

**CLIPPER WASH BANK PROTECTION
PRESCOTT, ARIZONA, U.S.A.**

Slope Protection

Problem

The Banks of the Clipper Wash near Dewey, A.Z. had been eroded significantly to the point that the new bank limits got very close to the adjacent road and housing. Protection was needed before the next monsoon season. The Yavapai County Flood Control in Coordination with FEMA and Lyon Engineering were looking for options to solve the erosion control problem and restore the bank to its original limits.

Solution

A gabion groyne system was selected to protect the bank from erosion and restore the limits of the bank to its original position. Groynes are finger-like structures projecting from a riverbank, they deflect flowing water away, protect the bank from erosion and establish a more desirable channel for flood and erosion control.

The outer ends of the groynes determine the line of the new bank and the spaces between Groynes were gradually filled with deposited material until the groyne structure is covered and virtually disappear. Groynes are structures made with gabions and reno mattresses and are filled with 4" to 8" rock. A non-woven filter fabric was placed between the gabions and the soil, adding erosion protection and prevented the migration of the fine soil material.

Gabions with Polimac coating were selected as the most appropriate solution, as they offer the most protection against corrosive soils, abrasion from sediment transport and humidity. The Polimac coated wire on the gabions is a high performance polymer exclusive to Maccaferri that has 10 times more abrasion resistance and more protection from Ultra Violet Degradation than traditional PVC coating. The steel wire is low carbon coated with long life Galvanization.

Client: Yavapai County

Designer / Consultant: Lyon Engineering

Contractor: Earth Resources Corporation

Products used (Qty.)

- Gabion 522

Date of construction: 12/2019 - 01/2020



Eroded Bank Before



Eroded Bank Before Aerial View



Eroded Bank Before Aerial View 2



Groyne - Construction



Groyne Scour Apron - Construction



Groyne Structure Finished - Aerial View



Groyne Structure Finished - Aerial View 2