

# SCOPE OF WORK BASIC CONTRACT

May 22, 2019

CONTRACT TYPE

- Specific Rate of Pay
- Cost Plus Fixed Fee
- Lump Sum

CONTRACT DATE: TBD

PROJECT NUMBER: TBD

PROJ. LOCATION: Front Range Corridor (I-25: Fort Collins to Pueblo)

PROJECT CODE: TBD

THE COMPLETE SCOPE OF WORK INCLUDES THIS DOCUMENT (ATTACHED TO THE CONTRACT FOR CONSULTANT SERVICES)

SECTION 1: PROJECT SPECIFIC INFORMATION

SECTION 2: PROJECT MANAGEMENT AND COORDINATION

SECTION 3: EXISTING FEATURES

SECTION 4: REFERENCE ITEMS NEEDED BY THE CONSULTANT

SECTION 5: GENERAL INFORMATION

SECTION 6: STUDY WORK TASK DESCRIPTIONS

APPENDICES

Comments regarding this scope may be directed to:

Pehle Colletta

CDOT Agreements Office,

(303)757-9195

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## SECTION 1 - PROJECT SPECIFIC INFORMATION

### 1. PROJECT BACKGROUND

## FRONT RANGE PASSENGER RAIL SERVICE DEVELOPMENT PLAN AND PROJECT SPECIFIC NEPA

Colorado Senate Bill 17-153 created the Southwest Chief and Front Range Passenger Rail Commission and directed the Commission to report to the House and Senate Local Government Committees of the Colorado General Assembly by December 1, 2017 regarding proposals for the development of a Front Range passenger rail system. Accordingly, the Commission presented a summary of strategic considerations, key steps towards implementing Front Range passenger rail, and a map of the proposed Front Range passenger rail corridor from Fort Collins to Trinidad, Colorado. As a result of this effort, on May 31, 2018, Colorado Senate Bill 18-001 was signed by the Governor providing \$2.5 million for studies, staffing and Federal grant match for use by the Commission.

Continuing the work to formulate a proposal advancing the construction and operation of a Front Range Passenger Rail service, which will both provide the greatest mobility to the largest number of Front Range residents, businesses and visitors and garner the greatest amount of public support, the scope of this RFP addresses the following areas to advance the development of the proposed rail system:

- **Purpose and Need/Program Rationale** which provides a description of the transportation challenges and opportunities faced in the market(s) to be served by the proposed service, as well as a description of alternatives that address the Purpose and Need, including rail passenger service corridor development as well as improvements to other modes and a “no action” alternative.
- **Public and stakeholder engagement** to define the proposed service(s) and determine the service offering that provides the greatest benefit to the Front Range and would engender the greatest amount of public support for funding and implementation.
- **Service Development Plan**, which develops evaluates and recommends a reasonable range of alternatives related to corridors, alignment and routes, station locations, service levels, technology requirements, and estimated capital and operating costs.
- **Alternatives Analysis** - Development and evaluation of a reasonable range of alternatives that both incorporate SDP and inform subsequent NEPA process.
- **NEPA Process, Analysis and Documentation (NEPA)**, which is a decision making process that considers the natural, economic and social environment when evaluating actions with a federal nexus.

Currently, no federal funding is associated with this provision. Respondents to this RFP acknowledge, by virtue of their response, that the likelihood of future funding and implementation of the proposed projects covered by this notice is unknown, and the State Government and/or the Commission are not liable for any costs incurred in preparing responses to the RFP.

Although not necessarily in the scope of this RFP, but as background to understand the context of this project, the Southwest Chief and Front Range Passenger Rail Commission, herein referred to as “the Commission”, has identified the Front Range Corridor as extending from Fort Collins to Trinidad, Colorado. While the boundaries for the analysis related to this RFP will not include specific work north of the legislatively defined corridor terminating in Fort Collins, study recommendations should not preclude, but in fact anticipate, future analysis extending the Corridor from Fort Collins to Cheyenne, Wyoming. Cheyenne, through its non voting member of the Commission, has requested to be included in future corridor development planning to include extending any resulting Front Range passenger rail service to include their area.

Several potential route options have been evaluated north and south of the Denver Metro region, and to varying degrees within and to other Front Range communities, including Fort Collins, Colorado Springs, Pueblo, and Trinidad. There are many documents that have studied rail or other modes in these areas and data in these documents should be used whenever possible. Based on previous studies, some of the rail alignments may include:

- North Denver Metro potential alignment options could include:
  - RTD’s proposed Northwest Rail alignment: Longmont to Boulder to Downtown Denver corridor
  - North I-25 EIS Corridor via BNSF Railway’s existing right-of-way between Longmont and Fort Collins
  - I-25 corridor from Fort Collins to Downtown Denver
  - RTD North Metro corridor to Downtown Denver
  - E-470 Corridor to Denver International Airport
  
- South Denver Metro potential alignment options could include:
  - US 85/Consolidated BNSF-UP Main Line corridor to RTD Southwest Rail Lines and Consolidated UP/BNSF Main Line corridor to Downtown Denver
  - I-25 to RTD Southeast rail lines to Downtown Denver
  - E-470 Corridor to Denver International Airport
  
- South of Denver to Pueblo/Trinidad potential alignment options could include:
  - Union Pacific Railroad and BNSF Railway rights of way
  - I-25 corridor from South Denver to Pueblo
  - Combinations of the I-25 corridor and UP and BNSF rights-of-way

Other possible alignments/alternatives may be brought forward to the project team as a part of the public involvement effort.

## **2. PROJECT GOALS**

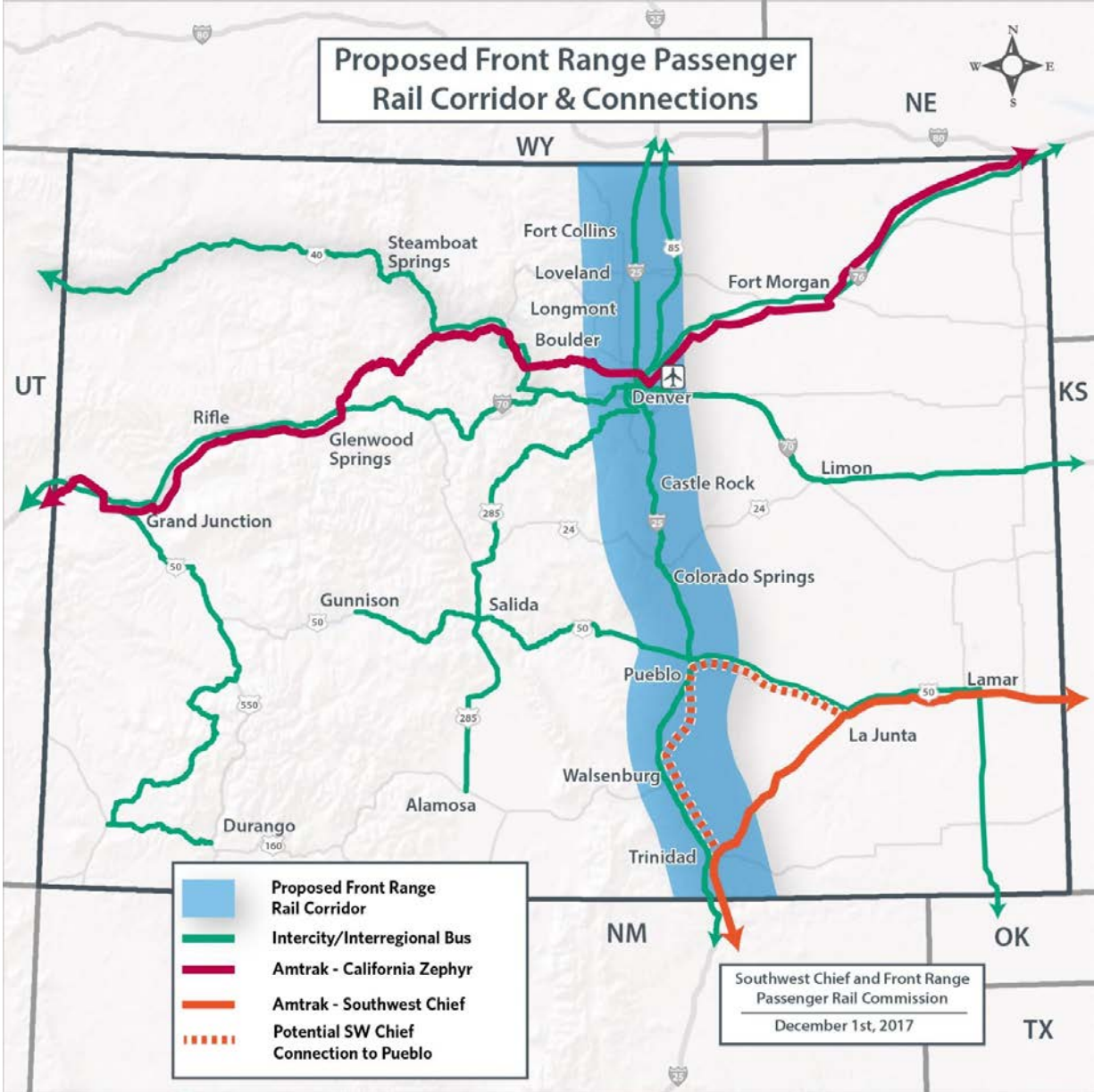
CDOT and the Commission will initiate some project initiation activities prior to the Notice to Proceed. These activities may include chartering, visioning, and establishing membership and responsibilities for stakeholder and multidisciplinary teams (i.e PLT, Executive Oversight, Technical Teams). Starting this summer, CDOT will be initiating an update to the Statewide Transportation Plan and is having stakeholder meetings with all of the Transportation Planning Regions (TPRs) and Metropolitan Planning Organizations (MPOs). The Commission and CDOT will be engaging the public and

stakeholders in these meetings in order to begin to gain input to the development of a vision for Front Range Passenger Rail. After NTP, the Consultant team can build upon the initial findings from these early scoping activities using various virtual public involvement strategies.

The goal of the Commission is to get a clear vision for a referendum and then voter approval of a Front Range Passenger Rail district. Such an approval could establish a future funding mechanism which would lead to the eventual implementation of Front Range Passenger Rail. In order to have the opportunity for a legislatively referred ballot measure to be placed on the November 2020 ballot, enough information related to alignment, technology, service plan, transit connections, district boundaries etc. need to be provided to the Legislature early in the 2020 session. That is the reason the Commission and CDOT are initiating this stakeholder engagement effort in advance of executing a contract with a Consultant Team.

The Commission and CDOT envision the preparation of a Federal Railroad Administration (FRA) required Rail Passenger Service Development Plan (SDP) that will inform a subsequent project specific NEPA process and documentation. This will strategically maximize connections and interoperability with local transportation systems.

The consultant will align all study work with Federal Railroad Administration (FRA) guidelines (specific steps which the agency will require to secure their support for the project) for a Service Development Plan and consult with the lead federal agency, once identified. The Commission and CDOT anticipate that federal funding will be sought to assist in funding implementation of Colorado's Front Range Passenger rail network. Therefore, the Commission and CDOT have consulted USDOT agencies about the interregional rail concept, conceptual ridership, operating plan, and other deliverables that will be provided to FRA, FTA and FHWA for comments as partners throughout the preparation of the Service Development Plan and NEPA document. As the alignments may involve elements of state and federal highway corridors and the FTA funded portions of RTD's network, consultation with the Federal Transit Administration (FTA) and the Federal Highway Administration (FHWA) would also be required.



### **3. CONSULTANT RESPONSIBILITIES AND DUTIES**

This scope of work was developed to provide guidance to the selected consultant in conducting the Rail Passenger Service Development Plan and Project level NEPA study for Front Range Passenger Rail service in Colorado. The consultant team (hereinafter referred to as the Consultant) shall work with CDOT staff as a “blended team” in completing these efforts. The major areas where CDOT staff will be used in this blended team concept are in the areas of the passenger rail ridership forecasting, public information/communications, (establishing methodologies, agency coordination), document review, and some data collection needed to identify existing conditions. Delineation of remaining activities/tasks to be completed by the Consultant or CDOT staff will be specified in the task descriptions that follow later in Section 6. The Consultant will produce materials related to Project related stakeholder engagement activities. Finally, the Consultant shall ultimately produce the SDP and NEPA documentation.

Note that the bulk of the modeling support services for this overall effort will be procured under a separate solicitation process conducted parallel to this one.

### **4. WORK DURATION**

The time period for the work described in this scope is approximately 30 months.

### **5. WORK PRODUCT**

The work in the scope of services for this project will be contracted on an individual Task Order basis, as needed and as determined by the Commission and CDOT. The Commission and CDOT reserve the right to, at their sole discretion, decide to not issue task orders for any part of the work contained in this scope of services. Similarly, additional funding for this project may become available during its progress. The nature of the work that would be performed by the Consultant is not expected to expand beyond the disciplines described in this Scope. Schedule milestones and deliverable deadlines may need to be adjusted to meet the issued task orders.

Consultant work products may include:

- A. Project Initiation and management plans
- B. Project Management and Quality Control Plan
- C. Agency Coordination and Stakeholder Outreach Plan
- D. Schedules
- E. Monthly Progress reports
- F. Meeting minutes
- G. Reports (Reports and documentation as described in the following Work Product discussions related to specific Tasks in Section 6: Study Work Task Descriptions.)

Specific requirements, work products and deliverables are further described in the sections that follow.

## **6. WORK PRODUCT COMPLETION**

All submittals must be reviewed and determined acceptable by the Commission/ CDOT Project Manager.

## **7. SCOPE OF WORK ORGANIZATION**

This draft scope of work has been reviewed by the Commission and CDOT 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 the project will be produced with input from the selected Consultant.



## SECTION 2 - PROJECT MANAGEMENT AND COORDINATION

### 1. COMMISSION CONTACT

The Contract Administrator for this project is: Jill Gaebler, SW Chief and Front Range Passenger Rail Commission Chair.

Active day-to-day administration of the contract will be delegated to the Commission PM:

- A. Randy Grauberger \_\_\_\_\_
- B. Project Director, Southwest Chief and Front Range Passenger Rail Commission
- C. Address: 2829 West Howard Place, Denver CO 80204 \_\_\_\_
- D. 303-512-4005 office \_\_\_\_\_
- E. 303-587-3591 mobile

### 2. AGENCY COORDINATION AND PUBLIC OUTREACH

Coordination will be required with the following:

- A. Cities (Front Range)
- B. Counties (Front Range)
- C. CDOT Regions 1, 2, and 4
- D. BNSF Railway
- E. Union Pacific Railroad
- F. Shortline Railroads within the Front Range Corridor as necessary
- G. Amtrak
- H. Regional Transportation District (RTD)
- I. North Front Range MPO
- J. Denver Regional Council of Governments (DRCOG)
- K. Pikes Peak Area Council of Governments (PPACG)
- L. Pueblo Area Council of Governments (PACOG)
- M. U.S. Army Corps of Engineers (USACE)
- N. Urban Drainage & Flood Control District (UDFCD)
- O. Federal Emergency Management Agency (FEMA)
- P. Colorado Division of Parks & Wildlife (CPW)
- Q. State Historic Preservation Officer (SHPO)
- R. U.S. Forest Service (USFS)
- S. Environmental Protection Agency (EPA)
- T. U.S. Fish and Wildlife Service (USFWS)
- U. Federal Railroad Administration
- V. Federal Highway Administration (FHWA)
- W. Federal Transit Authority (FTA)
- X. U.S. Department of Defense installations in El Paso County
- Y. Utilities
- Z. Colorado Department of Public Health and Environment (CDPHE)
- AA. Surface Transportation Board
- BB. Other parties as may be identified

## **SECTION 3 - EXISTING FEATURES**

### **1. STRUCTURES**

See CDOT Field Log of Structures at: [www.codot.gov/library/bridge/miscbridgedocs/fieldlog](http://www.codot.gov/library/bridge/miscbridgedocs/fieldlog)

### **2 UTILITIES**

Contact Utility Notification Center of Colorado (UNCC) at 1-800-922-1987

### **3. RAILROADS**

BNSF Railway (BNSF)  
Union Pacific Railroad (UP)  
Shortline railroads

### **4. Roadways**

State Highways  
City Streets  
County Roads

### **5. Other**

RTD  
ITS Features, including fiber optic facilities

Note: The above is a list of the known features in the Corridor. It should not be considered as complete. The Consultant should be alert to the existence of other possible conflicts.

## **SECTION 4 - REFERENCE ITEMS NEEDED BY THE CONSULTANT**

### **1. CURRENT MANUALS, SPECIFICATIONS, STANDARDS, ETC.**

The Consultant shall obtain and utilize the most recent CDOT adopted references including standards and specifications, manuals and software or as directed by the Project Manager. A list of general reference material is provided in Appendix A.

For rail engineering, the American Railway Engineering and Maintenance of Way Association (AREMA) standards shall be utilized. These include the manual for Railway Engineering (Fixed Properties) and Trackwork Plans.

### **2. PREVIOUS STUDIES**

A search for previous relevant studies will be conducted by the Consultant. Known relevant studies and plans are listed in Appendix B.

## **SECTION 5 - GENERAL INFORMATION**

### **1. NOTICE TO PROCEED**

Work will not commence until the written Notice-to-Proceed is issued by the State with certification from the Consultant that the work will be completed within the allotted time.

### **2. TIME LOST/DELAYS**

Commission/CDOT must review and concur on any time lost claims prior to the time lost delays being reflected in the baseline schedule. Subject to prior approval, the time charged may exclude time lost for any:

- A. Reviews and Approvals
- B. Response and Direction

### **3. PROJECT COORDINATION**

- A. Routine Working Contact

The routine working contact will be between the Commission/CDOT Project Manager (PM) and the Consultant Project Manager (C/PM).

- B. Project Manager Requirements

Each Project Manager will provide the other with the following in regards to the project:

- 1. Contact information (phone and email) for key personnel involved in the project for both the Commission/CDOT team and the Consultant team. others.
- 2. Copies of pertinent email and written communications.

### **4. ROUTINE REPORTING AND BILLING**

The Consultant will provide the following on a routine basis:

- A. Periodic Reports and Billings  
Reporting and Billings will be monthly or as otherwise agreed to by the PMs .
- B. Minutes of all Meetings:  
The minutes will be completed by the Consultant and provided to the PM within five (5) working days after the meeting. When a definable task is discussed during a meeting, the minutes will identify the "Action Item", the party responsible for accomplishing it, and the proposed completion date.
- C. General Reports and Submittals  
In general, all reports and submittals must be approved by Commission/CDOT prior to their content being utilized in follow-up work effort.

## 5. PERSONNEL QUALIFICATIONS

The Consultant Project Manager (C/PM) must be approved by the Commission PM. Certain tasks must be done by Licensed Professional Engineers (PE) who are registered with the Colorado State Board of Registration for Professional Engineers and Land Surveyors.

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.

## 6. CDOT COMPUTER/SOFTWARE INFORMATION

The consultant shall utilize the most recent CDOT adopted software. The primary software used by CDOT is as follows:

- |                            |   |
|----------------------------|---|
| A. Earthwork               | InRoads   |
| B. Drafting/CADD standards | InRoads and Microstation with CDOT's formatting configurations and standards        |
| C. Survey                  | CDOT Inroads TMOSS  |
| D. Geometry                | CDOT COGO (Coordinate Geometry)   |
| E. Bridge                  | CDOT Staff Bridge approved software shall be used in either design or design checks |
| F. Estimating              | Transport (an AASHTO sponsored software)  |
| G. Specifications          | Microsoft Word  |
| H. Traffic                 | Highway Capacity Software (HCS)   |
| I. Traffic Operations      | Synchro 9, SimTraffic, HCS, Rodel, INRIX, COGNOS                                    |
| J. Traffic Signals         | Synchro 9, HCS  |
| K. Traffic Model           | TransCAD (StateFOCUS) Model   |
| L. Hydraulics              | Hydrologic Engineering Center's River Analysis System (HEC-RAS)                     |
| M. Pavement Design         | DARWin (AASHTO)   |
| N. Scheduling              | Microsoft Project   |
| O. GIS                     | ESRI, ArcMap geodatabases (Projection: UTM NAD 83, Zone 13)                         |
| P. Noise Modeling          | TNM v2.5  |
| Q. Misc                    | Microsoft Word, Excel, Power Point  |
| R. Reports                 | Adobe Acrobat 7.0 Professional  |

## **7. COMPUTER DATA COMPATIBILITY**

CDOT presently utilizes a data format which Consultants shall be required to use for submitting survey, photogrammetry and the design data: Microstation/InRoads

The data format used by the Consultant to submit photogrammetric data shall be as determined by the Commission PM in coordination with the respective Region PLS. The data format for submitting design computer files shall be compatible with the latest version of the adopted CDOT program. The Consultant shall immediately notify the Commission PM if the firm is unable to produce the desired format for any reason and cease work until the problem is resolved. Refer to Table 1, Submittals, for additional information regarding the InRoads and TMOSS formats and the acceptable transmittal media.

## **8. PROJECT DESIGN DATA AND STANDARDS**

Appendix A is a list of technical references applicable to CDOT work. The consultant is responsible for ensuring compliance with the latest CDOT adopted version of the listed references. Conflicts in criteria shall be resolved by the Commission PM.

## SECTION 6 - STUDY WORK TASK DESCRIPTIONS

This section establishes the consultant's individual task responsibility. The consultant shall maintain the ability to perform all work tasks which are indicated below, in accordance with the forms and conditions contained herein, and the applicable CDOT standards. Selected work tasks shall be assigned only after coordination and consultation with Commission/CDOT. The Consultant is also responsible for coordinating the required work schedule for those tasks accomplished by CDOT and other agencies. The Consultant should review this entire section to identify applicable material. Contact the Commission PM if clarification is required.

A Project Management Plan shall be developed by the Consultant which satisfies the requirements of the project development. This plan must be approved by the Commission PM before starting the work. The activities of communication, consensus building, project reviews, conceptual design, data gathering, documentation, and formal public notice should be planned by the Consultant and coordinated with the Commission PM. The time of their accomplishment will overlap, and parallel paths of activity should be planned to finish in accordance with the shortest possible schedule. The type and number of meetings, documents, etc. will depend on the category and characteristics of the project work.

### TASK 1 - PROJECT INITIATION, PROJECT MANAGEMENT AND CONTINUING REQUIREMENTS

#### Project Initiation

Schedule and facilitate initial project kick-off meeting. All appropriate disciplines should be included. The meeting will also be used to clearly identify scope elements, responsibilities and coordination necessary to complete the work.

#### Project Management

Day to day project management and administration activities must be performed to guide the project through the requirements of this scope of work. These activities include, but are not limited to:

- 1) Tracking and managing the project budget and tasks
- 2) Maintain a Project File, set up similarly to established process for a NEPA Administrative Record (See CDOT NEPA Manual for additional guidance)
- 3) Develop and maintain the project schedule
- 4) Coordinating with the Commission, CDOT, FRA, FHWA and FTA, and interested stakeholders
- 5) Processing invoices
- 6) Submitting monthly progress reports to the Commission Project Manager
- 7) Ensuring the quality of the work and deliverables for each task
- 8) Data Management

At the kick-off meeting, or shortly thereafter, create and provide an approach for managing the project (i.e. involved staff, key team positions), including task orders, a schedule, document and agency reviews and other project needs.

The Consultant is responsible for coordinating the required work schedule for tasks accomplished by CDOT & Commission. Prepare the initial project schedule for review by the CDOT/PM and consultant team, and refine to provide detail as

requested. Modifications will be made as necessary in collaboration with CDOT and appropriate justification. The tasks covered by this Scope of Work are expected to take approximately 30 months to complete.

Prepare and submit a QA/QC plan as part of the planning documents noted above, and commit to adhering to the QA/QC process throughout the project.

## **TASK 2 - STAKEHOLDER ENGAGEMENT: Development of Public and Stakeholder Engagement & Service Vision**

- A. Design and conduct a public and stakeholder engagement strategic plan throughout the Front Range to increase public awareness and establish a mobility vision that includes passenger rail. This effort should encompass all of the required stakeholder and agency engagement for both the SDP and NEPA. In addition to traditional tactics, this effort should use virtual public involvement strategies such as, but not limited to: social media, telephone town halls, pop-up meetings, surveys, focus groups, videos and websites where possible.
  - 1) Develop and implement a comprehensive Stakeholder Engagement plan, including strategies that will lead to a collective Front Range mobility vision which incorporates passenger rail.
  - 2) Communicate to the public and stakeholders the benefits to the public and national transportation system, including an explanation of how similar projects are cost-effective, what advantages the project will offer over existing transportation services, and how the project could interact with and supplement existing transportation networks.
  - 3) Determine which alignment/service offerings produce the greatest level of public support and benefit that meet the project Purpose and Need.
  - 4) Meet NEPA agency and public scoping requirements.
  - 5) Prepare and implement a comprehensive report summarizing scoping, tasks and findings from stakeholder outreach.
  - 6) Develop key messaging for stakeholders
  
- B. Provide the presentation aids, and help conduct public meetings.
  - 1) With CDOT, identify and meet with key stakeholders or others directly affected by the project work to identify likely impacts and discuss possible mitigation or resolutions in small group and one-on-one meetings.
  - 2) Work with CDOT on General public meetings (information and workshops). The format of these meetings will be dictated by the project and goals for the meetings. These meetings may be used to establish communications with the public, add to the “contact list”, and gather information regarding local concerns. The meetings may also take the form of a work session or workshop with the affected parties.
  - 3) Work with CDOT on Public Review Meetings. These meetings are intended to disseminate project progress information to the public and representatives of local entities. Notices will be mailed at least fourteen (14) days in advance of these meetings to those on the “contact list”.
  - 4) Create all presentation collateral (i.e. powerpoints, boards, talking points, invites, notices).



Deliverables

1. Complete project meeting minutes and provide to the Commission/PM within one week of the actual meeting. When a definable task is discussed during a meeting, the minutes will identify the “Action Item”, the party responsible for accomplishing it, and the proposed completion date.
2. Establish and maintain a computerized list “Contact List” of all appropriate interested parties for the communication process.
  - a) The information on the list shall include as a minimum:
    - i) Name
    - ii) Firm (if any)
    - iii) E-mail address
    - iv) Phone number
  - b) The contacts will be compiled from the list below, as supplemented by the Project Team and attendees at public meetings:
    - i) Public Agencies
    - ii) Elected/Appointed Officials
    - iii) Business Interests
    - iv) Special Interests
    - v) Railroads
    - vi) Media Contacts

**C. Consultant is responsible for the following Communication Aids:**

- 1) Graphics Support – provide graphics for presentations and project documents. This may include PowerPoint presentations, boards, maps and plan views of conceptual design, computerized presentations and other displays for visual presentations at meetings. Graphics must coordinate with the Office of Communications on branding usage and style requirements.
- 2) Collateral - such as but not limited to media advisories, press releases, op-eds, articles, social media posts, videos\*
- 3) Newsletter – a newsletter (or e-newsletter) which will contain project progress information and announcements will be published at the specified interval and will be distributed to those on the “contact list” specified by the CDOT/PM.
- 4) Website/ web pages – Develop web pages to support the strategic plan and as a resource. All external CDOT-related Web sites shall be hosted on CDOT’s server and developed in-house with assistance from the Web Team and the Office of Communications. The use of all Web 2.0 and similar social marketing applications on behalf of CDOT (including all regions, divisions and offices) is strictly prohibited unless authorized by the Director of the Office of Communications. No CDOT employee, contractor or consultant working for CDOT will post material on behalf of the agency on such applications without expressed written consent of the Director of the Office of Communications.

**TASK 3 - RAIL PASSENGER SERVICE DEVELOPMENT PLAN**

**This Task to be completed primarily by the Consultant Team except where noted \*\***

**A. Develop a Vision Statement and Purpose and Need for Front Range Rail Passenger Service**

- 1) Determine project goals, objectives and desired outcomes
- 2) Documentation and presentation of existing and expected deficiencies in the transportation system serving the corridor area.
- 3) Define mobility needs and markets to be served; use of existing rail corridors and station locations, existing inter- and intra-city traffic by mode, transit-supportive land uses, and existing or required right of way (ROW);
- 4) Summarize existing corridor transportation modes, capacity, and condition, and current and projected future travel demand; CDOT travel demand model will be a starting point to identify passenger rail travel demand. Inputs to this effort include but are not limited to station locations, transit connections, equipment technology, operating speeds, land use, etc. This will be closely coordinated with the MPO's and their travel models. \*\* Model operations and output analysis and summary will be provided by CDOT staff and/or by consultant services provided through a contract separate from this one.
- 5) Development of logical termini for analysis and possible improvements;
- 6) Where freight rail corridor trackage is to be used, describe current freight operations by major line segments, facility and track condition, track configuration, curve geometrics, FRA class, current freight usage, capacity by line segment; and
- 7) Impact of the project on highway congestion, energy consumption, environmental impacts, land use, and economic development and allowance for future growth.
- 8) Production of a written statement of purpose and need, to serve as a vision statement for the corridor, based on identification of needs and deficiencies. The statement should reflect the context sensitivity of the corridor's communities to help reach their transportation goals by encouraging the consideration of land use, transportation, environmental and infrastructure needs in an integrated manner.

*Deliverables*

1. Documentation and presentation of existing conditions and deficiencies in a clear and concise manner.
2. Memorandum documenting the recommendations and endorsements made regarding goals and visions of the future passenger rail corridor, logical termini, and Purpose and Need statement.

**B.** Define, identify and evaluate a reasonable range of alternatives that will satisfy the purpose and need. Alternatives will be evaluated by agreed-upon NEPA appropriate criteria and measures of effectiveness. Alternatives will consider corridor, alignment and route concepts including those previously evaluated in previous studies. These include rights of way adjacent to existing freight railroad corridors, RTD passenger rail corridors, and also in or adjacent to existing interstate / state highway rights of way. These may include but are not limited to:

- 1) Recommendation for greatest alignment opportunity and service delivery to either directly serve downtown Denver/Denver Union Station and/or directly serve Denver International Airport;
- 2) Recommendation to maximize connections with present and planned local transit services, ensuring connectivity with previous transit investments (i.e. RTD's FasTracks, MAX BRT in Fort Collins, Bustang, etc.);
- 3) Utilization of existing freight rail corridors, new green field alignments, or a combination thereof;
- 4) Other alignment and route options along the Front Range Corridor.

Deliverables

3. Documentation of the screening criteria and measures of effectiveness utilized in evaluating the alternatives.
  4. Identification of a vision, if not a desired concept, for consideration during the Colorado Legislature in the 2020 legislative session.
  5. Memorandum documenting the rationale for the selection of the desired concept.
- C.** Develop a Conceptualized Operating Plan including, but not limited to:
- 1) Proposed type of passenger rail system (commuter rail, higher speed rail, high speed rail, etc.);
  - 2) Type and quality of preferred train equipment to be used, with technical specifications such as maximum speed, passenger capacity, energy consumption profile, acceleration and deceleration rates, and technologies used including Positive Train Control;
  - 3) Service frequency and operating speeds;
  - 4) Describe potential ridership; \*\* this task will be done by CDOT staff utilizing the CDOT travel demand model, with support as needed by consultant services provided through a contract separate from this one. These model runs will be based on the varying alignments, speeds, numbers of stations along the routes, etc.
  - 5) Provide an order-of-magnitude comparative analysis of the ridership developed in paragraph C. 4 with other existing passenger rail systems with appropriately similar characteristics.
  - 6) Fares and fare structure comparisons among proposed services;
  - 7) Describe alignment with existing and planned intermodal connections;
  - 8) Station locations and maintenance facility location and, for each, whether it is existing or new, and how it maximizes the use of existing infrastructure;
  - 9) Capacity improvement concepts for required infrastructure investments and improvements including the feasibility of building new track and the method for securing required ROW;
  - 10) The plan should be developed in partnership with track owners and freight service operators, when appropriate, for initial comments on required capacity improvements to permit anticipated passenger service to be operated without degrading freight service on the line segment.
  - 11) Recommendation for potential qualified service operator (i.e. existing transit agency, other public agency, new transit agency, Amtrak, BNSF Railway, private operator, etc.)

Deliverables

6. Documentation of the assumptions utilized in the development of the operating plan.
  7. Memorandum detailing the potential operating plans for various phases/segments (i.e. Fort Collins to Denver, Longmont to Denver, Denver to Colorado Springs, Pueblo to Colorado Springs, or others).
  8. Operating plan for the preliminary preferred alternative for the purposes of the documentation to the 2020 legislature.
- D.** Define High-Level Capital and Operating Costs and provide a financial plan for the proposed project, including:
- 1) Pre-construction cost estimates: planning, environmental/ National Environmental Policy Act (NEPA) documentation as well as estimated costs of required mitigations, design, ROW acquisition, etc.;
  - 2) Costs of construction of rail and station locations, acquisition of fleet equipment, and establishment of operating systems;
  - 3) Cost estimates for infrastructure and train control needs, including:
    - a) Train control systems, including Positive Train Control (PTC);
    - b) Track, signals, and interlocking upgrades;
    - c) Need for sidings and double tracking;
    - d) Grade crossing facilities (new crossings, new crossing gates, signals, and surface improvements), as well as opportunities to consolidate/eliminate grade crossings;
    - e) Station facilities: platforms, shelters, lighting, parking, and facilities that could be repurposed.
  - 4) Estimates of annual operating costs by expenditure type;
  - 5) Preliminary planning level revenue projections based on CDOT's ridership estimates.
  - 6) On-going operations, maintenance, and life cycle costs;
  - 7) Sources and descriptions of capital funds and projected levels of private and public investment;
  - 8) Recommendations for ongoing, dedicated funding sources;
  - 9) Projected financial statement for a proposed 'passenger rail organization' showing annual revenue, costs, investment, and debt service from project inception through construction, testing, and first 10 years of operation.

Deliverables

9. Documentation of the assumptions utilized in the updating costs previously developed in other CDOT or passenger rail studies developed prior to this effort.
  10. Comparison of costs of this proposed service to other relevant peer passenger rail systems within the US.
  11. High level Financial Plan appropriate for the Preliminary Preferred Alternative
- E.** Benefit Cost Analysis
- 1) The benefit cost analysis will document the overall economic impact of the proposal. This will include not just the financial results as described in financial planning but the benefits and impacts for the project such as

operational benefits, travel time savings, air quality impacts, community development, and other user and non-user economic benefits. This is informed by other elements of Service Planning and will be used to assess the transportation-related merits of the service alternative. \*\* Key data will be provided by the Statewide Travel Model where available (e.g. automobile travel time and delay, toll, transit and other revenues, etc.)

### Deliverables

12. Memorandum detailing the various analytical assumptions utilized in the benefit cost analysis, including descriptions of any specific analysis “tools” and monetized values for the various array of elements of “public benefit”.
13. Memorandum summarizing the results of the benefit cost analysis

## F. Governance

- 2) Governance represents the long term management structure for design, construction, maintenance and operations of a future Front Range Passenger Rail system. Options could include: elected/appointed interregional rail authority, special district, existing transit agency, etc.). Propose up to three potential governance scenarios that could lead to the implementation of Front Range Passenger Rail.
- 3) Determine feasibility of an aggregation of those “Front Range” jurisdictions to be formed into a “District” to be served by an interregional passenger rail system. This could be relevant for a possible ballot measure in 2020.
- 4) In identifying technology and other project characteristics, the project will need to coordinate with several federal and state agencies to ensure project planning and deployment process requirements are met (i.e. NEPA). Agencies that need to be involved, include, but are not limited to:
  - *Federal Railroad Administration (FRA)*
  - *Federal Transit Administration (FTA)*
  - *Federal Highway Administration (FHWA)*
  - *Colorado Department of Transportation (CDOT)*
  - *Colorado Public Utilities Commission (PUC)*

### Deliverables

14. Memorandum proposing ‘optimum’ regional boundaries for the purposes of attaining a successful 2020 ballot issue.
15. Governance memorandum identifying alternative governance structures and a recommended path forward for Front Range Passenger Rail.

## G. Implementation Plan/Timeline

- 1) Development of a preliminary service implementation plan with key benchmarks for establishing Front Range Passenger Rail Service. This should include an estimated timeline.

Deliverable

16. Implementation Plan /Timeline for Front Range Passenger Rail Service

## **TASK 4- Pre-NEPA Planning Activities & Alternatives Analysis**

### **A. Pre-NEPA planning activities**

As a result of initial stakeholder coordination and scoping, the team will be able to accomplish the following tasks in support of NEPA and the SDP. The project will follow the principles and intent of the One Federal Decision Executive Order and MOU. During this pre-Notice of Intent (NOI) stage, the team will accomplish the following milestones/deliverables:

1. Verify the Corridor study area and vision
2. Verify the lead federal agency, presumably FRA
3. Develop a draft Purpose and Need
4. Develop a draft Coordination Plan
5. Identify communities and stakeholders affected
6. Identify a reasonable range of alternatives
7. Determine the extent of environmental analysis needed for each resource
8. Initiate applicable resources surveys/studies
9. Identify potential significant environmental issues
10. Identify potential mitigation strategies
11. Initiate permit activities as soon as possible, such as pre-application process

These milestones will inform and accelerate the NEPA process in advance of publishing a NOI. In an effort to streamline project delivery, CDOT, the Commission and the lead federal agency should obtain written concurrence from cooperating agencies during the pre-NOI stage on: 1) Purpose and Need, and 2) Range of Alternatives. Completion of the above tasks will provide clarity so that the Publication of the NOI and subsequent NEPA tasks will be identified with greater certainty in a subsequent task order.

### **B. Alternatives Analysis**

The element of the Service Development Plan that evaluated a range of reasonable alternatives was primarily conducted for the purpose of providing a passenger rail concept to be presented to the Colorado Legislature early in the 2020 legislative session. The purpose of this task is to build on that effort to encompass a more complete alternatives analysis that would position the more feasible alternatives for additional analysis and evaluation, consistent with NEPA processes.

The alternatives analysis should evaluate reasonable routes, modes and station locations; building where appropriate, on work previously completed in Colorado. Some of this work may be identified in Appendix B (Relevant Studies and Plans). Also, input received during early stakeholder engagement efforts conducted in Task 2 will inform the alternatives analysis.

The alternatives should include a “best bus” alternative as a part of the no-build scenario as the potential exists for future passenger rail along the Front Range to build upon the Bustang intercity bus services currently being operated by CDOT.

The Consultant will be expected to recommend an alternatives analysis methodology adaptable for the characteristics of the Front Range Corridor, that initially evaluates

potential alternatives; screening them later to reasonable/ feasible alternatives. The measures of effectiveness and screening criteria should be appropriate for the level of screening and should be consistent with the initial development of a purpose and need statement. Rankings would be expected to elevate certain alternatives for further analysis while eliminating some alternatives from further consideration.

Deliverables:

- a. Memorandum describing methodology selected for the alternatives analysis
- b. List of criteria and measures used in developing rankings of alternatives.
- c. Mapping depicting alternative route alignments, possible station locations and station types (System hubs, regional mobility hubs, local stations)
- d. Alternatives Report summarizing the analyses

## **TASK 5 - NEPA Process, Analysis & Documentation**

Based on the SDP recommendations, determine the effort required to examine the transportation needs in the project area to evaluate a reasonable range of alternatives following the NEPA process and to develop the appropriate NEPA documentation. All technical reports and environmental documents will be submitted to the Commission, CDOT, lead cooperating and participating agencies.

An early environmental coordination/scoping task will occur as a part of the formal NEPA initiation. With consultant support, CDOT & the Rail Commission will lead coordination with local, state and federal agencies, and other key stakeholders during scoping and throughout. Formal agency and public scoping meetings will be required. A “scoping” technical memorandum will be prepared summarizing the agency and stakeholder coordination and comments. Consultant will need to meet agency coordination and reporting requirements under NEPA as well as the One Federal Decision Executive Order and Memorandum of Understanding.

### 1) Purpose and Need

The Purpose and Need, developed as a part of the Service Development Plan & Alternatives Analysis, will be refined, finalized and included in the NEPA process. To the greatest extent possible, existing studies and plans (see appendix B) will inform the development of the Purpose and Need in addition to agency and public input.

### 2) Alternatives Development and Evaluation

The team will analyze a No-Build Alternative and a reasonable range of alternatives as identified and narrowed in the Service Development Plan and Alternatives Analysis. The team may need to refine alternatives and evaluation criteria based on finer level of analysis or screening. A limited amount of passenger rail related engineering has been completed along the Front Range, therefore additional engineering will be needed once the detailed environmental analyses commences to ensure that potential impacts are identified and avoided, minimized, or mitigated to the greatest extent possible. In



addition, right-of entry may be required for properties along the alignment to allow the analysts access to conduct surveys, etc. unless this information can be obtained by other methods.

### 3) Environmental Data Collection, Field Investigation, Impacts & Mitigation Measures

To the greatest extent possible, rely on and refine analysis conducted as a part of the SDP and previous studies and plans. Identify opportunities where data and decisions made during past planning studies can be adopted for this effort. The project blended team, in coordination with the Commission, CDOT, lead, cooperating and participating agencies will endorse a methodology for impact analysis prior to commencing the work. Data collection will inform the analysis of the following aspects of the study:

- Route Alternatives
- Cities & Station Services
- Train service levels & frequency
- Train Technology
- Operating Speeds
- Ridership Projections; and
- Major infrastructure components

At the time of this RFP publication, it is expected that the level of detail for this NEPA document will be as appropriate for a project specific Environmental Impact Statement. Use of Geographic Information Systems (GIS) for environmental data is required to be in compliance with CDOT GIS standards. All GIS data shall be provided to CDOT in electronic format with the annual updates for the project file.

Relevant information will be incorporated in the NEPA document sections such as: Affected Environment, Environmental Consequences, and Mitigation Measures. Consultants will prepare technical reports in support of the project and shall be reviewed and referenced as appropriate in the NEPA document. If new or unique resources are identified during scoping, this scope of work will be modified.

Studies to be conducted as a part of the NEPA evaluation process for the study area may include the following resources. A final list will be determined during the development of the subsequent task order. To the extent applicable, the team will use the CDOT NEPA Manual, it's environmental guidance and policies, existing agreements, and other tools to accelerate project delivery and demonstrate environmental compliance and stewardship.

- Air Quality
- Water Quality
- Noise & Vibration
- Hazardous Waste
- Wetlands and Waters of the U.S.
- Wildlife, including threatened, endangered and other protected species
- Floodplains
- Energy

- Visual Resources
- Land Use
- Environmental Justice
- Recreational Resources
- Farmland Soils
- Historic, archeological & paleontological resources
- Section 4(f)
- Section 6(f)
- Socioeconomic Resources
- Transportation Resources
- Cumulative Impacts

4) NEPA Documentation & Distribution

This document will incorporate information by reference from prior studies where possible. Technical Reports will be minimized, but when necessary, will be combined with relevant resources, where possible and include existing conditions, analysis of impacts and mitigation. To the extent applicable, project will follow guidance and best practices identified in the CDOT NEPA Manual. Much of the CDOT's existing environmental methodologies presume FHWA oversight, guidance and regulations and do not consider oversight by another federal agency, such as FRA.

Deliverables:

- e. Production and Distribution of Draft & Final Documentation, Administrative Drafts and DEIS
- f. Technical Reports
- g. Development and Implementation of NEPA compliant Stakeholder Engagement Plan including Public Hearing/Meetings/Involvement
- h. Combined FEIS/ROD including Notice of Availability (likely to be negotiated as subsequent task order)

## APPENDIX A – REFERENCES

(Not all of these references may be relevant for the work described in this Scope of Work)

1. **AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) PUBLICATIONS and NATIONAL ASSOCIATION OF CITY TRANSPORTATION OFFICIALS**, using latest approved versions and as appropriate.
  - A. A Policy on Design Standards-Interstate System
  - B. A Policy on Geometric Design of Highways and Streets
  - C. Guide for Design of Pavement Structures
  - D. Standard Specifications for Highway Bridges
  - E. Guide for the Design of High Occupancy Vehicle and Public Transfer Facilities
  - F. Guide for the Development of Bicycle Facilities
  - G. Standard Specifications for Transportation Materials and Methods of Sampling and Testing – Part 1, Specifications and Part II, Tests
  - H. Highway Design and Operational Practices Related to Highway Safety
  - I. Roadside Design Guide
2. **COLORADO DEPARTMENT OF TRANSPORTATION PUBLICATIONS** (using latest approved versions):
  - A. CDOT Design Guide (all volumes)
  - B. CDOT Bridge Design Guide
  - C. CDOT Bridge Detailing Manual
  - D. Southwest Chief and Front Range Passenger Rail Commission website
  - E. Bridge Rating Manual
  - F. Project Development Manual
  - G. Erosion Control and StormWater Quality Guide
  - H. Field Log of Structures
  - I. Cost Data Book
  - J. Drainage Design Manual
  - K. CDOT Quality Manual
  - L. CDOT Survey Manual
  - M. CDOT Field Materials Manual
  - N. CDOT Design Guide, Computer Aided Drafting (CAD)
  - O. Erosion Control and Stormwater Quality Guide
  - P. CDOT and Denver Standard Plans, M & S Standards
  - Q. Standard Specifications for Road and Bridge Construction and CDOT Supplemental Specifications
  - R. Item Description and Abbreviations (with code number) compiled by Engineering Estimates and Marked Analysis Unit, CDOT
  - S. Right-of-Way Manual, Chapter 2, Plans and Descriptions Procedures and General Information

- T. The State Highway Access Code
- U. Utility Manual
- V. TMOSS Generic Format
- W. Field TMOSS Topography Coding
- X. Topography Modeling Survey System User Manual
- Y. Interactive Graphics System Symbol Table
- Z. Corridor Optimization Guidelines

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

- A. No. 400.2 Monitoring Consultant Contracts
- B. No. 501.2 Cooperative Storm Drainage System
- C. No. 514.1 Field Inspection Review (FIR)
- D. No. 1217a Survey Request
- E. No. 1304.1 Right-of-Way Plan Revisions
- F. No. 1305.1 Land Surveys
- G. No. 1601 Interchange Approval Process
- H. No. 1700.1 Certification Acceptance (CA) Procedures for Location and Design Approval
- I. No. 1700.5 Local Entity/State Contracts and Local Entity/Consultant Contracts and Local Entity/R.R. (Contracts under CA)
- J. No. 1700.6 Railroad/Highway (Contracts under CA)
- K. No. 1905.1 Preparation of Plans and Specifications for Structures prepared by Staff Bridge Branch

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

- A. Manual on Uniform Traffic Control Devices
- B. Highway Capacity Manual
- C. Urban Transportation Operations Training – Design of Urban Streets, Student Workbook
- D. Reference Guide Outline – Specifications for Aerial Surveys and Mapping by Photogrammetric Methods for Highways
- E. FHWA Federal-Aid Policy Guide
- F. Technical Advisory T6640.8A
- G. U.S. Department of Transportation Order 5610.1E
- H. Geometric Geodetic Accuracy Standards and Specifications for Using GPS
- I. Relative Positioning Techniques
- J. ADAAG Americans with Disabilities Act Accessibility Guidelines

## **5. TRANSPORTATION RESEARCH BOARD:**

- Access Management Manual
- NCHRP Report 672 - Roundabouts: An Informational Guide
- NCHRP Report 687 – Guidelines for Ramp and Interchange Spacing

## APPENDIX B – RELEVANT STUDIES AND PLANS

- [North I-25 Environmental Impact Statement](#), associated Records of Decision
- North I-25 EIS Commuter Rail Update [Final Report](#)
- Colorado State Transit Plan
- Colorado Freight and Passenger Plan
- Colorado Rail Relocation Implementation Study
- Northwest Area Mobility Study (NAMS)
- All RTD & FASTRACKS related plans
- Interregional Connectivity Study (ICS)
- Rocky Mountain Rail Authority (RMRA)
- I-70 Mountain Corridor Advanced Guideway System (AGS) Feasibility Study
- I-25 Gap Environmental Assessment
- I-25/Valley Highway Environmental Impact Statement
- CDOT Managed Lanes Guidance
- New Pueblo Freeway Environmental Impact Statement
- South I-25 PEL
- Central I-25 Planning and Environmental Linkage Study (ongoing)
- Front Range Passenger Rail Commission Charter (12/2017)