

**DEPARTMENT OF WATER RESOURCES**

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June 7, 2017

Dear Coalition Members:

Thank you for your letter dated April 19, 2017, which included questions and requests for information from the organizations and businesses impacted by the Lake Oroville spillways incident.

We respect the magnitude of difficulty that you and your community faced. We also understand the disproportionate impact that the evacuation had on residents who are socially or economically distressed, and will continue to seek solutions that address those considerations.

We know that this has been a difficult time for you, your colleagues, and your constituents. You have our commitment that safety and security are our primary goals. We are striving to improve communication with the public, and look forward to collaborating with you to do so.

Given the comprehensive nature of your letter, each of the items are addressed individually after my signature and the cc list in this letter.

Sincerely,

A handwritten signature in blue ink that reads "Cindy Messer".

Cindy Messer  
Chief Deputy Director

Enclosures

cc: (See attached list.)

cc:

James Gallagher, State Assemblyman, Third District  
Jim Nielsen, State Senator, Fourth District  
Bill Connelley, Chairman, Butte County Board of Supervisors  
Jim Whiteaker, Chairman, Sutter County Board of Supervisors  
Randy Fletcher, Chairman, Yuba County Board of Supervisors  
Linda Dahlmeier, Mayor, City of Oroville  
Stan Cleveland, Mayor, City of Yuba City  
Ricky Samayoa, Mayor, City of Marysville  
Angela Thompson, Mayor, City of Biggs  
Jason Banks, Mayor, City of Live Oak  
Frank Hall, Mayor, City of Gridley  
Rick West, Mayor, City of Wheatland  
Sean Morgan, Mayor, City of Chico  
Sandy Linville, President and CEO, Oroville Area Chamber of Commerce  
Rikki L. Shaffer, CEO, Yuba-Sutter Chamber of Commerce  
Lisa Van DeHey, Board Member, Gridley Area Chamber of Commerce  
Annette Bertolini, President, Live Oak District Chamber of Commerce  
Clark Becker, President, Butte County Farm Bureau  
David Burroughs, President, Yuba-Sutter Farm Bureau  
Holly Shackelford, President, Sutter Yuba Association of Realtors  
Randy Chapman, President, Oroville Association of Realtors  
Brendon Flynn, President, Sacramento Valley Landowners Association  
Brynda Stranix, President and COO, Yuba-Sutter Economic Development Corporation  
Lester E. Eaton, President, Sutter Deputy Sheriff Association  
Sam Escherman, President, Yuba City Police Officer's Association  
Tim Taylor, Superintendent of Schools, Butte County Office of Education  
Francisco Reveles, Ed.D., Superintendent of Schools, Yuba County Office of Education  
Dr. Baljinder Dhillon, Superintendent of Schools, Sutter County Office of Education  
Ron Roman, District Representative, Operating Engineers Local #3  
Mark Mulliner, Business Manager, United Association Local Union 228 Plumbers, Pipefitters, HVAC  
Robert D. Ward, Business Manager, IBEW L.U. 340  
John T. Harris, Chairman of the Board of Directors, Orchard Hospital  
Gino Patrizio, CEO, Rideout Health  
Robert J. Wentz, President and CEO, Oroville Hospital  
Robert Bateman, President, Roplast Industries, Inc.  
Robert Scheiber, President, Reclamation District 1001  
Gary Kim, President, Twin Cities Rod and Gun Club  
Mike Leggins, Vice President and General Manager, Recology  
John Cassidy, CEO, Sierra Central Credit Union  
Alex Bumpus, President and CEO, Bi-County Ambulance  
Larry Geweke, President and CEO, Geweke Ford Kia  
James Stone, President, Nor-Cal Guides and Sportsmans Association

1. *This emergency has demonstrated that the Oroville Dam lacks the operational flexibility and reliability to provide adequate flood protection to communities downstream. It is not clear how DWR is adapting both the dam itself and/or reservoir operations to accommodate these deficiencies. We believe options need to be explored to provide for large releases well in advance of high water events and well below the service spillway crest elevation. Or, overall flood protection could be improved by providing additional flood buffer when there is a large snowpack and the potential for warm storms.*

The flood control operation of the Oroville Dam and facilities are prescribed by the United States Army Corps of Engineers (USACE) operating criteria. These criteria are designed to provide sufficient flood control to downstream communities. On February 24, 2017, Governor Edmund G. Brown, Jr. sent a letter to USACE asking them to update the federal operating manuals for key California reservoirs. It is imperative that these manuals reflect current scientific and operational knowledge and industry best practices.

DWR has committed to coordinating with USACE, Federal Energy Regulatory Commission, and California's Division of Safety of Dams regarding the 2017/2018 winter operations plan. Discussions with the USACE regarding the development of the plan have been initiated by DWR.

2. *DWR's outreach to the downstream communities directly impacted has been inadequate at best. Our best sources of information have been informal and indirect sources rather than through official DWR channels. DWR must immediately shift its thinking in how, when, and to whom it shares information. There is already a strong community distrust of DWR due to this event. A lack of communication and transparency only makes it worse. DWR could do much more to improve trust and credibility with the community by providing greater transparency and providing formal, consistent communication with the downstream communities.*

We agree that our communication with impacted communities needs improvement. Now that we've moved from emergency response to emergency recovery, we are focused on improving the project's communications program. The seven recent community meetings were the first step, and we are creating other outreach and engagement strategies as well. Feel free to send recommendations for how to effectively reach your constituents to our communications advisor at [oroville@water.ca.gov](mailto:oroville@water.ca.gov)

Please share this information with your constituents:

- A new DWR webpage is dedicated to the Lake Oroville spillways incident. The most current information can be found here: [www.water.ca.gov/oroville-spillway](http://www.water.ca.gov/oroville-spillway).
- DWR is compiling all of the questions posed at the Lake Oroville spillways public meetings. We will post answers to the questions on the Lake Oroville spillways webpage in June.
- The public may watch construction activities through a live feed from two cameras at the site. Hosted by the California Department of Parks and Recreation, the Lake Oroville State Recreation Area Spillway Live Stream is at [www.parks.ca.gov/live/lakeorovillesra\\_spillway](http://www.parks.ca.gov/live/lakeorovillesra_spillway).
- The community meeting [PowerPoint presentation](#) is available online.
- DWR's [YouTube page](#) is home to hours of video content including recordings of the community meetings.

- We're working on a viewing area for the public and a 24-hour "dam cam" is available for your viewing [here](#). (Note: does not play in Google Chrome browser.)
- DWR's initial plans to repair both spillways are outlined [here](#). Work is well underway to repair both spillways by November 1 for the 2017/2018 flood season. We will ensure the main spillway is reconstructed to safely accommodate any weather we might face this winter. Also by November 1, we will construct a cut-off wall on the emergency spillway which will ensure if we ever need to use the emergency spillway again, that its use will not jeopardize the integrity of the dam. Construction will continue next season to make final updates to both spillways. DWR is also holding bi-weekly calls to provide construction updates to the media.
- Inspection reports of Oroville Dam and its spillways by the state Division of Safety of Dams are available to the public on the [DWR Spillways website](#).
- Lake Oroville is open for business. [Check out this map](#) to view closures and call the Visitor Center at 530-538-2219 to confirm accessibility.
- DWR will provide advance notice of changes in flows via emails and in coordination with the local maintaining agencies. We provide daily updates on current reservoir levels [here](#).
- Here's [Kiewit Infrastructure West Co.'s contract](#).

3. *Design and construction of the necessary repairs to the dam and related infrastructure must be paramount and other considerations must be secondary. The number one priority must be to protect the lives of 200,000 people living immediately downstream. To be abundantly clear: fisheries protection, water supply issues, State Water Contractor priorities, FEMA reimbursement, politics and other issues must take a distant backseat to public safety. We urge DWR to publicly acknowledge this priority.*

Public safety and security are DWR's highest priorities. We will continue to manage the Oroville Dam facilities throughout the year to ensure public safety, while managing reconstruction that will enable safe operation of the main spillway next winter. Frequent review by State and federal oversight and regulatory agencies are an important part of the operation and recovery process.

4. *The overall infrastructure of the dam is old and, in the case of the spillways, river valves and turbines, failing. There must be a longer term plan for ensuring that Oroville Dam and all appurtenant features are repaired and brought up to 21st century standards. This plan should include not only the gated spillway and the emergency spillway, but also ensuring the plant facilities and low level release valves are adequate and fully operational. All construction plans should be reviewed by independent experts to ensure that this infrastructure is well planned, soundly built and supported. This modernization should be paid by the owners of the project, which we understand to be the State Water Contractors.*

DWR is committed to ensuring that all infrastructure at the Oroville Dam facilities are safe and operational.

The River Valve Outlet System (RVOS) was available for use prior to February 7. It was flooded during the spillway incident with resulting damage to some of the operating and control components and had to be taken offline in February 2017. It was repaired in May 2017 and is currently available at a tested safe capacity of 4,000 cfs.

Plans to reconstruct the gated flood control (main) and emergency spillways are being developed to modern standards, informed by findings and recommendations from the independent Forensic Team and the independent Board of Consultants. In addition to these two groups of esteemed experts, oversight and recommendations are provided by the Federal Energy Regulatory Commission (FERC), the state Division of Safety of Dams (DSOD), the USACE, and Kiewit Corporation.

Oversight of the design and construction of the restoration of the Lake Oroville spillway structures is being conducted by several entities: FERC, DSOD, and the Board of Consultants (BOC). Each entity's areas of jurisdiction are outlined on the [DWR website](#). You may access and download the Board of Consultants memos on our website [here](#). The BOC memos provide a significant amount of information about the Lake Oroville spillways incident response and recovery, while protecting certain information that could enable terrorist activity.

To provide for an independent review of the spillways incident, DWR contacted the Association of State Dams Safety Officials and the United States Society of Dams to propose a team that could conduct a forensic evaluation. The assigned Forensic Team, comprised of six engineering experts with diverse specialties, is charged with determining the root cause of the spillways incident, as well as any other contributing causes.

Thus far, the Forensic team has released [this memo](#) outlining *potential* causes contributing to the spillways failure. It is important to understand that not all of the factors listed in this memorandum may have significantly contributed to the actual damages to the spillways. The Forensic team findings have been shared with the BOC as it advises DWR on work to recover spillways functions, so that any lessons learned can be incorporated into the recovery plans. The team's final report is expected to be released later in 2017.

Construction, operation and maintenance costs for Oroville Dam are covered by the 29 State Water Project Contractors. DWR is also seeking reimbursement from FEMA for all eligible emergency costs.

*5. There must be a full and thorough review of how the Department of Water Resources designed, constructed, operated and maintained the dam. This review should include not only the existing, independent consulting board review and regulatory review, but also legislative oversight hearings and reviews by the State Auditor. Full disclosure and transparency of these proceedings and documents is essential.*

The independent Forensic Team has responsibility for determining the cause(s) of the failures at the main and emergency spillway. In that capacity, they have access to all information related to operations and maintenance of the facilities, access to the construction site, and Department management information. Preliminary findings from the Forensic team are being shared with DWR during design and construction to ensure that potential problems are addressed. The Forensic Team released a memo outlining their preliminary findings and [was posted on May 5](#) and on May 26, the Forensic team and the two national dam engineering groups [released a press statement](#).

The independent BOC is responsible for advising DWR on state-of-practice planning, construction, operations, and maintenance. They also have access to all information related to operations and maintenance of the Oroville Dam facilities, and they visit the construction site as needed throughout the course of consultation. The BOC will continue to convene for one year after the end of construction and their memos are posted [here](#).

In addition to these two groups of outside experts, there are many subject matter experts from different disciplines on site daily to help DWR determine the most appropriate recovery efforts. We continue to work closely with FERC, DSOD, and the USACE throughout the recovery process; and we will regularly provide information to local, State and federal elected officials.

6. *There must be a public discussion as to how Oroville Dam should be operated in the future and who should operate it. Without prejudging the conversation, some of the questions are as follows:*

a. *Should DWR continue to be the operator of Oroville Dam? There are other alternatives and they should be analyzed and discussed.*

b. *Should the Division of Dam Safety remain under the Department of Water Resources or should it become an independent body or moved to another agency to avoid perceived conflicts? Many of the most important technical regulators in the State serve under a publicly accountable board-DSOD should be no different.*

DWR is focused on our responsibilities as the owner and operator of Oroville Dam and related facilities. It is not appropriate for us to address your questions about this status.

c. *Are the current inspections, maintenance, repair, and replacement activities associated with the infrastructure at the dam sufficient to provide for public safety?*

DWR is continually assessing Oroville Dam. Oroville Dam is formally inspected by three different entities. The dam is inspected twice a year by the DSOD. The last inspection by DSOD was conducted in August 2016. Annually, the FERC Dam Safety Program also inspects the dam. The last FERC inspection occurred in May 2016. Every five years, most recently in August 2014, an independent board of expert consultants inspects the dam. All of these inspections of Oroville Dam and its spillways concluded they were safe to operate. [Inspection reports](#) dating to 1998 of Oroville Dam and its spillways by the DSOD are available online.

After the spillway failure at Oroville Dam, Governor Brown on February 24 announced several actions to bolster dam safety and improve flood protection. This package is pending in the Legislature.

- <https://www.gov.ca.gov/news.php?id=19696>
- [https://www.gov.ca.gov/docs/Fact\\_Sheet\\_Governor\\_Brown\\_Four\\_Point\\_Plan\\_to\\_Bolster\\_Dam\\_Safety\\_and\\_Flood\\_Protection.pdf](https://www.gov.ca.gov/docs/Fact_Sheet_Governor_Brown_Four_Point_Plan_to_Bolster_Dam_Safety_and_Flood_Protection.pdf)

d. *How can we ensure more local input on dam operations?*

We will meet this summer with one or more representatives of your coalition to learn how you would like to provide input on dam operations. In addition, public meetings will be part of the process of the USACE update of the Oroville Dam facilities operations manual.

e. *Should there be a more robust public safety obligation on the part of DWR to provide for law enforcement and emergency response at the Oroville Dam and Reservoir? As of now this is obligation is largely shouldered by Butte County which has limited resources. FERC and DWR need to treat Butte County fairly for all the services provided to Lake Oroville facilities.*

This event has underscored the importance of public safety and effective communication. DWR has been working closely with Butte County and local area emergency responders to ensure that lessons learned help shape future planning.

f. *Should the operations at Oroville Dam be modified to provide for increased flood space during seasons in which there is a large snowpack?*

A revised dam operations manual from the USACE may address this question. In the meantime, DWR collaborates with Forecast-Coordinated Operations partners such as the National Oceanic and Atmospheric Administration, the National Weather Service California-Nevada River Forecast Center, and the USACE to model and plan for future weather events. Lake elevations, releases, inflows, and other hydrological considerations will be closely examined to ensure safe operations.

g. *How has DWR's coordinated reservoir operations and predictive forecasted reservoir operations benefitted our communities? How could these tools be better utilized? Forecasting during this crisis has been significantly inaccurate.*

By all accounts, 2017 was one of the wettest on record. Oroville Dam and related facilities prevented significant downstream flooding. The storm event that preceded the spillways incident changed the reservoir's status in a matter of hours. DWR and our partners learned a great deal this year that will be considered in future planning.

More than 14 different agencies participate in the California Data Exchange Center (CDEC), which provides a centralized database to store, process, and exchange real-time hydrologic information gathered by various cooperators throughout the State. The data collected by CDEC enable forecasters to prepare flood forecasts and water supply forecasts; reservoir and hydroelectric operators to schedule reservoir releases; and water suppliers to anticipate water availability. The two main entities that collect and manage data related to flood forecasting and response for California are CDEC and the National Weather Service California-Nevada River Forecast Center.

The Department has partnered with Yuba County Water Agency, the CNRFC, and the US Army Corps of Engineers on the Forecast-Coordinated Operations Program ([F-CO](#)) over the past 12 years. The F-CO program coordinates operations of Lake Oroville and New Bullards Bar Reservoir, and using improved

decision support forecasting tools, guides reservoir releases in advance of and during major flood events to reduce peak flood flows, resulting in additional levels of protection.

7. *Improving Flood Protection Downstream:*

a. *There are several constrictions of the Feather River downstream that could be improved to better contain flood flows from the spillway. A cost-benefit study should be conducted to analyze projects that might alleviate these constrictions.*

b. *There are also several critical repair sites along the Feather River levee system that should be improved in order to better contain future flood flows from the spillway, including but not limited to sites in District 10, south of Yuba City, and south of Nicolaus. These were the sites of significant seepage during the recent crisis.*

c. *We have also seen large-scale erosion of the river banks as a result of quick draw downs of the spillway in the aftermath of the crisis. This erosion could ultimately threaten levees and, combined with the debris from the spillway collapse, has contributed to significant debris in the river channel. The debris impact to the carrying capacity of downstream levees must be analyzed/measured and removal/mitigation measures must be taken to protect property, lives, and the ecology and fish habitat of the Feather River.*

The Oroville Field Division works closely with the Division of Flood Management, the Local Maintaining Agencies and other Feather River partners downstream. In the upcoming months, task forces will be formed to investigate restoration plans to protect the river channel and other downstream resources. The State has invested more than \$200 million in recent years to improving flood protection at particularly vulnerable locations on the Feather River downstream.

8. *As a result of the crisis and evacuation, there were business and property losses, lost wages, and damages to public and private property. These damages are harder to take for communities that are already struggling and families that are already living paycheck to paycheck. Emergency relief dollars may provide some compensation for these losses but it will not be complete. We would like to see some discussion as to how these gaps can be covered to help make our communities whole.*

Discussions are necessary to address the financial impact of the emergency response on individuals, businesses, and local governments. DWR will share information as we receive it from FEMA, CalOES and other relevant entities, and we will plan to meet with you and other elected officials this summer to discuss this issue in more detail.

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