
Other Corps Activities

Besides work for FEMA and other agencies, the Corps repaired levees on the San Lorenzo and Pajaro rivers. The San Lorenzo River carries runoff from the Santa Cruz Mountains through the city of Santa Cruz into the Pacific Ocean. In 1955, the Corps had improved a floodway channel and constructed levees along the banks of the San Lorenzo River to manage periodic floods. The earthquake severely damaged the levees and floodway, and with the rainy season fast approaching, Santa Cruz faced the threat of a major flood.¹¹²

On 19 October, a San Francisco District inspection team observed significant cracking, sloughing, and lowering of levee crests along several reaches of both projects, and damage to project gravity and pump station drainage structures that could fail completely with normal winter flow conditions. Corps inspectors found several cracks, about 1,200 to 1,500 feet long and 2 feet deep, in the levee on the San Lorenzo River. They completed their inspection on 21 October.¹¹³

Because of the urgent need for repair before the winter rains, General Sobke sought an exception to the requirement that the California governor specifically request assistance. He asked HQUSACE to give him the authority to approve the two projects. Sobke estimated that the Pajaro River would require 4,200 feet of levee construction at a cost of \$1 million and the San Lorenzo River would require 4,200 feet of levee construction at a cost of \$2 million.¹¹⁴

Public Law 84-99, *Flood Control and Coastal Storm Emergencies*, authorized the Corps of Engineers to repair only those federal and nonfederal flood control projects that had been damaged by floods, hurricanes, or coastal storms. If an "imminent danger" of flooding existed, the Corps could act to alleviate the threat to public health and safety. But this authority would be considered only after a request from the state governor confronted with the threat of flooding. The South Pacific Division requested authority under P.L. 84-99 to repair the levees.



A Corps inspector measures a fracture in the Pajaro River levee.

The fact that the Corps had constructed the levees initially made it easier to justify its involvement. After being built, both projects had been turned over to local residents for operation and maintenance. Corps officials reasoned that the Corps design had failed because the damaged levees no longer provided adequate flood protection for Santa Cruz and Watsonville. In addition, late October marked the beginning of the flood season.¹¹⁵

Within hours, HQUSACE approved the South Pacific Division's request. In his letter authorizing the South Pacific Division to proceed with repair of the levees, John Elmore increased the South Pacific Division commander's authority for approving flood control projects damaged by earthquake from \$500,000 to \$3 million.¹¹⁶

The division quickly established a resident office staffed by personnel from San Francisco and other districts. Within two weeks, Corps personnel prepared plans, specifications, and bidding packages. On 28 October, the Corps awarded Granite Construction a \$1.44 million contract for work on the San Lorenzo River project; on 31 October, the Corps awarded the company a \$1.35 million contract for the Pajaro River project. The projects consisted of 20.5 miles of earthen levee along the Pajaro River and 42 miles of earthen levee on the tributary Corralitos Creek. The Corps estimated that 9,530 feet of levee on the Pajaro River and 4,530 feet of levee on the San Lorenzo River required repair.¹¹⁷

By November, it became clear that the estimated \$3 million cost of repairs to the San Lorenzo levees would be exceeded. The cost estimates at that time were \$1.75 million for the San Lorenzo repairs and \$1.84 million for the Pajaro repairs. As the work progressed, crews discovered additional damage that added to the cost. Furthermore, large overruns had occurred in the import fill requirements at both projects because the material was shrinking 20 to 30 percent. Colonel Yanagihara requested \$3.58 million to complete the repairs.¹¹⁸ Elmore increased the commander's delegated authority from \$3 million to \$3.6 million.¹¹⁹

By 15 December, contractors had rebuilt 5,200 feet of levee at 8 locations along the San Lorenzo River; by 11 December, they had repaired 12,000 feet of levee at 49 locations along the Pajaro River.¹²⁰



Chief of Engineers LTG Henry Hatch and Corps inspectors examine the San Lorenzo River levee damage.

Another significant activity was the Corps' first-time involvement on a hazard mitigation team (HMT). Hazard mitigation, a process to reduce or eliminate threats to life and property, grew out of Sections 409 (Hazard Mitigation Planning) and 404 (Hazard Mitigation Grant Program) of the Disaster Relief Act of 1974 (Public Law 93-288; 42 U.S.C. 5121-5202). On 25 October, Tommie Hamner invited the Corps to participate in a hazard mitigation team that FEMA had created to develop strategies and recommend measures to reduce or eliminate future earthquake damage in California.¹²¹ The team met from 31 October to 2 November at the disaster field office in Sunnyvale. Attendees included representatives from federal agencies on FEMA Region IX's Regional Interagency Steering Committee (RISC) and from the principal agencies of the National Earthquake Hazards Reduction Program (NEHRP), with the exception of the National Science Foundation.

The Corps had nine representatives on the hazard mitigation team: Robert Edmisten and Paul Komoroske, emergency management specialists from the South Pacific Division and

the Seattle District respectively; Dr. Gus Franklin, a geotechnical expert from WES; Dr. Robert Hall, a structural specialist from WES; David Sills and Jack Hurdle, emergency managers from the Lower Mississippi Valley Division and the Memphis District; Dr. Surya Bhamidipaty, a hydraulics specialist from the South Pacific Division; Chuck Perry, a geotechnical specialist from the Seattle District; and Greg Hempen, a geophysicist from the St. Louis District.¹²²

In its final report, the team made roughly 60 recommendations in such areas as hazard identification and monitoring, repair, and construction. It also addressed the need to identify and pre-position federal, state, and local resources to mobilize immediately for a disaster. The report observed that current federal law prevented major federal participants, such as the Department of Defense, from mobilizing immediately.¹²³