



Transportation Engineering: Street and Road Design

- **Urban & Rural Roads**
- **New & Reconstruction**
- **Intersection Design**
- **Traffic Calming**
- **Urban Renewal**

WEI is experienced with various aspects of transportation engineering, including street and intersection reconstruction design, traffic calming facilities, and design of urban and rural streets, having particular emphasis and experience with reconstruction design. Projects range from a few blocks to larger urban renewal projects to redesigning all the streets in a town that involved 38 blocks and 27 intersections on steep mountainside terrain. WEI is ITD B1 General Roadway Design Term Agreement approved.

Selected Projects

Driggs Street Reconstruction, Driggs, ID

Performed traffic study for two collector roads that go from two highways to the regional high school, elementary school, and public outdoor recreational facilities. Regional paths and trailway system needs were evaluated. Alternative facility designs, including landscaped median boulevards, roundabouts, and special traffic calming and pedestrian crossing, were evaluated. Design and construction administration were provided for 18 blocks of street reconstruction and 17 intersections.

South Avenue Reconstruction, 5th St. to 9th St., Grand Junction, CO

Redesign street with bike and parking lanes, separate combined sewers into storm and sanitary sewers, new waterline and add fire hydrants. Existing utilities to avoid conflict with included: a 24", 21", and 15" combined sewer; a 12" high pressure and 10" medium pressure gas line; two 6" electric conduits plus high voltage overhead lines; phone, irrigation, and water lines; and various small storm drain lines. Design included crossing all this with a proposed 48" storm drain.

2nd South 1st to 2nd West, Rexburg, ID

Performed street reconstruction design involving a regional look at needs, capacities, and upgrades to sewer, water, and storm drain lines, and coordinating upgrades with the electric company.

Nancy Street, Mesa County, CO

Design reconstruction of local street and intersection with minor arterial. The project included storm drain design.

State Hwy 6 & 18 Road, Fruita, CO

As acting City Engineer, set up RFP for CDOT & city intersection improvements.

Peach Street Reconstruction, Fruita, CO

Design road reconstruction for 1750 feet of downtown streets and design drainage and sewer improvements, and construction oversight.

32-1/2 Road Upgrade, Mesa County, CO

Design street widening and intersection improvements to accommodate new school, design 5/8-mile storm interceptor.

400 East Street, Moab, UT

Designed pedestrian safety improvements.

Cedar Street Reconstruction, Blackfoot, ID

Project involved 4 blocks of street between an urbanized highway and collector road, serving mixed use properties, including retail, service businesses, health services, a school facility, and residences. Performed detailed traffic count, truck turning radius evaluation, and traffic safety evaluations for various scenarios that accommodated, as much as possible, grandfathered parking, loading zones, and service vehicular movements. Designed utility replacements, relocations, and street reconstruction.

Roadway Reconstruction & Drainage Project, Collbran, CO

Design of reconstruction of 38 blocks and over two miles of local residential streets and collectors with 27 intersections and provide drainage improvements.

2nd South Reconstruction, Rexburg, ID

Reconstruct block of street, add storm drain, replaced water, provide hard and soft landscaping, intersects with state highway.

18 Road Reconstruction Project Phase II, Fruita, CO

Design reconstruction of 1500 feet of arterial road for the City of Fruita. Project included storm drain upgrades.

J & 18 Road Reconstruction, Fruita, CO

4000 feet of collector road and intersection redesign at high school and 3300 feet of regional storm drain.

32-1/2 & E-1/2 Road Intersection Realignment Project, Mesa County, CO

Design of realignment of an offset intersection, with utility and storm drain improvements.

Apple Street Reconstruction, Fruita, CO

Reconstruct 3 blocks of street and storm drains.

Alley Reconstruction Projects (1992, 1994, 1996, 1998, 1999 and 2003), Grand Jct., CO

Design concrete pavement & sewerline replacement in alleys. Narrow alleys present unique grading challenge to match in and provide for proper drainage.





Transportation Engineering: Paths and Trails

- Concrete, Asphalt, and Gravel Trails
- Urban & Rural Paths
- Streamside Trails
- Traffic Calming
- Pedestrian Bridges

WEI has designed many miles of urban and rural path and trail systems, including the initial five phases of the community path and trail system for the City of Moab. Creek side paths have included underpasses, bridges, jetties, channel improvements, and erosion control. Urban paths have separated pedestrians and school children along major pedestrian and traffic routes. Traffic calming and pedestrian safety measures have been implemented in all designs, including speed tables, medians and refuge islands, changed surface materials, bulb-outs, signage, and roughened surfaces. WEI is ITD B3 Pathways Term Agreement approved.

Selected Projects



D-1/2 Road Pathway Project, Mesa County, CO

Design 2 miles of 8' wide concrete pathway and pedestrian bridge along an arterial road for students traveling to and from school. Used traffic calming devices and different surface materials at crossings for safety.

32-1/2 Road Pathway Project, Mesa County, CO

Design of 1/4 mile of pathway link between an elementary school and an area neighborhood. Work was coordinated with a water company, two sewer companies, a ditch lateral, the Grand Junction Drainage District, and a telephone company.



Mill Creek Flood Control & Parkway Project Phase III, Moab, UT

Design concrete bike/pedestrian paths, riverside improvements, pedestrian bridge abutments, park trails, and traffic calming features at crossings, sharp turns, and intersections.

Mill Creek Flood Control Parkway Project (Phase 2, 4, & 5), Moab, UT

Construction oversight and metric design of concrete bike & pedestrian paths, jetties, channel improvements, creek crossing, arterial underpass, crossing under UDOT bridges, and permitting. Project also included design of minor arterial road widening.



Scott M. Mattheson Wetlands Project, Moab, UT

Performed bridge hydraulics and abutment design and obtained associated permitting. Project was through environmentally protected area. The pathway was soft surfaced with gravel, narrow, and had to preserve trailside vegetation. The bridge was designed so that it could be installed without disrupting adjacent vegetation and overhanging branches from trees.

Hwy 340 Pathway, Fruita, CO

Design pathway and drainage features in CDOT R.O.W., consisting of 1950 LF of 21" storm drain, 1362 SY of asphalt path, and 2517 SY of concrete path.



Mill Creek Project Phase I, Moab, UT

Design of concrete bike/pedestrian paths and two bridges to provide two alternative safe pedestrian and cyclist stream crossings, located one block either direction from the highway in town.

500 West Underpass, Moab, UT

Design recommendations for a pathway under a UDOT bridge as part of the City of Moab trail system, which would allow non-vehicular traffic to safely cross an arterial road.

Teton Valley Trails and Paths, Driggs, ID

Performed traffic study for two collector roads that go from two highways to the regional high school, elementary school, and public outdoor recreational facilities. Regional paths and trailway system needs were evaluated, along with pedestrian and vehicular traffic safety and calming.

Ottley Pathway @ 17 Road, Fruita, CO

Design detached walk extension along an arterial road.



Transportation Engineering: Bridges

- **Pre-Fabricated**
- **Pre-Cast**
- **Pile Foundations**
- **Spread Foundation**
- **Slab Foundations**

- **Hydrology & Hydraulics**
- **Utility & Site Work**

- **Traffic Plans**

Prefabricated Pedestrian WEI has designed pedestrian bridges having conventional, spread, slab, and pile foundations. Design focus has been on ease and speed of installation, cost, stability and function, lack of disruption to the surrounding area, and beauty.

Pre-Cast WEI has also designed for pre-cast vehicular bridges, including an arterial bridge with a 22 foot span where utility relocates, excavation, placement, backfill, and readiness for operation had to occur over a 3 day weekend, and the road was open by Monday evening!

SITE WORK WEI provides site design work, including coordination with surveying/mapping and geotechnical firms as applicable, design coordination with utility companies for utility relocation and/or upgrades, traffic routing issues, design coordination with potentially affected interests, hydrology and hydraulics evaluations, and bridge approach design.

Selected Projects

Mill Creek Flood Control Parkway Project (Phase 2, 4, & 5), Moab, UT

Metric design and construction oversight of concrete bike & pedestrian paths, jetties, channel improvements, creek crossing, arterial underpass, crossing under UDOT bridges, and permitting. Project also included design of minor arterial road widening. The underpass was 22' wide and 9' high and doubled as a pedestrian underpass and overflow flood control structure. The biggest challenge was to perform all utility relocates, excavation of the roadway, placement of the foundation, 3-sided pre-cast bridge structures, and have everything completed and ready for opening traffic in 3 days -- and it was.

Mill Creek Flood Control & Parkway Project Phase 3, Moab, UT

Designed concrete bike/pedestrian paths, riverside improvements, pedestrian bridge abutments, and permitting.

D-1/2 Road Pathway Project, Mesa County, CO

As part of 2 mile 8' wide pathway project, designed roadside pedestrian bridge over canal.

Scott M. Mattheson Wetlands Project, Moab, UT

Bridge hydraulics & abutment design and associated permitting. Client was very particular about not disrupting the environment. Design approach was to have narrow crane back up to creek on path, drive piles, repeat on the opposite side, unload pre-fabricated bridge, and carefully swing and weave it around and through branches and set. And it worked -- not a single branch was scarred.

Cannon Site Access, Moab, UT

Evaluated hydraulics in Mill Creek and designed bridge abutments.

Mill Creek Project Phase 1, Moab, UT

Designed concrete bike/pedestrian paths and two pedestrian bridges.

