EROSION PROTECTION REPAIR - SANTA CLARA RIVER

Products: Gabions, Galvanized and PVC Gabion Mattresses

Problem
In January of 2005, a surge of water overwhelmed the retention basin of the Santa Clara River. Originally built to protect the nearby highway, the expansion was gradually surrounded with structures. The retaining wall was categorized as a high-risk dam due to the construction of homes and businesses below it.

Excessive rains and melting of large snowpacks in the mountains overlooking the Santa Clara and Rio Virgin Rivers caused water levels to rise to levels unseen since the Winter of 1862. Due to this flooding, 28 homes were either destroyed, condemned, or damaged. There was an estimated $85 million dollars in private property loss and an additional $140 million in damage to local infrastructure.

Solution
Maccaferri Gabion Mattresses were installed in phases and were used to protect the banks of the Santa Clara River. The stone confinement within the units allowed for higher shear stress resistance than rip-rap. These structures, made of PVC coated galvanized wire, were divided into compartments and filled with stones at the project site. After installation, the gabion mattresses formed flexible, permeable, monolithic structures. These devices offer long term performance against aggressive flow conditions and do not rely on vegetation for their hydraulic performance.

In 2010 similar heavy rains fell on community, but this time the results were different. Even though water flows exceeded the 2005 levels, only minor flooding was reported and the riverbanks remained intact. The only additional work that was needed was the use of heavy equipment to remove debris build up at bridges.

Client
CITY OF SAINT GEORGE - FEMA

Main Contractors
DESERT HILLS CONSTRUCTION, FELLER ENTERPRISES, INTERSTATE ROCK PRODUCTS, PROGRESSIVE CONTRACTING

Designer
ROSENBERG ASSOCIATES

Distributor
SOUTHWEST GEOTEXTILES

Maccaferri Gabion Mattresses post construction (2010)