

History of Flood Management Efforts in the Corte Madera Creek Watershed 1960 to 2025

*This article is a summary of information taken from the Flood Control District's
Ross Valley Watershed Program website.*

Because of frequent flooding local communities in the Ross Valley decided in the early 1960s that a flood control project was in order for Corte Madera Creek. Flood Control Zone Nine, a County agency, was created in 1966 for the sole purpose of being the local sponsor of the project to qualify for Federal funding. Zone Nine's responsibility has since its inception been limited to the main channel Corte Madera Creek Flood Control Project. There are certainly many other flood-control related issues and concerns in Ross Valley but they were not and are not within the mandate of Zone Nine.

As originally conceived the Corte Madera Creek Flood Control Project consisted of six Units, with a concrete channel 6.5 miles long, reaching from the Bay into Fairfax. It was designed to carry all the flow about 7600 cfs (cubic feet per second) or a 250-year event (a 250-year event is a flow that has a 0.4 percent chance of occurring in any one year). However, after the completion of Units One, Two and Three in 1971, the towns of Fairfax and San Anselmo (Units 5 and 6) opted out and the project was revised to extend only up to the Sir Francis Drake Boulevard bridge just before the Ross/San Anselmo boundary, a total distance of just over 4.0 miles. Units One and Two extend from the Bay to the College Avenue Bridge, Unit Three from that bridge to about 600 feet downstream of the Lagunitas Road Bridge in Ross, and Unit Four from there to the Sir Francis Drake Blvd. Bridge. The project consisted of a trapezoidal earth channel through Unit One and most of Unit Two with the last 1500 feet in Unit Two being a rectangular concrete channel. Units Three and Four continued the concrete channel to the end of the project. As designed, the revised project was also expected to handle 7600 cfs.

Units One, Two and Three were constructed in the late 1960s and completed in 1971. Construction of Unit Four was to have begun in 1972 but was postponed due to strong public opposition, litigation, and environmental concerns. The U.S. Army Corps of Engineers (Corps) was asked to redesign Unit Four in such a way as to preserve the natural character of the creek. After consideration of several alternatives, a plan was selected in 1980 that had general public support. However, before the project could be revised, Marin County could no longer afford its share of the project because of the effects of Proposition 13 and the project was put on hold.

After the flood of January 1982 and an order from the Marin County Superior Court to complete the project, the Marin County Board of Supervisors requested the Corps to re-initiate it and Congress reauthorized the project at a reduced 100-year level of protection. However, the 1982 flood also made it apparent that the existing concrete channel could carry only about half the flow it was designed to carry. This reduced capacity has been attributed to sediment entering the concrete channel from upstream and roughness of the channel walls was increased by barnacles and battering by rocks carried by flood flows. Water flows faster over a smooth surface than over a rough one and the gravel on the bottom and barnacles on the sides of the channel were considerably rougher than the finished concrete of which the channel is made. In fact, the channel, with sediment and barnacles, is just about twice as rough as what was assumed during

design.

Completing the project required the corps to devise an environmentally sensitive redesign of Unit Four and to correct the already constructed concrete channel in Units Two and Three so that it could carry the 100-year flow. Another period of study and analysis occurred and more than a score of alternatives were considered over the next several years. It became clear that to provide protection from a 100-year flood, would require a project that the community could not support because of its environmental impacts.

On February 1, 1996, the Zone Nine Advisory Board passed a resolution recommending to the Board of Supervisors of the Flood Control District that they request the Army Corps to proceed with a 5400 cfs project while adhering to certain specific design considerations. These include the minimization of the use of concrete, retaining adjacent recreational facilities such as the creek side multi-use pathway, using native plants, enhancing riparian and fish spawning habitat, and maximizing the channel capacity while retaining the Lagunitas Road Bridge as is. On March 5, 1996, the Board of Supervisors adopted Resolution 96-26 requesting the Corps to do just that. project that would provide 40-year protection or 5400 cfs.

To provide for effective and timely communications between the Corps and the communities, Zone Nine Advisory Board created a Design Advisory Committee or DAC. The stated purpose of the DAC was to periodically review the progress of the design, serve as a sounding board for Corps staff as to design decisions, and to make independent input as to its particulars. The DAC reported directly to the Advisory Board and was guided by the design parameters contained in the Board of Supervisor's February 1, 1996, Resolution. The DAC had nine members; two each from Ross, Kentfield, the Zone Nine Advisory Board, and the Friends of Corte Madera Creek Watershed and one member from the City of Larkspur.

The DAC held a number of meetings between 1998 and 2000 and co-sponsored several public workshops with both Kentfield and Ross in their respective communities. Four alternatives came to the fore during this process: No Project Alternative, two alternatives that would provide the full 5,400 cfs capacity; and a Minimal Project that would provide more capacity than exists currently but less than 5,400 cfs. The Corps also proposed the idea of a short bypass culvert around the Lagunitas Road Bridge in Ross that could be combined effectively with any of the other alternatives except the No Project alternative. The next step in the process was for local communities to determine the Locally Preferred Plan. The DAC directed the local communities (Larkspur, Kentfield and Ross) to review the alternatives and recommend to the DAC which one (or combination thereof) each community would prefer. In the end, no agreement was reached.

The Ross Valley Flood Protection and Watershed Program was established after the flooding that occurred in Ross Valley during December 2005. The floods caused nearly \$95 million in damages in the communities of Fairfax, San Anselmo, Ross, Kentfield and Larkspur. The program, a regional effort led by the Marin County Flood Control and Water Conservation District, has the objective of substantially reduce the frequency and severity of flooding throughout the Ross Valley Watershed, in an economically viable manner while prioritizing public safety and minimizing environmental impacts. It is partially funded by a storm drainage fee approved by voters in 2007 and applied to properties throughout the watershed; the fee expires in June 2027.

The Flood Control District is implementing these actions:

- Reduce and attenuate flows by increasing floodplain detention storage and stormwater infiltration
- Increase creek and floodplain capacity to convey floodwaters by:
 - Enlarging some channels through the removal, modification, or replacement of existing obstructions to flow, such as structures and bridges
 - Containing flood flows as they move through the watershed
- Conducting regular creek and channel maintenance
- Community flood education including flood preparedness real-time rain and stream monitoring, flood response checklists, and information

As specific projects were proposed, resistance developed, blocking detention basins under the jurisdiction of the towns of Fairfax and San Anselmo and severely limiting efforts to increase channel width on private property. Both the Town of Fairfax and the Town of San Anselmo withdrew from Flood Zone 9. After several projects were blocked by local action or proved infeasible, two major projects remain.

San Anselmo Flood Risk Reduction Project has three major elements:

- a flow diversion and storage basin, located upstream of the Town of Fairfax, where Sunnyside Nursery used to be located (constructed in 2022);
- the removal of buildings purchased by the Flood Control District in downtown San Anselmo (completed in 2020); removal of the Building Bridge 2 (BB2) structure that restricts flow, along with creek bank improvements; and
- flood mitigation of buildings downstream of BB2 that are affected by its removal.

Corte Madera Creek Flood Risk Management Project is intended to reduce the frequency and severity of flooding and to protect human life and property in the communities of Ross and Kentfield by enhancing and improving features of Corte Madera Creek. The project will make improvements to the concrete channel that the U.S. Army Corps of Engineers (USACE) built in the 1960-70s. The project area starts upstream at Lagunitas Road in the Town of Ross and ends downstream at the earthen channel in Kentfield.

The proposed channel improvements provide increased flood risk reduction (to a 25-year flooding level event) for residents and businesses within the Town of Ross and Kentfield and improve fish passage and habitat.

The project includes these activities:

- Add a stormwater pump station to control flooding in the Granton Park neighborhood (completed in 2024)
- Remove portions of the concrete channel from Stadium Way downstream to the natural earthen channel to improve fish and wildlife habitat (scheduled for fall 2025)
- Create taller and/or new floodwalls in Units 2 and 3 to control flood flows (planned for 2026)
- Create larger fish resting pools within the concrete channel in Unit 3 to improve fish passage (planned for 2026)

- Remove a fish ladder and lower the channel within Unit 4 to remove an impediment to flood flow (planned for 2026)

Funding for these projects has come from the storm drainage fee and numerous grants. After June 2027, there will be limited funding available for additional new project; the Flood Control District will focus on maintenance of existing infrastructure.

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