GEOWEB®

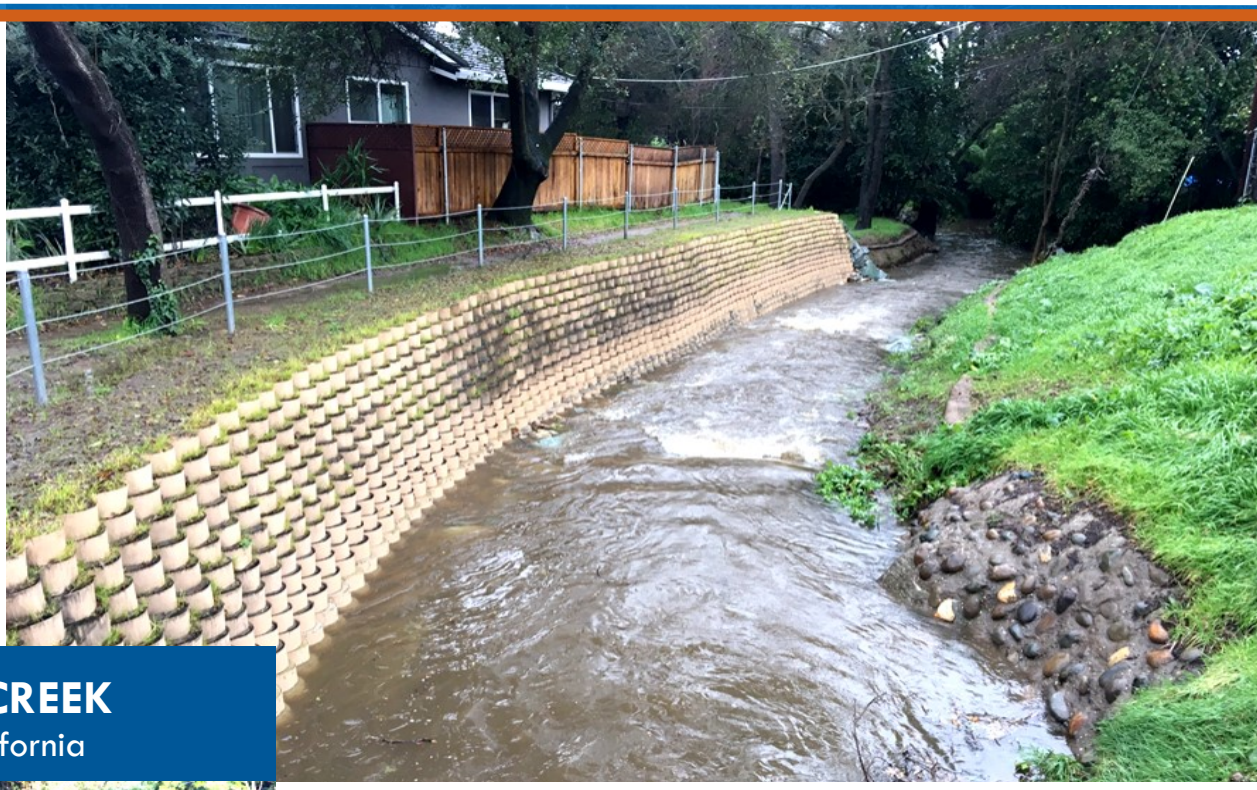
STREAMBANK RESTORATION

PROJECT OWNER:
City of Citrus Heights
Citrus Heights, CA

PROJECT ENGINEER:
Dokken Engineering
Folsom, CA

CONTRACTOR:
Glissman Excavating
Loomis, CA

MATERIAL SUPPLIER:
Reed & Graham Geosynthetics
Sacramento, CA



BROOKTREE CREEK

Citrus Heights, California

Before Repair

ERODED STREAMBANK REQUIRES REPAIR

Banks of a neighborhood creek that had eroded to the point where little embankment separated the creek from a homeowner's property required action. Large oak trees with roots that had become exposed also posed concern of falling into the creek or on property.

STREAM BANK EROSION PREVENTION INCORPORATES GEOWEB CHANNELS.

Concentrated runoff flowing from a storm water ditch and culvert cause damaging bank erosion.

THE PROBLEM

A concrete lined ditch and culvert were directing a concentrated flow of storm water runoff into the natural bank of the Brooktree Creek, not only causing severe erosion in places along the creek—but also exposing the roots of mature oak trees. The erosion had also caused the banks to erode and move to the point where they had become dangerously close to a homeowner's property.

THE CHANNEL SOLUTION

The Presto GEOWEB channel protection system was designed as a tiered structure to provide protection of the stream bank from further erosion. Large boulders set in concrete were also included in the design to better channel the runoff water by creating a series of overflow pools to help prevent downstream erosion.

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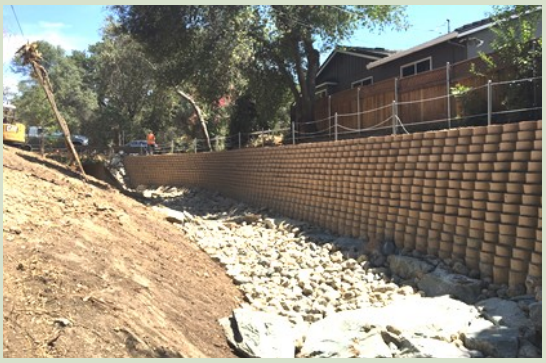
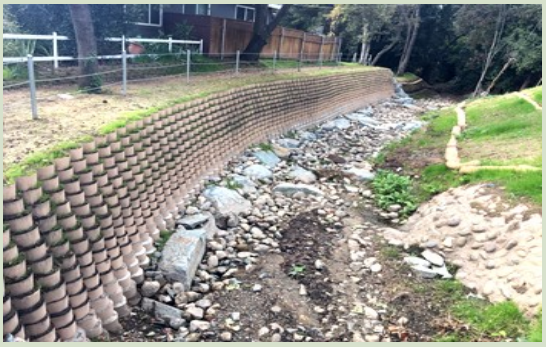




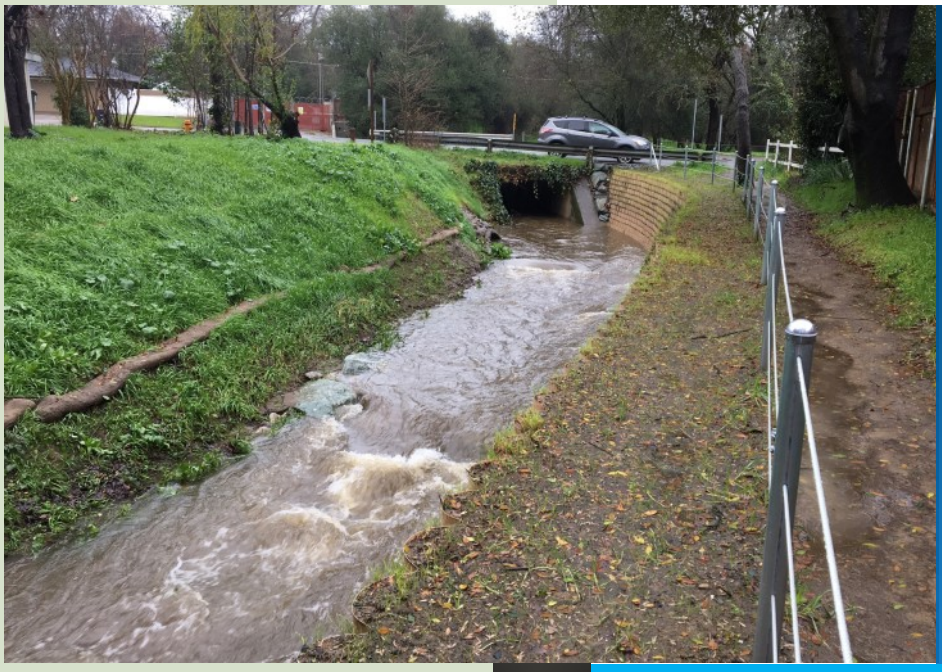
GEOWEB® Advantages

The GEOWEB tiered channel solution provided several benefits:

- Protection of the streambank from further erosion
- Provided a vegetated face for a more natural appearance
- Minimized the construction footprint

THE COMPONENTS OF INSTALLATION

Once the project was designed, the construction started by removing the oak trees with exposed roots that could not be saved in the excavation of the new channel. Platipus percussion anchors were driven into the bank and tied off to a deadman anchoring pipe. Kevlar tendons were attached to the GEOWEB panels and tied off to the deadman anchor to secure the wall. Mirafi 3XT geogrid was installed every 4th lift to provide the support required for this installation. The GEOWEB footing courses were filled with concrete to provide a non-erodible base. Upper GEOWEB courses were filled with topsoil in the front exposed fascia cells to provide a growing media for vegetation, and then covered with Enkamat 7010 Turf Reinforcement Mat to prevent infill loss.



PERFORMANCE

The GEOWEB channel system was completed in the Fall of 2016-just in time for the drought ending rains of late 2016 through Spring 2017.

The channel has been exposed to several rain events since construction. The wall structure has remained stable and vegetation is becoming established as expected.

Ideas that will work for your Project?

Request a FREE Project Evaluation

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