

WATERSHED

MASSEY DRAW WATERSHED AND ECOSYSTEM IMPROVEMENTS PILOT PROJECT

Conducted by: Jefferson County

On the Web:

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Project Partners: Urban Drainage and Flood Control District, Lockheed Martin, Chatfield Watershed Authority, United States Army Corps of Engineers, Denver Botanic Gardens/Chatfield Nature Preserve, Roxborough Park District, Volunteers for Outdoors Colorado

Contract Period: 1997-2004

NPS Funding: \$222,020

Matching Funds: \$139,716

The Massey Draw watershed originates in the foothills of the Rocky Mountains in Jefferson County, Colorado and terminates at Chatfield Reservoir in east central Jefferson County. The watershed area consists of about 4,300 acres of

undeveloped land and 3,700 acres of developed land. The developed area consists of suburban land uses including single and multi-family residences, commercial and office areas, commercial horse stables, and a golf course. The undeveloped area consists of agricultural uses and open space. Massey Draw is subject to flooding, which can cause severe erosion and sediment transport.



Pre-Construction Conditions

There are no point source dischargers to Massey Draw. Non-point sources from erosion and urban land use contribute phosphorus leading to the reservoir. The Chatfield Reservoir Control Regulation No. 73 establishes the Total Maximum Annual Load of 40,894 pounds of phosphorus per year from the Chatfield Watershed, including 19,961 pounds from non-point sources. The two sources of total phosphorus in Massey Draw are storm water runoff and stream bank and channel erosion that eventually enters Chatfield Reservoir.

The major goals of the Massey Draw Watershed and Ecosystem Improvements Pilot Project were to reduce the quantity of sediment and phosphorous into the reservoir, improve wetlands and riparian habitat, develop phosphorus reduction efficiencies for the improvements, provide information and education opportunities, and demonstrate how erosion management practices can be naturally or aesthetically incorporated into the environment.

Three enhanced drop structures were constructed, the channel banks laid back and stabilized, and improvements were made to the wetlands and riparian habitat. The monitoring program was designed to provide measurable results by establishing pre-and post-construction trends



Post-Construction Conditions

for both dry and wet weather events, and determine phosphorus reduction efficiencies for the improvements. The information and education program was designed to include trail and interpretative signs and self-guided tours of the project area.

The project has been in use for only twelve months. The drainageway has not shown any signs of erosion although there have been several minor storm events. The vegetation is still being established. Jefferson County and Urban Drainage and Flood Control District will continue to monitor the physical stream and structure conditions and take any corrective measures to facilitate the project intent. The Chatfield Watershed Authority will continue the post-construction monitoring program.