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Danger Below: SoCal's Dams Face Same Risks as Oroville

The near-disaster of the Oroville Dam is a stunning reminder that Californians live in a landscape of extremes. Just 18 months ago, the Oroville Reservoir was a posterchild of the state's withering drought—fish carcasses littered its dust-cracked floor; docks ended in mid-air. Today there is so much water cascading over the dam's spillway that it has threatened its structural integrity and forced 200,000 people to evacuate.

This rapid oscillation between drought and deluge is not a one-off. It is a harbinger of California's climate-changed environment. Over the rest of this century, scientists confirm, the Golden State will experience even more intense swings between dry and wet periods. What rain we receive will increasingly be concentrated into occasional very wet years with very strong storms. If you thought Oroville was bad, just wait.

Only we cannot wait, especially not in Southern California. For all our dependence on the water that Oroville and dams like it catch and then channel into the State Water Project, it is another kind of dam—those retaining floodwaters sheeting off the Santa Monica, San Gabriel, San Bernardino, and Santa Ana mountains—that has made it possible for development to sprawl across the inland valleys.

These dams are as old, if not older, than Oroville. Their structural integrity is just as questionable. Which is why those built and operated by Los Angeles, San Bernardino, Riverside, and Orange counties are getting hurried-up inspections. Constructed in the aftermath of the L.A. basin's massive 1938 flood, in which more than 100 died and property damage soared above \$40 million, they were designed to withstand a similar 50-year storm event.

Yet the high-energy storms that will pound this region in subsequent decades will be much more powerful. Should any of these dams collapse, the resulting devastation will be unfathomable.

The US Army Corps of Engineers hints at this possibility in its 2006-08 inspection reports of the Southern California dams it manages. Among its key facilities are the Hanson and Sepulveda dams in San Fernando Valley—without which it would have been impossible to build the 101 or the 5 freeways (or the dense suburbs that fan out from them). Other essential and vulnerable infrastructure include the Whittier Narrows Dam, which controls the San Gabriel River, thereby protecting Montebello, Pico Rivera, Downey and other cities clustered within the floodplain; and the San Antonio Canyon dam, which seals off the eponymous canyon above Ontario, Upland, Claremont and Pomona.

Each of these facilities needs repair. Hanson (built in 1940) and Sepulveda (1941) are in the best shape, but the Corps is concerned about their ability to withstand heavy flooding and earthquake deformation. The Whittier Narrows (1957) is the worst rated Corps-dam in the region, a “high-hazard” structure whose automatic spillway gates are antiquated; the foundation of this earthen structure “has a higher likelihood of failure” than previously understood and it may fail if overtopped.

The San Antonio Canyon (1956) is only slightly more secure. Here, too, the Corps is worried about foundation seepage, possible collapse of channel walls and/or overtopping. “The likelihood of failure from one of these occurrences, prior to remediation,” the Corps declared in 2008, “is too high to assure public safety.” Remediation would cost \$14 million, yet only \$1 million has been allocated. The “urgent” safety issues of the dam remain unresolved.

Our failure to act brings heightened risk with climate change bearing down. The projected increase in the magnitude of storm events, when combined with the region’s aging flood-control infrastructure, could prove disastrous. Given the crucial role Southern California’s dams play in holding back floods, trapping sediment, and channeling water away from the built landscape, their upgrading deserves immediate attention. Remember Oroville.

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