

ST. JOHNS WATER MANAGEMENT DISTRICT

Brevard County, Florida

GEO PRODUCTS, LLC | ENVIROGRID® GEOCELL

Background

The CI Canal in Melbourne, Florida provides flood protection to more than 80,000 people. The Canal carries soils, nutrients and large volumes of freshwater from the St. John's River floodplain eastward to Turkey Creek and into the lagoon.

Technical Information

MATERIALS USED:

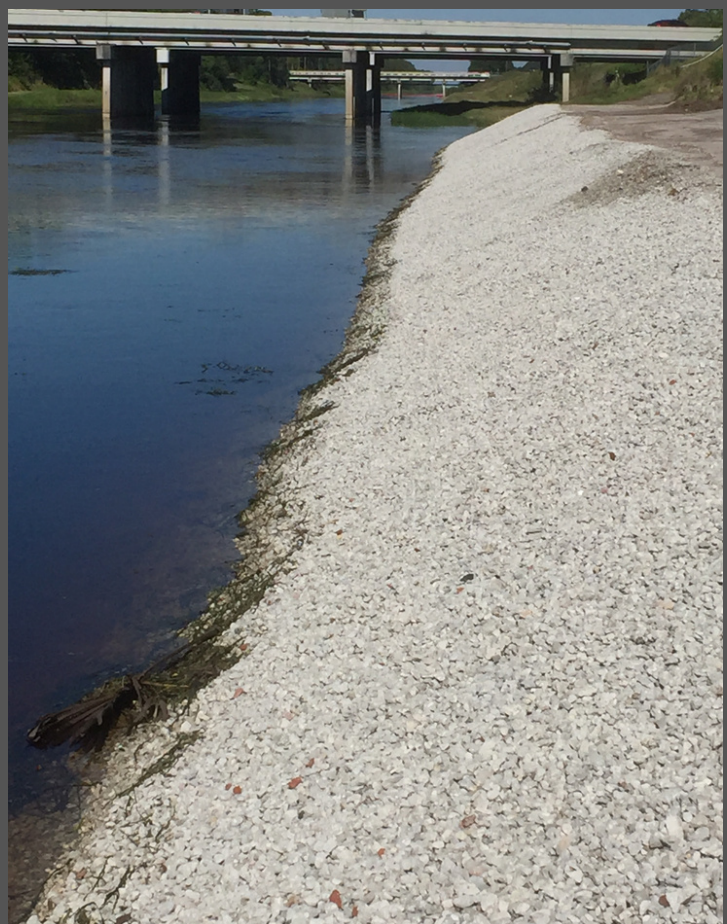
EnviroGrid® EGA30 4" 300,000SF
2200LB Tendon

APPLICATION:

Slope Erosion/Channel Protection

PROJECT LENGTH:

12 week installation
8-Man Crew



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Design Solutions

The sub-grade on site was saturated, sandy soil. After analysis of the St. Johns River District, it was concluded that the canal would continue to erode and vegetation would not remain intact. Use of a large riprap or concrete would be costly and unappealing. EnviroGrid® allowed for the use of a smaller, lower quality stone found locally as it confined the material and dissipated hydraulic forces.

Construction Overview

Some sections of the canal were excavated to remove poor soil and replace with quality fill, while other sections were simply compacted. A 4 oz. nonwoven geotextile fabric was rolled out onto the banks, and the 4" EnviroGrid® was laid on top. The geocell was anchored using 2 2200lb tendon per panel, which were attached to a 6" PVC pipe, buried within a trench at the top of the slope.

Results

Soon after installation, Hurricane Matthew caused severe flooding and damage along the eastern coast of Florida, but nearly two years post-installation, the EnviroGrid® and stone remained intact. The canal has begun to self-vegetate with the natural flora adding to the overall stability that EnviroGrid® has provided.



EnviroGrid® Geocell with 2,200LB Tendon



Installation of EnviroGrid® Geocell Layer



Vegetation