

# Engineering / Construction Management

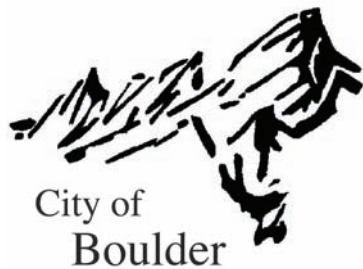
## Foothills Parkway & Arapahoe Avenue Transportation Improvements

Nominating Agency:  
City of Boulder

### Significant Accomplishments:

This \$6 million Public Works project was initiated in 2000 with significant public outreach and planning as part of an intersection traffic operations study. Several improvement options were considered (interchange, rotary, etc.), and after extensive traffic analysis, City policy and public review, a series of at-grade improvements to the intersection was selected for implementation.

This multi-jurisdictional improvement project at the busiest at-grade intersection in City of Boulder (over 85,000 vpd), was completed with the team efforts and funding of City of Boulder, CDOT and FHWA to meet local, state and regional transportation planning goals while balancing this with local interests and concerns. The key components of this project provided for a balanced approach



with improvements to all transportation modes including automobile, transit, bicycle and pedestrian, along with improvements to local storm drainage and regional floodplain conditions as well.

### Criteria Participation:

**Innovation:** A full time traffic cam was deployed for web-accessed monitoring of traffic conditions during construction. The underpass provided for grade-separated pedestrian/bicy-

cle access needs, while integrating flood control requirements for the adjoining creek. The project was awarded an FHWA Innovative Bridge Research and Development grant to fund integration of integral waterproofing concrete admixtures and specialized joint sealant products for the underpass, which was constructed over four feet below groundwater levels without the ability to construct permanent de-watering systems (wetland preservation).

**Achievement:** The project achieved its desired goals of improving traffic safety/operations and efficiency for all modes of travel through the intersection, while also improving storm drainage and floodplain conditions in the area as well. These improvements were completed while minimizing impacts to the environment, neighboring properties, and facility users resulting in a sustainable and context-sensitive solution.

**Transferable:** Several project components represent concepts transferable to other Public Works entities including:

- Underpass and trail system design in challenging location complicated by groundwater/floodplain issues.
- Use of concrete pavement in a white-topping application to overcome significant long-term pavement management challenges at a busy intersection, in an innovative, cost-effective manner. Construction phasing techniques are also transferable.
- Significant wetland impact min-

imization techniques and mitigation measures employed to preserve and enhance wetlands and area water quality (new storm sewer outlet bio-swale and enhanced wetland outlet), and wildlife mitigation for BTPD.

**Cooperation:** This project was the result of extensive cooperation with City of Boulder, CDOT and FHWA during the funding, design and construction stages. Significant public and private utilities (Boulder, Qwest, Xcel, Comcast) were a part of the project team early on, and allowed for efficient completion of utility relocations/enhancements. The cooperation of area private property owners including neighboring business parks and University of Colorado, provided a team-oriented dialogue to provide timely communication during design and construction and to minimize construction impacts. BTPD and wetland site issues created numerous inter-agency cooperative efforts between Colorado Division of Wildlife, US Fish and Wildlife Service, the US Army Corps of Engineers, and numerous animal advocacy groups. A representative from an animal advocacy group was even utilized on site in a cooperative effort to assist in BTPD relocation activities required by the project impacts.

**Nomination Summary:** The completion of this \$6 Million Public Works project represented a cooperative, multi-jurisdictional team effort on a project at the busiest at-grade inter-



section in City of Boulder (over 85,000 vpd). The challenging project location was overcome with dedicated team efforts of many individuals and entities. The resulting improvements are

a great example of multi-modal, sustainable and context-sensitive solutions applied to a congested urban transportation setting. ●



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