

# **Lake Oroville Spillways Community Meetings Yuba City, California on July 24, 2017, 6:00 pm Meeting Summary**

---

This meeting in Yuba City, California was the third of three community meetings convened by the California Department of Water Resources (DWR) in July 2017. Meeting objectives included:

- Provide an opportunity for the public to learn about progress on the Lake Oroville Spillways Emergency Recovery Project.
- Provide updated information about DWR and partner agencies' responses to community feedback on the project.
- Provide an opportunity for the public to ask DWR staff questions and offer perspectives.
- Disseminate information on opportunities for the public to find information and engage with DWR.

This document summarizes the presentation to the Oroville community on the Oroville Spillways Response and Recovery project. It also captures public comments, questions and DWR staff responses. It is not intended to serve as a detailed transcript of the meeting. This document maintains a similar format and focus as the summaries provided after the first round of Community Meetings in April-May 2017.

This document is organized into the following main sections:

1. Introduction
2. Presentation
3. Questions and Comments
4. Action Items

A full video of the meeting is available online at: <https://www.youtube.com/watch?v=Zd8aORGtj0w>.

## **Introduction**

Mike Harty, Facilitator, opened the meeting, reviewed the agenda, and provided meeting guidelines.

State Water Project Deputy Director Joel Ledesma thanked attendees for coming and promised to answer as many questions as possible and to follow-up on questions that DWR is unable to answer on the spot. He introduced elected officials in attendance and thanked them for their participation.

## **Presentation**

Deputy Director Ledesma delivered an overview presentation on the Lake Oroville Spillways Incident. Mr. Ledesma started with an explanation of the timeline of events of the Spillways Incident, as noted below.

- February 7, 2017: Flow halted on main spillway to assess damage
- February 11, 2017: Flow begins over emergency spillway
- February 12, 2017: Butte County Sheriff Kory Honea orders evacuation
- February 12, 2017: Main spillway flows increase to 100,000 cfs

- May 20, 2017: Kiewit officially begins construction
- May 24, 2017: Radial gates closed on main spillway for final time this water year

Deputy Director Ledesma noted that the flood control outlet was used in about half the years between 1969 and 2017, but 2017 was the wettest year on record for the basin. He explained that, throughout the Lake Oroville Spillways Incident, DWR's priority was to minimize the risk to human lives. To achieve that, they had to balance the risks associated with damage to the main spillway, the emergency spillway, the transmission lines running along the spillway to the Hyatt Power Plant, and the power plant itself.

Dave Gutierrez, consultant to DWR, discussed current and future reservoir operations, which are being driven by the need to ensure a long construction window. To this end, DWR is targeting a lake elevation of 700 feet by November 1. He also emphasized the dam's role as a flood control facility, which buffers large flows that would otherwise overwhelm downstream levees. DWR operates the reservoir based on the US Army Corps of Engineers (USACE) rule curve, though the two agencies have established an even more conservative buffer this year. In the long term, DWR will work USACE in a public process to update the current Operations Manual.

Gutierrez reviewed the objectives for Lake Oroville Spillways Emergency Recovery, which include ensuring the main spillway's ability to safely pass Feather River watershed flows by November 1, 2017. He clarified that by November 1, the "design criteria" to which the spillways will be repaired are as follows: 270,000 cfs for the upper chute, 100,000 cfs for the lower chute, and 30,000 cfs for the emergency spillway. The "design criteria" values integrate a factor of safety above and beyond how either of the spillways will ever be operated.

Mr. Gutierrez concluded with an update on construction progress, an overview of the entities with regulatory and oversight authority during the construction process, and a process reminder on the Forensic Team investigating the causes of the incident.

Erin Mellon, DWR Assistant Director of Public Affairs, provided an update on DWR's communication and outreach efforts. These efforts include public meetings, stakeholder and elected officials briefings, community notifications, and collaboration with state and local agencies, among others. Ms. Mellon then recapped the concerns raised at the April-May Public Meetings hosted by DWR and detailed DWR's ongoing efforts to address community concerns.

ASM James Gallagher addressed his constituents and expressed his appreciation for their continued engagement in the recovery process. He praised Kiewit and the DWR engineering team's progress on the construction, and asked that DWR continue to update the public if anything changes in their timeline or progress. He requested that DWR and the State Water Contractors to (1) prioritize changes that will make the system safer for downstream residents (e.g. a bigger lower level outlet; being able to dewater the dam faster), (2) find solutions to downstream impacts (e.g., silt buildup, changes in river capacity), and (3) strengthen the levees. He also discussed his legislation AB 1270, which aims to improve dam safety and inspections based on recommendations by the Water Commission and the UC Center for Catastrophic Risk Management.

#### **Public Comment and Question Session:**

Following the presentation was a public question and comment session, during which meeting participants had the opportunity to express concerns and clarify questions regarding the Lake Oroville

Spillways response and recovery effort. During this session, DWR staff addressed 18 questions and comments from meeting participants. The following comments, questions and responses were recorded (Q= question, R= response, C= comment) during the meeting.

- **Question (Q):** In 2005, money was appropriated for problems at Oroville, but nothing was done. Has anyone been held accountable/fired for not keeping us safe? Where did the \$400 million go?
  - **Response (R):** The Forensic Team is looking at what could have caused the spillways failure, including human error/negligence. Until their report is complete and identifies causal factors, DWR will not point fingers at any individual or group. Once we have that report, it will be shared publically and widely to ensure that those mistakes are not replicated.
  - **R:** The Feather River West Levee Project, funded by SB5, accounts for \$223 million. It was started in 2007 and completed since then. Other funds went to the Feather River East Levee Project and Sutter Butte Flood Control Agency.
- **Q:** Is the dam facing a breach danger from slow motion failure due to leaks in the dam, perhaps caused by shifting of dam fill? Why did sensors in the dam to detect such leaks quit working years ago?
  - **R:** The dam is earth-filled and constructed with slopes that act as shells on the outside and an impervious core. There are drains in the core to catch seepage (which occurs naturally) so that it can be measured. As long as the amount of seepage remains constant over time, there is not a crack. DWR has measured seepage for many years, and it has not changed.
  - **R:** This question is based on the theory that there is a crack in the dam and water is seeping through, causing the green spots on the face of the dam. However, the green spots were present even before there was water in the reservoir; they disappear in the summer and grow in the winter. Because of the way the shells were constructed, water can puddle in the winter, feeding the spots. DSOD and FERC have also asked for a detailed report on the green spots and DWR's plan to monitor them going forward, and DWR will be releasing that soon.
  - **R:** Instrumentation like piezometers, which measures where water is in the dam, has a natural life. Therefore, hundreds of piezometers were originally put in the dam with the knowledge that they would eventually fail. Replacing them runs the risk of fracturing the dam, so it is done with extreme caution. After DWR issues its final report on the vegetation and gets the agreement of DSOD and FERC on their analysis, they will decide whether new instrumentation is warranted.
- **Comment (C)/Q:** The Northern California Guides and Sportsman Association thanks DWR for their work on the spillways to ensure public safety and for responding to public complaints with more gradual drop downs in flows. They want to emphasize the importance of silt and gravel management. Does DWR have the required 404 permit through the Army Corps and 401 permit and LSA agreement through the CA Department of Fish and Game to dredge or complete any other in-stream work? Feather River users want to know when DWR will have the required permits to clean up the river. Gravel has built up around Gridley and Live Oak; sediment from bank erosion has built up downstream. The Lower Feather River Corridor Management Plan can and should be enacted under the emergency management.

- **R:** DWR has complied with all environmental laws, including obtaining 404 permits; it was exempt from some CEQA requirements because of the emergency. DWR has completed bathymetry surveys from the diversion dam down to Verona and completed end water surveys to get channel geometry. Analysis is now in progress to determine what the channel capacity is and where the geomorphology has changed.
  - **C:** DWR promised public transparency. The Northern California Guides and Sportsman Association has done flights and boat tours with multiple agencies, including DWR, to show them areas of high sediment. He read on the Feather River Conveyance Reevaluation Form that the initial studies were done in mid-July, but no one reached out to their organization to ask for their insight.
  - **R:** DWR was happy to join those tours. DWR can provide bathymetry surveys to anyone who is interested. **(Action Item #1)**
- **Q:** Why wasn't the same planning used during the summer of 2016 to lower reservoir levels to accommodate winter rains? Was it due to existing small cracks that caused the erosion or complacency due to drought? Why weren't cracks addressed during the summer of 2016 or before?
  - **R:** The issue this winter was not the amount of vacant flood control space — that space is mandated by the Army Corps' rule curve. In a situation like this winter, the rules call for an increase in releases in order to create space, but the spillway did not function the way it was designed to vacate space. This coming year, because Lake Oroville will not have normal outflow capabilities due to construction, DWR is operating the reservoir at a lower elevation than it normally would.
  - **R:** DWR responds to all inspection report findings; sometimes repairs are immediate, and sometimes they are delayed depending on the threat to operations and public safety. Over the last 5 years, DWR has spent \$30 million on Lake Oroville maintenance, but does not have unlimited time or money to address every single issue regardless of significance. None of the inspections suggested that the spillways had any significant problems, but whatever the forensic report identifies as causes of the failure will be addressed going forward.
- **Q:** The speaker read aloud the *Sacramento Bee* article titled "Catastrophic Engineering Experts ask, Is Oroville Dam Leaking?"
  - **R:** Bob Bea's evidence that the dam is leaking are the green spots on its face, which were already addressed in earlier responses. The Forensic Team has his report, and if it contains anything new they will investigate it.
  - **R:** FERC and the other inspectors have examined the gates and DWR has responded to any issues they identified. There has been maintenance and upkeep on the gates, but there have been no significant problems.
- **Q:** If DWR was able to get 404 permits for the dam work immediately, why can't it get them for work around Yuba City? We want the 8 feet of silt build-up cleaned up this year.
  - **R:** We need this kind of feedback. DWR is assessing the problem and will take action.
- **Q:** There is always something that slows down construction timelines. What if something slows down construction in advance of the November 1 deadline?
  - **R:** While DWR does not anticipate permitting issues, there could be construction issues that arise. DWR is consulting with the BOC on the schedule, and they will prioritize work

on the top of the chute. The reservoir operations decisions, like lowering the lake elevation to 700 in order to give DWR an additional buffer of 1.5 million feet, are being made with these kinds of potential delays in mind.

- **Q:** The *Sacramento Bee* article raises some red flags that the community would like DWR to take more seriously. There is a 14 foot crack on the gates. Are the gates safe?
  - **R:** The gates are safe. The Forensic Team, which is completely independent of DWR, has Bob Bea's report.
- **Q:** (1) What kind of mapping tools are you using to assess the spillway foundation, and how do they work? (2) What is status of relicensing? (3) What new checks and balances has DWR implemented that it did not have before?
  - **R:** Like any time a dam is built, DWR does geologic mapping, though this time they are using video, which is a new technique. The engineers have also drilled cores across the chute and analyzed the rock they pull out to assess the foundation's strength. That is how they concluded that the upper chute is on good rock.
  - **R:** The Federal Energy Regulatory Commission is still missing two commissioners and will not be able to make a decision on relicensing until those seats are filled. There have been calls from many community members to delay relicensing. DWR will not weigh in on that issue and has taken steps to begin fulfilling the commitments it would make under relicensing.
  - **R:** Regarding checks and balances, in the short term, the independent BOC is overseeing the design and construction of the spillways, and the Forensic Team is looking into causes of the incident. Long term, DWR will need to reassess its operations in light of whatever the Forensic Team determines about causes.
- **Q:** Please explain the Berkley Professor's stance that leaking is happening at the base of the dam as shown by constant and continual plant growth at the base of the dam. What, if any, studies have been done and how do citizens access this information?
  - **R:** A report on the green spots will be released soon.
- **Q:** Will the construction area be open to the public?
  - **R:** No, it is a public safety hazard, and public access to haul roads could slow down the construction timeline. To accommodate public interest, we have installed three livestream cameras and have been doing site visits with elected officials.
- **Q:** Will the dam ever be open again to walking or driving?
  - **R:** That remains unclear. It will not be open during construction. It is possible that other areas will be opened instead.
- **Q:** (A Facebook question about the report was skipped since it had already been addressed.)
- **Q:** (A Facebook question about the gates was skipped since it had already been addressed.)
- **Q:** DWR plans to build a spillpan between the emergency spillway and the curtain wall, but what will happen once the water goes over the wall? Will it erode the area below? Are there plans to build a spillpan below the wall?
  - **R:** Currently, the designs call for the cutoff wall, so that any erosion will stop there. However, other options remain on the table for future construction, including a fully concrete emergency spillway all the way down the hill.
- **Q:** (1) At one of the first meetings, someone produced a chunk of concrete that crumbled. Given that some parts of the dam are not being immediately replaced, how can we trust their integrity? (2) How are flow releases being planned so that they don't negatively impact habitat and property? (3) Who is paying for this? (4) How are designs accommodating to better protect the power plant in the future? (5) When will DWR actively address in-river issues?

- **R:** (1) DWR cannot say that the concrete piece you refer to actually originated from the spillway. The concrete on the upper chute that will remain this year is much thicker than what eroded, has a stronger bond to the rock beneath it, and sits on much higher quality rock. To meet current standards, some concrete will be removed and replaced next year.
- **R:** (2) There are multiple reasons for releases from the dam — flood control, in-stream fishery purposes, water supply, and salinity requirements south of the Delta. The kinds of releases made this spring were abnormal because of the need to have the spillway either ‘on’ all the way or entirely ‘off.’ The engineers concluded that low flows would cause more instability and erosion. DWR will try to give downstream residents as much notice as possible of changes in flows, though sometimes conditions in the Delta do not allow them much leeway to stage releases.
- **R:** (3) As a State Water Project facility, the Oroville System is funded by the State Water Contractors, not the public. DWR is also pursuing FEMA emergency funding and expects to receive it.
- **R:** (4) The Hyatt Power Plant was functioning throughout the incident. DWR will not build a wall around the power plant; however, they are making stop-logs more watertight, so water cannot make its way in.
- **R:** (5) DWR does not have a timeline on downstream dredging. They are still assessing the situation.
- **Q:** Should Robert Kelly’s book *Battling the Inland Sea* be required reading in California schools?
  - **C:** The facilitator suggested that everyone reflect on this.
- **Q:** How long will it be until DWR dredges the Yuba City-Marysville area? Why isn’t it being prioritized?
  - **R:** The capacity of the Feather River system is very important to DWR. DWR is looking at the depth of the water at the different forecasting points and will take whatever actions are needed to address issues.
  - **Q:** How long down the road will this happen?
  - **R:** The studies take time and are still in progress. DWR is meeting with the agencies that would need to permit the work, so it should be streamlined once we get to the point of permitting.
- **Q:** What are the ramifications if the dam does not get relicensed?
  - **R:** DWR has been operating under annual licenses for 10 years. It will continue to operate under the same operating instructions as it has been.
- **C:** Regarding the deadline of November 1<sup>st</sup> – does DWR believe the river will be dredged or any silt management will be done before that? There have been 7 boating accidents because of the sediment in the river. If the levees fail because of lack of channel capacity, we will be flooded. It is just as important to us as the dam.
  - **R:** We will have studies done evaluating the channel by the end of the year. The river will not be dredged in the lower reaches by November 1<sup>st</sup>. Our goal is to have levee rehabilitation done by November 1<sup>st</sup>.

### **Closing**

Deputy Director Ledesma closed the meeting by thanking everyone for attending and committing to elevate their concerns and seek action.

### **Action Items**

Following are action items or next steps for DWR, which came from the meeting:

(1) Provide bathymetry studies to any interested parties (especially the Northern California Guides and Sportsman Association).