



PROTECTING the Community

A joint powers agency delivers a new level of safety

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The river communities of Yuba County, California have witnessed a longstanding history of catastrophic flooding. Locals who reside near the Feather, Bear and Yuba Rivers still remember the floods of 1955, 1986 and 1997. For residents, it was not a question of if the rivers would flood again, but when.

In an effort to address the flooding issues, the Three Rivers Levee Improvement Authority (TRLIA) was established in 2004 as a California joint powers agency between the County of Yuba and Reclamation District 784. Its primary goal was to finance and construct urban levee improvements on



A History of Flooding

In 1955, a devastating flood along the Feather River prompted the creation of the Yuba County Water Agency, as well as the eventual construction of Bullard's Bar Dam on the Yuba River, which provides a flood control reservoir, a water storage resource and hydroelectric power. In 1986, a levee failure flooded more than 10,000 acres. This was a costly flood and resulted in a lawsuit that the state eventually settled for nearly \$500 million.

Following the 1986 levee failure, further work was completed, and every indication from the U.S. Army Corps of Engineers suggested that the levee system would deliver adequate protection. The Corps, along with the State of California and Yuba County Water Agency, instituted the "Levee Systems Evaluation Project" to ensure protection was maintained. But in 1997, another levee break on the Feather River flooded 16,000 acres, damaged more than 13,000 homes and forced tens of thousands to flee their homes. The combined costs associated with the floods of 1986 and 1997 exceeded \$96 million, and included the loss of several lives.

Rising to the Development Challenge

Following the 1997 flood, the California Department of Water Resources and the Corps initiated a re-evaluation of the levees to withstand a 100-year flood event. This brought renewed efforts by the Corps, as

well as state and local officials, to fix the levees. The preliminary results of these efforts were released in a 2003 report, identifying deficiencies along the Bear River and the Western Pacific Interceptor Canal. The County determined that further levee improvements were critical. However, prior to the report's release, Yuba County believed that necessary flood prevention measures had already been taken to address the issues raised by the prior floods and they allowed the Plumas Lakes community to proceed with construction. Work commenced on infrastructure and home construction to meet the growing real estate market demands, but once the report was released, development stalled.

Yuba County, primarily an agricultural community, could not afford the devastation of another flood. But the County lacked the local funding necessary to match the limited state funds that were available. And from a federal standpoint, there were essentially no funds available for flood improvements. With nowhere else for the local parties to turn, TRLIA was born. A unique partnership followed between the existing community and the developers who wanted to protect their investment and ensure future development potential.

Through a unique financing program, the developers were able to devise a funding solution. Community Facility Districts were established and levee fee program tools were used by TRLIA to fund projects as residential development proceeded. Developers regulated the number of homes to be built prior to completion of the

the Feather, Bear, and Yuba Rivers, as well as the Western Pacific Interceptor Canal in the Sacramento Valley.

From the beginning, TRLIA was determined to not only deliver the Federal Emergency Management Agency's 100-year flood protection, but to also satisfy the State of California's request for 200-year flood protection for roughly 30,000 acres of farms and urban land within the district. This included homesteads for over 40,000 current residents and for 9,000 future households in the new residential development of Plumas Lake. And despite being considered an underfunded community, Yuba County found a solution for achieving this level of flood protection while ensuring future growth and economic development.



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Aquaforia, a water education foundation, gives informational tours showing the flood protection measures along the Bear, Feather River and Sacramento River watersheds.

project. This unique funding partnership provided the local cost share that, together with some State of California funds, ultimately financed the project until the U.S. economy took a downward turn.

In 2005, the Corps issued a notice that the Feather River east bank levee and the Yuba River south bank levee above the Southern Pacific Railroad crossing did not meet 100-year requirements. In response, TRLIA performed additional evaluations of the Feather and Yuba River levees. The Yuba County community, which sought protection for existing homes and properties, as well as developer pressure to build in Plumas Lake, created a strong demand for a solution to the flooding problem. Community leaders clearly recognized the dire need for flood protection, as it was crucial for the future development of the local community. Yet, new flood prevention measures required that landowners who in the past had been devastated by the floods, allow their land to be used as part of the flood protection project.

The Right of Way Component

Upon joining the TRLIA team in 2005, Bender Rosenthal, Inc. (BRI) developed a right of way program that would evolve with the project's needs over time. The right of way services included program planning, project management, appraisals, acquisition, relocation, escrow support,

final accounting packages and expert witness services. The TRLIA Right of Way Program started with six parcels in 2005, and as of December 2013, covered over 2,400 acres, including 165 parcels and 30 residential relocations. The land uses varied from big box commercial to rural residential and agricultural. The right of way team was tasked with negotiating deals for over 3.5 million cubic yards of soil, which involved working closely with State and Federal partners to establish environmental and flood control uses for all new levee setback areas.

At BRI, our first charge was to bridge the Department of Water Resources sequential systematic approach to delivering right of way with TRLA's need for concurrent right of way activities due to time constraints. The team had to decide the rewards and risks associated with adhering to the State's program. As the ultimate owner of the land, the state was instrumental in setting forth what would be necessary from a real estate perspective to eventually transfer the flood control project in the Corps' Project Levee System. Meeting geodetic standards was our first priority, followed by processing and documenting TRLA's funding share for real estate and the ultimate transfer of needed lands.

The project required an expedited schedule so that we could accomplish in 11 years what might typically take the

Corps and the State of California as much as 30 to 40 years to complete. We knew that the residents of Yuba County could not wait, so a management framework was established to focus on identifying issues and quickly solving the most pressing problems. The TRLIA management team included four key team members overseeing environmental, engineering and right of way, plus local, state and federal stakeholders. Once the team, including agencies and consultants was assembled, they were given the charge of aggressively expediting the process of flood prevention actions.

BRI's role was to acquire the necessary rights of way from owners who had already experienced the devastation from previous floods. We kept a tight reign on the budget, communicating updates on the initial real estate budget in comparison to actual costs. Our first deliverable included a right of way manual setting forth the communication, authorities, reviews, legal documents and deliverables.

The lands needed for the new setback levee projects were primarily permanent plantings of tree crops, and required additional expertise in valuation and crop damage settlement. Appraisers and acquisition professionals had to develop an understanding of agricultural practices, including irrigation systems, harvesting and the packing of fruits and nuts. An internal training program commenced within BRI, where outside experts were invited to address these issues as they came to the forefront. Attorneys addressed the interpretation of "crop damages" as defined in the Civil Code of Procedures, and well drillers were assigned to develop an overall strategy for digging and replacing water sources impacted by the project during the appraisal phase. Goodwill experts were brought in to address the issues of specialty crops such as pears and cherries sold to specialty retailers.

Cost-Sharing Partnership

In 2006, TRLIA was working against the clock. For a project as extensive as this one, the issue was not only finding the funds, it meant finding them as quickly as possible in an effort to avoid the devastation of another flood. Fortunately, the state passed the Disaster Preparedness and Flood Protection Act of 2006 that provided a source of state levee funds. In addition, Yuba County and the Yuba County Water Authority sold \$78 million in bonds to acquire \$46 million for local share matches to the TRLIA funding.

Over time, there were additional projects incorporated into the initial scope, and other work was needed to comply with new Urban Levee Design Criteria requirements established by the California Department of Water Resources. Flood prevention criteria continued to change, and costs escalated as a result. In 2004, TRLIA had a three-phased program that cost less than \$100 million. However, between 2005 and 2006, new levee criteria caused TRLIA to add another phase. This new four-phased program increased the cost to over \$300 million. Then in 2010, the Goldfields area was added to the TRLIA work, which drove the project cost even higher, now over \$400 million. In its entirety, the current estimated cost of TRLIA's Levee Improvement Program is projected at nearly \$430 million.

Accommodating the Landowners

While continual changes were required to meet unique landowner situations during construction, the project team took special care when interacting with landowners and members of the community. To maintain the agricultural nature of the property, efforts were made to lease some of the acreage back to the community. In several cases, the original levee alignment was slightly altered to mitigate impacts to affected landowners. In one such instance, a slight adjustment allowed for the preservation of a memorial of redwood trees planted by a family in honor of a fallen son. In another, the levee alignment

was adjusted and easement language was coordinated with the local reclamation district to allow a farmer with a specialty crop of peach trees to continue farming adjacent to the landside toe of the setback levee. The team also widened a reach of the levee to accommodate a Native American burial ground not anticipated as part of the project. In each case, the team maintained structural integrity and sound engineering practices while working alongside the community to reach mutually beneficial outcomes.

Property owners and farmers had various value expectations during one of the highest land market peaks and similarly during the downturn. Speculative bids for land purchases by developers led to property owners having false expectations on the value of their property. Portions of the TRLIA project acquired property in areas that were identified in the Yuba County General Plan as agriculture. When the economy was hot between 2003 and 2004, developers approached property owners and offered speculative bids citing unrealistic property values based on residential home values. TRLIA could not match the owner's value expectations, which caused community alarm, distrust and eventually led to eminent domain actions. As in other parts of the country, as the market turned downward, owners continued to focus on historic values instead of current realities.

A Long-Term Commitment

To date, South Yuba County is one of the few urban communities in California that has achieved FEMA accreditation and offer 200-year flood protection. While accomplishing these goals, TRLIA was also able to increase the level of protection for communities on the other side of the Feather River in Sutter County, as well as for the upstream community of Marysville. While the project's primary significance is the protection of life and property from future flood events, secondary benefits include additional wildlife habitat and recreational opportunities.

The entire team dealt with the challenge of expediting a project to achieve flood protection to an economically challenged community. Along with many key players, the formation of the Three Rivers Levee Improvement Authority was able to serve as the overall umbrella to achieve the project goals. The unique funding relationship with the development community helped bridge the initial funding gap. Every participant, from the Federal and State agencies to the right of way professionals, was asked to engage in creative, cost and time saving methods for this newly-formed Agency where failure was not an option.

The project continues to require a partnership among developers, the community and the state to fund it, as well as a cohesive team of management, engineers and right of way professionals to deliver the needed improvements.

This unique project has brought a level of flood protection that was previously unknown to the area and to the California Central Valley. As the real estate market continues to strengthen, the rewards for achieving the 200-year flood protection will have a profound impact on the community as new development resumes. ✪



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