



FEMA

Flood Mitigation Project Protects Gingerbread Houses

Ferndale, CA – The City of Ferndale is a small dairy community located in Humboldt County's Eel River Valley. Historic Victorian homes line its downtown streets. Francis Creek meanders through the city, attracting ducks and picnickers. This beautiful town has been declared a Federal disaster area seven times since 1980, due to flooding. The peaceful creek has been known to become a raging river in heavy winters, overflowing its banks and damaging homes and businesses.

When it flooded in 1995, Francis Creek caused \$1.76 million in building damages and \$289,000 in content losses. After the waters receded, it cost an additional \$231,800 to clean up the debris. In 1996, the City, through the Governor's Office of Emergency Services (OES), applied to FEMA's Hazard Mitigation Grant Program (HMGP). The City sought a grant for a comprehensive flood mitigation project on a one-mile stretch of Francis Creek. The project called for increasing the creek's size and water flow by cleaning the creek bed of debris, widening the creek in some areas, and restoring its natural path in other areas. It also called for rebuilding 16 bridges where bridge supports unnecessarily restricted water flow.

Not only would the project prevent future flooding, it would also improve roads, water quality, and protected species habitat. The California Department of Transportation (CA DOT) and the California Department of Water Resources (CA DWR) became involved. Funding for the project included contributions from FEMA/OES HMGP, FEMA/OES for disaster assistance from a previously approved Disaster Survey Report, CA DOT as a cost-share for drainage improvements within the state right-of-way, CA DWR Urban Streams Restoration Grant Program, and City Drainage Funds.

Engineers designed the project to carry a flow of 750 cubic feet per second (cfs). To widen the creek, 5,600 cubic yards of soil and concrete were removed, then 7,500 tons of boulders were added to shore up the banks of the creek. Workers also removed a concrete channel in front of Ferndale High School and restored the creek's natural course there. They replaced non-native vegetation with native vegetation and layered culvert floors with three feet of gravel, which improved the mobility of aquatic life.

Upon completion in October 2002, the \$3.75 million project provided protection to 73 homes, 56 businesses and commercial structures, five churches, a fire station, and three schools. It also protected part of the city's infrastructure, including roads and bridges. Nature soon put the flood mitigation project to the test. Two severe storms in December 2002 exceeded the 1995 event, but the city stayed dry.

The Mayor praised the mitigation project. "We waited for the banks to overflow, but they didn't. I'm grateful to the State. We couldn't have done it without them." This successful project serves as a model for other communities. The key element was the collaboration of Federal, state, and local governments.



Humboldt County,
California



Quick Facts

- Year: **1995**
- Sector: **Public**
- Cost: **\$3,750,000.00 (Actual)**
- Primary Activity/Project: **Flood Control**
- Primary Funding: **Hazard Mitigation Grant Program (HMGP)**