



Floodwall Gives Seniors Peace of Mind

Full Mitigation Best Practice Story

Napa County, California



Yountville, CA – On New Year’s weekend, 2005-2006, Northern California suffered a severe winter storm that dropped six to eight inches of rain in 48 hours in Napa County. The storm followed a two week period in which 12 to 14 inches of rain fell overall. Streams and drainage ditches around Yountville flooded, but two mobile home parks surrounded by a new flood wall stayed dry. In homes where flood water would have been four feet deep in the absence of a protective flood wall, the owners were safe and dry. “They had peace of mind . . . slept through the night,” said Myke Praul, town engineer for Yountville. The new flood wall was completed less than nine months before the winter storms hit.

The Town of Yountville experienced severe and repetitive flooding several years in a row in the early and mid 1990s. One hundred homes were destroyed by three previous floods.

Affected most severely in past floods were mobile homes in the Rancho de Napa and Gateway Mobile Home parks located at the town’s southeast corner. These mobile home parks lie within the 100-year floodplain of the Napa River. They are bordered to the west by Hopper Creek and to the east by Beard Ditch. To the north and south are local drainage ditches that carry surface runoff from the adjacent properties and mobile home parks to Beard Ditch.

Frustrated residents of the frequently flooded areas appealed to town officials to explore ways to mitigate the problem. Initially, the Town of Yountville applied for and was granted funding through FEMA’s Hazard Mitigation Grant Program (HMGP) for an elevation project for 88 mobile homes. In the spring of 2001, following several years of preparations and evaluation, the town changed the project to floodwall construction and instituted building codes that required newly installed mobile homes in the two parks to be elevated above the Base Flood Elevation (BFE). The BFE is the average floodwater depth for a flood event that has an estimated one percent chance of occurring during any given year. Buildings constructed to this standard are expected to sit above the floodwater and avoid damage during all but the most severe inundations.

The project included several other components in addition to the floodwall. Project engineers built an automatic warning system into the retention pond consisting of a float that rises as the water in the pond approaches flood levels. If the water reaches the 50-year flood level, the system automatically sends warnings to the local emergency response agency dispatchers. An additional component of this project was to move the town’s lift station generators inside the floodwall. Prior to this move, the generators were subject to frequent flooding, which meant that Yountville’s sewerage infrastructure could fail, causing additional damage as effluents backed up into homes.

A combination of Federal, county, and local sources funded the flood mitigation project. The total cost of the Yountville flood wall project was \$6 million. Approximately 50% of the project costs was funded through the HMGP, owners of the two mobile home parks contributed funds, and the County procured a loan against the proceeds of Measure A, which is a half-cent sales tax that was approved by the citizens of Napa, California, to help fund a flood control project. The revenue from the tax is used as needed and has grown into a substantial amount, enabling other jurisdictions in Napa County to take advantage of the funds and use them for flood control projects in their communities.

Floodwall design and engineering began in 1995, and construction began in the spring of 2003. The project was completed in March 2005. Eight months later, the winter storms of 2005-2006 hit Yountville. The floodwall spared 314 homes from flooding and prevented the need to evacuate residents, many of whom were senior citizens.

Activity/Project Location

Geographical Area: **Single County in a State**

FEMA Region: **Region IX**

State: **California**

County: **Napa County**

City/Community: **Yountville**

Key Activity/Project Information

Sector: **Public**

Hazard Type: **Flooding**

Activity/Project Type: **Flood Control**

Structure Type: **Manufactured Housing**

Activity/Project Start Date: **05/2003**

Activity/Project End Date: **03/2005**

Funding Source: **Hazard Mitigation Grant Program (HMGP)**

Funding Recipient: **Local Government**

Funding Recipient Name: **Town of Yountville**

Application/Project Number: **9999**

Activity/Project Economic Analysis

Cost: **\$6,000,000.00 (Actual)**

Activity/Project Disaster Information

Mitigation Resulted From Federal
Disaster? **Yes**

Federal Disaster #: **1044 , 01/10/1995**

Federal Disaster Year: **1995**

Value Tested By Disaster? **Yes**

Tested By Federal Disaster #: **No Federal Disaster specified**

Year First Tested: **2005**

Repetitive Loss Property? **Yes**

Reference URLs

Reference URL 1: <http://www.fema.gov/government/grant/hmgp/index.shtm>

Reference URL 2: <http://www.co.napa.ca.us/>

Main Points

- An HMGP project to elevate 88 mobile homes was changed instead to construction of a protective flood wall.
- An automatic flood warning system was built into the retention pond.
- The town's sewer lift station generators were moved inside the flood wall.



Closeup of the new floodwall around Gateway Mobile Home Park.



Homeowner Dennis Brown.



A view of two sections of the floodwall.



A view of the floodwall and retention pond.