

NAPA RIVER DRY BYPASS NAPA, CA



Problem



Solution



Result

Application: Channel Stabilization
Product: PP5-Xtreme + Anchors

Site Issues: Flood control • Structural reinforcement • Steep slopes • Multi-use site • Storm events

Problem: The United States Army Corps of Engineers (USACE) sought to implement flood control measures that could contain the Napa frequent and destructive flooding, with the intention of preventing damage and potential loss of life. The Dry River Bypass was designed for flood relief conveyance that could divert approximately half of the 100-yr flow from the Napa River into temporary storage. Conceptualized by the USACE, the project design called for diverting flow prior to flood stage into an approximately half-mile channel that included large areas for ponding. The project faced multiple challenges. First, erosive forces from sudden, rushing flood water risked significant impact to existing structures and walkways. Second, structural reinforcement was required for the slopes that abutted roads and pathways. Finally, as it was a large area a multi-use approach for the area was devised that could double as a community park/trail/theatre during dry times and flood storage during wet times.

Solution: The high-strength and durable woven structure of the PP5-Xtreme was a key factor in meeting all of the projects varied needs. Rounding out the system design was the use of XAS Percussion Driven Anchors (PDAs). The deep-set, high strength anchors were used along slopes to improve stability and in flat areas to reinforce seams. This combination of high-strength fabric and anchors yielded a strong, resilient, and flexible solution that prepared the bypass for the next flood. System installation was smooth and completed in short order. The PP5-Xtreme was vegetated by seed, sod and sprigging on site, and vegetation took hold quickly. The immediate protection provided by this successful system was not achieved a second too soon.

Result: Soon after installation California experienced a significant wet season. The rain was so intense, reservoirs filled and rivers were swollen to flood stage across the state. The bypass was called into service as rising Napa River floodwaters threatened the area. The river was diverted over the bypass and flowed for days, safely circumventing the city. Following the flooding the bypass was declared a success and one citizen remarked, "The Army Corp got it right."



PRODUCT HIGHLIGHTS

- PP5-Xtreme was installed along the steep slopes and secured with percussion driven anchors.
- PP5-Xtreme HPTRM is optimized for steep slopes, with its UV stability and woven synthetic construction.
- The extended longevity of the product allows for permanent erosion protection and support of vegetation.