

Oroville Spillways Community Meetings Marysville, California on May 3, 2017, 5:30 pm Meeting Summary

The meeting in Marysville was the third 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/6WJyehWrbY>

This summary also captures public comments and 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 main 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. 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

Presentation

Joel Ledesma, 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

¹ In some cases DWR has added a "NOTE" that reflects subsequent investigation to ensure factual accuracy.

failed in early and mid-February. Mr. Ledesma noted the unprecedented meteorological conditions that required the controlled but rapid release of water from the reservoir onto the damaged spillway. He reviewed the proposed approach to restoration and mitigation which focuses first on repairing the upper chute of the spillway and installing a cutoff wall on the emergency spillway in 2017 to avoid any further erosion, and then on constructing a new lower chute of the main spillway and additional improvements to the emergency spillway as quickly as possible.

Public Comment and Question Session:

The summary below provides a detailed overview of the questions (Q) and comments (C) provided 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: What is the frequency of inspections to the dam and spillways, and when a problem is identified, how is it resolved?
 - R: DWR, the Division of Safety of Dams (DSOD), and the Federal Energy Regulatory Commission (FERC) perform two on-site inspections per year. Problems with any Oroville structures are assessed and repaired when identified.
- Q: Was the emergency spillway checked by running water over it?
 - R: The emergency spillway is different from the main gated spillway; it was never intended to be used except as a last resort to avoid dam overtopping in extreme hydrologic events. Although the main gated spillway is regularly tested, normally you don't test the emergency spillway. DWR will learn from this experience.
- Why aren't all repairs to the emergency spillway a higher priority than the gated spillway?
 - R: The gated main spillway is the highest priority because DWR wants to be able to control flows downstream to avoid *uncontrolled* releases from the emergency spillway. However, repairs will be made to the emergency spillway as soon as possible, including the installation of a concrete cutoff wall to eliminate the erosion issues we had this year.
- What security issues limit the release of all plans related to spillways construction?
 - R: Before 9/11, all plans were regularly released. Afterwards, the US Department of Homeland Security created a special branch to address dam safety issues. Portions of Oroville are considered “Critical Energy Infrastructure” and release of Critical Energy Infrastructure Information (CEII) is limited to protect public safety.
- Q: Is the emergency spillway anchored in bedrock?
 - R: The concrete weir is excavated into rock, but it does not have an anchor. The new design will have a roller compacted concrete (RCC) buttress, which is a better design.
- C: I don't want to see any water against the emergency spillway until the buttress is in place. Water should not reach a water surface elevation (WSEL) of 900 feet. On the gated main spillway, the design should include a step down so water doesn't pound over joints and into the diversion pool.
- Q: Why weren't the penstocks and river outlets used?
 - The penstock outage was scheduled to replace major pieces of equipment.
- C: Variations in flow from Lake Oroville cause significant damage downstream; when water levels rise or drop quickly, it causes banks to slough and damages spawning habitat. We need

dedicated funding to improve spawning grounds and perform channel maintenance (including dredging). The river outlets at the dam should also be used to keep temperatures low for fish.

- R: The spillways incident was a known high-turbidity event. DWR is conducting evaluations right now and will compare pre-flow spawning conditions to post-event conditions for potential restoration. A large fish rescue was conducted in March, but no additional fish issues have been identified since. The river outlets were opened today, so we should have no trouble keeping temps low throughout the year. Additionally, no other water quality impacts or contaminants have been detected since the incident, but DWR will continue to monitor.
- R: The California Department of Fish and Wildlife (CDFW) saved 9 million fish in two days during the event, and will release many more throughout the year.
- R: On the Yuba County side of the river, DWR is working closely with the Sutter Butte Flood Control Agency (SBFCA) on levee issues and SBFCA is conducting emergency repairs to levees.
- Q: What are the required qualifications for the contractors performing the spillways construction?
 - R: For emergency response actions, they were required to meet financial qualifications, and provide detailed history of similar work. This initial work was expected to last months, but the contractors were able to complete it in weeks. DWR will provide additional recovery and response contractor information as it becomes available (**see Action Item #1**).
- Q: How was CAL FIRE involved?
 - R: CAL FIRE is part of the unified incident command and provides search and rescue services as well as equipment for evacuation (particularly air resources).
- C: Downstream farmers would prefer rapid ramp up of flows and rapid decrease so they can drain orchards quickly to avoid damage to trees.
 - R: DWR continues to look into solutions to this issue, and will notify downstream users of any changes to Oroville flows (**see Action Item #2**).
- C: I don't have any confidence in state inspections.
- Q: I lost an acre of land due to flow changes from Oroville and bank sloughing. How much water can you release from the river outlets and power plant? Why don't you ramp down more slowly to reduce bank sloughing?
 - R: We can release a combined 17,000 cubic feet per second (cfs) from the power plant and river outlets. Additional work is needed on the ramping rates question (**see Action Item #2**).
- Q: How will cost overruns/schedule issues be addressed?
 - R: DWR has a number of contingency plans in place. The main gated spillway is the biggest priority for 2017. If we can't finish the cutoff wall in time for next winter, DWR will reinforce the emergency spillway with a temporary fix. If the full main gated spillway can't be completed before winter, DWR will buttress the upper chute so it remains fully functional and diverts water into the "canyon" created during the spillways incident this year.
- Q: Who will pay for repairs?

- R: A reimbursement request was made to FEMA. The State Water Contractors (*as opposed to tax payers*) will pay for the remainder of construction.
- C: In 2006, fixing the spillway would have cost \$100 million. Today it will cost over \$500 million.
- C: California State Senator Neilsen discussed a range of issues with audience members. He stressed the importance of repairing the spillways *as well as* downstream levees to reduce flood risk and ensure this incident isn't repeated in the future. He also discussed water rights issues, and closed by asking participants to notify his office of any issues arising during the recovery process.
- Q: Why wasn't snowpack factored into the release schedule before the spillways incident?
 - R: It was. The Oroville flood control manual and rule curve require us to consider a "wetness index" for the basin. Although it includes all precipitation (not just snowfall), it does impact our release schedule. Updated manuals and rule curves are being discussed with the US Army Corps of Engineers.
- Q/C: The original operations manual for Oroville states that a total of 900,000 acre feet of flood storage should be available (including 150,000 acre feet from the never-constructed Marysville Dam). The 150,000 acre feet from Marysville is required in the Oroville manual, but never realized. How will DWR address this?
 - R: It is correct that the Oroville manual includes a flood surcharge for storms over the Yuba River. The Yuba County Water Agency has a process in place to manage flows *without* Marysville, but DWR and the Corps need to revise the manual to account for the missing 150,000 acre feet (**see Action Item #3**).
- Q: Is there an active fault under Oroville?
 - R: There is a small "dip fault," but this is very different than the major earthquake faults in the Bay Area or Southern California. Although there have been small earthquakes in the area in the past, the size and probability of earthquakes in the area is very small.
- Q: Folsom Dam has had a number of very large upgrades. Why hasn't the same been true of Oroville?
 - R: On the power production side, \$250 million was spent on upgrading turbines, the turbine shutoff valves, and new fire suppression system. The average annual expenditures on Oroville Operations and Maintenance (O&M) is \$20 million.
- Q: Why wasn't a contraflow program put in place to open all lanes on Highway 70 to southbound traffic?
 - R: Yuba County Sheriff Durfor responded to the question. The nature of this disaster was different than the typical "slow-rise" flood events in the Yuba and Feather basins. The immediacy of the danger required us to evacuate people immediately, and contraflow programs take time to implement.
- Q: What would happen to homeless populations/encampments in the event the emergency spillway had failed?
 - R: The Yuba County Sheriff's Department did a complete sweep of all river bottom areas to move homeless populations to higher ground.
- C: It would be helpful to have a monthly emergency preparedness broadcast in Yuba/Sutter counties.
- Q: Why were five people fired for taking pictures in the early days of the response effort?

- R: One CDFW contractor was fired for violating safety protocol when he was found taking pictures while driving a D-9 bulldozer.
- Was cavitation an issue in the spillways damage?
 - R: It's difficult to say at this time, but the forensics team will be looking into the issue. The full forensics report is due out in the fall of 2017; a preliminary memo will be released the week of May 8.
- Q: Is there long-term funding to fix every spillway in California?
 - R: The State Water Project Contractors will pay for Oroville repairs; there is legislation under development right now to address spillways statewide.
- Q: Has any thought been given to reducing permitting requirements for emergency repairs and emergency dredging?
 - R: Senator Nielsen noted that in certain public safety situations, permitting requirements can be waived. He also noted that the spillways incident may warrant some type of waiver. Marysville Councilmember Simmons added that it could be possible to specifically get waivers for streambed alteration permits.
- Q: Is there a manual override to open the gated main spillway if power fails?
 - R: Yes.
- Q: Is there a specific water surface elevation in Lake Oroville that triggers evacuation?
 - R: Briana Scute, Yuba County Office of Emergency Services, noted that there are "trigger points" on the Yuba, Feather, and Bear Rivers, as well as Dry Creek, for "slow-rise" flood events.
 - R: DWR has a dam failure plan in the event of an actual dam failure, but the most important thing to do is evacuate immediately. Legislation requiring plans for "pertinent facility failure" (such as the spillways) is currently under consideration in the California Legislature.
- C: There should be a clear plan for improving the inspection process, since the existing process missed the spillways issue.
 - R: On February 24, the Governor sent a package of bills to the Legislature to address the inspection issue.
- C: The spillways recovery effort should include agricultural representatives.
- C: There should be an "override switch" to the USACE rule curves if certain hydrologic events occur.
- Q: Are we still under emergency funding right now? Will that money expire at some point?
 - R: We don't have time limits to spend federal emergency funds. DWR is working with FEMA to get all of the reimbursements in place.
- Q: Does DWR support sediment removal?
 - R: Yes.

Closing

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

Action Items

The following action items were recorded:

1. DWR will investigate posting information on response and recovery contractor selection to the website. *NOTE: Contractor information for the recovery effort is available at <http://www.water.ca.gov/oroville-spillway/kiewit.cfm>.*
2. DWR will investigate how to inform stakeholders of changes to flows from Oroville *and* avoid downstream impacts caused by rapid ramp up/down of releases.
3. DWR will continue to participate in conversations with the USACE to update the Oroville flood control manual, with particular attention to the 150,000 acre feet of flood surcharge space required in the original manual with the assumption the Marysville Dam would be built.