

**Howes Street Storm Sewer Outfall/Water Quality Pond
Fort Collins, Colorado**

Client/ Mr. Jay Rose
Reference: City of Fort Collins Utilities
700 Wood Street
Fort Collins, CO 80521
(970) 221-6700

Project Manager: Brad Anderson, P.E.

In 1993, a Master Drainage Basin Plan was completed for the City of Fort Collins. That study identified areas of flooding throughout the Old Town Basin and provided a plan for completing drainage improvements that would mitigate flooding for the major storm events. The recommended plan included reconstructing and regrading existing streets to direct excess surface water flows to locations that would minimize damages. The Howes Street Outfall was the portion of that plan which directs storm flows from the area around Laporte Avenue and Howes Street and conveys them via a conveyance system to the Cache La Poudre River. This reach was identified as the Howes-Mason Outfall in the Master Plan.



Outlet of Howes Street Outfall

Anderson Consulting Engineers, Inc. (ACE) was contracted by the City of Fort Collins to provide a design team for engineering and landscape design services necessary for the construction of drainage and flood control improvements for the Howes Street Outfall from LaPorte Avenue, north to the Cache La Poudre River.

The improvements proposed included lowering LaPorte Street east from Howes Street to one-half block west of Mason Street. An open channel was proposed to be constructed directly north to carry storm flows to the existing wetland area north of Cherry Street in Martinez Park and into the Cache La Poudre River.

Specific tasks completed by ACE design team included:

- A hydrologic study was conducted to: (a) facilitate the planning and evaluation of surface and storm sewer collection alternatives necessary to collect stormwater runoff and convey it to the outfall; and (b) support the preparation of the design solution for the outfall system.
- Evaluation of several alternative configurations and alignments of the storm drainage system. Design alternatives, including several open channel and closed conduit options, were evaluated.
- Final designs were completed using UDSEWER for the selected alternative that was a closed box conduit (750 cfs maximum discharge).
- Cost estimates, construction drawings and documents were prepared.
- Environmental and permitting issues were addressed.



Howes Street Outfall Water Quality Pond

Major Project Features:

- Hydraulic Analysis and Design
- Cost Estimates
- Environmental Permitting
- Alternative Development and Evaluation
- Construction Plans and Specifications

Key Personnel: *Brad Anderson, P.E., Project Manager* — Hydraulic Analysis and Design
Dan Smith, P.E., Engineer — Hydraulic Storm Sewer Modeling; Floodplain Mapping