

## South Platte River Globeville & North Areas

*Nominating Agency:*

City & County of Denver, Public Works Dept., Wastewater Management Division

### **Significant Accomplishments:**

The South Platte River project located in North Denver (Globeville Area) is the single largest flood control project undertaken by either Urban Drainage and Flood Control District or City and County of Denver. This project represents state-of-the-art water resources engineering along 2.5 miles of the South Platte River channel. Major components of the project included: channel improvements and bank stabilization; 7300 lineal-feet of flood levees and flood walls; trail improvements; removal and replacement of a railroad bridge; relocation of a major diversion dam and irrigation intake structure; aquatic and wildlife habitat improvements. This project was implemented over a 13-year period with three construction phases for a total design-construction cost of approximately \$25 million. Love & Associates was the lead engineering designer and construction manager for the project. Structural design services were provided by Loris & Associates (Phase 2) and Bates Engineering (Phase 3) and geotechnical services were provided by CTL/Thompson. Construction was completed in three phases



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by L&M Enterprises (Phase 1), New Design Construction (Phase 2) and Lawrence Construction (Phase 3).

### **Criteria Participation:**

**Innovation:** Innovative bridge design that permitted much of the new RR Bridge to be constructed while the existing bridge was in service so down time associated with replacement of the bridge deck and tracks was minimized. A scale model of the proposed project was constructed at Colorado State University Hydraulics Research Center to verify the proposed improvements would maintain the irrigation water deliveries to the Farmers Reservoir and Irrigation Co. while containing the 100-year flood. The scale model was also used to fine tune the hydraulic design of the various project components. A

large grouted boulder structure spanning the width of the river was designed to achieve multiple project goals including river grade control; irrigation diversion dam; eliminated a major life safety hazard by providing safe boater passage; eliminated a barrier to fish migration through the installation of a fish ladder; and provided water quality enhancement through aeration of the river.

**Achievement:** As a result of this project, flood conveyance within the S. Platte channel has been dramatically increased and has removed over 300 acres of land in north Denver and south Adams County from the 100-year floodplain. This opens the door for the potential for substantial development resulting in economic revitalization for the City, the region and the State, due to fewer regulatory obstacles and the elimination of the need for flood insurance for those in the historic floodplain. The project also included new pedestrian trails, a new pedestrian bridge over the river and a pedestrian trail underpass below Franklin Street and the Denver Rock Island Railroad track thus eliminating an at grade street crossing of Franklin.





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We are proud to have worked on this award-winning project and **BELT COLLINS WEST** will continue providing its clients with the highest quality engineering on all current and future projects.



**Transferable:** A constructability review, extensive public and stakeholder involvement process, alternate analysis during design development, design integration to meet multiple project goals and constraints and a modified bid process to include the prospective contractor's project approach and schedule in addition to cost are unique tools that can be utilized on other flood control projects.

**Cooperation:** The involvement of multiple stakeholders was necessary for the successful completion of this project. FRICO was an integral partner during design and construction to ensure the reconstructed diversion dam and headgate facilities met the needs and requirements of its water users. The removal and replacement of a Denver Water 36" potable water line was scheduled for the winter months to avoid impacting Denver Water's supply during the high demand summer months. Replacement of the Denver Rock Island Railroad bridge spanning the river was also a time sensitive piece

and a smooth review and approval process was achieved with railroad personnel.

**Nomination Summary:** The multifaceted improvements to 2.5 miles of South Platte River in north Denver resulted in the removal of approximately 300 acres of residential, industrial and commercial properties from the floodplain thus removing the risk of flooding to these properties, increased property values and removal of the requirement to have

flood insurance on the properties formerly located in the floodplain which saved property owners millions of dollars in flood insurance premiums. With completion of this project, the South Platte River corridor through north Denver provides the community with an enhanced recreational experience, improved aquatic, terrestrial and riparian habitats and environmental sustainability. North Denver is now a safer and more enjoyable place to live, work and recreate. ●



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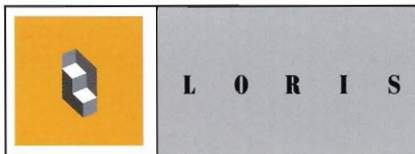
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