



# Green Infrastructure & Stormwater Management CASE STUDY

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## Loveland Sports Park

**Location:** Loveland, CO

**Client:** City of Loveland, Parks and Recreation Department

**Design Firm(s):** Design Concepts and DHM

**Landscape architect/Project contact:** Janet Meisel-Burns, ASLA

**Email:** [meisej@ci.loveland.co.us](mailto:meisej@ci.loveland.co.us)

**ASLA Chapter:** Colorado

### Project Specifications

**Project Description:** The project was designed to capture and retain stormwater within the 55-acre community sports park. The design minimized stormwater pipe and provided bioswales to catch stormwater off of all paved surfaces, transporting water to a retention pond which filters the stormwater along with raw water for irrigation through a constructed wetland for pretreatment before releasing it downstream to an irrigation pond and ultimately releasing overflow water through a small stream to the Big Thompson River. The downstream irrigation pond is designed for 72 hour release during irrigation. Inlets were placed in turf or bioswales again so pre-treatment of stormwater would occur prior to the water moving to the retention/detention ponds.

#### Project Type:

Open space - park

Part of a new development

**Design features:** Bioretention facility, bioswale, downspout removal, and curb cuts. All parking lots were constructed without curbing on the low-side of the lot and there are no gutters on any of the structures in the park.

**This project was designed to meet the following specific requirements or mandates:**

Local ordinance, to meet funding criteria, urban drainage and flood control ordinances

**Impervious area managed:** greater than 5 acres

**Amount of existing green space/open space conserved or preserved for managing stormwater on site:** greater than 5 acres. Since this was a park - over 40 acres of the site is green!

**The regulatory environment and regulator was** supportive of the project.

**Did the client request that other factors be considered, such as energy savings, usable green space, or property value enhancements?** Yes - all plus maintenance costs and infrastructure depreciation and replacement.

## Cost & Jobs Analysis

**Estimated Cost of Stormwater Project:** \$500,000-\$1,000,000 (Public funding: State, regional, local. Project was funded by City and grants and donations)

**Related Information:** A detailed breakout of all stormwater related costs for the project can be provided upon request. Can't insert the large files in this area.

**Was a green vs. grey cost analysis performed?** No

**Cost impact of conserving green/open space to the overall costs of the site design/development project:** It saved the City money since less piping was used to manage and direct stormwater.

**Cost impact of conserving green/open space for stormwater management over traditional site design/site development approaches (grey infrastructure)?** Significantly reduced costs (10% or greater savings). No specific cost analysis was done as it was evident that at a cost \$24-65 /LF of pipe we were going to save money if we didn't need to pipe all of our stormwater.

**Number of jobs created:** Not available

**Job hours devoted to project:**

Planning and Design: 12 month - Approx 5,000 hours

Construction: 21,000 hours

Annual Maintenance: < \$20,000 for just stormwater maintenance

Other: \$< \$300,000 for entire park maintenance

## Performance Measures

**Stormwater reduction performance analysis:**

Stormwater detention was designed for a 2-year release and all stormwater is retained on site with an orifice restriction on the outlet pipes. All water is pretreated through the bioswales for

settlement in the 2 ponds (1 on-site and 1- off-site). Detention capacity is for a 100-year storm event in several on-site ponds.

**Community & economic benefits that have resulted from the project:** Since this is a public park - we don't generate revenue. The park has increased the value of the surrounding property and provided needed public recreation and open space.

### **Project Recognition**

2006 Silver Hard Hat Award - General Contractors of CO, Outstanding Landscape Project;  
Voted Best Park in City for several years starting 2006