

TECHNICAL MEMORANDUM

TO: Jen Babbington/Parsons
FROM: Elissa Roselyn/Goodbee and Associates, Inc.
DATE: February 5, 2014
SUBJECT: Utility Relocation Cost Comparison
 I-70 Mountain Corridor Traffic and Revenue Study

1.0 INTRODUCTION

This technical memorandum documents Goodbee & Associates' evaluation of major utilities for the Colorado Department of Transportation's (CDOT's) I-70 Mountain Corridor Traffic and Revenue Study. The purpose of this work is to provide CDOT with a comparison of potential relocation costs associated with the construction of each of the 13 alternatives being considered as part of the study. The project corridor is roughly 55 miles long and extends along I-70 from approximately 4,000 feet west of the I-70/SH-9/US-6 interchange in Silverthorne to the I-70/C-470 interchange in Golden. Table 1 summarizes the alternatives that were evaluated (Parsons 2014).

Table 1
Alternatives under Consideration

| Alternative/Option | Description |
|---------------------------|---|
| Alternative 01/Option 01 | 2 tolled reversible managed lanes, third bore at Eisenhower-Johnson Memorial Tunnel (EJMT) and Twin Tunnels, independent viaduct East Idaho Springs to Floyd Hill |
| Alternative 01/Option 02 | 2 tolled reversible managed lanes, third bore at EJMT and Twin Tunnels, independent viaduct East Idaho Springs to Floyd Hill |
| Alternative 02/Option 01 | 3 tolled reversible managed lanes, third bore at EJMT and Twin Tunnels, independent viaduct East Idaho Springs to Floyd Hill |
| Alternative 02/Option 02 | 3 tolled reversible managed lanes, third bore at EJMT and Twin Tunnels, independent viaduct East Idaho Springs to Floyd Hill |
| Alternative 02/Option 03 | 3 tolled reversible managed lanes, third bore at EJMT and Twin Tunnels, independent viaduct West Idaho Springs to Floyd Hill |
| Alternative 03/Option 01 | Minimum program per Programmatic Environmental Impact Statement (PEIS), third bore at EJMT |
| Alternative 03/Option 02 | Minimum program per PEIS, third bore at EJMT, new tunnels at Hidden Valley and near US-6 |
| Alternative 03/Option 03 | Minimum program per PEIS |
| Alternative 03/Option 04 | Minimum program per PEIS, new tunnels at Hidden Valley and near US-6 |
| Alternative 04/Option 01 | Maximum program per PEIS, third bore at EJMT |
| Alternative 04/Option 02 | Maximum program per PEIS, third bore at EJMT, new tunnels at Hidden Valley and near US-6 |
| Alternative 05/Option 01 | Permanent peak period shoulder lane EJMT to Floyd Hill |
| Alternative 06/Option 01 | Temporary peak period shoulder lane Empire to Floyd Hill |

Methodology:

After coordinating with CDOT and Parsons, it was agreed that privately owned utilities (electric and gas transmission lines and communication trunk lines) located in an easement or fee property and utilities owned by CDOT and local jurisdictions would be relocated at project cost and would be referred to as “major utilities” for this project. To identify owners of major utilities in the project area, Goodbee & Associates conducted a search of the Utility Notification Center of Colorado database. Utility owners were contacted to confirm the presence or absence of facilities in the project area and to obtain key maps and contact information. After reviewing the key maps and verbal information from utility owners, major utilities were identified and added to a working base CAD map provided by Parsons containing preliminary design details for each alternative. Private utility owners were asked if their facilities were located in easement. Although it was not apparent from key maps and follow-up conversations with Xcel, it was assumed that overhead electric transmission lines and towers were located in an easement or fee property as this is usually the case.

Goodbee performed an impact analysis by comparing the approximate location of major utilities with the proposed improvements associated with each alternative. The following assumptions were made regarding relocations and adjustments:

- Buried utilities located in proposed areas of cut, running along or crossing a proposed wall, or through a proposed round-about would be relocated.
- Buried utilities in areas of fill would be adjusted (raising manholes and/or adding encasement).
- Overhead utility lines would be relocated overhead if there were proposed structures crossing them or proposed fill beneath them.
- Electric transmission towers would be relocated if they were located in cut/fill, interfered with proposed roadway or structures, or located adjacent to an overhead line that was to be relocated.
- Fiber relocations would occur between existing splice points.
- There would be no modifications to the design as shown on the CAD files to mitigate utility impacts.

Ballpark relocation costs were obtained from utility owners or recent CDOT projects. For each alternative, the cost to relocate or adjust major utilities affected by the alternative’s improvements were calculated and totaled. The following relocation and adjustment costs were used:

- CDOT fiber backbone: \$150,000/mile
- Water/Sanitary sewer: \$50,000/relocation and \$10,000/adjustment
- Electric Transmission Line (including adjacent towers): \$200,000
- Electric Transmission Tower: \$100,000/tower if the adjacent line is not to be relocated.

Limitations:

It should be noted that several assumptions were made for this work effort:

- Information received from utility owners was assumed to be accurate and complete.
- Buried utility locations were estimated based on schematic maps that were provided.
- The locations of overhead utilities were based on project aerial photos and public domain information.
- Some utility owners did not provide maps or information about their facilities.
- There were no field observations made to verify the information received from utility owners or to detect undocumented utilities.

- Utilities located on private property were assumed to be in easement or fee property.
- Design as shown January 14 – February 4, 2014 would not be modified to mitigate utility impacts.

2.0 FINDINGS

A total of 20 utility owners were identified as having facilities in the vicinity of the project corridor. Information was received from 16 utility owners, and no information was received from four utility owners. A list of utility owners is provided in the appendix.

As shown in the Major Utility Summary in the appendix, 48 major utilities were identified within the project corridor and consisted of water lines, sanitary sewers, two overhead electric transmission lines, one electric substation, one waste water treatment plant, and one fiber backbone. Of these, 15 major utilities were found not to conflict with any of the alternatives. All of the alternatives were found to have some major utility impacts.

The estimated cost to relocate and/or adjust major utilities is summarized in Table 2 and ranges from \$400,000 for Alternative 6/Option 1 to \$11.1 Million for Alternative 2/Option 2. The detailed table in the appendix indicates that relocating the CDOT fiber backbone and Xcel electric transmission facilities are responsible for the greatest contribution to the total relocation cost.

Table 2
Estimated Major Utility Relocation Costs*

| Alternative/Option | Estimated Cost (Millions) |
|--------------------------|---------------------------|
| Alternative 01/Option 01 | \$10.3 |
| Alternative 01/Option 02 | \$10.5 |
| Alternative 02/Option 01 | \$10.5 |
| Alternative 02/Option 02 | \$11.1 |
| Alternative 02/Option 03 | \$9.9 |
| Alternative 03/Option 01 | \$4.2 |
| Alternative 03/Option 02 | \$3.7 |
| Alternative 03/Option 03 | \$2.0 |
| Alternative 03/Option 04 | \$1.5 |
| Alternative 04/Option 01 | \$8.1 |
| Alternative 04/Option 02 | \$7.4 |
| Alternative 05/Option 01 | \$6.1 |
| Alternative 06/Option 01 | \$0.4 |

* Assumes project will cover cost to relocate privately owned major utilities located in easement or fee property and all publically owned major utilities. See Appendix for details.

3.0 CONCLUSIONS AND RECOMMENDATIONS

All of the alternatives under consideration will likely result in utility impacts. It is recommended that the following actions be taken after a preferred alternative is selected to better identify and resolve these potential conflicts:

- Follow up with all utility owners to fill any data gaps;
- Verify the terms and conditions of private utility owners' easements and property rights;
- Conduct a field reconnaissance to verify the key maps and record any undocumented utilities;
- Have utility locations marked and surveyed;
- Obtain depth information with a manhole survey to confirm the location and depth of wet utilities;
- Pothole buried utilities to confirm the location and depth of utilities where they will be crossed or otherwise impacted by proposed improvements; and
- Re-evaluate the design to mitigate utility conflicts.

Appendices:

- Data Sources
- Utility Owner Contact List
- Major Utility Summary Table
- Utility Relocation Cost Comparison

Data Sources

Buffalo Mountain Metro District - Verbal information from Eric Kircher/BMMD 12/24/13.

Central Clear Creek Sanitation District – Annotated Collection System Maps received from Mike Lutz/Dewberry Engineers 1/2/14.

Chicago Creek Sanitation District – Sewer Interceptor as-built downloaded from district website (<http://www.colorado.gov/cs/satellite/ChicagoCreekSanitationDistrict/>) 12/30/13.

City of Idaho Springs – Telephone conversation regarding cost estimate for relocating water lines and sanitary sewers along mountain corridor with John Bordoni/Idaho Springs 1/24/14.

Clear Creek County, GIS map plots showing water and sanitary facilities in Dumont, Georgetown, Idaho Springs, and Silver Plume received from Matt Taylor/Clear Creek County IT Department 1/16/14 and 1/21/14.

Colorado Department of Transportation - Annotated Comcast drawings showing CDOT fiber backbone dated 5/16/13 and received from Michael Lopez/CDOT 12/26/13.

Colorado Department of Transportation – Telephone conversation regarding cost estimate for relocating CDOT fiber backbone along I-70 from Jill Scott/CDOT 1/17/14.

Denver Water Department - Email communication from Vince Gaiter/DWD 1/16/14.

Dillon Valley District – Water and Sewer System Plans dated June 2009 and Google Earth mark-up received from Patrick Armour/Water Solutions, Inc. 1/16/14.

Genesee Water and Sanitation District - Plan view water and sanitary system plan from Elizabeth Cessar/GWSD 12/26/13.

Intermountain Rural Electric Association - Telephone conversation with Rick Chapel/IREA 1/28/14.

Parsons. Information Sheets for Alternatives dated 1/13/14.

Parsons. CAD design files on ProjectWise 1/14/14 – 2/4/14.

Silverthorne-Dillon Joint Sewer Authority – Sewer Line Segments map received from Matt Smith/Town of Silverthorne 12/30/13.

Town of Dillon - Telephone conversation with Sebastian Madrid/Town of Dillon 1/10/14.

Town of Silverthorne – GIS map plot showing Silverthorne’s water and sanitary facilities received from Zach Margolis/Town of Silverthorne 1/2/14.

West Jefferson County Metro District/El Rancho Metro District – GIS system map plot showing water and sanitary facilities received from Chris Schauder/ERMD 12/23/13.

Xcel Energy – GIS map plots showing electric and gas facilities received from Xcel Mapping Department 12/23/13 and 2/3/14.

Note: Goodbee and Associates also contacted and requested information from CenturyLink, Comcast, Forest Hills Metro District, and Lookout Mountain Water District, but did not receive information from them.

**I-70 Mountain Corridor Traffic and Revenue Study
Utility Relocation Cost Comparison Memo
Utility Contact List**

**Goodbee and Associates, Inc.
February 2014**

| Utility | Contact Name | Address | Office Phone | email |
|---|---|---|------------------------------|--|
| Buffalo Mountain Metro District | Eric Kircher | PO Box 2430, Silverthorne CO 80498 | 970-390-7688 | eric@bmmmd.org |
| CDOT Fiber Backbone | Michael Lopez (maps) Jill Scott (info) | 425C Corporate Circle, Golden CO 80401 | 303-512-5817 303-512-5814 | michael.lopez@co.state.us richard.sembrat@co.state.us |
| Central Clear Creek Sanitation District | Mike Lutz, Dewberry Engineers | 1095 S Monaco Pkwy, Denver CO 80224 | 303-951-0612 | mlutz@dewberry.com |
| Century Link Communications | Sam Tooley (Summit Co.) | PO Box 739, Silverthorne 80498 | 970-468-6860 | sam.tooley@centurylink.com |
| Century Link Communications | Dan Lewis (Idaho Springs/Georgetown) | 1855 So. Flatiron Ct, Boulder, CO 80301 | 303-441-6021 | dan.lewis@centurylink.com |
| Century Link Communications | Andy Devine (Evergreen) | 7759 S Wheeling Ct., Englewood, CO 80112 | 720-578-5141 | andy.devine@centurylink.com |
| Century Link Communications | Jodie Leonard (Golden/Lookout Mtn) | 5325 Zuni St., Denver, CO 80221 | 303-451-2379 | jodie.leonard@centurylink.com |
| Chicago Creek Sanitation District | Crystal Miller, Business Manager | PO Box 634 Idaho Springs, CO 80452 | 1-877-724-0817 | waltweiss@comcast.net |
| Comcast | Artjamel Davis | 1601 Mile High Stadium Cir. Denver, CO 80204 | 303-603-1646 | artjamel_davis@cable.comcast.net |
| Denver Water | Vince Gaiter | 1600 W 12th Ave. Denver CO 80204 | 720-999-1069 | vincent.gaiter@denverwater.org |
| Dillon Valley District | Bob Polich | PO Box 3428, Dillon, CO 80435 PO Box 192, Silverthorne, CO 80498 | 970-668-5500 970-262-0217 | bob@mtn-sys.com Parmour@wsicolorado.com |
| El Rancho/W. Jefferson Co. Metro District | Chris Shauder | 30920 Stagecoach Blvd., Evergreen, CO 80439 PO Box 3819, Evergreen, CO 80437 | 720-458-4362 | cschauder@evergreenmetrodistrict.com |
| Forest Hills Metro District | Sue Fletcher | 25958 Genessee Trail Rd., #232 Golden 80401 | 303-526-4266 | TBD |
| Genesee WSD | Scott Jones, Dist Manager | 2310 Bitterroot Lane, Golden, CO 80401 | 303-278-9780 | SJones@geneseeewater.com |
| Idaho Springs | John Bordoni | PO Box 907, Idaho Springs 80452 | 303-961-6508 | pw@idahosprings.com |
| Intermountain Rural Electric District | Rick Chapel | 5496 N Hwy 85, Sedalia, CO 80135 | 720-733-5485 | rchapel@irea.coop |
| Lookout Mountain Water District | Christina Shea, Blacklock Integrated Services | 25958 Genessee Trail Rd., #232 Golden 80401 | 303-526-2025 | csbis@msn.com |
| Silverthorne-Dillon Joint Sewer Authority | Mike Bittner | 26452 Colorado 9, Silverthorne CO 80498 | 970-468-6152 | mike.bittner@silverthorne.org |
| Town of Dillon | Sebastian Madrid | PO Box 8, Dillon, CO 80435 | 970-513-3340 | smadrid@townofdillon.com |
| Town of Georgetown | John Curtis | 404 6th St. Georgetown, CO 80444 PO Box 426, Georgetown, CO 80444 | 303-569-2555 | TBD |
| Town of Silver Plume | Rick Gaubatz | 710 Main St., Silver Plume, CO 80476 PO Drawer F, Silver Plume, CO 80476 | 303-569-2363 | townofsilverplume@msn.com |
| Town of Silverthorne | Zach Margolis, utility manager | 264 Brian Ave., Silverthorne, CO 80498 PO Box 1309, Silverthorne, CO 80498 | 970-262-7340 | zachm@silverthorne.org |
| Xcel Energy | Dick Moss | 4019 Evergreen Parkway, Evergreen, CO 80437 PO Box 640, Evergreen, CO 80437-0640 | 303-445-4553 | richard.moss@xcelenergy.com |

| Starting MM | Ending MM | Station | Utility Owner | Description | Alt 01/Opt 1 | Alt 01/Opt02 | Alt 02/Opt 01 | Alt 02/Opt 02 | Alt 02/Opt03 | Alt 03/Opt01 | Alt 03/Opt02 | Alt 03/Opt03 | Alt 03/Opt04 | Alt04/Opt01 | Alt04/Opt02 | Alt05/Opt01 | Alt06/Opt01 |
|-------------|-----------|------------------|---------------|--|--------------|--------------|---------------|---------------|--------------|--------------|--------------|--------------|--------------|-------------|-------------|-------------|-------------|
| 242.5 RT | 242.5 RT | 69 RT | Xcel | ELT tower | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| 242.5 RT | 242.6 LT | 69 RT to 78 LT | Xcel | ELT crossing | R | R | R | R | R | R | NC | R | NC | R | NC | R | NC |
| 242.6 LT | 242.6 LT | 78 LT | Xcel | ELT tower | NC | R | NC | R | NC | R | NC | R | NC | R | NC | NC | NC |
| 242.6 LT | 242.8 RT | 78 LT to 85 RT | Xcel | ELT crossing | R | R | R | R | R | R | NC | R | NC | R | NC | R | NC |
| 243.4 RT | 243.4 RT | 121 RT | Xcel | ELT on south side of I-70 | NC | R | NC | R | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| 244.9 LT | 260.7 LT | 204 LT to end | CDOT | fiber backbone; excludes Alt 2/2 and all options for Alt 3, 4, 6 | R | R | R | NC | R | NC | NC | NC | NC | NC | NC | NC | NC |
| 245.4 LT | 245.4 LT | 230 LT | IREA | Floyd Hill Substation | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| 245.4 RT | 245.4 RT | 236 RT | Xcel | ELT tower | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| 245.4 RT | 245.6 LT | 236 RT to 246 LT | Xcel | ELT crossing | R | R | R | R | R | R | R | R | R | R | R | R | NC |
| 245.6 LT | 245.6 LT | 246 LT | Xcel | ELT tower | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| 251.5 LT | 259.9 LT | 257 LT to 694 LT | CDOT | fiber backbone; excludes Alt 1 and 2 all options | NC | NC | NC | NC | NC | R | R | NC | NC | R | R | NC | NC |
| 253.8 | 253.8 | 378 | GWSD | 10" DIP water in 66" tunnel - east of Genesee Park interchange | R | R | R | R | R | A | A | NC | NC | A | A | NC | NC |
| 253.8 | 253.8 | 378 | GWSD | 8" sanitary in 66" tunnel - east of Genesee Park interchange | R | R | R | R | R | A | A | NC | NC | A | A | NC | NC |
| 259.2 | 259.2 | 656 | Xcel | ELT crossing | R | R | R | R | R | R | R | R | R | R | R | NC | NC |
| 259.2 RT | 259.2 RT | 656 RT | Xcel | ELT crossing of SH-93 south of I-70 | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| 259.2 LT | 260.0 LT | 656 LT to 701 LT | Xcel | ELT north of I-70 | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |

Notes/Assumptions:

Following utility relocations/adjustments considered project cost: utilities owned by CDOT or local jurisdiction, private utilities in easement or fee property. ELT assumed to be in easement or fee property.

LT is north of I-70 and RT is south of I-70 regardless of direction of stationing

Stationing and offset are based on Alternative 2/Option 1.

Proposed improvements as shown on Parsons' CAD design files posted to ProjectWise 1/14/14 - 2/4/14.

ELT crossing considered a relocation if it crosses proposed improvements.

ELT tower considered a relocation if new roadway is on tower or if at top of cut/toe of fill.

Utility considered a relocation if in area of proposed cut, under proposed wall, in a proposed round-about, or runs parallel to roadway in proposed lane of traffic

Utility considered an adjustment if in area of proposed fill.

Extent of CDOT fiber relocation assumed to be between existing splice points shown on key maps from CDOT.

Abbreviations

CCCD Central Clear Creek Sanitation District
 CDOT Colorado Department of Transportation
 DVD Dillon Valley District
 GT Town of Georgetown
 GWSD Genesee Water and Sanitation District
 IREA Intermountain Rural Electric Association
 IS Town of Idaho Springs
 JSA Silverthorne-Dillon Joint Sewer Authority
 SP Town of Silver Plume
 TOS Town of Silverthorne

ACP Asbestos Containing Pipe
 CIP Cast Iron Pipe
 DIP Ductile Iron Pipe
 EJMT Eisenhower-Johnson Memorial Tunnel
 ELT Electric Transmission
 LT Left (north side of I-70)
 MM Mile Marker
 RT Right (south side of I-70)
 STL Steel

A Adjustment
 NC No Conflict
 R Relocation

| Starting MM | Ending MM | Station | Utility Owner | Description | Alt 01/Opt 1 | | Alt 01/Opt 2 | | Alt 02/Opt 01 | | Alt 02/Opt 02 | | Alt 02/Opt 03 | | Alt 03/Opt 01 | | Alt 03/Opt 02 | | Alt 03/Opt 03 | | Alt 03/Opt 04 | | Alt 04/Opt 01 | | Alt 04/Opt 02 | | Alt 05/Opt 01 | | Alt 06/Opt 01 | |
|-------------|-----------|---------------------|---------------|---|--------------|------------------|--------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|
| | | | | | R | cost x \$million | R | cost x \$million | R | cost x \$million | R | cost x \$million | R | cost x \$million | R | cost x \$million | R | cost x \$million | R | cost x \$million | R | cost x \$million | R | cost x \$million | R | cost x \$million | R | cost x \$million | R | cost x \$million |
| 240.9 | 241.1 | -8 RT to -3 LT | Xcel | ELT crossing | R | 0.20 | R | 0.20 | R | 0.20 | R | 0.20 | R | 0.20 | NC | | NC | | NC | | NC | | R | 0.20 | R | 0.20 | R | 0.20 | R | 0.20 |
| 241.0 | 241.1 | -5+00 RT to 1+00 RT | IS | 2" STL water - E. Idaho Springs Rd. | R | 0.05 | R | 0.05 | R | 0.05 | R | 0.05 | A | 0.01 | NC | | NC | | NC | | NC | | R | 0.05 | R | 0.05 | R | 0.05 | A | 0.01 |
| 241.0 | 241.6 | -4+00 to 18+00 LT | IS | 4" CIP water - Colorado Blvd. | R | 0.05 | R | 0.05 | R | 0.05 | R | 0.05 | NC | | A | 0.01 | A | 0.01 | NC | | NC | | R | 0.05 | R | 0.05 | R | 0.05 | A | 0.01 |
| 241.0 | 241.6 | -4+00 to 18+00 LT | IS | 12" sanitary south side Ctr Ck | R | 0.05 | R | 0.05 | R | 0.05 | R | 0.05 | NC | | A | 0.01 | A | 0.01 | NC | | NC | |
| 241.1 | 241.1 | -3 LT | Xcel | ELT tower in infill area | R | N/A | R | N/A | R | N/A | R | N/A | NC | | R | N/A | R | N/A | NC | | NC | |
| 241.1 | 241.3 | -3 LT to 6 LT | Xcel | ELT crossing | R | 0.20 | R | 0.20 | R | 0.20 | R | 0.20 | R | 0.20 | NC | | NC | | NC | | NC | | R | 0.20 | R | 0.20 | NC | | NC | |
| 241.1 | 246.5 | -1+00 LT to 299 LT | CDOT | fiber backbone; excludes Alt 1, 2, 4, 6 all options | NC | | NC | | NC | | NC | | NC | | R | 0.81 | R | 0.81 | R | 0.81 | R | 0.81 | NC | | NC | | NC | | NC | |
| 241.3 | 241.3 | 6 LT | Xcel | ELT tower | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | |
| 241.4 | 241.6 | 12 LT to 25 RT | Xcel | ELT crossing | R | 0.20 | R | 0.20 | R | 0.20 | R | 0.20 | R | 0.20 | R | 0.20 | R | 0.20 | R | 0.20 | R | 0.20 | R | 0.20 | NC | | NC | | NC | |
| 241.8 | 241.8 | 27+00 | IS | 4" CIP water - Clear Creek crossing | R | 0.05 | R | 0.05 | R | 0.05 | R | 0.05 | A | 0.01 | NC | | A | 0.01 | A | 0.01 |
| 241.8 | 241.8 | 28+00 | IS | 12" Sanitary - Clear Creek crossing | A | 0.01 | A | 0.01 | A | 0.01 | A | 0.01 | A | 0.01 | A | 0.01 | A | 0.01 | A | 0.01 | A | 0.01 | NC | | A | 0.01 | NC | | A | 0.01 |
| 241.6 RT | 241.6 RT | 25 RT | Xcel | ELT tower | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | |
| 241.8 RT | 241.8 RT | 34 RT | Xcel | ELT tower | NC | | NC | | NC | | NC | | NC | | R | 0.10 | NC | | R | 0.10 | NC | | R | 0.10 | NC | | NC | | NC | |
| 242.4 | 260.7 | 1000 to end | CDOT | fiber backbone; excludes Alt 2/1, 2/3, and all options Alt 1, 3, 4, 6 | NC | | NC | | NC | | R | 2.75 | NC | |
| 242.5 | 242.5 | 69 RT | Xcel | ELT tower | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | |
| 242.5 | 242.6 | 69 RT to 78 LT | Xcel | ELT crossing | R | 0.20 | R | 0.20 | R | 0.20 | R | 0.20 | R | 0.20 | R | 0.20 | NC | |
| 242.6 | 242.6 | 78 LT | Xcel | ELT tower | NC | | R | | NC | | R | N/A | NC | | NC | | NC | |
| 242.6 | 242.8 | 78 LT to 85 RT | Xcel | ELT crossing | R | 0.20 | R | 0.20 | R | 0.20 | R | 0.20 | R | 0.20 | R | 0.20 | NC | |
| 243.4 | 243.4 | 121 RT | Xcel | ELT on south side of I-70 | NC | | R | 0.20 | NC | | R | 0.20 | NC | |
| 244.9 | 260.7 | 204 LT to end | CDOT | fiber backbone; excludes Alt 2/2, and all options Alt 3, 4, 6 | R | 2.37 | R | 2.37 | R | 2.37 | NC | | R | 2.37 | NC | |
| 245.4 | 245.4 | 230 LT | IREA | Floyd Hill Substation | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | |
| 245.4 | 245.4 | 236 RT | Xcel | ELT tower | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | |
| 245.4 | 245.6 | 236 RT to 246 LT | Xcel | ELT crossing | R | 0.20 | R | 0.20 | R | 0.20 | R | 0.20 | R | 0.20 | R | 0.20 | R | 0.20 | R | 0.20 | R | 0.20 | R | 0.20 | R | 0.20 | R | 0.20 | NC | |
| 245.6 | 245.6 | 246 LT | Xcel | ELT tower | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | |
| 251.5 | 259.9 | 257 LT to 694 LT | CDOT | fiber backbone; excludes Alt 1 and 2 all options | NC | | NC | | NC | | NC | | NC | | R | 1.26 | R | 1.26 | NC | | NC | | R | 1.26 | R | 1.26 | NC | | NC | |
| 253.8 | 253.8 | 378 | GWSD | 10" DIP water in 66" tunnel - east of Genesee Park interchange | R | 0.05 | R | 0.05 | R | 0.05 | R | 0.05 | R | 0.05 | A | 0.01 | A | 0.01 | NC | | NC | | A | 0.01 | A | 0.01 | NC | | NC | |
| 253.8 | 253.8 | 378 | GWSD | 8" sanitary in 66" tunnel - east of Genesee Park interchange | R | 0.05 | R | 0.05 | R | 0.05 | R | 0.05 | R | 0.05 | A | 0.01 | A | 0.01 | NC | | NC | | A | 0.01 | A | 0.01 | NC | | NC | |
| 259.2 | 259.2 | 656 | Xcel | ELT crossing | R | 0.20 | R | 0.20 | R | 0.20 | R | 0.20 | R | 0.20 | R | 0.20 | R | 0.20 | R | 0.20 | R | 0.20 | R | 0.20 | R | 0.20 | R | 0.20 | NC | |
| 259.2 | 259.2 | 656 RT | Xcel | ELT crossing of SH-93 south of I-70 | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | |
| 259.2 | 260.0 | 656 LT to 701 LT | Xcel | ELT north of I-70 | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | | NC | |

Total Estimated Relocation/Adjustment Cost (millions) **\$10.3M \$10.5M \$10.5M \$11.1M \$9.9M \$4.2M \$3.7M \$2.0M \$1.5M \$8.1M \$7.4M \$6.1M \$0.4M**

Assumptions:
 Fiber backbone will be relocated between existing splice points
 Wet utilities \$50,000/relocation and \$10,000/adjustment
 Elec Transmission \$100,000/tower or \$200,000/crossing
 Fiber backbone: \$150,000/mile (calculated to the nearest 0.1 mile)

Abbreviations

| | | | | | |
|------|---|------|------------------------------------|-----|---|
| CCCD | Central Clear Creek Sanitation District | ACP | Asbestos Containing Pipe | A | Adjustment |
| CDOT | Colorado Department of Transportation | CIP | Cast Iron Pipe | N/A | Not Applicable (cost to relocate tower included in cost to relocate ELT crossing) |
| DVD | Dillon Valley District | DIP | Ductile Iron Pipe | NC | No Conflict |
| GT | Town of Georgetown | EJMT | Eisenhower-Johnson Memorial Tunnel | R | Relocation |
| GWSD | Genesee Water and Sanitation District | ELT | Electric Transmission | | |
| IREA | Intermountain Rural Electric Association | LT | Left (north side of I-70) | | |
| IS | Town of Idaho Springs | MM | Mile Marker | | |
| JSA | Silverthorne-Dillon Joint Sewer Authority | RT | Right (south side of I-70) | | |
| SP | Town of Silver Plume | STL | Steel | | |
| TOS | Town of Silverthorne | | | | |