

District Projects Receive Awards

by
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Pinehurst Tributary to Bear Creek
Drainage and flood control improvements to the Pinehurst Tributary of Bear Creek in Lakewood offered a unique opportunity to develop a multi-use open space project. The project was initiated due to the need for a regional detention pond and 100-year capacity flood diversion channel. The project was located on the property of the Colorado Academy, a private liberal arts K-12 school. The goal of Colorado Academy was to convert the undeveloped portion of the property into an educationally oriented nature preserve.

Project sponsors, including the City and County of Denver, Urban Drainage, and the Colorado Academy, decided to combine the goals into a single multi-use open space project. Jefferson County agreed to hold the easements as the project was mostly in Jefferson County. During the design process, the master plan for the Alumni Nature Preserve was incorporated into the drainage improvement project. The nature preserve was designed to represent the various eco-zones found in

Colorado, as well as offer a trail for hiking and cross-country running events. The flood control structures would reduce the flooding of local residences and help provide the educational opportunities desired by Colorado Academy.

The result of the project was that a relatively unattractive vacant field was transformed into a 13 acre-foot detention facility and nature preserve with over 3,000 feet of trail through varying landforms and eco-zones. By pooling the financial and open space resources, the project sponsors were able to accomplish their goals much more effectively than if they were conducted as independent and potentially conflicting projects.

This project received an Honor Award for Outstanding Achievement from the Colorado Association of Stormwater and Floodplain Managers at their annual conference in September.

Marcy Gulch Channel Stabilization Project

Marcy Gulch in Highlands Ranch has a

drainage basin of approximately 3.3 square miles and prior to development was an ephemeral stream. Commercial and residential development began in this basin in 1994 and with resulting increased runoff, the steep sandy channel began to experience severe erosion. The drainageway displayed a high potential for instability which was typified by channel degradation, lateral migration, and high sediment transport. This stream erosion was causing damage to existing infrastructure (utilities, storm sewer outfalls, trails, etc.), threatening several residential lots with encroachment by the actively moving channel, and in general, degrading the overall quality and safety of the open space corridor.

Between October of 2000 and May of 2002, Urban Drainage and the Highlands Ranch Metro District partnered together to construct 18 soil cement drop structures, 400 lineal feet of soil cement bank protection, 3,000 lineal feet of bioengineered bank protection, and 6 trail crossings.

The completion of the project resulted in a raised and flattened channel bed stabilized with drop structures to achieve bed slopes of approximately 0.5 percent. Vertical eroded banks were laid back and reinforced with vegetation and a variety of bank protection measures. These measures protected existing infrastructure and homes, and provided a safer environment for open space users. The stabilized channel also reduced the bed load significantly which allowed the downstream reaches to clean-out and water quality to improve.

This project has received an Honor Award for Outstanding Achievement from the Colorado Association of Stormwater and Floodplain Managers, the International Erosion Control Association's Environmental Excellence Award and the APWA Colorado Chapter's Project of the Year Award in the Utility, Drainage & Environmental – Medium Community Category.



Marcy Gulch project after completion (Photo courtesy of Muller Engineering)