



# Utilities Technical Memorandum

## US 24 West

CDOT Project No. NH 0242-040

Project Control No. 187824

**Colorado Department of Transportation**

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# US 24 West Environmental Assessment: Utilities

PREPARED FOR: Dirk Draper/CH2M HILL  
PREPARED BY: Shonna Sam/CH2M HILL  
COPIES: Dirk Draper/CH2M HILL  
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## 1.0 Introduction

The Colorado Department of Transportation (CDOT) is conducting an Environmental Assessment (EA) for changes to a 4-mile portion of US 24 between I-25 and Manitou Springs. This technical memorandum identifies major utilities in the corridor and assesses the potential for conflicts as a result of the Proposed Action, described in Section 3.0. Utilities include water, sewer, electrical infrastructure, natural gas, telecommunications, and fiber optics.

## 2.0 No Action Alternative

The No Action Alternative consists of existing transportation facilities and committed transportation projects that would occur regardless of whether the Proposed Action is constructed. The No Action Alternative would not make any improvements to the existing condition beyond those which are already planned and funded. The projects listed below are shown in existing adopted transportation plans and are locally funded projects.

- **8th Street Intersection Improvements.** Lengthens turn lanes and acceleration and deceleration lanes on US 24, and widens 8th Street north and south of US 24.
- **8th Street Bridge Replacement.** Replaces the existing four-lane bridge structure over Fountain Creek at 8th Street.
- **21st Street Roadway Improvements.** Includes the widening of 21st Street south of US 24 to four 12-foot travel lanes with dedicated turn lanes, extended acceleration lane, and curb and gutter. Geometric improvements to the US 24/21st Street intersection will also be constructed.
- **21st Street Bridge Replacement.** Replaces the existing four-lane bridge structure over Fountain Creek at 21st Street.
- **25th Street Bridge Replacement.** Replaces the existing two-lane bridge structure over Fountain Creek at 25th Street.
- **Midland Trail Extension.** Extends Midland Trail between 21st Street and Manitou Avenue to connect with Manitou Springs' Creekside Trail.

Under the No Action Alternative, improvements to intelligent transportation systems (for example, variable message signs) would be implemented as part of the congestion management

program. Existing bus routes and service would continue as they are today, and bike and pedestrian facilities would only be extended or improved as local funds and grants allow.

### 3.0 Proposed Action

The Proposed Action would provide additional capacity on US 24 by building additional travel lanes, two new interchanges, and one new overpass. The Proposed Action includes rebuilding several cross-streets, replaces bridges over Fountain Creek, and includes modifications to Fountain Creek's channel at each bridge crossing. Sidewalks would be built at all intersections and interchanges. The Proposed Action would also accommodate a park and ride facility and two future local access points along the route, which would be built by others. The Proposed Action is illustrated in Exhibit 1.

A single point diamond interchange is proposed at the Cimarron Interchange. This interchange design differs from what was originally presented in the *I-25 Improvements through the Colorado Springs Urbanized Area EA* (CDOT, 2004). Since the I-25 EA was approved, new opportunities have been identified to improve existing and future traffic operations, making this improved design now feasible.

US 24 in the project area would be built to have eight through-lanes, four in each direction, east of 8th Street, and six through-lanes, three in each direction, from 8th Street to a point west of 31st Street. New interchanges are proposed at 8th and 21st Streets.

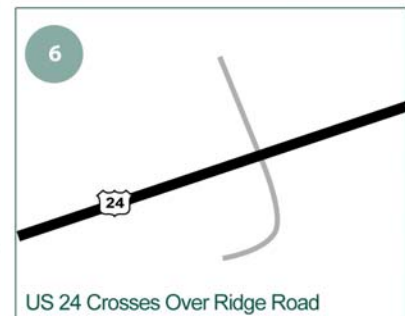
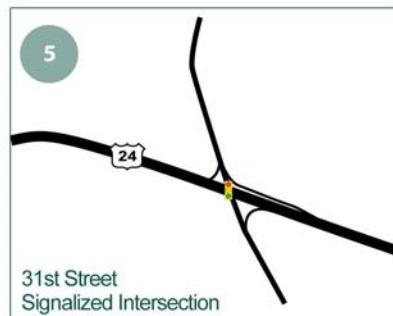
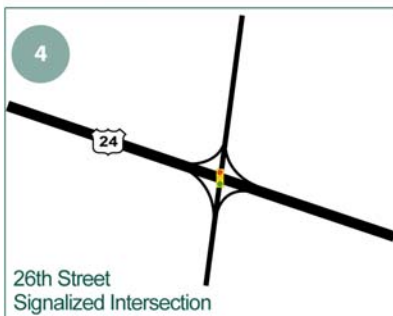
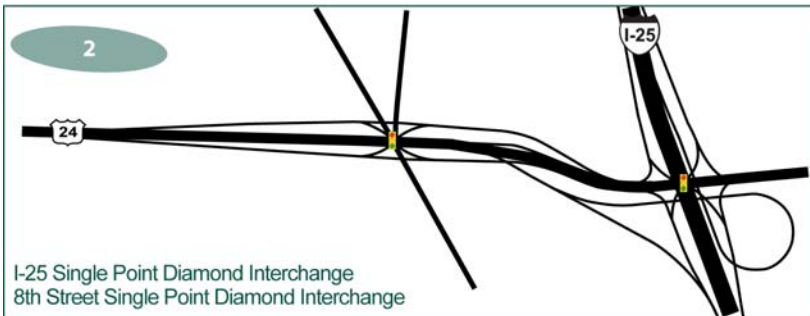
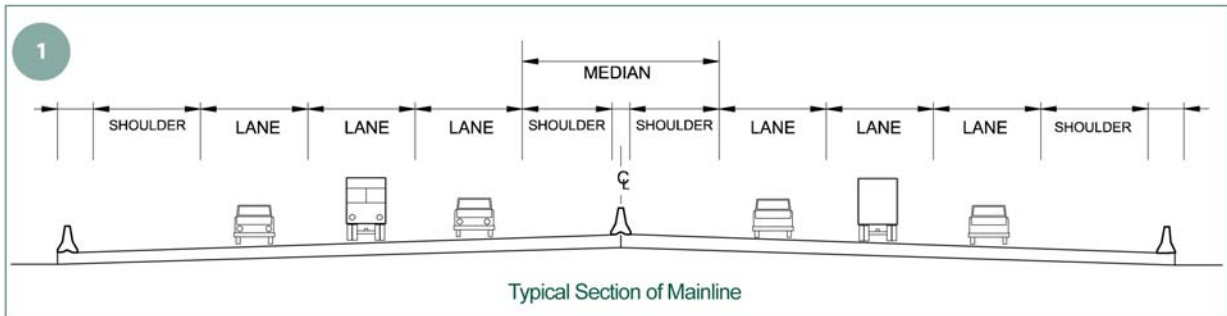
Intersection upgrades are proposed at 26th Street. The intersection of US 24 and 31st Street would be widened, as would the intersection with Colorado Avenue to the north. South of US 24, 31st Street would be rebuilt to align with the highway intersection.

At the west end of the corridor, an overpass would be built to carry US 24 over Ridge Road. Ridge Road would be widened between High Street and Colorado Avenue. The west end of the Proposed Action is approximately 1,800 feet west of the Ridge Road overpass where the overpass connects to the existing highway. Because there is not an existing or future congestion problem between Ridge Road and Manitou Avenue, no changes are proposed west of Ridge Road.

Accommodations would be made for the following features that will be built by others in the future:

- At 15th Street an overpass would be constructed to carry 15th Street over US 24 and Fountain Creek, and connect to the street network of Old Colorado City and Gold Hill Mesa. This overpass would include ramps on the east side to connect to the 8th Street intersection. Between the ramps and Colorado Avenue, 15th Street would be reconstructed to provide pedestrian features such as sidewalks.
- At Ridge Road ramps providing direct access to US 24 would be constructed to convert the overpass to a tight diamond interchange.
- At 31st Street a park and ride facility would be constructed in the northeast quadrant of the intersection, with access from Colorado Avenue.

EXHIBIT 1  
Proposed Action



As described in Chapter 4 of the EA, the Proposed Action also includes various mitigations such as the construction of a greenway and the extension of some trails. The Proposed Action is illustrated in Exhibit 1.

## 4.0 Methodology

The City of Colorado Springs shares the responsibility of providing municipal services to residential, commercial, and industrial areas along the US 24 corridor with other private entities. The types and general location of public utilities in the corridor were identified through mapping provided by the City of Colorado Springs. The Utility Notification Center of Colorado was contacted to identify the private utility companies in the study area. These companies were then contacted to identify the types and general location of utilities in the corridor.

Certain utilities were classified as major utilities based on the cost and complexity of relocation. These included underground electric transmission lines, water lines and sewers with diameters greater than 24 inches, fiber optic lines, and high-pressure gas lines. Only these major utilities are addressed in the analysis that follows.

To evaluate the potential for utility conflicts, utilities were overlaid with the impact footprint for the Proposed Action. In cases where the alignment crossed a utility, a potential impact was noted. Where impacts were identified, utilities would need to be relocated, modified, or adjusted (e.g., lengthen a pipe or culvert). Utilities will need to be verified during final design and prior to construction. It is possible that some impacts could be avoided as the Proposed Action is refined.

Coordination with CDOT and utility providers was an important part of the analysis. The project team met with Colorado Springs Utilities on multiple occasions to discuss utilities, collect information, and identify potential conflicts. Emphasis was placed upon the Martin Drake Power Plant, which is currently located in the southeast quadrant of the Cimarron interchange.

## 5.0 Existing Conditions

A number of utilities are located throughout the study area, including water and wastewater mains, underground and overhead electrical transmission lines, natural gas lines, telecommunication lines, and fiber optic communications. The service providers and the types of utilities they own are listed in Exhibit 2.

El Paso County does provide fiber optic service to the area; however, none of the lines owned by the county are located in the project area (El Paso County, 2009). Major utilities with the potential to be affected by the project are described by location in Exhibit 3.

EXHIBIT 2

Utility Ownership in the Study Area

Utility Owner	Utility Type
Comcast	Fiber optic communications
Colorado Springs School District 11	Fiber optic communications
Colorado Springs Utilities	Water, Wastewater, Electrical Power, Natural Gas
City of Manitou Springs	Water, Wastewater
Level 3 Communications	Fiber optic communications
Porchlight Communications	Fiber optic communications
QWEST	Telecommunications

Source: Utility Notification Center of Colorado, 2009

EXHIBIT 3

Summary of Major Utility Conflicts as a Result of the Proposed Action

Owner	Utility Type	Description
City of Colorado Springs	Water	30-inch ductile iron water main. Crosses beneath West Colorado Avenue, west of Ridge Road.
	Water	36-inch steel water main. Crosses beneath US 24, east of South 8th Street.
	Water	36-inch steel water main. Crosses beneath US 24, west of I-25.
	Wastewater	42-inch concrete wastewater pipe. Runs along the west side of Fountain and Monument Creeks north and south of Cimarron interchange.
	Electric	Primary underground transmission lines adjacent to US 24 at 31st Street (north of US 24), east of 25th Street (north of US 24), east of 21st Street (north and south of US 24), east and west of 8th Street (south of US 24), and east of I-25 (north and south of US 24 adjacent to the railroad).
	Electric	Martin Drake Power Plant. Electrical generating station in the southeast quadrant of the Cimarron interchange. Approximately 1.9 acres of property would need to be acquired to allow for vertical clearance of the flyover ramp.
Colorado Springs School District 11	Fiber Optics	Fiber optic lines cross beneath US 24 – exact location will need to be verified prior to excavation.
Comcast	Fiber Optics	Fiber optic lines cross beneath US 24 north of 8th Street and at 25th Street. Fiber optics also located near I-25 – exact location will need to be verified prior to excavation.
Qwest	Telecom	Cable TV lines cross beneath US 24 north of 8th Street and at 25th Street.

Sources: City of Colorado Springs, 2007; City of Colorado Springs, 2008; City of Colorado Springs, 2009

## 6.0 Impacts and Mitigation

Utilities are typically located along a roadway corridor within property easements or roadway right-of-way, and as a result are often impacted by roadway improvements.

### Impacts of No Action Alternative

The projects included in the No Action Alternative would likely involve the relocation, modification, or adjustment of some utilities. However, because these projects are not yet designed, the type, location, and degree of impacts are unknown. Potential impacts to utilities would be assessed by the project sponsor prior to construction of these projects.

### Impacts of Proposed Action Alternative

Exhibit 3 summarizes the major utility conflicts anticipated to result from the Proposed Action. The Proposed Action is not expected to impact the diversion structure and pump station located on Fountain Creek behind Safeway at 33rd Street. Level 3 Communications and Porchlight Communications do not anticipate conflicts with any of the utilities they own in the study area.

Adjustments to ditch crossings, manholes, fire hydrants, and valves may also be required throughout the corridor. Numerous overhead transmission lines run adjacent to the existing right-of-way for US 24; conflicts with the majority of these could be avoided through design. Although the City of Manitou Springs did not respond to the request for information from the UNCC or follow up call, impacts are not anticipated because the Proposed Action does not include improvements west of Ridge Road.

### Avoidance and Minimization of Impacts

Alternative designs were evaluated to avoid impacts to the Martin Drake Power Plant. However, traffic patterns and the proximity to the Bijou interchange constrained design flexibility, making complete avoidance impossible.

An early design option for the Cimarron interchange included a tight diamond configuration with a north-to-westbound flyover ramp that would have been the fourth level of that interchange. By changing the interchange to a single point diamond interchange the flyover ramp was eliminated, reducing the aerial encroachment to the power plant.

### Mitigation of Proposed Action

Utility adjustments or relocations will be provided where conflicts are identified. Utilities relocated outside of the proposed right-of-way will require an easement.

The 1.9 acres of property that would be acquired from the Martin Drake power plant would be purchased by CDOT and then leased back to the City. Plant operations would not be affected significantly, though some activities and storage would need to be relocated. Representatives from CDOT and the City of Colorado Springs Utilities Department tentatively agreed to this approach in a meeting held in April 2009.

CDOT will continue to coordinate with Colorado Springs Utilities, Martin Drake Power Plant, and private providers throughout project design. Utilities conflicts will be verified and updated during final design.

## References

City of Colorado Springs Utilities, 2009. Geographic information systems dataset of electrical transmission lines. May 2009.

City of Colorado Springs Utilities, 2008. *Colorado Springs Utilities Utility Data Management Water Distribution Map*. Plotted January 2009.

City of Colorado Springs Utilities, 2007. *Colorado Springs Utilities Utility Data Management Wastewater Distribution Map*. Plotted March 2007.

El Paso County, 2009. Personal telephone contacts. October 13, 2009 and October 26, 2009.

Utility Notification Center of Colorado, 2009. Utility Owner Database.  
<http://www.uncc2.org/web/>. Contacted September 2009.