

Draft Request for Proposals (RFP)

DRAFT Design – Professional Services Scope of Work

**US 285 Kings Valley Interchange Project
Mile Point (MP) 232 to MP 233**



**PROJECT NUMBERS: FSA 2854-141
PROJECT LOCATION: US 285 at Kings Valley Drive
PROJECT CODE: 21749**

May 19, 2022

Colorado Department of Transportation
2829 West Howard Place
Denver, CO 80204



TABLE OF CONTENTS

TABLE OF CONTENTS	2
INSTRUCTIONS	4
SECTION 1 – PROJECT SPECIFIC INFORMATION	5
1.1. PROJECT BACKGROUND	5
1.2. PROJECT LIMITS	6
1.3. PROJECT GOALS	6
1.4. PROJECT FUNDING	7
1.5. WORK DURATION	7
1.6. CONSULTANT RESPONSIBILITY AND DUTIES	7
1.7. WORK PRODUCT	8
1.8. ADDITIONAL PROJECT INFORMATION	10
SECTION 2 – PROJECT MANAGEMENT AND COORDINATION	11
2.1. CDOT CONTACT	11
2.2. PROJECT COORDINATION AND MEETINGS	11
2.4. PROJECT ROLES	12
2.5. PROJECT COORDINATION	13
SECTION 3 – EXISTING FEATURES	15
3.1. STRUCTURES	15
3.2. UTILITIES	15
3.3. IRRIGATION DITCHES	15
3.4. RAILROADS	15
3.5. PERMANENT WATER QUALITY CONTROL MEASURES	15
3.6. WATER FEATURES	15
SECTION 4 – GENERAL INFORMATION	16
4.1. NOTICE TO PROCEED	16
4.2. ROUTINE REPORTING AND BILLING	16
4.3. PERSONNEL QUALIFICATIONS	16
4.4. COMPUTER SOFTWARE INFORMATION	17
4.5. PROJECT DESIGN DATA AND STANDARDS	18
SECTION 5 – WORK ACTIVITY ASSIGNMENTS	19
SECTION 6 – SUBMITTALS	26
APPENDIX A: REFERENCES	30
A.1. AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION	



OFFICIALS (AASHTO) PUBLICATIONS (USING LATEST APPROVED VERSIONS):	30
A.2. COLORADO DEPARTMENT OF TRANSPORTATION PUBLICATIONS (USING LATEST APPROVED VERSIONS):	30
A.3. CDOT PROCEDURAL DIRECTIVES (USING LATEST APPROVED VERSIONS):	31
A.4. FEDERAL PUBLICATIONS (USING LATEST APPROVED VERSIONS):	31
APPENDIX B: DEFINITIONS	32



INSTRUCTIONS

This Scope of Work is to serve as a template for Colorado Department of Transportation (CDOT) to develop and negotiate solid contracts with Consultant teams on projects and tasks. The Consultant shall coordinate all activities, tasks, meetings, communications, and deliverables with the CDOT/ Project Manager (PM) (or his or her designee) for this Project. All submittals will be through the CDOT/PM or a designee, who will make appropriate distribution. Upon notice to proceed (NTP), the Consultant shall be responsible and will account for all effort contained in the Final Scope of Work.

This Draft Scope of Work has been reviewed by the Department and reflects a plan of approach based on the known goals. One factor determining the selection of a Consultant is the ability of that Consultant to analyze the project goals, evaluate the work elements, and formulate a work plan. This process may produce new approaches or modification to the Project work elements. Because of that, all Consultants should be aware that the Final Scope of Work for a project will be produced with input from the selected Consultant. The Final Scope of Work submitted will be generated by CDOT personnel and be on CDOT letterhead.



SECTION 1 – PROJECT SPECIFIC INFORMATION

1.1. PROJECT BACKGROUND

Project Location and Overview

US 285 is a north-south federal route extending from Sanderson, Texas to Denver, Colorado. Through the Project area, US 285 is a 3-lane highway with 4-foot shoulders and auxiliary turn lanes at Kings Valley Drive. This segment of US 285 is classified as an arterial (R-A) in mountainous terrain with a posted speed limit of 55-MPH. US 285 supports commuter traffic from communities in Jefferson County to the Denver Metropolitan workforce. Additionally, US 285 connects the Denver Metropolitan area to recreational mountain activities, oftentimes resulting in inflated weekend traffic volumes.

Kings Valley Drive is a two-lane collector road with a posted speed limit of 25-MPH that connects the community of Kings Valley to US 285. The Kings Valley community consists of residential and commercial uses in a mountainous setting. The area hosts a gas station, an auto mechanic shop, and a retail center with various attractions.

Kings Valley Drive intersects US 285 at MP 232.42 and is situated in the Town of Conifer. Traffic is facilitated from US 285 to Kings Valley Drive via the use of auxiliary turn lanes. Traffic traveling from Kings Valley Drive to US 285 is stop-controlled. All intersection movements are at grade. The intersection has a long history of motor vehicle crashes with several fatalities.





US 285 and Kings Valley Drive Crash History

A Safety Assessment Report for US 285 dated June 2021 evaluated crashes between MP 228.80 and MP 235.00 to determine where opportunity exists for safety improvements. 17 crashes were documented in the 5-year timespan between July 1, 2015 and June 30, 2020. Of the 17 crashes, 10 crashes resulted in injuries and one resulted in fatality. All 17 crashes were broadside collisions. The primary at-fault vehicle was traveling southbound on Kings Valley Drive and making a left turn to NB US 285 (14 of the 17 crashes). Significant delays are experienced for this left-turning movement and there is a potential sight-distance issue where right-turning vehicles from US 285 to Kings Valley Drive could obstruct the view of the thru vehicles traveling on SB US 285.

US 285 Environmental Assessment and Design Status

The US 285 Foxtan Road to Bailey Environmental Assessment (EA) was executed in August 2004. This EA evaluated US 285 from Foxtan Road (MP 235.2) to Bailey (MP 220.5). The purpose of the EA was to assess impacts of proposed projects that would improve safety and traffic operations. The Kings Valley and US 285 Interchange was one of the seven locations along the corridor that recommended a grade-separated interchange.

In 2019, the Kings Valley Interchange Project was developed to a 30% Field Inspection Review (FIR) level of design. At this stage, the project team discovered that the project footprint would impact historic properties (that were not deemed historic at the time of the EA completion) and a conservation easement located south of US 285. In spring of 2021, CDOT teamed with a consultant to investigate new design alternatives to avoid impacts to the historic properties. A new preferred alternative came out of the analysis which has a strong likelihood of avoiding adverse impacts to historic properties in the area. CDOT's desire is to develop a Final PS&E package for this avoidance alternative.

Due to the age of the EA and the changed environment surrounding the project area, this project will require a NEPA Reevaluation to evaluate any environmental resources that may have changed.

1.2. PROJECT LIMITS

The primary roadway construction activities will occur near the intersection of US 285 and Kings Valley Drive (MP 232.42). The Project limits will be located on US 285 between MP 232 (east of Shaffers Crossing) and MP 233 (west of Richmond Hill) to allow the project to tie into existing grades and transition related signing and striping improvements.

1.3. PROJECT GOALS

The goals of this project are:

- Avoid adverse impacts to Section 4(f) historic structures and properties
- Utilize value engineering and design innovations to optimize the project scope
- Minimize impacts to the traveling public during construction
- Maintain and improve access for residents and local businesses that rely on Kings Valley Drive
- Improve safety, mobility, and operations



- Develop roadway plans and specifications by utilizing a blended team consisting of both CDOT and consultant staff

1.4. PROJECT FUNDING

The planning level interchange construction cost of this project is estimated to be \$40,000,000, inclusive of ROW acquisitions.

Identified funding sources include \$1,000,000 from Senate Bill 267 (SB 267) and \$5,900,000 of FASTER Safety Funding.

Construction funding is not identified at this time. CDOT will pursue and identify measures to construct the project, which could include alternate financing, federal grants, or a combination of all of these.

1.5. WORK DURATION

The time period for the work described within this SOW is estimated to begin July 2022 and is not anticipated to exceed 18 months.

1.6. CONSULTANT RESPONSIBILITY AND DUTIES

All work shall be done in accordance with CDOT's latest manuals, directives, and generally accepted practices. This Project will be delivered by the Design-Bid-Build (DBB) delivery method.

The Consultant will develop an all-encompassing scope of the Project and prepare a written recommendation of activities that coincide with Project costs, goals, and planned improvements.

The Consultant shall be responsible for developing complete Plans, Specifications, and Cost Estimate (PS&E) packages for the planned improvements. The consultant shall be responsible for acquiring all necessary permits, clearances, and improvements required for the development of the project. Upon completion, the Consultant shall supply final engineer-signed and sealed electronic plans and reports for all necessary work.

The Consultant shall be prepared for the following duties:

- Provide a full time Project Manager and Project Team capable of providing project deliverables on time
- Project Coordination
- Meet all project milestones
- Develop and maintain CPM schedules
- Attend site meetings and site visits
- Environmental NEPA Process and Documentation
- Provide FIR, FOR, and Final Advertisement (PS&E)
- Develop phasing and detour concepts that incorporate project goals
- Track project action items and deliverables
- Investigate implementation of innovative intersection design and plan development (i.e. roundabouts)
- Create and maintain a project risk matrix
- Create and maintain a project communication log



- Perform and document quality management activities
- Perform and document contract management including earned value analysis
- Develop and maintain a project change log
- Develop and maintain a project decision log
- All other efforts and deliverables as indicated in this SOW.
- Deliver items included, but not limited to, the items described in **Section 1.7 Work Product**

1.7. WORK PRODUCT

The following work products include all reports, studies, field investigations, and professionally engineered design of the following. The State shall retain all work products and backup materials, both in-progress or completed.

CDOT products will include:

- CDOT R1 Survey will provide a supplemental topographic survey to the 2018 survey, ROW Plans, and Project Control.

The Consultant work products may include:

- Project Management and Coordination
- Preliminary, Interim, and Final Design
 - DSR package
 - FIR package consisting of PS&E
 - FOR package consisting of PS&E
 - Advertisement package consisting of PS&E
 - Construction phasing plan
 - Maintenance of Traffic (MOT) Plan
 - Noise analysis and noise wall design
 - Completed CDOT Form 463
 - Completed CDOT form 859 in accordance with CDOT construction staff.
 - Preparation, coordination and completion of intergovernmental agreement(s) (IGA) for funding and various agreements with Jefferson County
 - Professional engineer stamped record sets
 - Interchange Approval Process per Policy Directive 1601
 - Constructability review
 - FHWA Intersection Access Request (IAR)
 - Grant writing assistance to pursue construction funding
- Roadway Design
 - Develop roadway design and plan sheets utilizing a blended team approach with CDOT Staff.
- Pavement Design
 - Pavement Life Cycle Cost Analysis (LCCA) investigation and report
 - Pavement evaluation and recommendations
- Project Management and Coordination
 - Design and construction schedules
 - Meeting Agendas and Minutes
 - Value Engineering Study



- Environmental
 - Reevaluation of EA and Form 1399
 - Section 4(f) requirements
 - SHPO coordination and documentation
 - Biological resources updates - by CDOT
 - Noxious weeds inventory
 - HazMat
 - Wetlands - by CDOT
 - Air Quality
 - Noise Study
 - Visual Impacts
 - Stormwater Management Plans (SWMP) and Template
- Utilities, Survey and ROW
 - Potholing and borings
 - Utility locating, identification, and subsurface utility engineering (SUE)
 - Utility conflict identification
 - Utility relocation coordination
 - Utility Clearance
 - Supplemental topographic survey as needed - by CDOT
 - ROW mapping and ownership information preparation - by CDOT
 - ROW Clearance
 - Quantities for ROW Cost Estimates
- Hydraulics and Hydrology
 - Permanent water quality (PWQ) analysis, design, and certification after construction in coordination with Jefferson County and CDOT Region 1 Hydraulic Engineer
 - Roadway, roadside, and bridge drainage analysis
 - Drainage report
 - All other hydrology and hydraulic engineering required based on final interchange design
- Traffic, Safety, and Access Management
 - Signing and striping plans
 - Lighting design
 - Fiber optic design and ITS component design
 - System Engineering Analysis
 - Traffic data collection
 - Traffic prediction based on coordination with planning region, CDOT Staff Traffic, Jefferson County and CDOT access permits group
 - Interchange selection process and report
 - Updates to access management plan as required based on final design
 - Interchange approval process in accordance with CDOT Policy Directive 1601
- Structural Design
 - Retaining wall design
 - Preliminary and final bridge foundation investigation and design
 - Construction phasing design and coordination with CDOT Staff Traffic, Jefferson County, the Town of Conifer, CDOT Construction, and other stakeholders.
 - Accelerated Bridge Construction



- o Bridge design
- o Structures Selection Report and analysis
- All other efforts / deliverables as indicated in this RFP.

Requirements are further described in the sections that follow. All work required to complete this Scope of Work requires the use of English Units.

The Consultant shall follow the latest version of the CDOT Project Development Manual for project delivery procedures and requirements and follow all CDOT and FHWA required design guidelines and Procedural Directives. The Consultant shall act as the Engineer in Responsible Charge for all Traffic Control needs for design field work as required to complete this SOW.

1.8. ADDITIONAL PROJECT INFORMATION

Access to additional information regarding this project will be provided upon request. Please send all requests to Bryan Meyer (bryan.meyer@state.co.us) and Jana Spiker (jana.spiker@state.co.us).

- US 285 Foxton Road to Bailey Environmental Assessment
- US 285 at Kings Valley Drive Alternatives Development and Analysis Summary - 2021
- Topographic survey and ROW mapping of the project limits
- FIR-level documentation and project information from 2019
- US 285 at Kings Valley Drive Traffic Impact Study
- State Highway 285 Safety Assessment Report MP 228.80 to 235 Pine Junction to Conifer Resurfacing



SECTION 2 – PROJECT MANAGEMENT AND COORDINATION

2.1. CDOT CONTACT

The Consultant shall utilize the following project administration contacts for the Project:

- A. The Contract Administrator for this project is:
Jana Spiker, P.E.
425A Corporate Circle
Golden, CO 80401
W: 720-497-6951
Jana.Spiker@state.co.us
- B. Active day-to-day administration of the contract will be delegated to the CDOT/PM:
Bryan Meyer, P.E.
425A Corporate Circle
Golden, CO 80401
W: 720-497-6911
Bryan.Meyer@state.co.us

2.2. PROJECT COORDINATION AND MEETINGS

The consultant shall, unless otherwise directed, meet with CDOT at the Region 1 West Program Office located at: 425A Corporate Circle, Golden, CO, 80401. The blended team effort may consist of co-location at the Consultant's office, the CDOT West Program Office, a virtual work environment, or a hybrid of virtual and in-person work arrangements. Meetings with local agencies, utility companies, stakeholders and meetings requiring field visits will be held on site or at the CDOT Region 1 West Program office. The consultant shall prepare handouts, graphics, and agendas for meetings and produce meeting minutes and make revisions as requested. The following meetings shall be included in the consultant's scope:

- Project Kickoff
- Design Scoping Review
- Environmental Coordination
- Survey Coordination
- Coordination Meetings with Jefferson County
- ROWPR Meeting
- SUE Coordination
- Structure Selection (Staff Bridge)
- Value Engineering
- Field Inspection Review – 30%
- Final Office Review - 90%
- Final Construction PS&E -100%
- Pre-Bid Meeting
- Pre-Construction
- Post-Construction Review (After Action Review)
- Bi-weekly project updates to CDOT Project Manager (by phone or in person)



- Coordination to facilitate a blended roadway design team that includes consultants and CDOT Project Staff consisting of 1-2 EITs.
- Other Project Meetings

The Consultant will be required to provide primary coordination with the CDOT PM and specialty units as approved.

The Project Innovation and Value Engineering Workshop will be co-facilitated by CDOT and the Design Consultant. Attendance and duration will be determined at the Kick-Off Meeting. The approach, agenda, format, and duration for the workshop will be developed in collaboration with CDOT West Program, CDOT specialty units, and the Design Consultant. This workshop may require several sessions, over an extended period. The purpose of this workshop is to evaluate the Preferred Alternative, consider any innovations or design refinements for the Project, incorporate value engineering principles to the Project, and get support for endorsement of any potential changes to the Preferred Alternative.

2.4. PROJECT ROLES

Lead and Supporting Agencies: CDOT is the lead agency and Owner of the Project. Oversight is provided by FHWA.

Stakeholders: Primary Project stakeholders and their role or involvement in the Project are listed in the following table:

Stakeholders

Agency/Stakeholder	Role or Involvement
Federal Highway Administration (“FHWA”)	<ul style="list-style-type: none"> • Project oversight
Jefferson County, Jefferson County Historical Commission, and Jefferson County School Districts	<ul style="list-style-type: none"> • Project limits reside within Jefferson County • Coordinate any necessary IGAs and coordination with the County on project status
285 Tourism Committee	<ul style="list-style-type: none"> • Public information
Colorado Parks and Wildlife (“CPW”)	<ul style="list-style-type: none"> • Coordinating partners of the design and construction on wildlife mitigation • Coordinate wildlife habitat consideration and connectivity during preconstruction • Coordination of work with Staunton State Park
US Fish and Wildlife Service (“USFWS”)	<ul style="list-style-type: none"> • Regulation of federally listed species in the project limits
Army Corps of Engineers (“ACOE”)	<ul style="list-style-type: none"> • 404 Permit decisions
Colorado Motor Carriers Association	<ul style="list-style-type: none"> • Input on freight consideration, decisions, and impacts for the Project
RTD	<ul style="list-style-type: none"> • Park n Ride coordination

Additional Coordination Contacts

Other Stakeholders	Role or Involvement
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Private Property Owners and/or Residents	<ul style="list-style-type: none"> ● Roadway reconstruction input ● Will want to know travel impacts/delays/detours
Traveling public	<ul style="list-style-type: none"> ● Roadway safety/trip reliability input ● Will want to know travel impacts/delay/detours
Emergency Responders/Incident Command	<ul style="list-style-type: none"> ● Emergency response/access input ● Will want to know travel impacts/delay/detours ● Incident Management and Planning for all potential impacts ● CDOT Executive Leadership ● CDOT Traffic Operations Center (CDOT TOC)
State Historical Preservation Office (SHPO)	<ul style="list-style-type: none"> ● Preservation of historical property identified near project limits
Colorado Department of Public Health and Environment (CDPHE)	<ul style="list-style-type: none"> ● Wetland and Stormwater Permits

Anticipated Utility Coordination/Relocations

Utility Identification	Facility type	Relocation Required?
Cable Television (Comcast)	Potentially located within project limits	TBD
Electric (CORE Electric Cooperative)	CORE Electric Cooperative has both underground and overhead utilities within the project limits	TBD
Telecommunications (CenturyLink)	Potentially located within project limits	TBD
Gas (Xcel)	Lines are potentially within the project area	TBD
Sanitary Sewers	Location and potential conflicts to be further investigated	TBD
Water	Location and potential conflicts to be further investigated	TBD
Storm Sewer	Potentially located within project limits	TBD

2.5. PROJECT COORDINATION

- Routine Working Contact: Routine working contact shall be between the CDOT/PM and the Consultant Project Manager (C/PM) as defined in Appendix B.
- Project Manager Requirements: Each Project Manager shall provide the others with the following:
 - A written synopsis or copy of their respective contacts by telephone and in person with others



- Copies of pertinent written communications

In addition to the stakeholders listed in **Section 2.4** the PM shall partner and coordinate with the groups below. The CDOT Project Management Team (defined below) shall be included in all coordination.

- The CDOT Blended Roadway Design Team will consist of 1-2 CDOT EITs that will have the opportunity to learn hands-on design from Consultant staff.
- CDOT Project Management Team
 - CDOT Program Engineer – Mike Keleman, PE
 - CDOT Regional Environmental Manager – Vanessa Halladay
 - CDOT Resident Engineer – Jana Spiker, PE
 - CDOT Design Project Manager – Bryan Meyer, PE
 - CDOT Construction Project Manager – Kevin Brown, PE



SECTION 3 – EXISTING FEATURES

3.1. STRUCTURES

- No existing structures

3.2. UTILITIES

Anticipated Utility Relocation/Coordination:

- Cable Television (Centurylink)
- Electric (IREA/CORE Electric Cooperative)
- Fiber Optic/Communications (Centurylink)
- Gas (Xcel)
- Sanitary Sewer (Mountain Water and Sanitation District)
- Water (Mountain Water and Sanitation District)
- Other unknown utilities may exist
- Contact Utility Notification Center of Colorado (U.N.C.C.) at 1-800-922-1987 or 811

3.3. IRRIGATION DITCHES

- None Anticipated

3.4. RAILROADS

- None Anticipated

3.5. PERMANENT WATER QUALITY CONTROL MEASURES

- None Anticipated

3.6. WATER FEATURES

- Existing storm sewer beneath US 285 and Kings Valley Drive

SECTION 4 – GENERAL INFORMATION

4.1. NOTICE TO PROCEED

Work shall not commence until the written Notice-to-Proceed is issued by CDOT. Work may be required, night or day, and/or weekends, and/or holidays, and/or split shifts. CDOT must concur in time lost reports prior to the time lost delays being subtracted from time charges. Subject to CDOT prior approval, the time charged may exclude time lost for:

- Reviews and Approvals
- Response and Direction

4.2. ROUTINE REPORTING AND BILLING

The Consultant shall provide the following on a routine basis:

- Periodic Reports and Billings: Submit all documents in accordance with CDOT standards and common practices.
- Coordination: Coordinate all activities with the CDOT PM and the Consultant Project Manager (C/PM).
- General Reports and Submittals: In general, all reports and submittals must be approved by CDOT prior to their content being utilized in follow-up work effort.
- Provide Vendor backup as part of all executed Task Orders.

4.3. PERSONNEL QUALIFICATIONS

- The Consultant PM must be approved by the CDOT Contract Administrator.
- Certain tasks must be done by Licensed Professional Engineers (PE) or Professional Land Surveyors (PLS) who are registered with the Colorado State Board of Registration for Professional Engineers and Land Surveyors. National Institute for Certification in Engineering Technology (NICET) or other certifications may be required for project inspectors and testers.
- All tasks assigned to the Consultant must be conducted by a qualified person on the Consultant team. The qualified person is a professional with the necessary education, certifications (including registrations and licenses), skills, experience, qualities, or attributes to complete a particular task. Design of any special project features must be directed, completed, and overseen by a professional engineer with significant experience in design of those special project features.
- This contract requires that the prime firm or any member of its team, be pre-qualified in the following disciplines for the entire length of the contract:
 - AC – Acoustical Engineering
 - AR – Architecture
 - BI - Bridge Inspection
 - BR – Bridge Design
 - CE – Civil Engineering
 - EL – Electrical Engineering
 - EN – Environmental Engineering
 - GE – Geotechnical Engineering
 - GL – Geological Engineering
 - HD – Highway & Street Design
 - HY – Hydraulics

- o LA - Landscape Architecture
 - o MA – Management (Contract Admin)
 - o ME – Mechanical Engineering
 - o MT - Materials Testing
 - o SE – Structural Engineering
 - o SO – Soils Engineering
 - o SU – Surveying
 - o TP – Transportation Engineering
 - o TR – Traffic Engineering
 - o VE – Value Engineering
- Key Personnel in the Statement of Interest section of the Proposal, see **Section 6** of the Design RFP, constitutes an agreement by the Proposer to make the Key Personnel available to complete the services of the contract at the level the Project requires. CDOT requires that all Key Personnel be engaged to perform their specialty for all services required by this contract, and the Key Personnel shall be retained for the life of this contract to the extent practicable and to the extent that such services maximize the quality of work hereunder.

If the Consultant or a subconsultant decides to replace any of its Key Personnel, the Consultant shall notify the Regional Engineer (RE) in writing of the desired change. No such changes shall be made until at least two qualified replacement candidates are recommended by the Consultant and a replacement is approved in writing by the RE or its designated representative. The approval shall not be unreasonably withheld. Failure of the Consultant to comply with the requirements of this provision may be the cause for CDOT’s termination of the contract.

The RE or its designated representative will respond to the Consultant’s written notice regarding replacement of Key Personnel within fifteen working days after receipt of the list of proposed changes. If the RE or its designated representative does not respond within that time, the listed changes shall be deemed to be approved.

If, during the term of the contract, the RE or its designated representative determines that the performance of approved Key Personnel is not acceptable, a notification shall be sent to the Consultant. The notification shall include a reasonable timeframe to correct such performance. Thereafter the Consultant may be required to reassign or replace such Key Personnel. If the RE or its designated representative notifies the Consultant that certain Key Personnel of a subconsultant should be replaced, the Consultant shall use its best efforts to replace such Key Personnel within a reasonable time, but not to exceed fifteen working days from the date of the notice.

4.4. COMPUTER SOFTWARE INFORMATION

The Consultant shall utilize the most recent CDOT adopted software (if applicable). The primary software used by CDOT is as follows:

- Earthwork - OpenRoads Designer – Bentley Systems
- Drafting/CADD - OpenRoads Designer – Bentley Systems with CDOT’s formatting configurations and standards.
- Survey/Photogrammetry - CDOT TMOSS, OpenRoads Designer – Bentley Systems, allowable systems in the CDOT Survey Manual
- Bridge - CDOT Staff Bridge software shall be used in either design or design check, refer to the CDOT Bridge Design Manual

- Estimating - Trnsport (an AASHTO sponsored software) as used by CDOT
- ProjectWise (a/k/a ProjectWise Explorer or ProjectWise Cloud)
- Specifications - Microsoft Word
- Scheduling - Microsoft Project or Primavera
- 3D graphic imaging - As approved
- B2GNow System for DBE/ESB tracking and prompt payment
- Pavement Design - please refer to the CDOT M-E Pavement Design manual for software and other requirements for CDOT submittals.

The data format for submitting design computer files shall be compatible with the latest version of the adopted CDOT software as of Notice to Proceed for the contract. The Consultant shall immediately notify the CDOT/PM if the firm is unable to produce the desired format for any reason and cease work until the problem is resolved

4.5. PROJECT DESIGN DATA AND STANDARDS

- **General:** Appendix A provides a comprehensive list of state and federal reference material. However, Appendix A does not contain all local agency reference material that may be pertinent to some projects. The Consultant is responsible for obtaining and ensuring compliance with the most recent CDOT-adopted version of the listed references including standards and specifications, manuals, and software, or as directed by the CDOT/PM. Conflicts in criteria shall be resolved by the CDOT/PM.
- **Construction Materials/Methods:** The materials and methods specified for construction will be selected to minimize the initial construction and long-term maintenance cost to the State of Colorado. Non-typical construction materials and methods must be approved in writing by CDOT.



SECTION 5 – WORK ACTIVITY ASSIGNMENTS

Note: This list establishes the individual task responsibility. Those tasks identified as CDOT/Other should utilize an abbreviation system to indicate whether the task will be completed by CDOT or another agency (i.e. “C” for CDOT and abbreviations as provided below). The consultant shall maintain the ability to perform all work tasks that are indicated below by an ‘X’ in the consultant column, in accordance with the forms and conditions contained herein, and the applicable CDOT standards. Where appropriate, mark “N/A” for not applicable items.

PRECONSTRUCTION	CDOT/ Other	Consultant	Notes
A. Project Initiation and Continuing Requirements:			
1. Initial Project Kick-Off Meeting	C	X	
2. Review Environmental Mitigation Requirements	C	X	
3. Independent Design Review	C	X	
4. Project Schedule		X	
5. Develop Design Criteria	C	X	As part of a blended team
6. Initiate Survey (Map Preparation)	C	X	
7. Right-of-Entry and Permits	C	X	
8. Traffic Control		X	
9. Initial Submittals	C	X	
10. Progress Meetings	C	X	
11. Structure Review Meetings	C	X	
12. Project Management	C	X	
B. Project Development:			
1. Communication and Consensus Building			
a. Contact List	C	X	
b. Public Notices/Advertisements	C	X	
c. General Meetings			
i. Small Group	C	X	
ii. General Public	C	X	
2. Project Review	C	X	
a. Communication Aids		X	
b. Graphics Support		X	
c. Newsletter/Website Updates	C	X	
d. Wall Displays		X	
e. Study Model		X	
3. Project Review Team		X	
4. Survey	C		
a. Presurvey Conference	C	X	
b. Survey Data Research	C	X	
c. Secure Rights of Entry	C	X	



d. Project Control Survey				
i. Locate or establish HARN Stations	C			
ii. Monumentation	C			
iii. Project Control	C			
e. Photogrammetry				N/A
i. Camera Calibration Report				N/A
ii. Flight Plan				N/A
iii. Flight				N/A
iv. Contact Prints				N/A
v. Negatives				N/A
vi. Enlargements				N/A
vii. Photo Index				N/A
viii. Supplemental Survey (wing points)				
g. Supplemental Surveying	C		X	Consultant to coordinate supplemental survey needs
h. Accuracy Tests	C		X	Confirmation of existing survey
i. Review (by Registered Professional Land Surveyor)	C			
4. Conceptual Design				
a. Aesthetics	C		X	
b. System Feasibility	C		X	
c. Alternatives Analysis	C		X	Further develop the new Preferred Alternative from the alternatives analysis such that it does not impact historic properties.
d. Final Alternatives Reports			X	
e. Interchange Approval Process	C		X	
5. Data Gathering Analysis, and Mitigation Development				
a. Traffic Related				
i. Traffic Study			X	
ii. Crash Study			X	
iii. Noise Study			X	
b. Air Quality				
i. Air Quality Monitoring	C		X	
ii. Air Quality Analysis			X	
c. Alternate Transportation Sys.	C		X	Consideration for Bicycle and Pedestrian Improvements
d. Archaeology				
i. Gather Data & Analysis	C		X	



ii. Mitigation Implementation	C		X	
e. Paleontology				
i. Gather Data & Analysis	C			
ii. Mitigation Implementation	C			
f. Initial Geology Investigation			X	
g. Water Quality				
i. Quality Analysis			X	
ii. Quality Monitoring			X	
h. Ecological Assessment	C			CDOT will perform in-house
i. Historical				
i. Historical Bridge Clearance				N/A
ii. Historical Study & Clearance	C		X	
iii. Floodplain and Drainage Assessment			X	
j. Right-of-Way				
i. Early ROW			X	
ii. ROW Review			X	
k. 4(f)/6(f) Activity				
i. Evaluation	C		X	
ii. Clearance/Concurrence	C		X	
l. Threatened and/or Endangered Species	C			CDOT will perform in house
i. Determination of Presence	C			
ii. Implement Mitigation	C			
m. Wetlands	C			CDOT will perform in house
i. Wetlands Determination	C			
ii. Wetlands Findings Report	C			
n. Hazardous Materials				
i. Field Search			X	
ii. Research			X	
iii. Conduct in-situ tests			X	
iv. Analyze and Assess Impacts	C		X	
o. Existing Roadway/Major Structure	C		X	
i. Construction Requirements	C		X	
ii. Aesthetic Considerations	C		X	
p. Utilities			X	
q. Economics			X	
r. Farmland				N/A
s. Energy Usage			X	



t.	Environmental Assessment (EA) Reevaluation Process	C	X	
u.	Environmental Impact Study (EIS) Process			N/A
6.	Design Report Process		X	
7.	Obtain Permits		X	
C.	Preliminary Design:			
1.	Design Field Surveys			
a.	Presurvey Conference	C	X	
b.	Survey Data Research	C	X	
c.	Secure Rights of Entry	C	X	
d.	Project Control Survey	C		
2.	Locate or Establish HARN Stations	C		
3.	Monumentation	C		
4.	Local Project Control	C		
5.	Bentley OpenRoads TMOSS Survey	C		
a.	Terrain Survey	C		
b.	Utility Survey		X	To be done by SUE
c.	Hydraulic Survey	C		
d.	Material Survey		X	
e.	Supplemental Surveying	C		
f.	Survey Report	C		
g.	Accuracy Tests	C		
h.	Review (by Registered PLS)	C		
i.	Wetland Boundary	C		
6.	Traffic Engineering		X	
7.	Materials Engineering			
a.	Preliminary Soil Investigation		X	
b.	Pavement Rehabilitation		X	
c.	New Pavement Structure		X	
d.	Pavement Justification		X	
e.	Pavement Design Report		X	
f.	Existing Bridge Investigation			N/A
g.	Foundation Investigation		X	
8.	Geotechnical		X	
9.	Hydrology/Hydraulics Engineering			
a.	Hydrology		X	
b.	Hydraulics		X	
c.	Preliminary Hydraulics Report		X	
10.	Utility Coordination			
a.	Location Maps		X	
b.	Reviews and investigations		X	
c.	"Potholing"-Excavation		X	



d. "Potholing"-Surveying Utility Locations			X	
e. Relocation recommendations			X	
f. Ditch Company coordination			X	
11. Roadway Design and Roadside Development	C		X	
a. Roadway Design	C		X	As part of a blended team.
b. Roadside Development	C		X	As part of a blended team.
i. Guardrail and delineator	C		X	As part of a blended team.
ii. Curb ramps and sidewalk	C		X	As part of a blended team.
iii. Landscaping	C		X	As part of a blended team.
iv. Sound Barriers	C		X	As part of a blended team.
v. Bike paths/sidewalks	C		X	As part of a blended team.
vi. Truck escape ramps				N/A
vii. Rest areas				N/A
viii. Safety analysis			X	
ix. Lighting Plan			X	
x. Right-of-Way	C		X	
a. Research	C		X	
b. Ownership Map	C		X	
c. Appraisal	C		X	
d. Acquisition	C		X	
12. Major Structural Design			X	
a. Structural Data Collection			X	
b. Structure concept study			X	
c. Value Engineering	C		X	
d. Structure Selection Report			X	
e. Foundation Investigation Request			X	
13. Construction Phasing Plan			X	
14. Preparation for the FIR			X	
15. Field Inspection Review	C		X	
16. Post FIR Revisions			X	
D. Final Design:				
1. Project Review	C		X	
2. Design Coordination	C		X	
3. Utility Coordination			X	
4. Hydraulic Design			X	
a. Data Review			X	
b. Stormwater Management Plan	C		X	Potential for a blended team effort.
c. Major Structure Channel Design			X	
d. Final Hydraulics Report			X	



5.	Interim Plans	C	X	Potential for a blended team effort.
a.	Initiate ROW Authorization Process	C		N/A
b.	Final Utility Plans		X	
c.	Final Railroad Plans			N/A
6.	Right-of-Way	C		
a.	ROW Plans Content	C		
b.	Title Insurance and Closing Services	C		
c.	Authorization Plan	C		
d.	Appraisal Staking	C		
e.	ROW Plan Revisions (During Negotiations)	C		
f.	ROW Acquisition	C		
7.	Materials Engineering		X	
a.	Materials Data		X	
b.	Stabilization Validity		X	
c.	Stabilization Plan		X	
8.	Traffic Engineering		X	
a.	Permanent Signing/Pavement Marking Plans	C	X	Potential for a blended team effort.
b.	Signalized Intersections		X	
c.	Traffic Control Plan		X	
9.	Roadside Planning	C	X	As part of a blended team.
a.	Landscaping		X	
b.	Other		X	
c.	Sprinkler systems/Liquid Anti-Icing		X	
10.	Sidewalk and Curb Ramps	C	X	As part of a blended team.
11.	Sound barriers		X	
12.	Truck escape ramps			N/A
13.	Rest Areas			N/A
14.	Guardrail and delineator	C	X	
15.	Safety analysis		X	
16.	Lighting Plans		X	
17.	Roadway Design	C	X	As part of a blended team.
18.	Final Major Structural Design		X	
a.	Structure Final Design		X	
b.	Preparation of Structure Plans and Specifications		X	
c.	Independent Design, Detail, and Quantity Check	C	X	
d.	Bridge Rating and Field Packages		X	
e.	Structure Final Review Plans and Specifications	C	X	



19.	Construction Phasing Plan			X	
20.	Plan Preparation for FOR	C		X	
21.	Final Office Review	C		X	
22.	Construction Plan Package	C		X	
23.	Respond to Job Showing Questions	C		X	
24.	Value Engineering	C		X	

SERVICES AFTER DESIGN		CDOT/Other		Consultant	Notes
1.	Post Design Plan Modifications	C		X	
2.	Post Construction Services:				
a.	Final earthwork determination			X	
b.	As-built plans			X	
c.	Revisions to Right-of-Way Plans (Excess Land)	C			
d.	Monument ROW	C			
e.	Set Property Corners (Remainders)	C			
f.	Deposit ROW Plans	C			
3.	Construction Engineering	C			



SECTION 6 – SUBMITTALS

SUBMITTALS	CDOT/Other	Consultant	Notes
A. Project Initiation and Continuing Requirements:			
1. Periodic Reports & Billings		X	
2. Meeting Minutes		X	
3. Project Schedule		X	
4. Completed Specific Design		X	
5. Survey Plan		X	
6. Permissions to Enter (Form 730)		X	
7. Traffic Control Plan		X	
8. Initial Submittal of TMOSS and/or MOSS Compatible Data – OpenRoads Designer		X	
9. Initial Submittal of an Original Plan Sheet		X	
B. Project Development:			
1. Public Communication Contact List		X	
2. Route Location Survey:			
a. Electronic Survey Files	C		
b. Survey OpenRoads TMOSS Data	C		
c. Monument Records	C		
d. Control & Monumentation Plan Sheets	C		
e. Aerial Photography Index Map Sheets			N/A
f. Aerial Photography Contact Prints			N/A
g. Aerial Photography Negatives			N/A
h. Photogrammetry			N/A
1. Electronic Data			N/A
3. Base Map Sheets			N/A
4. Base Map Index Sheet(s)			N/A
a. Rectified Photos with Mylar Originals			N/A
5. System Feasibility Study			N/A
6. Final Alternatives Report			N/A
7. Noise Assessment Report		X	
8. Air Quality Report		X	
9. Archaeology Survey Report & Mitigation Plan	C		
10. Paleontology Preliminary Report & Mitigation Plan	C		
11. Water Quality Report (SCMP)		X	
12. Ecology Report	C	X	
13. Historical Bridge Clearance or Mitigation Plan			N/A



14. Historical Cultural Resources Report			X	
15. Floodplain and Drainage Assessment Report & Mitigation Plan			X	
16. ROW Report	C		X	
17. 4(f)/6(f) Mitigation Plan	C		X	
18. Threatened and/or Endangered Species Assessment	C		X	
19. Wetlands Findings Report	C			
20. Hazardous Materials Findings			X	
21. Environmental Assessment (EA)				N/A
a. Preliminary EA				N/A
b. Certified Verbatim Transcript				N/A
c. Finding of No Significant Impact (FONSI)				N/A
d. Form 1399	C		X	
22. Environmental Impact Statement				N/A
a. Draft EIS				N/A
b. Certified Transcript of Meeting				N/A
c. Final EIS				N/A
23. Design Report Process				
a. Preliminary Design Report			X	
b. Final Design Report			X	
24. Permits				
a. 401 Permit			X	
b. 402 Permit			X	
c. 404 Permit	C		X	
d. Wildlife Certification			X	
e. NPDES Stormwater Permit	C		X	
25. Preliminary Design	C		X	As part of a blended team.
a. Electronic Survey			X	
b. Traffic Data & Recommendations			X	
c. Soils Investigation Report			X	
d. Pavement Design Report			X	
e. Existing Bridge Condition Report				N/A
f. Foundation Investigation Report			X	
g. Engineering Geology Plan Sheet(s)			X	
h. Preliminary Hydraulics Report			X	
i. Utility Relocation Recommendations			X	
j. Ditch Structure Plans			X	
k. Stabilization Plan			X	
l. FIR Plan Set	C		X	As part of a blended team.
26. Final Design	C		X	As part of a blended team.



a. Corrected FIR Plan Set	C		X	As part of a blended team.
b. Preliminary Cost Estimate	C		X	As part of a blended team.
c. List of Deviations from Standard Design Criteria			X	
d. Final Hydraulics Report			X	
e. Signing/Pavement Marking Plans	C		X	Potential for a blended team.
f. Signal Warrants				N/A
g. Signalized Intersection Plans and specifications				N/A
h. Traffic Control Plan			X	
i. Structural Selection Report			X	
j. Foundation Investigation Request			X	
k. Structure Final Review Plans and Special Provisions			X	
l. Construction Phasing Plan	C		X	As part of a blended team.
m. FOR Plan Sheets and Special Provisions	C		X	As part of a blended team.
n. FOR Cost Estimate	C		X	As part of a blended team.
o. FOR Revised Plans and Special Provisions	C		X	As part of a blended team.
p. Final Review Revisions	C		X	As part of a blended team.
q. Final Utility Plan Set			X	
27. Roadside Planning				
a. SWMP Plans & Specs.	C		X	Potential for a blended team.
b. Certification of plant Availability			X	
c. Sprinkler System Plans & Specs.			X	
d. Bike path Plans & Specs.	C		X	Bike paths not anticipated. Sidewalk and curb ramps will be required.
e. Sound Barrier Plans & Specs.			X	
f. Truck Escape Ramp Plans & Specs.				N/A
g. Rest Area Plans & Specs.				N/A
h. Lighting Plans			X	
C. Right-of-Way				
1. Title Commitments			X	
2. Preliminary Ownership Map (include in the FIR plan set)			X	
3. Area Calculations			X	Quantities will be developed by Consultant
4. Authorization Plans	C			
5. Legal Descriptions	C			
6. ROW Authorization Plans	C			



D. Construction Plan Package				
1. Roadway Design Data Submittal (Form 463)	C		X	As part of a blended team.
2. Major Structure Design Final Submittal			X	
3. Record Plan Sets	C		X	

APPENDIX A: REFERENCES

A.1. AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) PUBLICATIONS (using latest approved versions):

- A Policy on Design Standards-Interstate System
- A Policy on Geometric Design of Highways and Streets
- Guide for Design of Pavement Structures
- Standard Specifications for Highway Bridges
- Guide for the Design of High Occupancy Vehicle and Public Transfer Facilities
- Guide for the Development of Bicycle Facilities
- Standard Specifications for Transportation Materials and Methods of Sampling and Testing – Part I, Specifications and Part II, Tests
- Highway Design and Operational Practices Related to Highway Safety
- Roadside Design Guide
- Load Resistance Factor Design (LRFD) Specifications

A.2. COLORADO DEPARTMENT OF TRANSPORTATION PUBLICATIONS (using latest approved versions):

- Design Guide (all volumes)
- Bridge Design Guide
- Bridge Detailing Manual
- Bridge Rating Manual
- Project Development Manual
- Erosion Control and Stormwater Quality Guide
- Field Log of Structures
- Cost Data Book
- Drainage Design Manual
- NEPA Manual
- Environmental Stewardship Guide
- Quality Manual
- Survey Manual
- Field Materials Manual
- Standard Plans, M & S Standards
- Standard Specifications for Road and Bridge Construction and Supplemental Specifications
- Item Description and Abbreviations (with code number) compiled by Engineering Estimates and Market Analysis Unit (“Item Book”)
- Right-of-Way Manual
- The State Highway Access Code
- Utility Manual
- TMOSS Generic Format
- Field TMOSS Topography Coding
- Topography Modeling Survey System User Manual
- Interactive Graphics System Symbol Table

A.3. CDOT PROCEDURAL DIRECTIVES (using latest approved versions):

- No. 27.1 Social Marketing – Use of Web 2.0 and Similar Applications
- No. 31.1 Website Development
- No. 501.2 Cooperative Storm Drainage System
- No. 514.1 Field Inspection Review (FIR)
- No. 516.1 Final Office Review (FOR)
- No. 1217a Survey Request
- No. 1304.1 Right-of-Way Plan Revisions
- No. 1305.1 Land Surveys
- No. 1601 Interchange Approval Process
- No. 1700.1 Certification Acceptance (CA) Procedures for Location and Design Approval
- No. 1700.3 Plans, Specifications and Estimates (PS&E) and Authorization to Advertise for Bids under Certifications Acceptance (CA)
- No. 1700.5 Local Entity/State Contracts and Local Entity/Consultant Contracts and Local Entity/R.R. Contracts under C.A
- No. 1700.6 Railroad/Highway Contracts (Under Certification Acceptance)
- No. 1905.1 Preparation of Plans and Specifications for Structures prepared by Staff Bridge Branch

A.4. FEDERAL PUBLICATIONS (using latest approved versions):

- Manual on Uniform Traffic Control Devices
- Highway Capacity Manual
- Urban Transportation Operations Training – Design of Urban Streets, Student Workbook
- Reference Guide Outline – Specifications for Aerial Surveys and Mapping by Photogrammetric Methods for Highways
- Executive Order 12898
- Executive Order 11988 & 13690 FHWA Federal-Aid Policy Guide
- FHWA NHI Hydraulic Circular (HEC) and Hydraulic Design Series (HDS) Reports
- Technical Advisory T6640.8A
- U.S. Department of Transportation Order 5610.1E
- Geometric Geodetic Accuracy Standards and Specifications for Using GPS Relative Positioning Techniques
- ADAAG Americans with Disabilities Act Accessibility Guidelines
- 23 CFR 771, the FHWA Technical Advisory T6640.8A
- 44 CFR 59-72, standards of the National Flood Insurance Program (NFIP)
- FHWA Colorado Division Guidance for the Preparation of a FHWA INTERSTATE ACCESS REQUEST

A.5. AREA:

Jefferson County Transportation Design & Construction Manual, Latest Version



APPENDIX B: DEFINITIONS

Note: For other definitions and terms, refer to Section 101 of the CDOT Standard Specifications for Road and Bridge Construction and the CDOT Design Guide.

AASHTO	American Association of State Highway & Transportation Officials
ADT	Average two-way 24-hour Traffic in Number of Vehicles
AREA	American Railway Engineering Association
ATSSA	American Traffic Safety Services Association
AT&SF	Atchison, Topeka & Santa Fe Railway Company
ADAAG	Americans with Disabilities Accessibility Act Guidelines
BAMS	Bid Analysis and Management Systems
BFE	Base Flood Elevation
BLM	Bureau of Land Management
BNRR	Burlington Northern Railroad
CA	Contract Administrator – The CDOT Manager responsible for the satisfactory completion of the contract by the Consultant.
CAP	CDOT’s Action Plan
CBC	Concrete Box Culvert
CDOT	Colorado Department of Transportation
CDOT/PM	Colorado Department of Transportation Project Manager – The CDOT Engineer responsible for the day-to-day direction and CDOT Consultant coordination of the design effort (as defined in Section 2 of this document)
CDOT/STR	Colorado Department of Transportation Structure Reviewer – The CDOT Engineer responsible for reviewing and coordinating major structural design
CDPHE	Colorado Department of Public Health and Environment
CEQ	Council on Environmental Quality
COG	Council of Governments
COGO	Coordinate Geometry Output
CONSULTANT	Consultant for the Project
CONTRACT ADMINISTRATOR	Typically a Region Engineer or Branch Head. The CDOT employee, directly responsible for the satisfactory completion of the contract by the Consultant. The contract administration is usually delegated to a CDOT Project Manager (as defined in Section 2 of this document).
C/PM	Consultant Project Manager – The Consultant Engineer responsible for combining the various inputs in the process of completing the project plans and managing the Consultant design effort.
CWCB	Colorado Water Conservation Board
DEIS	Draft Environmental Impact Statement
DHV	Future Design Hourly Volume (two-way unless specified otherwise)
DOR	Design Office Review
DRCOG	Denver Regional Council of Governments



D&RGW	Denver & Rio Grande Western Railroad
EA	Environmental Assessment
EIS	Environmental Impact Statement
ESAL	Equivalent Single Axle Load
ESE	Economic, Social and Environmental
FEIS	Final Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FHPG	Federal Aid Highway Policy Guide
FHWA	Federal Highway Administration
FIPI	Finding In Public Interest
FIR	Field Inspection Review
FONSI	Finding of No Significant Impact
FOR	Final Office Review
GPS	Global Positioning System
MAJOR STRUCTURES	Bridges and culverts with a total clear span length greater than twenty feet. This length is measured along the centerline of roadway for bridges and culverts, from abutment face to abutment face, retaining structures are measured along the horizontal distance along the top of the wall. Structures with exposed heights at any section over five feet and total lengths greater than a hundred feet as well as overhead structures including (bridge signs, cantilevers and butterflies extending over traffic) are also considered major structures.
MPO	Metropolitan Planning Organization (i.e. Denver Regional Council of Governments, Pikes Peak Area Council of Governments, Grand Junction MPO, Pueblo MPO, and North Front Range Council of Governments).
MS4	Municipal Separate Storm Sewer System
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NGS	National Geodetic Survey
NICET	National Institute for Certification in Technology
NOAA	National Oceanic and Atmospheric Administration
PAPER SIZES	See Computer-Aided Drafting Manual (CDOT); Table 6-13 and Table 8-1
PE	Professional Engineer registered in Colorado
PM	Program Manager
PLS	Professional Land Surveyor registered in Colorado
PRT	Project Review Team
PS&E	Plans, Specifications and Estimate
PROJECT	The work defined by this scope
PWQ CM	Permanent Water Quality Control Measure
ROR	Region Office Review
ROW	Right-of-Way: A general term denoting land, property, or interest therein, usually in a strip acquired for or devoted to a highway
ROWPR	Right-of-Way Plan Review
RTD	Regional Transportation Director
T/E	Threatened and/or Endangered Species



SFHA	Special Flood Hazard Area
SH	State Highway Numbers
TMOSS	Terrain Modeling Survey System
TOPOGRAPHY	In the context of CDOT plans, topography normally refers to existing cultural or manmade details.
UDFCD	Urban Drainage and Flood Control District
USCOE	United States Army Corp of Engineers\