



Briefing on Inundation Map Regulations

Today, the Department of Water Resources (the Department) will brief the Commission on the new requirements for inundation maps and the Department's plan to develop associated regulations.

Background

In late February 2017, Governor Brown announced a four-point plan to bolster dam safety and flood protection, including expedited Proposition 1 flood funding, a redirection of prior-year deferred maintenance funding to emergency response actions, seeking increased federal funding to improve dam safety, and changes to state law that would bolster dam safety planning and inspections. Those provisions include:

- 1) Requiring the Department to classify dams based on risk;
- 2) Requiring dam owners to prepare emergency action plans by January 1st of 2018, 2019, or 2021, based on the risk designation made by the Department;
- 3) Requiring dam owners to provide inundation maps associated with the unique failure scenarios of the dam and critical appurtenant structures; and
- 4) Explicitly enhancing the Department's enforcement authority to include civil penalties and property liens in addition to levying restrictions on reservoir levels to ensure safe operation.

This program was enacted through the 2017 Budget Trailer Bill, SB 92. Altogether, the various provisions strengthened dam safety and established new requirements for preparing and updating Emergency Action Plans and inundation maps, including improved coordination between the Department and the California Office of Emergency Services (CalOES).

SB 92 also included a one-time loan to the Department of \$6.5 million from the General Fund for increased activities associated with these new provisions of law. The loan is to be repaid through increased dam safety fees.

Dam Safety

Currently, about 1,250 dams are subject to the state's jurisdiction with respect to safety and regulated by the Department's Division of Safety of Dams. These dams are inspected annually and prior to SB 92, these dams were classified in three categories consistent with federal definitions; 678 high hazard, 281 significant hazard, and 289 low hazard.

The Department's Dam Safety Program comprises four basic safety activities, including annual maintenance inspections, construction oversight, application reviews, and re-evaluation of existing

dams. Over the last ten years, the re-evaluation component of the program focused on the highest risk to California dams, including a seismic re-evaluation of dams in areas that have a high probability of a major earthquake. The seismic re-evaluations led to over \$1 billion in repairs to dams.

The inspection process focused heavily on the dam itself, and included a visual inspection of the appurtenant structures, such as spillways. The February 2017 spillway failure at Oroville demonstrated that California needed a more extensive evaluation of the adequacy, stability and structural integrity of the appurtenant structures.

New Requirements for Dam Safety

At the time of the Oroville spillway incident, Emergency Action Plans were not required for all jurisdictional dams; however, about 70 percent of the high-hazard dams had them, including Oroville.

Prior to SB 92, inundation maps, the cornerstone of emergency plans, were created or updated only at the time the dam was built or enlarged. A dam inundation map delineates the area that would be flooded by a hypothetical dam breach or failure. It includes downstream effects and shows the probable path of water released due to the failure of a dam or from abnormal flood flows released through a dam's spillway and/or other appurtenant works.

SB 92 requires the Department's Division of Safety of Dams to re-classify jurisdictional dams as extremely high, high, significant or low risk, and to require inundation maps and Emergency Action Plans for all jurisdictional dams, allowing a waiver for low hazard dams. During regular inspections, the Department will track any dams where the hazard classification has changed and reassess the waiver as necessary. The Department will identify which scenarios, other than a complete dam failure, require a separate inundation map. The dam owner will create the inundation map and submit to the Department's Division of Safety of Dams, for review and approval of the map. The approved maps will then be posted publicly on the Department's website.

Cal OES will coordinate emergency response drills with dam owners and local emergency management agencies. The dam owner will be required to update the Emergency Action Plans regularly in accordance with federal guidelines and update the inundation maps every ten years or sooner if there is a change in dam status or change in downstream risk.

AB 1270

On February 12, 2018, the Legislature sent AB 1270 (Gallagher) to the Governor as an urgency bill, to take effect immediately with his signature. This bill would require the Department to inspect dams, reservoirs and critical appurtenant structures in the state at the expense of the dam owner every year except for low hazard dams which would be inspected at least every two fiscal years. It further requires dam inspection reports be made publicly available, as specified, and dam owners to demonstrate operability of their structures annually. Finally, the Division of Safety of Dams, in consultation with dam experts, will make public dam inspections protocols and reassess those protocols every ten years.

Additionally, AB 1270 would memorialize in statute the existing practices of the Department regarding inspection of dams and structures based upon hazard classification as well as require the inspection protocols to be updated. This process will incorporate changes such as those identified in the

Independent Forensic Team (IFT) report on the Oroville spillway failure, released on January 5, 2018. That report has highlighted issues that need to be addressed across the entirety of the dam industry – issues such as greater emphasis on inspecting the appurtenant structures of a dam complex and not only the dam structure itself.

Specific provisions of AB 1270 include:

1. A requirement that the Division of Safety of Dams to conducts inspections of dams at least once per fiscal year, with the exception on low hazard classification dams which would be inspected at least every two fiscal years [this is a modification to existing practice, reducing the frequency for low hazard dams];
2. A requirement that the Department make dam inspection reports publicly available, and provide in its disclosure a statement outlining any withheld information due to sensitive data security issues [this is a new requirement];
3. A requirement that dam owners operate critical outlet and spillway control features on an annual basis, and demonstrate full operability in the presence of the Department every three years [this is a new requirement];
4. A requirement that the Division of Safety of Dams, in consultation with independent national dam safety and dam safety risk management organizations, beginning January 1, 2019 and every ten years thereafter, to amend dam safety inspection and reevaluation protocols to incorporate updates best practices [this is a new requirement], and
5. A requirement that the Department report to the Governor and Legislature the intent to update dam safety protocols and provide notice to dam owners prior to enacting the amendments.

This is an informational item.

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