

Oroville Spillways Community Meetings Yuba City, California on May 9, 2017, 5:30 pm Meeting Summary

The meeting in Yuba City was the fifth meeting of seven community meetings convened by the California Department of Water Resources (DWR) in April and May 2017, with the following focus:

- Response: What happened to the main and emergency Lake Oroville spillways (spillways) in February and March and what was the response?
- Recovery: What is happening today and in the future to repair the main and emergency spillways?
- Community Topics: What are likely community impacts of the recovery and how can they be addressed?

This document summarizes the presentation and opening remarks. The full presentation is available online at: http://www.water.ca.gov/oroville-spillway/pdf/2017/OER%20Community%20Meetings%20Presentation%2020170504_v8.pdf.

A complete video of the meeting is available online at: https://youtu.be/PpAbK7PnT_w

The video also captures public comments, clarifying questions, and DWR staff responses. It is not intended to serve as a detailed transcript of the meeting.¹

This document is organized into the following sections:

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

Introduction

Mike Harty, facilitator with Kearns & West, opened the meeting, reviewed logistics, and discussed the meeting purpose and agenda.

Cindy Messer, Chief Deputy Director for DWR, provided opening remarks for DWR. Ms. Messer said she was sorry on behalf of DWR for the spillways failure and subsequent evacuation, and affirmed the Department's commitment to:

- Public Safety
- Security
- Transparency in communications related to the spillways recovery effort

She also introduced four key elected officials who presented brief opening remarks, including:

- State Senator Jim Nielsen
- Assemblyman James Gallagher

¹ Where appropriate DWR has added a "NOTE" that reflects subsequent investigation to ensure factual accuracy.

- Sutter County Supervisor Jim Whitaker
- Yuba City Mayor Stanley Cleveland

Senator Nielsen commented that his goal is to avoid repeating anything like the spillways failure, noted that he and Assemblyman Gallagher are committed to ensuring repairs are done correctly, and thanked DWR for hosting the community meetings.

Assemblyman Gallagher stated that he and his family evacuated with everyone else, and affirmed his commitment to the recovery process. He noted that the #1 priority is public safety, transparency is critical, and expressed appreciation to DWR for releasing the Board of Consultants' report.

Supervisor Whitaker thanked DWR for hosting the community meetings and stressed that these meetings are the first of many opportunities for community members to interact with DWR and make sure their concerns are taken into account.

Mayor Cleveland closed by stating that Sutter County is very familiar with flood risks and thanking DWR for attending.

Presentation

Geoff Shaw, DWR, delivered a brief presentation on the Oroville Emergency Response and Recovery process and the current status of operations. He emphasized that the dam itself was not impacted by the event. He reviewed the structure of the spillways and the timeline over which the primary spillway failed in early and mid-February. Mr. Shaw noted the unprecedented meteorological conditions that required the controlled but rapid release of water from the reservoir onto the damaged spillway. Shifting to recovery, he reviewed DWR's proposed approach to repairing the spillways and mitigating impacts. The priority is repairing the upper chute of the spillway and installing a cutoff wall on the emergency spillway in 2017 to avoid any further erosion. The next step would be constructing a new lower chute of the main spillway and making additional improvements to the emergency spillway as quickly as possible.

Mr. Harty reviewed some potential community impacts and DWR's efforts to address them, recreational opportunities at Lake Oroville during construction, and planned outreach and stakeholder engagement activities associated with recovery efforts.

Public Comment and Question Session:

The summary below provides a detailed overview of the questions (Q) and comments (C) offered by meeting participants, as well as responses (R) provided by DWR staff. Specific items for follow up are identified in the "action items" section below.

- Q: How long would it take for water from a dam failure to reach Yuba City, and how deep would the water be?
 - R: If Oroville Dam or the emergency spillway failed with a water surface elevation (WSEL) of 901 feet, the travel time to Yuba City is eight hours. This represents a "worst case scenario;" in the event of less than a total failure, the travel time is longer. In either case, inundation depths vary depending on the exact location. Inundation maps are available on the CalOES website [here](#).

- C: Before the event, DWR wasn't communicating with the public. Thankfully the evacuation happened on a Sunday, which meant school children were already home with their parents. A few suggestions for future communication (particularly around evacuation) include:
 - Although Yuba City was able to get evacuation information out, other areas in Sutter County may not have access to the same level of information.
 - Information should be distributed to more than just immediate first responders. When information is sent to County administrators, it often takes 2-3 days to circulate to all county staff.
 - Given the available technology to rapidly distribute evacuation information, consider developing a system besides phone trees or email listservs to quickly reach a wide audience.
 - If the November 1st deadline for repairs can't be met, DWR should release information on what that means for safety to the general public.
- C: While the spillway gates are certainly a security issue and have critical energy infrastructure information (CEII) implications, the rest is simply a concrete chute. We should be able to have access to that information.
- Q: How will forecast information operations be used moving forward, and will there be impacts to downstream recreation?
 - R: We receive constant updates from the National Weather Service that inform our operations; in this case, damage to the gated main spillway impacted our operations.
 - R: Our rule curves and flood control manual are set by the US Army Corps of Engineers (USACE); although we must stay within the curve for all operational decisions, we are in conversations to update the curve.
 - R: Dove season should not be impacted. DWR is analyzing downstream channel capacity and making sure capacity is restored by the start of the 2017/2018 flood season.
- C/Q: Sedimentation is a significant problem on the Feather River; in some places sediment is as much as 15 feet deep. Dredging would help, as would a more gradual ramp up/ramp down of release rates from Oroville. Instead of releasing 27,000 cubic feet per second from Oroville and rapidly shutting off flows, DWR should release 20,000 cfs from the spillway, then slowly close it down using the penstocks and river outlets. Why is the power plant shut down for maintenance?
 - R: The power plant outage has been scheduled, but it was delayed. We need five weeks to complete penstock repairs; these repairs must be complete before the main gated spillway is closed for the year.
- C: The current release schedule destroys farmland, levees, and fish habitat, and causes public safety issues. It causes major sedimentation issues, and when release flows are rapidly reduced, it collapses the levees. The ramp down should be done over several days, not hours.
- C: The damage reports on the spillways show many construction deviations from the original design.
 - R: Yes, DWR is noticing there were some deviations. These will be taken into consideration, but ultimately the plan is to replace the entire spillway.
- Q: Why aren't the river outlets being used?
 - R: They are in operation and allow releases of 4,000 cfs. They do not have the capacity to drain the reservoir and are used primarily for cold water pool management for fish.

- Q: Have there ever been inflows equivalent to the standard project flood outlined in the original Oroville flood control manual? With only a 160,000 cfs inflow this year, downstream channel capacity was exceeded.
 - R: No. The highest recorded inflow to the reservoir was around 300,000 cfs in 1997.
- Q: Has DWR mined the dirt/debris from response and recovery activities including erosion to pay for repairs?
 - R: DWR is using 1.6 million cubic yards of material gathered on site to reduce costs. Concrete and fill will come primarily from the construction site.
- Q/C: Why isn't Acting Director [Croyle] here? He should be replaced and the Commander of the USACE Pacific Division needs to review CEII statements to see if they're true. If not, documents should be released immediately.
 - R: Acting Director Croyle was called to Washington DC by Governor Brown. DWR has released the Board of Consultants' report with minimal redaction based on guidance from the US Department of Homeland Security.
- C: There should be administrative action against the individuals responsible for spillways maintenance and inspection. DWR or the State Water Contractors should reimburse local first responders for all costs associated with the spillways incident.
- Q: What is an "OG Weir?"
 - R: It's a specific shape of weir that allows water to smoothly flow over the concrete.
- Q: How did the drought impact cement at the dam?
 - R: The forensics team will look into this issue (**see Action Item #1**).
- Q: Did wave action against the dam make it collapse?
 - R: The dam is sound and did not collapse.
- Q: Does Lake Oroville release greenhouse gases?
 - R: Oroville is actually a greenhouse "sink" and absorbs carbon.
- C: This is an emergency situation; DWR should work with regulators to make emergency modifications to the rule curve and decrease storage as quickly as possible. In the last nine days, the lake has risen 13 feet. In addition to operational changes, the spillways should be constructed to release water as quickly as possible, similar to the new Folsom spillway.
 - R: DWR has worked extensively with Federal Energy Regulatory Commission (FERC) and Division of Safety of Dams (DSOD) to create release projections through the peak of the snowmelt. The gated main spillway will be used through the peak snowmelt. After this peak passes, DWR is confident that the Hyatt Powerplant and the river outlets can handle releases for the remainder of the year.
- C: I have a piece of the spillway. It's only six inches thick on one end and eight inches on the other; there is no rebar or fractured rock in it. There appears to be significant issues with the concrete. Has anyone core drilled the flood control gates?
 - R: The forensics team will look into the reasons the spillways were damaged, including problems with the concrete.
 - R: DWR is not aware of any core drilling on the gates themselves; a large number of cores have been drilled on the main gated spillway. The concrete has generally been in good condition. DWR will check to see if the gates have been core drilled at any point (**see Action Item #2**).

- C: Syblon Reid was selected for response activities, but does not have any expertise in waterworks. Kiewit Construction may be industry leaders, but they tend to hire recent graduate students with theoretical knowledge only.
 - R: Syblon Reid has done a large number of complex water projects. They are a preferred provider for PG&E and are working on Friant Dam as well. The same Kiewit team that worked on the Folsom Joint Federal Project (JFP) is working on Oroville. Additionally, DWR, DSOD, and FERC will provide oversight of the entire recovery process.
- Q: Is the Feather River Fish Barrier Dam in poor condition?
 - R: The Fish Barrier will be repaired this year once flows subside.
- Q: Dam expert Scott Cahill offered to assist DWR with the recovery process but was turned down. Why?
 - R: DWR is not aware of any offer of assistance.
- Q: Does the “Green Spot” pose any danger to the integrity of the dam?
 - R: It does not. It is caused by rain and is visible in pictures during dam construction, even before Lake Oroville was filled.
- Q: Will the forensics team look at the emergency spillway *and* management culture at DWR?
 - R: Yes.
- Q: Why was the emergency spillway not used sooner? Was DWR aware that there was something wrong with it before the weir overtopped?
 - R: DWR avoided using it because it had never been used before and we were unsure how it would perform. That said, in anticipation of needing to use it, DWR cleared trees and provided some concrete armoring in advance of flows actually coming over the emergency spillway.
- C: DWR designated the spillways as CEII, not FERC.
 - R: FERC provides the definition of CEII; DWR took that definition and applied it to structures meeting specific criteria. Only the absolute minimum of information was redacted from the Board of Consultants’ report. The definition of CEII can be found online [here](#).
- Q: Can the public take pictures of the dam?
 - R: Yes. DWR also has hundreds of pictures of the dam, and is actively working to set up viewing platforms so the public can see construction and the damage. There are also dam cams streaming a live feed of construction activities. The dam cam livestream can be viewed [here](#).
- Q: Did the system of pipes under the spillways used to drain excess water play a role in the main gated spillway damage?
 - R: The forensics team will look at the underdrain system.
- Q: Are there records of repairs and inspections?
 - R: Yes. DWR has given all of the DSOD records to the forensics team. They are publicly available online [here](#).
- Q: When will the forensics report be distributed for public consumption?
 - R: There are two pieces: the final report will be released in the fall of 2017, but a preliminary findings memo will be released this week. The preliminary findings memo is available online [here](#).

- Q: Will the roller-compacted concrete (RCC) be made of the same concrete used to build the spillways?
 - R: No. It will be based on 2017 technology.
- Q: Who are the State Water Project contractors?
 - R: 29 water agencies throughout California. A full list of the 29 agencies is available online [here](#).
- Q: President Trump issued a winter storm repair fund of \$540 million. Will that money be used to fix our levees and dredge the river?
 - R: The winter storm repair fund applies to the entire state; counties can apply for cleanup grants.
 - R: Other federal funds may be available for levee maintenance as well, including the USACE PL 84-99 program.
- C: My brother lost his entire orchard as a result of the spillways incident. Previous calls to DWR have not resulted in positive communication.
 - R: DWR will speak to him directly (**see Action Item #3**).
- Q: Will an evacuation plan be developed in the near future?
 - R: DWR is working with county officials, but ultimately locals develop their own evacuation plans. The Yuba City plan is available at yubacity.net/flood. The Sutter County plan is currently being updated.
- Q: A number of organizations recommended complete armoring of the emergency spillway in 2005. Why was that not completed?
 - R: Those recommendations sought to reduce sediment deposits in the river. State and federal agencies determined that was not necessary at the time, but DWR is changing the design.
- Q: Where was funding for maintenance? Has DWR profited on water sales to southern California?
 - R: Oroville dam and associated facilities have an annual Operations and Maintenance budget of \$20 million in addition to \$30 million for capital improvements over the last five years.
 - R: DWR does not make a profit and by law, is not allowed to make a profit.
- C: George Soros and Governor Brown don't like dams.
- Q/C: Can we access the original blueprints for the dam? If rebar is submerged, it should be coated. If it wasn't coated, it will rust and deteriorate. As an ironworker and local union member, we are finishing up one job in Reno right now, but will come down to Oroville for our next job.
 - R: DWR is not sure if the original drawings are considered CEII; we will look into it and provide a response (**see Action Item #4**).

Closing

Deputy Director Messer thanked participants for attending and closed the meeting.

Action Items

The following action items were recorded:

1. The DWR Oroville Forensics Team will investigate how/whether the drought impacted concrete on the spillways.
2. DWR will investigate whether or not any core samples have been taken of the main spillway gates.
3. DWR will follow up with specific stakeholders regarding downstream damage to specific properties.
4. DWR will investigate whether the original blue prints of Oroville dam and pertinent facilities are considered CEII.