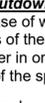


CALENDAR ALERTS

- Feb. 16th** - DPC Subcomm. mtg, Levee Funding [Feasibility Study](#), 1416-9th St., 10:30 am
- Feb. 16th** - Merced hearing, draft 2017 CVFPP, 678 W. 18th St., 6:00-8:00 pm
- Feb. 24th** - Sacramento hearing, draft 2017 CVFPP, 915 I St., 10:00 am - Noon
- Mar. 1st** - Deadline to comment on DPC Levee Funding Feasibility Study and [Appendices](#)
- March 3rd** - [Deadline](#) to comment on [O&M EIR](#) for SRFCP
- March 9th** - Woodland hearing, draft 2017 CVFPP, 2001 East St., 6:00-8:00 pm
- Mar. 15th** - CCVFCFA Annual [Food Forum](#), 1:00 am - 1:30pm @ Holiday Inn Sacramento Downtown, 300 J Street, Sacramento.
- Mar. 9th** - Stockton hearing, draft 2017 CVFPP, 2101 E. Earhart Ave., 10:00 am - Noon
- Mar. 31st** - [Comments due](#) for Draft Central Valley Protection Plan Update and EIR.

** = [New Calendar Alert](#)

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KEEPING UP

**Check [CCVFCFA Website](#) for more information on topics in Flood Flash

[Spillway at Oroville Shutdown after Portion of Concrete Channel Collapses](#)

During a controlled release of water for flood safety from Lake Oroville on February 7th, [video by local residents](#) showed pieces of the concrete spillway washing away. DWR [halted water releases](#) from the reservoir a few hours later in order to conduct a visual inspection and were shocked to see a [large hole](#) that spanned the width of the spillway and about 30 feet deep.

Despite serious concerns about further damage to the spillway, DWR decided they had to [resume releasing](#) water because the inflows to Oroville had increased to 190,000 cfs by Thursday. Eventually the inflows outpaced the spillway releases and on February 12th the water crested the top of the [emergency spillway](#) and started pouring out of the reservoir for the first time in the dam's 48-year history.

Erosion below the unlined emergency spillway soon raised fears about stability of the concrete wall and at around 4:30 p.m. DWR informed local officials that the emergency spillway was in danger of imminent failure and the Butte County Sheriff announced the [mandatory evacuation](#) of communities below the dam. Amazingly, about 180,000 residents from Oroville, Yuba City, Marysville and other towns responded quickly and the entire area was one huge ghost town by the next morning.

Once water stopped pouring over the top of the emergency spillway, they immediately began performing emergency remediation and repairs by dropping tons of rock and pouring concrete to armor the eroded base of the emergency spillway and dissipate any further erosion if water begins spilling over again as storms and snow melt continues. DWR also continued releasing 100,000 cfs down the main spillway to lower lake level before another series of storms start later in the week.

[Federal regulators](#) have already initiated discussions with DWR regarding what went wrong, including reviewing past inspections and repairs of the spillways. Questions about DWR's decision to not line the hillside below the emergency spillway have surfaced due to [filings by environmental agencies during relicensing](#) of the dam that raised concerns about the potential for erosion below the emergency spillway during severe storm conditions. For evacuated citizens who fear they may still be in danger, it's too late for any "coulda, woulda, shoulda" regrets that DWR may have.

Residents received a Valentine's Day present when Butte County [lifted the mandatory evacuation](#) and downgraded it to an evacuation warning, advising people to stay prepared to leave again if necessary.

Spillways are not the only emergency work going on at Oroville dam. DWR is also busy [removing debris](#) from below main spillway that is affecting operation of Hyatt Powerhouse. An accumulation of concrete, rocks, dirt, and vegetation that eroded from both spillways have raised the water level in the Diversion Pool to a level that is preventing operation of the power plant. PG&E is also working to move transmission towers higher up toward the main spillways gates due to erosion at their bases from both spillways, but may have to delay while DWR completes emergency repairs.

[Downriver from Oroville Dam Flood Control Districts Quickly Shore Up Levees](#)

In response to rising water in the Feather River after January storms, the Sutter Butte Flood Control Agency (SBFCA) was already busy implementing emergency work on a section of the [Feather River levee](#) on the Yuba City side before problems surfaced at the Oroville Dam. Using a quick-setting substance similar to concrete, SBFCA crews were able to complete work on the 400-foot stretch before water reached the base of the levee at the 5th Street Bridge.

With the coordinated assistance of DWR, Teichert Construction, and MBK Engineers, Reclamation District 1001 spent Valentine's Day shoring up an 850-foot section of levee along the [Sacramento River in Verona](#), just south of Nicolaus. Heavy equipment danced around each other as they busily added rock to the land side of the levee. A stronger stability berm is also being considered by the U.S. Army Corps of Engineers as a future improvement. The district is adding sandbags to a few boils along the Garden Highway where the Sacramento and Feather Rivers converge, and is monitoring another 2-mile section along the Feather River between Cypress and Laurel Avenues that is showing signs of distress. This levee section is scheduled for major improvement in May, but the flood control agency will perform some short-term remedial measures to protect the levee through a very long runoff season.

[Evacuations in Delta](#)

Considering the relentless rain with high tides and winds as a kicker, the Delta levees are performing amazingly well, but there are cracks appearing – literally. On [Tyler Island](#) a crack was big enough to compromise integrity of the levee, but luckily there was no water coming through. The section of concern is along the north fork of the [Mokelumne River](#), west of Dead Horse Island.

Due to possible levee failure, Sacramento County issued a mandatory [evacuation order](#) on February 13th for the 20 or so residences on Tyler Island. The levee situation did not pose an immediate threat to Walnut Grove, but those residents were encouraged to take all necessary actions to prepare for possible evacuation at some future point. The county also advised evacuations in [Pt. Pleasant](#).

Reclamation District 536 immediately began implementing flood fighting measures with the assistance of 45 CA Conservation Corps members. On Valentine's Day, crews proceeded to place huge [loads of rock from a barge](#) on the water side of the levee to stabilize the remaining portion with weight. Then work began on the landside and repair of the large hole where two-thirds of the levee had slipped off. Evacuation will remain in effect while emergency repairs are conducted.

As a precautionary measure to prevent the type of flood damage experienced in 1997, the neighboring island, [McCormack-Williamson](#), implemented a proactive measure to intentionally [lower a portion of the levee](#) on the eastern end in order to control floodwater. The effort included cooperation of adjacent islands and use of helicopter to lower earth moving equipment into place.

The rising water in January and early February are a stark reminder of the damage that levees in the legal Delta and Suisun Marsh can suffer during significant storms with high tides and high flows: [Grizzly](#), [McCormack-Williamson](#), [Glanville](#), [Van Sickle](#), and [Tyler](#) which included mandatory [evacuation order](#) by Sacramento County. The [San Joaquin River](#) is also running high and threatening [flooding further south](#). The stress on the Delta levees is just beginning, because water surface levels will likely stay high as the enormous snowpack melts through early summer.

[Sacramento Weir Gates Opened for Second Time](#)

One month after closing the gates on January 10th, DWR started re-opening Sacramento Weir gates for a [second time](#) on evening of February 8th. They progressively [opened more gates](#) as wet weather continued until nearly [all gates were open](#) by February 10th. Each gate allows 1,500 cfs to enter the Yolo Bypass from the Sacramento and American Rivers.

This is the first time since the 1985-86 flood season that the Sacramento Weir has been opened twice in one year. Maybe we could see an unprecedented third time if the extremely large snowpack starts melting too fast when warm weather returns?

[Governor Activates State Resources and Requests Federal Aide for Flood Emergency](#)

In addition to the initial Proclamation Declaring a State of Emergency for more than fifty counties due to relentless winter storms in early January, Governor Brown issued a second Proclamation on [February 12, 2017](#) to invoke his emergency police powers to ensure the full extent of the State's resources are available to respond to the Oroville dam safety situation. State assistance includes activation of the National Guard, suspending state laws to waive compliance with CEQA, allowing quick procurement of equipment and services, and authorizing the California Office of Emergency Services (CalOES) to offer assistance to Butte, Sutter, and Yuba counties under the State Disaster Assistance Act.

Governor Brown also sent a [letter to President Trump requesting a presidential Declaration](#) of Disaster and [assistance from FEMA](#) on the evacuation efforts below Oroville Dam and to [bolster state and local recovery efforts](#) following consecutive storms causing flooding, mudslides, erosion, power outages, and damage to critical infrastructure such as levees and highways. President Trump gave California a Valentine's Day gift when he [approved the Governor's request for federal aid](#).

In the meantime, CalOES has activated the [State Emergency Operations Center](#) located in Sacramento to coordinate emergency response activities of state and federal agencies.

[Maintenance of California Infrastructure](#)

In response to [President Trump's commitment](#) to provide \$1 trillion in federal funding to improve aging infrastructure across the nation, Governor Brown sent a list of priority water, transportation, and energy [infrastructure projects](#) with a \$100 million price tag.

Based on the serious damage to Oroville reservoir, California's request could triple once the cost to repair the critical flood and water supply facility is added to the list.

[Legislators Form Delta Caucus to Increase Awareness and Collaboration](#)

A coalition of State Senators and Assemblymembers representing districts in the Delta [announced formation](#) of a [Delta Caucus](#) to provide a venue for legislators to collaborate and be updated on the important issues affecting the region.

To help them formulate unified positions on important Delta policy issues, legislators will rely on various agencies and organizations to provide briefings to the Caucus and their staff. The nine founding members of the Caucus are: Senators Dodd, Gallegos, Glazer and Pan, and Assemblymembers Aguiar-Curry, Cooper, Eggman, Grayson, and Frazier.

[New Leadership at DWR](#)

Governor Brown recently [appointed William \("Bill"\) Croyle](#) to serve as Acting Director of the Department of Water Resources and [Cindy Messer](#) as Assistant Chief Deputy Director. In his nine years with DWR, Bill has served in many positions including more than six years as Chief of Flood Operations. Cindy worked for several years on Delta/CalFed issues at DWR and the Delta Stewardship Council, and will now advise the Director and Chief Deputy Director on issues impacting statewide water management. Both will certainly have their hands full dealing with protecting infrastructure and managing flood flows in a flood season that will last for months as more rain is compounded by melting snowpack.

IN THE NEWS

(Clicking the links will take you to news organization websites, where you can read the full stories. CCVFCFA is not responsible for content on these external sites.)

- [Water, water everywhere in California – and not enough reservoir space to store it](#) - Sacramento Bee
- [California snowpack reaches 173% of average, replenishing a third of state's 'snow-deficit'](#) - LA Times
- [Release or Store? California Agencies Manage Reservoir Flows](#) - Sierra Sun Times
- [January breaks record in rainfall](#) - Ceres Courier
- [Commentary: Fixing California water storage is not zero-sum game](#) - East Bay Times
- [Atmospheric Rivers: Five Breakthroughs in Analyzing West-Coast Storms](#) - News Deeply
- [Yolo County OK's storm damage emergency](#) - Daily Democrat
- [Release or store? Agencies manage reservoir flows](#) - Ag Alert
- [Sites Reservoir project takes step forward](#) - KCRA
- [With rain clouds looming, Sacramento residents rushed to buy flood insurance](#) - Sacramento Bee
- [Watch crews closing gates to Sacramento Weir, and beautiful views of waterway](#) - Sacramento Bee
- [Great Flood of 1862 was worst in California history](#) - Lodi News
- [Folsom Lake less than half full after recent rains. Residents ask: Why so dry?](#) - Sacramento Bee
- [RESERVOIRS AND WATER CAUCUS](#) - The Reporter
- [RESERVOIR AND WATER CAUCUS for February 6, 2017](#) - Maven's Notebook
- [Bay area storms: Wet Friday commute and chances of rain through next week](#) - Mercury News
- [Hang on to those umbrellas, another set of storms is coming through](#) - Sacramento Bee
- [California snowpack at drought-busting level, water managers say](#) - CBS News
- [Project within budget, likely to finish by October](#) - Folsom Telegraph
- [Plan for more wind and rain this week](#) - Record Searchlight
- [Sierra snowpack is biggest in 22 years](#) - The Kaweah Commonwealth
- [Lake Tahoe Gained 8.7 Billion Gallons Of Water In Just 2 Days](#) - Forbes
- [Experts say driving through flooding causes severe damage to engines](#) - Your Central Valley
- [Water releases into Sacramento River increased Monday](#) - Daily News
- [UPDATE: Flooding subsides in most areas of Shasta County](#) - Record Searchlight
- [County officials push for water storage, saying Delta is losing out on recent rainfall](#) - Lodi News
- [High desert water treatment authority mismanaged millions in federal funds, audit says](#) - San Diego Union Tribune
- [Delta Legislators seek clout](#) - Recordnet.com
- [Storm, dam releases have rivers swelling](#)—Chico ER
- [THIS JUST IN ... Assemblyman Frazier and Senator Dodd announce formation of legislative Delta caucus](#) - Maven's Notebook
- [Drought, Flood and Flow – Time for Changes](#) - Mountain Counties Water
- [Floodwaters Create Crucial Habitat In Yolo Bypass](#) - Capital Public Radio
- [Los Vaqueros reservoir reaches record high water mark](#) - Mercury News
- [California wettest drought?-2017](#) - California Water Blog
- [Spillway crumbles as California reservoirs max out capacity](#) - San Francisco Chronicle
- [Sierra storm packs triple threat _avalanches, floods, winds](#) - The Tribune
- [California may be long overdue for a mega flood](#) - CBS San Francisco
- [Flood waters create unique habitat in Yolo Bypass](#) - Capital Public Radio
- [Storms run rampant in Mountain Area, cause flash floods, mandatory evacuations, and roadway hazards](#) - Sierra Star
- [Another wave of rain wreaks havoc across Solano County](#) - The Reporter
- [California storms wreak havoc on region, damage spillway](#) - SF Gate
- [DWR: Test releases further erode Oroville Dam spillway](#) - KCRA
- [Oroville Dam officials find new damage after water releases, as reservoir levels climb](#) - The Sacramento Bee
- [Water to flow at Oroville Dam spillway despite damage](#) - Record Searchlight
- [OROVILLE DAM: Friday early AM update: Oroville Dam emergency spillway expected to be used as soon as early Saturday](#) - Maven's Notebook
- [Water Climate Update](#) - USDA
- [Storm slams North Bay, Russian River set to flood Friday](#) - Press Democrat
- [Beal deals with two dams showing weaknesses](#) - Appeal-Democrat
- [Huge Oroville Dam hole makes clear California's bill comes due](#) - Sacramento Bee
- [After frantic night, officials say Lake Oroville may not top emergency spillway](#) - Sacramento Bee
- [BREAKING: No word when evacuation order for 188,000 will be lifted as Oroville threat remains](#) - Sacramento Bee
- [A race against the weather to avoid disaster at California's Lake Oroville](#) - CNN
- [Evacuees might not go home until dam spillway is repaired](#) - Hawaii News Now
- [Evacuees from California dam allowed home even as storms near](#) - Reuters
- [Northern California dam forced to use emergency spillway for first time as water tops capacity](#) - CNBC
- [Repairs on eroded spillway at Oroville Dam in Calif to run \\$200mn](#) - Digital Journal
- [Mudslides shut both major Sierra highways on big travel day for snow enthusiasts](#) - Sacramento Bee
- [California governor asks Trump for south aid](#) - Las Vegas Review-Journal
- [Flood waters slowly receding in south Sacramento County](#) - Sacramento Bee
- [How does a spillway work?](#) - ABC 10
- [Experts: State left with few options while trying to avert disaster at Oroville Dam](#) - Sacramento Bee
- [Shasta Lake nears capacity as water releases increase](#) - KCRA
- [Lake Oroville solution includes emergency spillway down hillside](#) - Chico ER
- [Is California overdue for biblical, catastrophic flooding? History says it could be](#) - SF Gate
- [California rivers are so swollen from runoff that the impact is easily seen in these before and after satellite images](#) - Discover Magazine
- [Comment: Atmospheric rivers increase water supply in California — but only to a point](#) - Earth Magazine
- [OROVILLE DAM: DWR halts flows down Oroville Dam spillway; Engineers investigating erosion *UPDATED with link to pictures](#)—Maven's Notebook
- [Dam release may cause flooding through the weekend](#) - Daily News
- [Anderson Dam in Morgan Hill Over Capacity, Santa Clara Valley Water District Fears Earthquake](#) - NBC
- [Officials prepare emergency plan for Oroville Dam spillway with gaping hole](#) - UPI
- [Rainfall, dam water releases may cause flooding in Tehama County](#) - Red Bluff Daily News
- [Nimbus Dam releasing water as American River surges](#) - Sacramento Bee
- [Lake Tahoe received \\$87 billion gallons of water in 48 hours](#) - KCRA 3
- [NASA: Measuring Dust Can Improve Snowmelt Predictions](#) - Arizona Public Media
- [Oroville Dam isn't the only piece of California flood infrastructure under strain](#) - Sacramento Bee
- [OROVILLE DAM: Thursday noon update: DWR increases spillway flows \(updated with pictures!!!\)](#) - Maven's Notebook
- [Water will keep flowing at Oro Dam spillway despite gaping hole, erosion](#) - Chico ER
- [Oroville Dam officials find new damage after water releases, as reservoir level climbs](#) - Sacramento Bee
- [Water to flow at Oroville Dam spillway despite damage](#) - Record Searchlight
- [Russian River rises again, flooding Guerneville](#) - SF Gate
- [Spillway crumbles as California reservoirs max out capacity](#) - San Francisco Chronicle
- [How rain and melting snow could affect the California Dam crisis](#) - Washington Post
- [Five Facts About the Oroville Dam](#) - WSJ
- [Point Pleasant residents can return home as localized flood threat diminishes](#) - The Sacramento Bee
- [Shasta Dam set for high release for next few weeks](#) - Record Searchlight
- [Water creates a high-stakes game on San Joaquin, Tuolumne and other N. California rivers](#) - Modesto Bee
- [OROVILLE DAM, Wednesday noon: Work continues to stabilize emergency spillway; Releases might be ramped down soon ...](#) - Maven's Notebook
- [Mandatory evacuations lifted for residents downstream of Oroville Dam](#) - Chico ER
- [Spillway repairs not only project underway at Oroville Dam](#) - Chico ER
- [Broken California Dam Is a Sign of Emergencies to Come](#) - Scientific American
- [Trump Administration Approves Federal Aid For Storm, Oroville Dam Relief](#) - Capital Public Radio
- [California Megaflood: Lessons from a Forgotten Catastrophe](#) - Scientific American
- [Would more dams help with all this water?](#) - The Modesto Bee
- [As we fix California water system, also fix data system](#) - The Modesto Bee
- [More rain could spell more trouble](#) - Record Searchlight
- [Wet winter banishes Northern California drought, fills North Bay reservoirs](#) - The Press Democrat
- [Despite Problems With Oroville Dam Spillway, Officials Say Flood Risk In Sacramento Negligible](#) - CBS Sacramento
- [Tyler levee holds; SJ River rises](#) - Recordnet.com
- [Keeping Eye on Don Pedro](#) - Manteca Bulletin
- [Water creates a high-stakes game on San Joaquin, Tuolumne and other N. California rivers](#) - The Modesto Bee
- [OROVILLE DAM, Monday 6PM: DWR working to fill erosion on emergency spillway](#) - Maven's Notebook