

**Fossil Creek Rehabilitation at Larimer County Landfill
Channel Stabilization Analyses and Design
Larimer County, Colorado**

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This project involved rehabilitation of approximately one-half mile of Fossil Creek immediately west of Taft Hill Road. Pre-project conditions consisted of a channel adjacent to the Larimer County Landfill that had incised by 10-12 feet with nearly vertical banks. Potential widening and/or meandering associated with channel instabilities posed possible threats to the landfill, an active sanitary sewer, groundwater monitoring wells, and adjacent access road.



Turf Reinforcement Mat Installation

The design goal of this project was to relocate fossil creek to the North (an area in which the channel

was historically located), and incorporate erosion protection measures designed to mitigate future erosion of the Fossil Creek channel. This project consists of the following components:

- Hydraulic analysis to design a re-aligned channel that would convey approximately the 10-year event.
- Design of a termination basin to restore supercritical flow conditions to a subcritical flow regime at the end of the project reach.
- Analysis, design, and specification of turf reinforcement mat to be utilized as a permanent erosion control feature for the main channel.
- Utilization of CHANLPRO Version 2.0 to size rock to be utilized in buried grade control. Buried grade control structures were designed to launch rock in the event that a headcut were to propagate upstream.
- Design of protection measures for the sanitary sewer crossing at the upstream end of the proposed channel. The protection measures included lowering the sanitary sewer line and sizing riprap adequate of withstanding subcritical 100-year flow conditions.



Completed Channel Realignment