Hsiao explain, the membranes sort dissolved salt ions and other molecules contained in brackish water or seawater so that only pure water can flow through.*

*The water needs to be pressed through the membranes with force, which incurs the high energy cost – to make 100 gallons of fresh water uses around one kilowatt-hour, comparable to using a 100-watt light bulb for 10 hours.*

*“So ... if the membrane could filter the water with ‘less resistance’ but result in the same cleanliness, you would need less energy to push the water through,” say Ocko and Hsiao.*

*By understanding the membrane's molecular structure, the researchers hope to refine it so it holds back undesired atoms and molecules while being permeable so the water can pass through with less energy.*

*“Even small improvements in the performance of filtration membranes would result in huge energy and cost savings globally,” says Hsiao.*

## ***Study of brine discharge from desalination plant finds good news and bad news***

Source: University of California - Santa Cruz

January 31, 2019

[https://www.sciencedaily.com/releases/2019/01/190131143433.htm?utm\\_source=feedburner&utm\\_medium=feed&utm\\_campaign=Feed%3A+sciencedaily%2Fearth\\_climate%2Fecosystems+%28Ecosystems+News+--+ScienceDaily%29](https://www.sciencedaily.com/releases/2019/01/190131143433.htm?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+sciencedaily%2Fearth_climate%2Fecosystems+%28Ecosystems+News+--+ScienceDaily%29)

*Before the Carlsbad Desalination Plant in Southern California began operations in 2015, scientists at UC Santa Cruz recognized an important opportunity to study the effects of the high-salinity brine that would be discharged from the plant into coastal waters. Starting in 2014, they collected measurements of water chemistry and biological indicators in the area so they could compare conditions before and after the plant began discharging brine into the ocean.*

*The results of their study, published January 25 in *Water*, include good news and bad news. The good news is that they found no significant changes in the organisms living on the seafloor and other biological indicators. The researchers attributed this to the long history of industrial activities in the area, including cooling water discharge from a power plant adjacent to the desalination plant, which had already perturbed the natural setting.*



*The bad news in the study is that the salinity level in the discharge zone exceeded the permitted level, and the salinity plume extended much farther offshore than permitted under the California Ocean Plan.*

## **Turning Desalination Waste Into A Useful Resource**

By David L. Chandler, [MIT News](#)

February 13, 2019

<https://www.wateronline.com/doc/turning-desalination-waste-into-a-useful-resource-0001>

*Process developed at MIT could turn concentrated brine into useful chemicals, making desalination more efficient.*

*The rapidly growing desalination industry produces water for drinking and for agriculture in the world's arid coastal regions. But it leaves behind as a waste product a lot of highly concentrated brine, which is usually disposed of by dumping it back into the sea, a process that requires costly pumping systems and that must be managed carefully to prevent damage to marine ecosystems. Now, engineers at MIT say they have found a better way.*

*In a new study, they show that through a fairly simple process the waste material can be converted into useful chemicals — including ones that can make the desalination process itself more efficient.*

*The approach can be used to produce sodium hydroxide, among other products. Otherwise known as caustic soda, sodium hydroxide can be used to pretreat seawater going into the desalination plant. This changes the acidity of the water, which helps to prevent fouling of the membranes used to filter out the salty water — a major cause of interruptions and failures in typical reverse osmosis desalination plants.*

*The concept is described today in the journal Nature Catalysis and in two other papers by MIT research scientist Amit Kumar, professor of mechanical engineering John. H. Lienhard V, and several others. Lienhard is the Jameel Professor of Water and Food and the director of the Abdul Latif Jameel Water and Food Systems Lab.*

*Sodium hydroxide is not the only product that can be made from the waste brine: Another important chemical used by desalination plants and many other industrial processes is hydrochloric acid, which can also easily be made on site from the waste brine using established chemical processing methods. The chemical can be used for cleaning parts of the desalination plant, but is also widely used in chemical production and as a source of hydrogen.*

*The method of converting the brine into useful products uses well-known and standard chemical processes, including initial nanofiltration to remove undesirable compounds, followed by one or more electro dialysis stages to produce the desired end product.*

## **California Touts Desalination, but Take It With a Grain of Salt**

Posted Feb. 27, 2019, 4:15 AM

<https://news.bloombergenvironment.com/environment-and-energy/california-touts-desalination-but-take-it-with-a-grain-of-salt>

*California has a water problem, drought or no drought. The new administration has signaled a shift in water policy by specifically talking about turning salty water potable after Gov. Gavin Newsom (D) said he would support only a single tunnel as part of the project known as WaterFix, rather than the two tunnels his predecessor pushed for to bring water to the state's southern half.*

*But talking up desalination is much easier than making it a reality. In the four years since California updated its desalination regulations, none of the eight applications for new or expanded facilities has been approved. Meanwhile, the costs for the projects keep rising and the state has few details about its plans.*

*If California is serious about making desalination part of its water strategy, it has to untangle a review process that includes the local water board, State Lands Commission, California Coastal Commission, and local governments, advocates said.*

### ***The Waiting Game***

*California has 11 desalination plants operating now from just south of San Jose to near San Diego.*

*Under review are another eight new projects or existing ones seeking expanded permits under new 2015 regulations included in the state Water Quality Control Plan for Ocean Waters of California, Ellis said.*

*No permits under that 2015 plan have been issued while project costs rise.*

### ***1.3 Million Awarded in Grant Funding for Water Desalination Projects***

*Published: April 12, 2019*

<https://water.ca.gov/News/Blog/2019/April-19/Grant-Funding-Awards-for-Water-Dealination-Projects>

*Four projects were awarded for a total of \$1.3 million of the available funds. DWR/2019*

*DWR released the first round of projects to be awarded grant funding by the Water Desalination Grant Program as part of the [Continuous Application Process \(CAP1\)](#). The following water districts and cities will receive a total of \$1.3 million for the construction, planning, and design of potable water desalination facilities for both brackish and ocean water sources.*

- The West Basin Municipal Water District received \$547,295 in grant funding for the C. Marvin Brewer Desalter Facility Improvement Project, a construction project that will install a new well at an existing groundwater desalination facility.*
- The West Basin Municipal Water District received \$500,000 in grant funding for an environmental documentation project to prepare the final Environmental Impact Report for a proposed ocean desalination facility.*
- The City of Thousand Oaks received \$111,326 in grant funding for a feasibility study to assess the potential to desalinate water from a former golf course irrigation well for both potable and irrigation water supply.*
- The City of Simi Valley Water Department received \$144,685 in grant funding for a feasibility study to assess the potential to desalinate brackish groundwater in the Simi Valley Groundwater Basin for potable water supply.*

*These awards assist in the planning and implementation of projects that support local water supply reliability. DWR is currently reviewing the next group of applications, referred to as CAP2. Draft funding recommendations are expected to be released in early May.*

## **Credit For Infrastructure**

The following are a few excerpts from an book review by Paul Gallagher. The excerpts discuss how to

generate credit for building infrastructure, based on the historical precedents of President Abraham Lincoln's "Greenback" policy and the use of the Reconstruction Finance Corporation by President Franklin Roosevelt in the 1930s.

Also in this section is a nine minute video: "*Congress-- Put America to Work with the National Infrastructure Bank!*"

## ***What Is America's National Credit? Can We Use It for Real Economic Growth?***

*Review by Paul Gallagher*

*This article appears in the [April 19, 2019 issue](#) of **Executive Intelligence Review**.*

[https://larouhepub.com/other/2019/4615-what\\_is\\_america\\_s\\_national\\_cre.html?fbclid=IwAR2WYmMhgXXtWLMLhCw4C3OzEAAtBAH-llWFaqd1\\_jsZgSkqMNovoukzPAaM](https://larouhepub.com/other/2019/4615-what_is_america_s_national_cre.html?fbclid=IwAR2WYmMhgXXtWLMLhCw4C3OzEAAtBAH-llWFaqd1_jsZgSkqMNovoukzPAaM)

*All realistic estimates of the national credit that must be mobilized for basic economic infrastructure investments, are in the multiple trillions. The relatively conservative American Society of Civil Engineers creates annual "report cards" which do not deal with new infrastructure technologies like nuclear desalination and propulsion, high-speed and mag-lev rail, or fusion technologies, but only with restoring and upgrading the nation's existing basic economic infrastructure. Yet the Society estimates \$2.4 trillion must be invested in just five years, a very short time in economic terms. Other serious evaluations, which incorporate from 50 to 100 significant projects—and not even the most ambitious ones—are in the \$3-5 trillion range, up to \$8 trillion by one of China's state investors who wished to invest in infrastructure renewal in America.*

### ***Direction by the Fed—To Wall Street***

*The Federal Reserve Bank, which prints America's currency now, directs its issuance of that currency very precisely—to the largest private banks, for the purpose of building their capital reserves and their liquidity, even far in excess of what is required by regulation. These banks, unfettered by any Glass-Steagall regulations, use their excess reserves as the basis for speculation. The Fed has printed more than \$4 trillion in new currency since the 2008 crash, directed to this purpose—even including the reserves and liquidity of London and European banks!*

*The chair and governors of the Fed, a "reserve bank" for banks, say this is their charter's mandate. It is of no use to the U.S. physical economy. This is what Fed supporters call its "independence" from the Federal government's purposes.*

*If the Fed were instructed by Congress to issue trillions in currency for any sort of infrastructure investments, it would fight this, to keep using its control of currency to control interest rates and to feed liquidity reserves to money-center banks. And the Fed would still be run by major bankers, bank traders and academic economists, with no expertise in investing credit in productive, high-technology new infrastructure.*

*Worse, the technologies it would be funding in some "Green New Deal" are low-energy-density, expensive facilities which can litter the land anywhere and will lower the technological level of the economy. It would be lending the new Federal Reserve notes to hundreds of state and community banks newly created for the haphazard "greening" of locales, lowering productivity of industry and agriculture. Unsupported by productivity increases or tax revenue, this new \$2 trillion could trigger rapid inflation.*

*As LaRouche warned, "disaster would ensue" from Fed control of such a chaotic currency issuance.*

*Worse, the promoters want to reduce the human population to “save the planet.”*

### ***A National Credit Institution***

*Congress and the President have to direct the issuance of national credit to those investments which cause the greatest increase in productivity in the economy—in new basic infrastructure and in revolutionary technologies like plasma processes, fourth-generation fission, and fusion. This must include protective infrastructure particularly against storm and flood—productivity increase emphatically includes ending the senseless, repeated loss of many lives and tens of billions in wealth from flooding rivers that could be managed and storm surges that could be stopped by new infrastructure.*

*The Treasury now can issue new credit and currency to agencies or authorities specifically tasked with carrying out missions of new infrastructure or crash programs of science and technology research and development. A new Reconstruction Finance Corporation modelled on President Franklin Roosevelt’s RFC can organize this process.*

*But Lincoln’s Administration combined the direct issuance of Treasury credit as new Greenback notes, with the issuance of Treasury notes through a system of Federally chartered commercial banks, essentially capitalized with Treasury bonds.*

*A new Bank of the United States can be created by Congress, capitalized both by the Treasury and by private holders of Treasury securities. A key advantage: It can bring back into new infrastructural investment some of the dollar-based liquid assets held overseas—recall that three-quarters of dollar holdings are abroad.*

*That Bank can be the instrument to multiply many times the tax revenue assigned to it to pay interest or dividends on the long-term capital subscribed or loaned to it. It will enable the issuance of new currency on a large, but controlled, scale through this Bank. It will operate as a large commercial bank, funding projects and technologies, including in partnership with other major nations’ national credit institutions. Therefore it must be run by directors and staff experienced in scientific and construction projects as well as in banking. And it must operate in cooperation with private banks under Glass-Steagall regulation.*

### ***Video: Congress-- Put America to Work with the National Infrastructure Bank!***

<https://www.youtube.com/watch?v=oHWQcy9qfH0&feature=share>

*Published on Jan 30, 2019*

*An 9 minute video from <https://americansystemnow.com/>*

*The National Infrastructure Bank (NIB) is a flagship policy proposal to establish an infrastructure bank similar to Alexander Hamilton's First Bank of United States. Such banks existed 4 times in our nation's history, and are largely responsible for building almost all our nation's infrastructure -- from early transportation and industrialization through FDR's New Deal and mobilization for WWII. This NIB would reinstate Alexander Hamilton's tradition. It would work by taking in \$4 Trillion in existing US Treasuries held by the public, in exchange for stock in the NIB paying an extra 2% interest rate above the Treasury rate. The Bank would monetize the \$4 Trillion, and lend it out to fully fund all of America's infrastructure projects, using the latest technologies, while creating no new Federal debt. Just like the 4 Banks that came before, the NIB would create millions of new, great-paying jobs, supercharge economic growth, make business investment in America profitable again, and re-establish the United States as an economic superpower of the 21st century.*

## **Feature: Infrastructure Means a Total Economy Policy**

The following excerpted article highlights a principle of economics that few so-called economists today, and even fewer political leaders, recognize: Infrastructure is not an “add-on,” but the fundamental foundation of a healthy economy. The ongoing Midwest flooding exemplifies that principle. The failure to follow-through with the necessary flood-control infrastructure that was planned in the 1940s, has, in 2019, resulted in 10s of billions in damage. That is far less than the cost would have been in fully building the Pick-Sloan plan.

The full article can be accessed with the below link.

### ***A NEW ‘MISSOURI BASIN AUTHORITY’***

#### ***Midwest Flooding Is National Emergency: Space-Age Mobilization Required***

by EIR Staff

This article appears in the [April 26, 2019 issue](#) of *Executive Intelligence Review*.

[https://larouchepub.com/eiw/public/unlisted/2019/eirv46n16-20190426/Omnjbo90xc\\_o/4616-a\\_new\\_missouri\\_basin\\_authority.html?utm\\_source=sendinblue&utm\\_campaign=EIR\\_April\\_26&utm\\_medium=email](https://larouchepub.com/eiw/public/unlisted/2019/eirv46n16-20190426/Omnjbo90xc_o/4616-a_new_missouri_basin_authority.html?utm_source=sendinblue&utm_campaign=EIR_April_26&utm_medium=email)

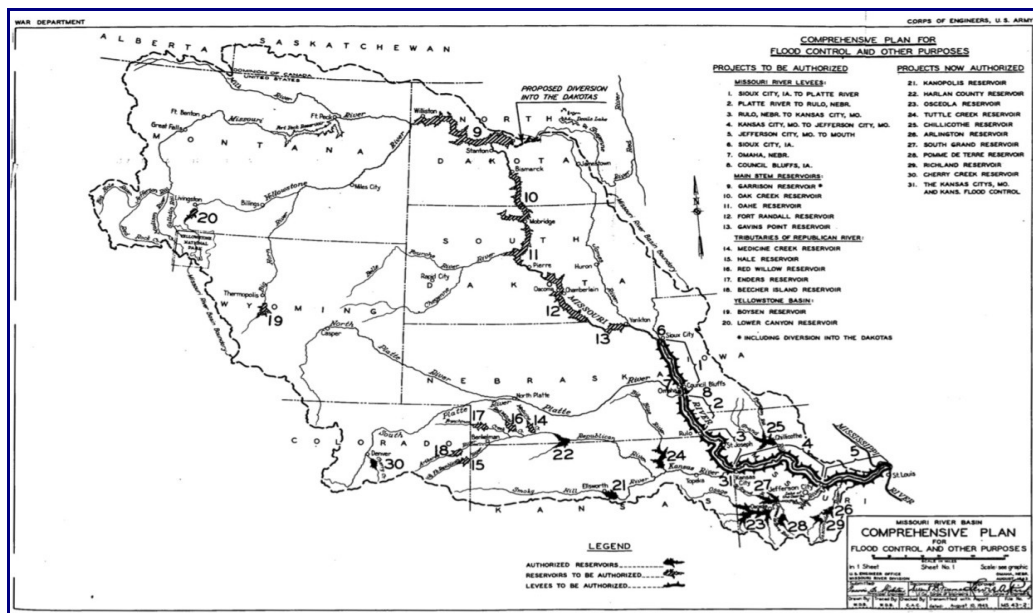


*Aerial view of what's left of the Spencer Dam on the Niobrara River in Nebraska, which gave out March 14, 2019. (Photo: State of Nebraska)*

*April 20—The new “Moon-Mars” directive by President Donald Trump, committing the nation to an accelerated return to space, is the necessary spirit for the space-age mobilization required to respond to the severe flooding and food production emergency now playing out in the Missouri-Upper Mississippi River Basins. That spirit will enable us to deal with the vast damage, and also act to create a new, modern platform for higher productivity in the Midwest and nationally. From immediate flood relief, to a full build-out of needed water management, new rail lines, nuclear power, and other infrastructure in the center of the continent, and population growth, not depopulation, in these rural counties—this is the right disaster response.*

*There is no “natural” reason for the vast damage now taking place in the multi-state region, from the Dakotas south through Nebraska, Iowa, Kansas, Missouri, and into the Lower Mississippi. The Federal “Flood Control Act of 1944” mandated the building of a “Missouri River Basin Project,” which was an integrated plan encompassing more than 100 dams on the tributaries and mainstem of*

*the Missouri River, plus hundreds of miles of levees, new irrigation areas, navigation and other features.*



Pick-Sloan: The Missouri River Development Project

The map here shows features of the “Comprehensive Plan” for flood control in the Missouri River Basin, proposed in early 1944 by Col. Lewis A. Pick of the Missouri District of the U.S. Army Corps of Engineers, after the devastating Missouri River flooding in 1943. Later in 1944, the Pick Plan was combined with other plans proposed by William Glenn Sloan of the Bureau of Reclamation for the Western Missouri Basin, for irrigation, erosion control, and other improvements, to soon become a joint Missouri River Basin Project approved by Congress and President Franklin Delano Roosevelt by the end of the year, as part of the “Flood Control Act of 1944.”

*Additional legislation authorized upper watershed dams to be built on smaller feeder streams, under the U.S. Agriculture Department’s Watershed Protection and Flood Prevention Act of 1954.*

*All these improvements taken together would have prevented the destruction we are now seeing in the High Plains, and expected to continue on in to May. But this Missouri River Basin Project was never completed.*

*The very limited infrastructure that was built involved five new mainstem dams (constructed 1946-1966) and a small number of lesser dams, levees, irrigation programs, etc. Therefore, huge flood disasters have repeatedly occurred over the past half-century.*

*The Missouri, second longest river in North America, has the largest watershed in the United States. The Missouri Basin is home to a large share of the corn and soybean output of the U.S., which in turn, accounts for a third of total world production. Much of this area is now in crisis. The National Weather Service forecasts above-average rainfall to continue in the Missouri Basin on into June.*

*After the last two huge flood disasters in the Upper Midwest in 1993 and 2011, EIR printed a full report on the original 1944 water management program, the Missouri River Basin Project, called the Pick-Sloan Plan, after its design engineers, Gen. Lewis A. Pick from the Army Corps of Engineers and William Glenn Sloan from the Bureau of Reclamation.*

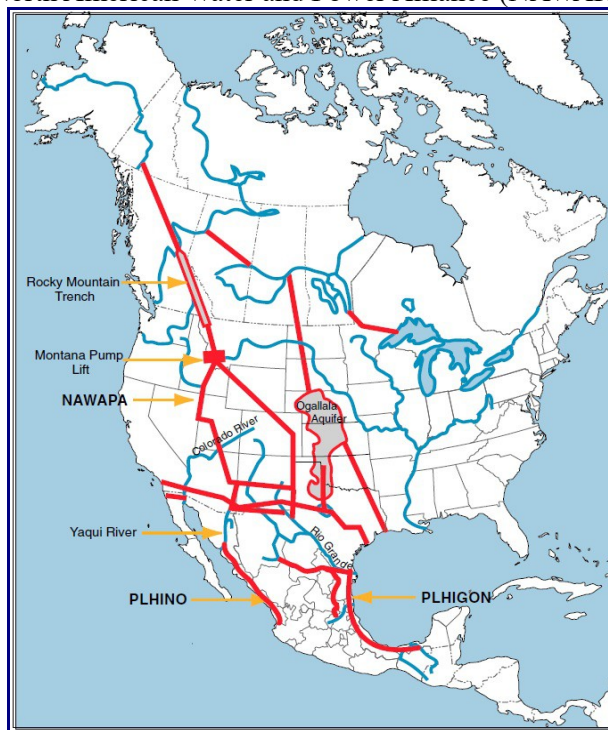
*It is time to finally act on the Pick-Sloan Plan, as updated by experts. This is the needed agenda focus of the newly formed Missouri Basin Governors’ Task Force, whose first meeting April 3 in Council*

*Bluffs, Iowa called for actively building flood control; and for a series of public meetings by the Army Corps in the Basin. It is citizens' leadership that will force the action.*

*Mobilizing for action in the Missouri and Upper Mississippi Basin, also calls for finally moving on relevant disaster defense systems, and infrastructure build-up for all the other obvious places across the country hit by, or vulnerable to disasters, for want of infrastructure.*

*Most outstandingly, this includes, the New York/New Jersey region, hit by Hurricane Sandy in 2012 and still waiting for a sea wall and other defenses, and modernized transportation, etc.; the Western drylands, hit repeatedly by floods and wildfires, as in California, for want of the continental-scale NAWAPA (North American Water and Power Alliance, proposed back in the 1960s); the Gulf Coast and Florida peninsula, and most outstandingly, the need to fully build up Puerto Rico, constructing modern systems of transportation, power, soft infrastructure—schools, medical services, housing, and a port system to figure in the Caribbean's position in the newly expanding world Silk Road.*

North American Water and Power Alliance (NAWAPA)



The map here shows the North American Water and Power Alliance (NAWAPA), which had widespread support in Washington in the 1960s, to divert a portion of run-off going into the Arctic, southward throughout the entire dry western regions. The plan, which also involved hydro-power, would foster favorable biospheric effects through greening of large areas of now-barren desert. Hydrologists have studied how to make the core NAWAPA plan coherent with the Missouri-Mississippi Basins—to augment the flow in these rivers during drought; and to divert westward the flow, when the rivers were flooding, as now. (Sources: Parsons Company, North American Water and Power Alliance Conceptual Study, Dec. 7, 1964; Hal Cooper; Manuel Frías Alcaraz; EIR.)

*All this is coherent with and will contribute to the nation's commitment to resume manned space missions, as announced by President Trump. In his Space Policy Directive No. 1, issued December 2017, Trump stated, "This time, we will not only plant our flag and leave our footprint [on the Moon], we will establish a foundation for an eventual mission to Mars and perhaps, some day, to many worlds beyond."*

*This was the lead statement on the new White House Fact Sheet released March 24, setting a five-year*

*goal for a new manned mission to the Moon.*

*Implied in this imperative, is the long-overdue revival of U.S. industrial capacity and productivity, in collaboration with other nations, to produce the metal, plastics, chemicals, fixtures, designs, machine tools, and skilled people, to carry out the mission.*

*All the elements required for space activity call upon the ability to produce the highest precision requirements. But the components for disaster defense on Earth, and modern infrastructure-building likewise are a challenge to provide in quantity and quality. In the case of water management, this ranges from brigades of heavy construction machinery, to culverts, lock and dam gates and fixtures, to pipes, pumps and turbines.*

*The Rust Belt must be restored as a powerhouse in this process. Plus, putting the space program, and disaster response forward as the same mission, breaks the current impasse on how to fund U.S. infrastructure-building and thus get it going again.*

*Five years ago, statesman and economist Lyndon LaRouche outlined the steps needed to create the national credit and commitment to carry this through. Released in 2014, his [proposal](#) is called “Four Laws to Save the U.S.A. Now!....”*

### **Create the Credit and Full Funding**

*Following Federal disaster emergency aid to farm households and businesses across the affected region, the issuance of national credit can begin with the creation of a Missouri Basin Reconstruction Authority (MBRA) charged with creation of a new flood-control and economic infrastructure. Its leadership will need engineering, agricultural and business experience, and to work in cooperation with the U.S. Army Corps of Engineers, Agricultural Department and farm organizations.*

*Critical cooperation with the National Aeronautics and Space Administration (NASA) will be needed because of the importance of laser and space-based location and reconnaissance technologies to both water management in great river basins, and agriculture generally; and for the development of new construction and other materials and techniques.*

*For the MBRA to deploy the billions of dollars required to complete the Pick-Sloan Plan and related transportation and power infrastructure projects, it will have to receive credit from a national credit institution modelled on the Roosevelt Administration's Reconstruction Finance Corporation or the “Hamiltonian” national banks of the 19th century. This institution is long, long overdue for creation by Congress, given the national deterioration and the major failures of infrastructure across North America, not to speak of the long-standing plain lack of critical economic infrastructure, as painfully shown in these repeated Upper Midwest flood disasters.*

*The Treasury can simply issue special U.S. Treasury bonds for the purpose of funding the operations of a new Reconstruction Finance Corporation; it can organize capitalization of a new national bank for infrastructure by itself and by private investors; or it can issue its own currency, Treasury notes, to provide the operating capital for a national credit institution, supported by new taxes collected over a long period into the future.*

*As for the Missouri Basin Reconstruction Authority itself, it can combine its own spending—especially working with the Army Corps of Engineers on the Pick-Sloan Plan itself—with lending to state and county agencies for the restoration of their flood-destroyed basic economic infrastructure at the same or a higher technological level.*