Design – Professional Services
Scope of Work

Federal Boulevard BRT: Dartmouth Avenue to 120th Avenue
SH 88A Mile Point (MP) 0 to MP 5.45,
US 287C MP 282.7 to MP 294.7

COLORADO
Department of Transportation

Project Numbers: NHPP 088A-040

Project Location: Federal Boulevard in Denver, Westminster, Federal Heights, and Adams County CO

Project Code: 27327

March 5, 2026

Colorado Department of Transportation
Region 1
2829 West Howard Place
Denver, CO 80204

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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

Federal Boulevard Corridor Overview

Federal Boulevard is a critical arterial connecting residents, businesses, services, and recreation areas in the west-central Denver Metropolitan Area. Federal Boulevard is critical for transit users as one of the highest ridership bus corridors in the Regional Transportation District (RTD) system. Federal Boulevard within the project limits spans from Englewood and Denver in the south, to Westminster, Federal Heights, and Adams County in the north. This project includes reconfiguring roadway segments along Federal Boulevard between Dartmouth Avenue and 120th Avenue to add dedicated bus lanes, bus stations with elevated platforms enabling near-level boarding and providing enhanced shelters with passenger amenities, substantial sidewalk improvements, new pavement markings, and Transit Signal Priority (TSP) technology at signalized intersections. The Federal Boulevard Bus Rapid Transit (BRT) project (hereafter, "Project") is critical for improving the travel experience of transit riders, pedestrians, drivers, and local residents, as well as for supporting the economic vitality of the corridor and the region.

The Project was developed over the previous five years, through the planning efforts led by CDOT's project partners the City and County of Denver, the Cities of Federal Heights and Westminster, and Adams County. CDOT built the Project's preliminary design on this foundational work. Details about previous work are included in the following sections.

Federal Boulevard Multimodal Transportation Study: December 2021 (City of Westminster)

The transit improvements recommended in this study include side-running bus lanes and stations, broken down by character zones/jurisdictions. The outcome planned by the study is that "...transit users would experience substantial benefits in both convenience and connectivity, with much more frequent service that sees significant savings in travel time."

Denver Moves Federal: May 2022 (City of Denver)

A major goal of this planning effort was to advance the transit vision collectively defined in the City of Denver's 2017 Federal Boulevard Corridor Study, the Regional Transportation District's (RTD) 2019 BRT Feasibility Study, and the City's overall transit plan – Denver Moves: Transit (2018). Led by the City of Denver in partnership with RTD and the Colorado Department of Transportation (CDOT), the Denver Moves: Transit study identifies the Federal project with transit improvement options along the corridor and examines how improved transit can better serve the communities that make this corridor such a vibrant and multi-faceted place.

Side running BRT with two lanes of general purpose traffic in each direction was the preferred alternative advanced out of the Denver Moves: Transit study, which is available here:

https://denver.prelive.opencities.com/files/assets/public/v/2/doti/documents/programsservices/denver-moves-federal/federal-transit-aa-summary-report.pdf

Recommended Alternative Assessment Process: 2023 (CDOT and Project Partners)

From August to November 2023, CDOT conducted an assessment process to evaluate the recommendations for BRT from previous studies with the goal of affirming the Project's recommended (i.e. locally preferred) alternative. This process established a project purpose and need, developed evaluation criteria, and examined alternatives to implement BRT on Federal Boulevard from Dartmouth Ave. to 120th Ave., with service expanding to Englewood Station in the south and Wagon Road Park and Ride in the north. CDOT and its partners revisited the side running, center running, and mixed flow BRT

options considered for Federal Boulevard through previous planning work, and re-affirmed that the side running BRT alternative with sections of mixed traffic operations matched state, local, and project goals. More information on the project goals and an overview can be found here:

https://www.codot.gov/projects/studies/denvermetrobrt/federalbrt

National Environmental Policy Act (NEPA) Evaluation Process

The Federal Transit Administration (FTA) is the lead federal agency on this Project. CDOT initiated the NEPA process for the Project in September 2023, with a categorical exclusion (CatEx) being anticipated by Summer 2026. The CatEx will need to follow the CDOT NEPA Manual in addition to all of FTA's requirements. The CatEx shall identify permits and mitigations necessary to complete to deliver the project. The CatEx will need to be signed by CDOT and FTA during the next stage of design (30-100%) for the project, outlined in this scope of work document. NEPA evaluation and review is near completion at the time of the release of this Scope of Work, and additional NEPA analysis is not anticipated in this stage of design for the project, outside of compliance with the anticipated signed CatEx document. (If the design changes, the CatEx document and NEPA process may need to be revisited….See Section 7 of this RFP.)

1.2. Project Limits

The Project is located on Federal Boulevard between Dartmouth Ave. to the south and 120th Ave. to the north, extending on State Highway (SH) 088A from Mile Post (MP) 0 - 5.44 and on US-287 from MP 282.7 - 294.7. The design Scope of Work will cover the full project limits. Construction activities are anticipated for the full project limits, depending on available funding at the start of the construction phase.

1.3. Project Goals

The Project goals reflect the values that this Project holds and expects. An exceptional proposal will demonstrate how each of the Project goals will be accomplished by the Proposer.

The following Project goals were developed for this RFP based upon the foundation of the Federal Boulevard BRT Partnership Charter Document listed in **Appendix C** of this SOW. The project charter document outlining project goals was completed by the Project Leadership Team (CDOT, FTA, and local government partners) as part of the project development process. The Project goals are detailed in the following sections.

A. Improve Safety Along the Corridor and at Transit Station Areas

Improve the safety of Federal Boulevard for all modes of travel, and in particular for transit users through the design process. Using current and transit-oriented design standards, the Project will bring Federal Boulevard into a state of good repair, install new infrastructure for multimodal travel, and repurpose current right-of-way uses to accommodate new bus rapid transit facilities. The Project design shall decrease general traffic speeds, help reduce emergency response times, and maintain access for local residents. These design directives will result in the long-term reduction of crash trends and support safe travel on Federal Boulevard.

B. Increase Transit Reliability and Ridership

Deliver on this overarching project goal by designing the project in a timely manner for a Fall 2027 advertisement date and by coordinating with RTD and municipalities. Advance the Federal Boulevard BRT design to a constructible state, designing roadway, civil infrastructure, stations (enabling level boarding and off-board fare collection), and transit signal priority infrastructure. With operational support from RTD, this project shall double the transit service frequency along

the corridor. The selected proposer shall provide for the proper design and construction of these elements to both increase transit reliability and ridership.

C. Decrease Transit Travel Times

Advance the Federal Boulevard BRT design, which includes several components like stations with near-level boarding and off-board fare collection equipment, dedicated bus lanes, and transit signal priority. The combination of these elements into a single cohesive BRT design will reduce transit travel times. Implement physical infrastructure upgrades in the Project design that are conducive to increased transit reliability and decreased transit travel time. The main mechanisms for reducing transit travel times are through the design of BRT stations, dedicated bus lanes, transit signal priority, and bypass lanes in select locations.

D. Promote Cultural Vibrancy and Quality of Life Along the Corridor

In partnership with the Owner's Representative and Construction Manager (CM), minimize inconvenience and impacts to the traveling public, residents, and business owners during construction. Develop construction phasing plans to accommodate and maintain travel along the corridor. Provide continuous access to businesses along Federal Boulevard with minimal disruption. Create a reliable communication methodology for disseminating information using accurate, meaningful, and timely technologies and resources. Avoid and minimize impacts to environmental resources identified in the NEPA process and ensure that these commitments are carried forward into construction. Implement innovative methods for environmental stewardship and community supported enhancements that maximize opportunity for shared-use within and adjacent to the Federal Boulevard Corridor. Work with local stakeholders and community members to identify opportunities to customize station areas to reflect local culture and history.

E. Improve Connectivity and Mobility

Develop the Project design to improve transit, bicycle, pedestrian, and vehicular connections on and across Federal Boulevard Work with partners including City and County of Denver's Department of Transportation and Infrastructure (hereafter "DOTI"), City of Federal Heights, City of Westminster, Adams County, and Denver Regional Council of Governments (DRCOG) staff to address local goals that align with Project goals. Work with local stakeholders, businesses and community members to develop design solutions that meet specific location needs aligning with Project goals.

F. Optimize Scope, Schedule, and Budget

Balance schedule and budget to maximize the scope and positive impact of the Project. In partnership with the Owner's Representative and Construction Manager, utilize innovation and manage risk to recover budget to reinvest in the Project.

1.4. Project Funding

The construction funding for the Project has not been fully secured at this time. This requires CDOT to deliver as much of the Project Scope Elements as possible with the funding available at the completion of this Project, while maintaining the future implementation of scope elements that may be unfunded at the start of construction. The Project design is fully funded at this time.

CDOT anticipates the final funding source determinations and the associated Project budget will be

finalized by June 1, 2027.

CDOT is pursuing full funding for the Project, which could include FTA Capital Investment Grant Small Starts, CDOT 10 Year Plan funds, Nonattainment Area Pollution Mitigation Enterprise (NAAPME) alternate financing, or a combination of all of these. The currently identified Project funding sources include but are not limited to: CDOT Strategic 10-Year Plan, DRCOG Surface Transportation Block Grant (STBG), Funding Advancements for Surface Transportation and Economic Recovery (FASTER), and CDOT Resurfacing Program funding sources.

1.5. Project Information, Definition, and Scope Elements

The goal of the Project is to construct the below Project Scope Elements in their entirety to minimize impacts to stakeholders and the traveling public. All Project Scope Elements are included in this solicitation for services but are not guaranteed for construction if funding is not secured or costs exceed the project budget or available funding resources. The Project Scope Elements may be modified based on available funding, packaging, CM input, stakeholder input, and final design refinements. If it is determined to be in the interest of CDOT, or to meet funding constraints, portions of the completed design may be procured separately.

Project Scope Elements

- Federal Boulevard BRT Roadway Scope:
  - Full reconstruction of roadway from Louisiana Ave to Dakota Ave. (south of Alameda Ave.)
  - Addition of northbound bus lane to the 2 existing northbound lanes from Evans Ave. to Dakota Ave. (south of Alameda Ave.), requiring new curbline, sidewalks, curb ramps, and driveway replacement from Evans to Dakota
  - Addition of southbound bus lane to the 2 existing southbound lanes from Evans Ave. to Jewell Ave., requiring new curbline, sidewalks, curb ramps, and driveway replacement from Evans to Jewell
  - Addition of southbound bus lane to the 2 existing southbound lanes from 16th Ave. to 20th Ave. requiring new curbline, sidewalks, curb ramps, and driveway replacement from 16th to 20th. This includes the addition of a new median between 16th Ave. and 20th Ave.
  - Addition of curb and gutter between 116th Pl. and 120th Ave. Pavement work associated with curbline construction.
  - Resurfacing of Federal Boulevard from Dartmouth Ave. to Jewell Ave., including construction of sidewalks and reconstruction of driveways
  - Intelligent Transportation System (ITS) installations and improvements throughout the Project limits, connecting each station with fiber for live bus arrival information
  - Storm sewer infrastructure and other utility improvements along impacted roadway
  - Median construction and intersection reconfigurations/improvements, particularly at:
    - Reconfiguration of 14th Ave. and Howard Pl. intersection
    - Reconfiguration of 112th Ave. intersection
    - Replacement/construction of approximately 100 new signal poles, with transit signal priority installed/implemented along strategic intersections along the corridor
    - Installation of ADA accessible curb ramps at 65 intersections, totalling to approximately 326 curb ramps

    - Reconfiguration/restriping of Federal Boulevard and Colfax Ave. interchange, reconstruction of EB Colfax to SB Federal and NB Federal to EB/WB Colfax Ramps to be perpendicular with Federal Boulevard. Earthwork/grading will be required.
  - Roadway lighting from Louisiana Ave to Dakota Ave. (south of Alameda Ave.)
  - Restriping of Federal Boulevard and US-36 interchange affecting Federal Boulevard
  - Restriping and static signing throughout the Project limits.
- Federal Boulevard BRT Station Scope:
  - Construction of 37 bus rapid transit station pairs, 74 total stations. Stations include bus pads, elevated platforms, electrical conduit, shelters, ticket machines, ticket validation machines, emergency telephones, and connection to adjacent sidewalk
  - Shelters include distinctive canopies to be constructed from various materials. Shelters shall include lighting, pedestrian amenities (seating, lean bars, railings, etc.), windshields/paneling, emergency/security systems, ITS infrastructure, and fare infrastructure to be determined in coordination with RTD
- Complimentary Projects (Construction Add Alternates)
  - Various curb extensions, hardened bike lane separation curbs, and other pedestrian treatments at and between intersections in the City and County of Denver
  - Various sections of detached sidewalk or multiuse path
  - Sidewalks not included in 30% design plans, otherwise underway by Adams County, or to be completed by private developer in unincorporated Adams County
  - BRT station customization in different neighborhoods/jurisdictions (e.g., lighting colorization, concrete etching design, panel motifs, banners, landscaping, etc.)
  - Landscape design for sidewalk detachment areas, medians, including pedestrian scale fencing where replacement is needed or where new fencing is desired
- Fare Equity Analysis
  - Station-level analysis for all BRT stations included in Project Scope Elements to determine need for Ticket Vending Machines (TVM) at each station
  - This analysis will be consistent with RTD's Title VI Fare Equity Analysis: Ticket Vending Machines (TVM) Modernization published on October 31, 2025
  - This analysis requires direct coordination with RTD staff
- Surface Parking Striping and Sign Relocation Plans
  - Create parking striping plans for privately owned surface parking lots impacted by construction of the Project Scope Elements
  - Develop or include sign relocation plans as needed, incorporating Subsurface Utility Engineering (SUE) information from the Project Scope Elements tasks
- FTA Capital Investment Grant Program Compliance
  - In partnership with the Owner's Representative, develop and support FTA documentation and required milestones, including but not limited to the Project Management Plan (PMP), Real Estate Management Plan (RAMP), Safety and Security Management Plan (SSMP), etc.
- Community Engagement and Outreach

- Develop and deliver multifaceted community engagement strategy focused on the project design, including public open houses, outreach events, online engagement, and other actions.
- Develop and produce public-facing communications materials (graphics, videos, etc.) that explain BRT/curbside bus lane operations, how drivers are expected to interact with bus lanes and BRT operations, and other related issues that will need to be broadly communicated to the traveling public.

1.6. Project Roles

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

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

Stakeholders

Agency/Stakeholder	Role or Involvement
FTA	• Project oversight • Member of the Project Leadership Team (PLT) and Project Management Team (PMT)
Adams County	• Member of the Project Leadership Team (PLT) and Project Management Team (PMT)
RTD	• Member of the Project Leadership Team (PLT) and Project Management Team (PMT)
DRCOG	• Member of the Project Leadership Team (PLT) and Project Management Team (PMT)
City of Englewood	• The project limits fall within City limits • Member of the Project Leadership Team (PLT) and Project Management Team (PMT)
City of Denver	• The project limits fall within City limits • Member of the Project Leadership Team (PLT) and Project Management Team (PMT)
City of Federal Heights	• The project limits fall within City limits • Member of the Project Leadership Team (PLT) and Project Management Team (PMT)
City of Westminster	• The project limits fall within City limits • Member of the Project Leadership Team (PLT) and Project Management Team (PMT)

Additional Coordination Contacts

Other Stakeholders	Role or Involvement
Private Property Owners: Residents, landowners, and businesses	• ROW/easement impacts • Travel impacts/delays/detours coordination and notification

Traveling public	• Roadway safety/trip reliability input • Travel impacts/delays/detours coordination and notification
Emergency Responders/Incident Command	• Emergency response/access input • Travel impacts/delays/detours coordination and notification • Include emergency responders (fire departments) on project team
Utilities	See table below

Anticipated Utility Coordination/Relocations

Utility Identification	Facility type	Relocation Required?
AT&T	Fiber/Telecom	No
Adams 12 Five Star Schools	Fiber	No
Berkeley Water & Sanitation	Water/Sewer	No
City of Federal Heights	Water, Sanitary Sewer	No
City of Westminster	Water, Sanitary Sewer	No
Crestview Water & Sanitation District	Water/Sanitary Sewer	No
CDOT – ITS	Fiber	Yes
CDOT – Storm Sewer	Storm Sewer	Yes/Reconstruction
Comcast	Fiber/Telecom	No
Crown Castle	Fiber	No
DOTI - Sewer	Stormwater Sewer	No
Denver Water Department	Water, Sanitary sewer	No
Lumen	Fiber	No
MCI-Verizon	Fiber	No
Regional Transportation District	Fiber	Yes
Unite Private Networks	Fiber	No
Windstream-PAETEC	Fiber	No
Xcel Energy	Electrical transformers	Yes
Xcel Energy – Electric	Electric	Yes
Xcel Energy – Distribution Gas	Distribution Gas	No
Xcel Energy – Transmission Gas	Transmission Gas	No
Zayo	Fiber	No

1.7. Work Duration

The time period for this work described in this scope is estimated to begin July 6, 2026 and end January 10, 2030. It is estimated that the project can be constructed in 2.5-3 years from construction notice to proceed. It is CDOT's goal to start construction on this project in 2027 as defined in the goals. The Consultant should expect to have design and construction overlap should the team proceed with concurrent packages.

1.8. Collaboration

This project will be delivered via Construction Management/General Contractor (CM/GC) procurement. The Consultant will need to work in conjunction with the Construction Manager (CM) to collaborate on innovation and constructability throughout the duration of the project, as well as follow the CM/GC process.

1.9. Consultant Responsibility and Duties

All work shall be in accordance with CDOT's latest manuals, directives, and generally accepted practices.. The Consultant shall work closely with CDOT's Project Manager, ICE, Construction Manager, and consultant construction management personnel. The Consultant shall supply Engineer signed and sealed electronic plans and reports. The Consultant shall collaborate with the NEPA effort and include the mitigation measures identified in the CatEx into the plans and specifications for the Federal Boulevard BRT project.

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

The Consultant is responsible for developing complete Plans, Specifications, and Cost Estimate (PS&E) packages for Construction Agreed Price ("CAP") negotiations of the planned improvements. Additionally, the Consultant is required to develop concepts and associated quantities to allow the Independent Cost Estimator (ICE) to create cost estimates to assist with CDOT decision making. The work will include, but is not limited to, the design of the roadway improvements, bus rapid transit station design, environmental, traffic, hydraulics, geotechnical, survey, and utility design.

The Project will be delivered via CM/GC procurement. The Consultant must work in conjunction with the CM to collaborate on innovation, constructability, schedule, and risk throughout the duration of the project in addition to following the CM/GC process. The Consultant is also required to collaborate with the ongoing NEPA CatEx process and project stakeholders.

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
- Program management
- Attend project meetings
- Meet all project milestones
- Create and maintain project critical path method (CPM) schedules for design and construction
- Develop concepts and quantities for cost estimates
- Participate in public outreach meetings
- Provide environmental support to complete the Project, to complete any necessary environmental mitigation strategies, to obtain any necessary environmental permits and clearances, and complete NEPA reevaluations as needed after the NEPA decision document has been completed.

- Provide Subsurface Utility Engineering (SUE) research, field investigation, utility coordination, and sealed plans.
- Attend site meetings and site visits, documenting critical dimensions.
- Provide DOR, FOR, and final project design, specifications, and quantities for estimates
- Provide phasing and detour concepts that will meet project goals
- Track project action items and deliverables

1.10. 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.
- 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:
  - 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
  - LA - Landscape Architecture
  - MA – Management (Contract Admin)
  - MT - Materials Testing
  - SE – Structural Engineering
  - SO – Soils Engineering
  - SU – Surveying
  - TP – Transportation Engineering
  - TR – Traffic Engineering
  - 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 Project Director 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 Project Director 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 Project Director 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 Project Director 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 Project Director 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 Project Director 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.

1.11. 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 - Transport (an AASHTO sponsored software) as used by CDOT
- LIMS
- 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 ESB tracking and prompt payment

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.

1.12. Project Coordination and Meetings

The Consultant will be required to provide primary coordination with the CDOT PM and specialty units as approved. There is an extensive list of stakeholders for this project for each PLT (Project Leadership Team), PMT (Project Management Team), and TWG (Technical Working Group), as well as local agencies that are interested in the project. This list is included in **Section 1.6 Project Roles** in this SOW.

The Kick-Off Workshop will emphasize the importance of partnering within the CM/GC delivery method by focusing on team building and partnering over a 2-day period. This workshop is mandatory for all key team members including key subcontractors. This workshop will be facilitated by CDOT and will cover at a minimum the following items:

- Introduction to the Project, CM/GC, partnering, Project stakeholder engagement, roles and responsibilities identification. Subcontractors performing major and high-risk work items should be in attendance.
- The Team will review Project status, vision, goals, objectives, funding, preliminary pre-construction schedule, what success would look like, current design, etc.
- Initial discussion of innovations, phasing, and risk mitigations being proposed by the CM (Construction Manager), Design Consultant, and ICE (Independent Cost Estimator).
- Cost Model review and coordination with the ICE during OPCCs.
- Cost Model components.
- Project Schedule meetings in accordance with the schedule developed by the CM.
- Agreement on progress meeting frequencies and initiate working groups for various elements of the Project. Progress meetings may include project management meetings, design meetings, discipline/specialty meetings, stakeholder meetings, and public meetings.
- Strategy, timing, and approach for the Project Innovation and Value Engineering Workshop.

The Project Innovation and Value Engineering Workshop will be co-facilitated by CDOT, the CM, ICE, and the Design Consultant. Attendance and duration will be determined at the Kick-Off Meeting. It is also anticipated that Project stakeholders' input will also be incorporated into this workshop. The approach, agenda, format, and duration for the workshop will be developed in collaboration with CDOT, the CM, ICE, and the Design Consultant. The CM shall provide input into how to achieve the desired results for the Project. This workshop could require several sessions, over an extended period. The purpose of this workshop is to evaluate the Preferred Alternative, consider any CM innovations or design refinements for the Project, incorporate value engineering principles to the Project, incorporate stakeholder input and get support for endorsement of any potential changes to the Preferred Alternative.

The Consultant shall be prepared to participate in Project Vision Meetings to analyze how Project progress is aligning and tracking with Project Goals. Items of focus include priorities, commitments, approach, scope, schedule, and cost reasonableness. The Project Vision Meetings are anticipated to be scheduled quarterly at a minimum to achieve the Project Goals and will be conducted by the CM.

1.13. Supplemental Work

Work on other investigations, coordination and design tasks as related to the project and as directed by the PM shall be limited to the available budget to complete them under the approved task order. The consultant shall not perform work out of scope without prior written approval from the PM. Per the contract, subconsultants and vendors may not go over task order or contract budget.

1.14. 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. The Consultant work products may include:

- Project Management and Coordination
- FTA Value Engineering Requirements
- Utility Coordination / Final SUE Work

- Schedules
- Meeting Minutes
- Stakeholder Coordination and Public Outreach
- Survey
- Geotechnical Investigation
- Structural Engineering
- Highway Design and Traffic/Safety Engineering
- Hydraulics and Hydrology
- Environmental Compliance and CatEx Documentation
- ITS Components
- Work Activity Assignments
- Design Office Review (DOR) 60% Plans and Estimates
- Final Office Review (FOR) 90% Plans, Specifications, and Quantities for estimates
- AD/CAP Plans, Specifications, Cost Estimate
- Construction Plan Package(s)
- Professional Engineer Stamped Record Sets
- Design Support During Construction
- Submittals
- Invoice Formatting and Information

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

1.15. Additional Project Information

Additional information regarding this project is included at the following link: https://www.codot.gov/projects/studies/denvermetrobrt/federalbrt

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 (Project Director) for this project is:
Ryan Noles, AICP
Federal Boulevard Bus Rapid Transit Project
2829 W Howard Pl
Denver, CO 80204
W: 303-512-4162
ryan.noles@state.co.us

B. Active day-to-day administration of the contract will be delegated to the CDOT PM:
Adam Spiker, PE
Federal Boulevard Bus Rapid Transit Project
2829 W Howard Pl
Denver, CO 80204
W: 303-757-9940
adam.spiker@state.co.us

2.2. Project Management

The Consultant shall supply Project Management services that meet the following requirements:

- The consultant shall provide the following for the overall interdisciplinary needs of the Project:
  - Project Manager
  - Engineering Task Lead
  - Environmental Task Lead
  - Public Involvement Task Lead
- Attend CDOT PM check-in meetings with all Consultant PM and Task Leads present as needed
- Provide monthly progress reports and invoicing, track progress of deliverables against the developed schedule, and ensure internal project controls are being followed. If the project falls behind schedule, provide a plan to get back on track.
- Assist with maintaining the CDOT Project webpage with appropriate updates.
- Provide Project Management efforts in following areas at a minimum:
  - Risk Management – develop and execute a plan for risk management which will include the following:
    - The plan for how to identify, track, analyze and respond to project risks
    - Track risks and provide recommendations to either avoid, transfer, mitigate or accept individual risks to the project scope, schedule, and budget
  - Roles and responsibilities
    - Maintain the contact list for the project and all stakeholders
    - Document decision making hierarchy for the project
  - Scope Management – develop and execute a plan for scope management including collecting requirements, defining, and validating project scope, and a plan for assessing scope changes.
  - Contract Management – develop and execute a plan for contract management including working with the CDOT PM to develop the task orders.
    - The plan shall include planning, managing, and controlling the costs for the prime consultant and the subconsultants to stay on track, on task and under budget.

- Task orders will be written to define the task order scope. Notify the CDOT PM about potential out of scope items.

- Cost Management – develop the quantities required for the construction cost estimate at major project milestones. Since this project will be delivered via CM/GC, this project will have an independent cost estimator to complete the actual construction estimate.
- Schedule Management – develop and execute a schedule management plan including:
  - The plan to develop, maintain and communicate the project schedule for the time and resources on the project.
  - The schedule shall be a detailed schedule using one of the programs allowed in **Section 1.11** in this SOW tracking all major milestones, Context Sensitive Solutions (CSS) process, deliverables for the design process, and tie to CM/GC deliverables. The schedule shall be used as a baseline to track progress. If the schedule is at risk of slipping, notify the CDOT PM and recommend options for schedule recovery.
- Change Management – develop and execute a change management plan that will include the following:
  - Define how project deliverables and documentation will be controlled, changed, and approved. Note how changes could impact the project scope, schedule, and budget.
  - Identify who should approve the changes and how they will be communicated and documented.
- Communication Management – develop and execute a communication management plan. The plan shall include the following:
  - The processes that are required to ensure timely and appropriate planning, collection, creation, distribution, management, control and monitoring of project information.
  - Ensure that project information is consistently distributed in a timely manner to the team members that need it in the appropriate format.
  - Meeting planning
    - Establish the frequency of meetings and the most effective team members to invite and attend
    - A goal is defined for each meeting
    - For major meetings establish a meeting plan template defining who, what, where, when, why, how, etc.
    - For all stakeholder meetings, including public, PLT, business, small group, and others the following shall apply:
  - A public involvement liaison shall participate and be present
  - Public Meetings shall require distribution of marketing materials prior to the meeting to make the public aware of the meeting
  - Ensure published public meeting materials on the CDOT website are ADA accessible and 508 compliant.
  - Provide an individual employee to specifically record notes and meeting minutes
  - Specific Coordination Meetings shall be planned for major stakeholder meetings like PLT, business, and public meetings.
  - Track crucial project decisions in a communications log
  - Provide communication as appropriate with internal CDOT Specialty units as directed by the CDOT PM
  - Contact and coordinate project needs with CDOT personnel and additional entities noted in **Section 1.6** of this SOW.
  - Document and report to CDOT PM when items have been submitted for review and log and track responses.

        - List of regular communications and/or engagement actions, including at a minimum: Project newsletters, webpage updates, responses to Project email address and/or hotline, social media posting and comment resolution. Other actions may be included to this list in development of Task Order scopes of work as deemed necessary by the Project Director.
        - Regular coordination and collaboration with the Owner's Representative/Public Information Manager
        - Track all public communications and produce a quarterly report to the Project Manager with a summary of outreach and any comments/feedback.
    - Quality Management – Develop and execute a quality management plan for all project deliverables. The plan shall include quality assurance and quality control:
        - Ensure accuracy and elimination of errors reducing the need for rework
        - Provide interdisciplinary oversight ensuring that the documents capture not only the correct detail but are tied to the larger overall picture/concept of the project
        - Provide contract documents that take into consideration constructability and maintainability
        - Provide quality assurance practices to reduce defects in work products. If the consultant completing the work is not the prime consultant, the prime consultant shall complete an additional quality assurance practice to ensure the goal of the work product has been met.
    - Action Items and Deliverables tracking: Track action items and note date assigned, date completed, item, and who is responsible. Provide management of consultant team tasks and team members, including sub consultants and vendors, and work or task leads. Report progress to CDOT PM. Deliverables are part of the project schedule but require their own communication tool for tracking progress. Create a separate deliverable tracking log indicating planned due date versus actual date submitted. Report progress to CDOT PM.
- Routine Reporting and Billing
    - Coordinate all activities with the CDOT PM
    - See requirements for monthly billing in **Section 4** General Information in this SOW.
    - Reports and submittals. In general, all reports and submittals must be approved by the CDOT PM prior to their content being utilized in follow-up work effort.
    - Provide Vendor backup as part of all executed Task Orders

2.3. Final Engineering / Construction Plans

The Consultant shall follow the latest version of the CDOT Project Development Manual for project delivery procedures and requirements and follow all CDOT and RTD 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. Consultant shall supply a vendor for traffic control services. Submit an MHT to CDOT PM for review. Coordinate field work with CDOT Maintenance and any active construction projects to avoid conflicts.

The Consultant shall host the following meetings as part of the plan development process:

- Project Scoping: Host a formal project scoping meeting to address the following items:
    - This Project requires the early identification of all required variables at the initial scoping meeting and review of 30% design plans. The Consultant shall be familiar with all the mitigation requirements of the CatEx and the scope of improvements.
    - Establish and layout the plan to deliver the project to construction
    - Prepare a plan for preliminary quantities

- Prepare preliminary plan and profile of improvements
- Applicable traffic data and traffic review of scope items
- Environmental considerations
- Establish and confirm the design requirements for the following items:
  - Typical sections
  - Horizontal and vertical alignment
  - Detour alignment
  - Drainage and hydraulics
  - Approach of project
  - Aesthetic features
  - Pedestrian and bicycle facilities
  - Landscaping
  - Lighting
  - BRT Stations
  - Minor structures
  - Walls
  - Pedestrians/recreation
  - Signs/miscellaneous
  - Safety
  - ITS components
  - Traffic control
  - Access control
  - Source of materials
  - Roadway and roadside clearances
  - Erosion control
  - Pavement options
  - Wetland / 404 Permit
- Review construction requirements
- NEPA Commitments
- Maintenance concerns
- ROW
- Survey
- Traffic and safety issues
- Utility
- Contract
- Geotechnical and Geohazards
- Coordination of all disciplines
- ITS components
- Other
- Reference 23 CFR Part 625, Design Standards for Highways

- Design Office Review (DOR): Host a formal DOR Meeting:
  - The DOR package shall incorporate all the ongoing TT/ITF efforts.
  - This shall be a 60% design development issue package that provides plan sheets and details for all of the planned improvements items and also includes:
    - Title Sheet
    - Standard Plans List
    - Typical Sections
    - General Notes
    - Summary of Approximate Quantities

        - Tabulation Sheets
        - Plan and Profiles
        - Wall layouts
        - Structure layouts
        - Storm water plans
        - ITS concepts and coordination
        - Preliminary construction Phasing
        - Traffic Control
        - SWMP
        - Custom Detail Concepts as required for construction
    - Identify required Project Specifications
    - Provide a preliminary detailed cost estimate with summary of approximate quantities
- Final Office Review (FOR): Host a formal FOR of the plans, specifications, and cost estimate
    - Address all comments from the DOR plan set
    - Update all plans and specs to a 90% design development issue level.
    - Submit all required reports
    - All TT/ITF efforts shall be completed

This project is a CM/GC project, the Consultant need only provide quantities for the cost estimates. Cost estimating will be performed by an independent cost estimator. However, the Consultant should plan on the preparation of cost estimates as noted above for DOR and FOR.

When applicable, the engineering and overall process must consider ALL of the proposed Project Scope Elements as part of the CatEx and plan for their future implementation and mitigation measures such that one improvement does not preclude a future improvement. Traffic engineering expertise must be utilized for continued evaluation of options and alignments as well as interactions of the additional roadway improvements.

In addition to the deliverables described above, the following are also required:

- Final PSE: Provide a final Plans, Specs and Estimate for review prior to final AD/CAP set. 99% Design Development Plans
- Final AD/CAP set of plans. 100% construction documents

2.4. Survey Coordination

Surveying, ROW plan development, title commitments, and legal descriptions for private property acquisitions are being completed in the 30% design phase anticipated to end in late summer/early fall 2026.

2.5. Geotechnical Investigation

- Geotechnical investigations will be targeted along the corridor where there are impacts to retaining walls greater than 5 ft, and where full depth reconstruction of the roadway is required (Alameda Ave to Louisiana Ave).
- The elements of the work shall include recommendations for Pavement Design (Coordinate with Regional Materials Program for final needs), foundations, retaining walls, culverts, cut slopes and embankments.

- The consultant shall follow the guidelines set forth in the latest CDOT Geotechnical Design Manual for the preparation of the Geotechnical Investigation Report. Including, but not limited to:
  - Standards for CDOT Geotechnical Work Table 2-1
  - Accepted Geotechnical Software for CDOT Projects Table 2-2
  - A full literature review
  - Field Reconnaissance
  - Minimum Requirements for Subsurface Explorations Table 3-2 for:
    - Pavement Design
    - Foundations (Minimal)
    - Retaining Walls (Minimal)
    - Culverts
    - Cut Slopes (Minimal, sidewalk related)
    - Embankments (Minimal, sidewalk related)
  - Follow the prescribed methods for subsurface exploration.
- Borings are anticipated to be conducted under the reconstructed segment of Federal Boulevard, from Alameda Ave to Louisiana Ave. Soil and potentially bedrock samples will be collected by in-situ testing and sampling methods outlined in Section 3.6 of the CDOT Geotechnical Design Manual. Selected soil samples will be tested to determine classifications, moisture, density, resistance values, pH, sulfides, and strength parameters.
- Identification of geotechnical issues and concerns associated with boring locations.
- Provide a draft report for CDOT specialty unit and PM review prior to issuing the final stamped version. Final engineer stamped versions are required.
- Provide for the minimum FTA and CDOT required number of borings/test holes per wall, bridge, poles, or other features as required. Alternate field collection methods such as geophysics and cone penetration testing can be used in place of borings at CDOT's approval.
- This project will need a Life Cycle Cost Analysis for proposed pavement sections.

2.6. Structural Engineering

- The Consultant shall provide Structural Engineering services for the design and construction of walls, bridges, and other structural items as required including structure selection reports, wall selection reports and plan sheets. Provide cost effective innovation and coordinate with the CDOT PM and CM for alternative selection.
- The Consultant shall follow the latest CDOT Bridge Design Manual Policies and Procedures. At the time of this SOW there is a February 2024 version.
- Project scoping shall also include a determination that a new structure is required, or rehabilitation of an existing structure is feasible. This determination shall be confirmed through preliminary design.
- Provide structure inspection services of existing walls.
- The consultant shall provide inspection services on existing Federal Boulevard bridge structures.
- The preliminary design for major and minor structures, walls, and other miscellaneous structures within CDOT ROW shall be conducted as required to ensure that CDOT obtains a structure layout and type selection that achieves the project's objectives and minimizes revisions during the final design and construction phases.
- The Structure Selection Report is due by DOR.
- Coordinate required recommendations with the geotechnical engineer.
- The general scope of work includes, but is not limited to:

  - Bridge Rehabilitation
  - Wall Design
  - Wall Rehabilitation/Replacement
  - Poles
  - Fence
  - Gates
  - Any additional major/minor structures
- The design effort on this project may require alteration of existing walls to accommodate the desired roadway alignment and improvements.
- Participate in the survey SOW needs.

2.7. Highway Design and Traffic/Safety Engineering

- Provide geometric highway design and traffic engineering expertise for the Project Scope Elements.
- The Consultant shall follow the latest version of the CDOT Roadway Design Guide, CDOT Bus Rapid Transit Signing and Markings Design Guide (2025), AASHTO A Policy on Geometric Design of Highway and Streets 2018, and the MUTCD.
- Provide for Traffic and Safety Engineering recommendations.
- A preliminary alignment has been designed for the proposed improvements as part of the CatEx. The Consultant shall confirm or modify the CatEx alignment and lane assignment to provide the most cost effective and safest layout that still meets the Project Goals and follows the core values defined in the CSS process. The safety revision and optimization effort shall be documented in a final memo.
- Provide traffic engineering expertise for crash reduction evaluation.
- Provide detailed site grading expertise for the identifications of walls and conforming the roadway to the adjacent landscape. Coordinate efforts with the geotechnical, structural, and other areas of expertise as required to complete the Project.
- Provide a Traffic Engineering plan for management of traffic during construction for phasing purposes. Evaluate the current Region 1 Lane Closure Strategy and make recommendations for implementation on the Project.
- Provide recommendations for and layout of ITS components.

2.8. Hydraulics Engineering

- The Consultant shall adhere to guidelines in CDOT's Drainage Design Manual and applicable Procedural Directives for drainage design work.
- The Consultant shall devise and implement a plan to inspect each culvert to assess its condition. Determine if the culverts can be used as is, need to be rehabilitated, replaced, abandoned, or rerouted. Provide an inventory and memorandum, based on the field reconnaissance, to the CDOT PM. Review as-built information as part of the research effort.
- Prepare detailed design work of rundowns to convey water from the roadway.
- Hydrology:
  - Determine the watershed hydrology
  - Visit the site and obtain and review flood history and data
  - Check for current floodplain studies and determine the FEMA/CWCB level of coordination for a LOMR or LOMC if required. A Letter of Map Revision (LOMR) will be required at Sanderson Gulch and Federal Boulevard.
- Provide required plans per the CDOT Drainage Manual as well appropriate project specifications

- Coordination between Hydraulics, Geotechnical and Bridge Engineer will be required for DOR/FOR submittal timing
- Provide plans, specs, details, hydrology/hydraulic analysis, and drainage report of existing and upgraded storm sewer system per CDOT Drainage Manual.
- Integrate a new storm sewer system into the existing system considering recommendations and commitments from the CatEx.
- Evaluate potential implementation of local agency Permanent Water Quality control measures, including coordination with local agencies and technical review of facility incorporation to the project area.

2.9. Environmental Compliance and NEPA Reevaluation(s)

- The Designer shall monitor and ensure that the Project adheres to all of the mitigations noted in the CatEx documentation.
- Provide Environmental expertise as required to review project materials and ensure compliance with the CatEx documentation.
- The CatEx evaluated the following items for impacts and mitigation. The Consultant shall have the ability to reassess the following areas if impacted by design scope changes that follows the appropriate NEPA guidelines and direction. Following are the required areas of expertise:
  - Air Quality
  - Biological Resources - wildlife, Threatened and Endangered species, wetlands, aquatic species and resources, vegetation, noxious weeds
  - Floodplains
  - Hazardous Materials
  - Cultural Resources - Section 106 compliance, Archaeology, Paleontology
  - Social Resources
  - Noise
  - Section 4(f) Historic and Non-Historic (recreational Section 4(f))
  - Section 6(f) /Resources funded with Land and Water Conservation Funds
  - Water Quality
  - Visual

2.10. ITS and Utility Engineering

- ITS components shall be designed such that they are fully integrated into the CDOT ITS Network.
- The Designer shall coordinate with CDOT ITS to determine the equipment and infrastructure needed for the Project Scope Elements, and coordinate with the CDOT Project Manager and CDOT ITS on the Systems Engineering Analysis (SEA) Process for the project ITS components.
- The Designer shall provide design plans for all required utility installations for all ITS components of the project.
- Provide all required expertise for areas requiring lighting and electronic components.
- As part of the scoping process, prepare an assessment of all the utility needs and all Intelligent Transportations Systems (ITS) and Network Services.
- Coordinate with the City of Denver DOTI and RTD on potential fiber/conduit sharing
- Follow CDOT SUE guidelines for existing conditions survey.
- Provide SUE compliant plans following Senate Bill 18-167.

Subsurface Utility Engineering (SUE)

Utility Investigation Activities - the scope of work for utility investigation may include:

- The Consultant shall conduct and document an investigation of the project area to determine existing utility conditions within the project limits. As part of the investigation the Consultant will meet with all utility providers and collect utility key maps for all utilities in the project area, identify all known utilities: including lighting, irrigation, ITS, storm sewer, ownership, type, size and special conditions should utility relocation be required, and research and obtain copies of utility easements (public and private) and utility franchise agreements to determine conditions under which the utility was established in its present location (e.g. by revocable permit or by a privately owned easement. The utility investigation requirements are to meet Quality Levels A and/or B as required under CI/ASCE 38 or explain why QLA/B could not be achieved. The Consultant shall employ Professional Engineers who are able to stamp plans.

- Project Goals
  - Quality Level B involves the use of Quality Level D and C methods of utility investigation plus the use of surface geophysical techniques to determine the existence and horizontal position of underground utilities. This activity is called "designating." The information obtained in this manner is surveyed to project control. Two-dimensional mapping information is obtained. This information is usually sufficient to accomplish preliminary engineering goals.

  - Quality Level A involves the use of Quality Level D, C and B methods of investigation plus the use of minimally intrusive excavation methods at critical points to determine the precise horizontal and vertical position of underground utilities, as well as the type, size, condition, material, and other characteristics. This activity uses test holes (sometimes called Locating). It is the highest level presently available. When surveyed and mapped, precise plan and profile information is available for making final design decisions. Records research shall include but limited to the following sources:
    - 811 Notification
    - Contacts List
    - Public Agencies
    - Utility Owner
    - Colorado 811
    - County Clerk's Office
    - Landowner
    - Internet Search
    - Visual Site Inspection
    - Irrigation Companies

- 3D Modeling involves the use of CADD to depict the precise horizontal and vertical profile of each utility in areas of high conflict. This tool is only utilized where precision locating and design of utilities is essential for project success. Some areas of the project may require 3D modeling and will be determined after 60% design, but the ability to model utilities within CDOT's MicroStation workspace may be required in a supplemental SOW.

    - Utility Investigation Methodology
  - Project Scoping
    - Quality Level B Utility Investigation

        - Use existing survey project control data, GIS data, plans and electronic data from utility providers, and field survey to prepare utility design plans that meet ASCE Quality Level (QL) B identified within the project limits identified within CDOT's SUE checklist (provided by CDOT). The QLB areas will be determined between the SUE Consultant and CDOT's UEPM. Survey accuracy of all observations shall be in accordance with CDOT's Survey Manual.
    - DOR (Design Office Review)
        - This work is performed at 30% design, during DOR Plan development
        - Quality Level A Utility Investigation
    - FOR (Final Office Review)
        - This work is performed at 60% design, during FOR Plan development
    - PS&E (Plans, Specifications & Estimate)
        - Ready for Utility Clearance and Advertisement
- Deliverables
    - Project Scoping:
        - PointMan CDOT's live Subsurface Utility Mapping mobile application will be available for all designated utilities during the SUE survey or submit a shape file of all existing utilities found during the SUE survey if PointMan is not used.
        - The end product (the CADD file and project plans) that contain the horizontal location of utilities, ownership, type, and size of the line including any special conditions of the line.
        - The CADD file and project plans should depict the lines in approved CDOT utility line type standards and colors, including all utility easements, and power source locations with easements, per CDOT's available CADD workspace.
        - Define limits of work SUE work and include SUE report per ASCE 38 Standards. SUE report shall be included, and will include the following if requested by CDOT:
        - All overhead utilities and pole inventory and including guy anchors-Power source diagrams
            - Telephone source diagrams
            - Fiber optic diagrams
            - Storm sewer diagrams
            - Water diagrams
            - Sewer diagrams
            - Vault diagrams
            - Easements shown on plans
            - Produce a utility contact list: Including utility provider, contact name, email address, work & cell phone numbers. Used for both utility notes and specifications.
            - The utility plan sheets will include the utility line work with proper designation colors.
            - Complete scoping design for utility plans.
            - Include service line locations for water, sewer, electrical, communications and natural gas.
            - Show transmission main lines and secondary feed lines with labels.
            - Distinguish lines between CDOT owned facilities, local agency facilities and utility provider facilities.
            - Produce utility plan sheets for review with utility providers including an oversize plan sheet for coordination and meetings.
            - Include known easements for the utility providers; inside, adjacent to and outside CDOT ROW on the utility plans.

    - Provide a table for each utility provider that includes size and type of the providers' facilities.
    - Include manhole rim labels and inverts in and out labels that match CDOT project datum elevation.
  - DOR (Design Office Review)
    - Provide for and manage the test hole services, including permitting.
    - Provide a test hole map for survey locates.
    - Provide a test hole test hole chart and incorporate test hole location into the FIR Utility Plans. In the event there is insufficient design available to perform the test hole activities prior to FIR, the consultant shall coordinate the final test hole work into the FOR plan level submittal
    - Sewer/Storm manholes will be verified; rim elevations, inverts in and inverts out, include pipe size and pipe material. Include labels for other sewer appurtenances, lift stations, drop manholes, vents and force mains.
    - Water lines to be verified; elevations for valve boxes including size, pipe size and pipe material. Include labels for other water appurtenances, air vacs, PRV vaults, vents and curb stops.
    - Dry utility labels for vaults, pull boxes, manholes, drop down transformers and other providers attached to all overhead utility line poles.
  - FOR (Final Office Review)
    - If requested, provide Utility 3-D modeling in high conflict areas where precision placement of utilities is deemed essential.
    - Support CDOT with the development of cross sections leveraging SUE deliverables with both vertical and horizontal data.
    - Support the development of drainage profiles leveraging SUE deliverables with both vertical and horizontal data.
    - Support wall and bridge profiles leveraging SUE deliverables with both vertical and horizontal data.
      - Support CDOT with Landscape plans leveraging SUE deliverables with both vertical and horizontal data.
      - Support CDOT with signal and lighting plans leveraging SUE deliverables with both vertical and horizontal data.

Design Phase – Utility Coordination

- Project Scoping/30% Review
  - Act as liaison between CDOT and the utility companies during design as it pertains to information, scheduling, coordination and documents.
  - The Consultant will be responsible for obtaining all permits for work within CDOT ROW related to SUE investigations separate from the SUE consultant.
  - Coordination of scoping meetings with all utility providers and meeting minutes.
    - Using CDOT Utility Checklist for each utility provider.
    - Coordinating work with SUE consultant
    - Obtain GIS information from utility providers
  - Request and receipt of utility maps and easements from utility companies will be coordinated with CDOT project manager and with CDOT Utility Engineering Program Manager (UEPM).
  - The consultant will conduct a review of utility information and share findings with SUE consultant and CDOT UEPM.

- Request franchise agreements from the local agencies. Determine responsible party for cost implications.
- Request any secondary utility provider feeds, laterals, services and other attachments to the main utility provider's facility.
- Consultant to work with SUE consultant, surveyor and CDOT UEPM that information is adjusted and matches CDOT project datum.
- Provide photos of existing utility facilities and conditions in the project limits.
- Review and comment on SUE related plans with CDOT project manager and CDOT UEPM.
- Develop mapping and associated pertinent information of existing utilities, street lighting, and irrigation ditch facilities within the project limits of each construction project. underground-at grade-overhead utilities
- Ascertain and define all utility, street lighting, and irrigation ditch conflicts within the highway construction project limits by an in-depth review of complex highway plans. Contact individual utility, and irrigation companies to convey and jointly resolve these conflicts. The typical construction project requires contact with 4-6 individual companies.
- Schedule and conduct subsequent meetings with utilities to resolve complex issues.

- DOR (Design Office Review)
  - Coordination of DOR meetings with all utility providers and meeting minutes. (Both Office and Field)
  - Review, recommend revisions, and approve relocation and/or installation plans developed by utility companies to insure compatibility with CDOT construction plans. This process requires input from and coordination with CDOT construction and design personnel, and appropriate State and Local agencies.
  - Use CDOT's Work Plan (template to be provided) document for non-reimbursable relocation, modification and/or adjustment of existing utilities, irrigation ditches and street lighting companies. These documents describe work that must be performed in a prescribed time and method and require signatory concurrence from the affected company and appropriate CDOT personnel.
  - Use CDOT's Utility Conflict Matrix plan sheet (template to be provided) to develop and review utility matrix conflicts with CDOT UEPM and work on a preliminary plan of action.
  - Produce and review a proposed test hole location map with CDOT UEPM.
  - The consultant will coordinate with SUE consultant, CDOT UEPM, test hole provider and survey company on test hole schedule along with field site coordination.
  - The Consultant will be responsible for obtaining all permits for work within CDOT ROW related to SUE investigations separate from the SUE consultant.
  - Provide a matrix of potential utility conflicts utilizing CDOT's standard utility conflict matrix plan sheet.
  - Produce utility plan sheets for review with utility providers including an oversize plan sheet for coordination and meetings.
  - Complete DOR design for utility plans.
  - The utility plan sheets will include the utility line work with proper designation colors, per CDOT's MicroStation workspace.
  - The consultant will coordinate with CDOT project manager and CDOT UEPM and utility companies on the DOR design plans for review and comment.
  - Review and interpret all DOR plans to ensure that utility facilities have been accurately and completely depicted, including field verification of all utility locations.
  - Schedule and conduct subsequent meetings with utilities to resolve complex issues.

  - Responsible for creation of draft utility specification documents, utility notes and preparation of subsequent written certification to proceed with construction. The utility specification defines the process to be followed for performance of utility, street lighting, railroad, and irrigation ditch relocations or installations. This includes who will perform the work, when it will be performed, time allotted for the work, and method of construction.
- FOR (Final Office Review)
  - Coordination of FOR meetings with all utility providers and meeting minutes. (Both Office and Field)
  - Assist the development of utility plan sheets to include the utility line work with proper designation colors.
  - Include utility notes and specifications.
  - Assist in the completion of FOR level utility plans.
  - The consultant will finalize the identification of existing utilities (both wet and dry) that will be impacted by design and finalize the existing utility plans with call-outs indicating which existing utilities are impacted by the project.
  - Produce and/or obtain from the owner utility cost estimates to be used for utility reimbursement agreements.
  - Coordination with the utility providers and CDOT UEPM on potential relocation areas.
  - Review, recommend revisions, and approve relocation and/or installation plans developed by utility and railroad companies to insure compatibility with CDOT construction projects. This process requires input from and coordination with CDOT construction and design personnel, and appropriate State and Local agencies.
  - Create documents for non-reimbursable relocation, modification and/or adjustment of existing utilities, irrigation ditches and street lighting companies. These documents describe work that must be performed in a prescribed time and method and require signatory concurrence from the affected company and appropriate CDOT personnel.
  - Produce and coordinate draft utility notification letters for review.
  - Prepare and coordinate preliminary utility cost relocation estimates for budget review.
  - The consultant will coordinate with SUE consultant, CDOT project manager, CDOT UEPM and utility companies on the FOR design plans for review and comment.
  - Review and interpret all FOR design plans to ensure that utility facilities have been accurately and completely depicted, including field verification of all utility locations.
  - Schedule and conduct subsequent meetings with utilities to resolve complex issues.
  - Determine eligibility for reimbursable expenses associated with utility and railroad company installations, modifications, and/or relocations according to CDOT, State and Federal rules and regulations. This process includes obtaining and verifying legal documentation to determine property ownership and right of occupancy.
  - Initiate and prepare contracts with utility companies for reimbursable modifications. Review estimates for content, check mathematical accuracy, and submit for CDOT signatures and authorization, in compliance with all CDOT, State and Federal rules and regulations. Following issuance of the notice to proceed, act as primary contact for coordination of design, bidding, construction and billings.
  - Responsible for creation of final utility specification documents and preparation of subsequent written certification to proceed with construction. The utility specification defines the process to be followed for performance of utility, street lighting, railroad, and irrigation ditch relocations or installations. This includes who will perform the work, when it will be performed, time allotted for the work, and method of construction.
- PS&E (Advertisement)

- Coordination of PS&E meetings with all utility providers and meeting minutes. (Both Office and Field)
- Final coordination with the utility providers on the potential relocation areas.
- Produce and coordinate final utility notification letters for review.
- Prepare and coordinate final utility cost relocation estimates for budget and utility contracts.
- The consultant will coordinate with SUE consultant, CDOT project manager, CDOT UEPM and utility companies on the PS&E design plans for review and comment.
- Review and interpret all PS&E design plans to ensure that utility facilities have been accurately and completely depicted, including field verification of all utility locations.
- Schedule and conduct subsequent meetings with utilities to resolve complex issues. Review billings and preparation of payment documentation pertaining to work performed under utility and railroad reimbursable contracts to insure compliance with CDOT, State and Federal rules and regulations. This process includes obtaining written concurrence from CDOT personnel, and/or performing personal site inspection, to verify that work was performed in accordance with said contracts.

2.11. Project Coordination

In addition to the stakeholders listed in **Section 1.6.**, the CM shall partner and coordinate with the groups below. The CDOT Project Management Team (defined below) shall be included in all coordination.

- Executive Oversight Committee
- CDOT Project Management Team
  - CDOT Program Manager and Project Director – Ryan Noles, AICP
  - CDOT Regional Environmental Manager – Lisa Streisfield
  - CDOT Design Project Manager – Adam Spiker, PE
  - CDOT Construction Project Manager – TBD, PE
- CDOT Specialty Groups
  - Region 1 Materials
  - Region 1 Traffic
  - Region 1 Hydrology and Hydraulics
  - Region 1 Survey
  - Region 1 Environmental
  - Region 1 Right-of-Way
  - Region 1 Utilities
  - CDOT Staff Bridge
  - CDOT Staff Geotech
  - CDOT Public Information Office
- Design Consultant and Subconsultants

- Project Construction Manager (Owner's representative in construction) and any subcontractors
- ICE - Independent Cost Estimator
- CDOT Engineering Estimates and Market Analysis (EEMA) Group
- CDOT Maintenance Forces
- Headquarters and Regional Civil Rights Manager

2.12. Project Co-Location

Plans to co-locate with the Design Team and CM for the preconstruction phase of this Project and throughout construction will be determined after selection. The location and timeframe for co-location is to be determined but is anticipated to be in the Denver Metro or within the Project vicinity. Co-location is at the discretion of CDOT.

2.13. Context Sensitive Solutions Stakeholder Effort

The goal of the CSS Stakeholder effort is to continue the collaborative approach to decision-making that has been employed as part of the preliminary design and NEPA process. The CSS process will continue through all life cycles, including design, construction, and operations and maintenance.

The Consultant shall collaborate with CDOT and the stakeholders through this process and manage all the meetings and materials. The CSS process shall be incorporated into the design process to ensure that the correct decisions are made at the right time, with both the design and CSS process complementing each other while allowing for each to move forward in a timely, unimpeded manner with no backtracking.

This section covers the Project Leadership Team (PLT) meetings, Technical Team (TT) meetings and Issue Task Force (ITF) meetings. Other CSS Stakeholder meetings may be required to complete the CSS process and integrate it into design. The following are the estimated required meetings:

- Project Leadership Team (PLT) Meetings – 12 estimated
- Technical Team (TT) Meetings – 12 estimated
- Issue Task Force (ITF) Meetings
- Emergency Response Meetings - 4 estimated
- Preconstruction Public Meetings – 4 estimated

Section 3 – Existing Features

3.1. Structures

Note: This Section lists known features in the area. It should not be considered as complete, and should include, as appropriate, information from Section 2 Project Management and Coordination. The Consultant should be alert to the existence of other possible conflicts.

- F-16-AP
- F-16-EK
- F-16-XK
- F-16-XM
- F-16-XO
- 287C286810BL
- 287C288260BL
- 287C289820BL
- 287C294110BR
- E-16-FJ
- E-16-GI
- E-16-HT
- E-16-KK
- E-16-LX
- E-16-MT
- E-16-MU
- E-16-NI
- E-16-PX
- E-16-YG
- F-16-FW
- F-16-YQ

3.2. Utilities

Anticipated Utility Relocation/Coordination:

- AT&T
- Adams 12 Five Star Schools
- Berkeley Water & Sanitation
- City of Federal Heights
- City of Westminster
- Crestview Water & Sanitation District
- CDOT – ITS (Fiber Optic)
- CDOT – Storm Sewer
- Cable Television (Comcast)
- Crown Castle
- DOTI – Sewer
- Denver Water
- Lumen
- MCI – Verizon
- Regional Transportation District (RTD)
- Unite Private Networks
- Windstream – PAETEC
- Xcel Energy
- Xcel Energy – Electric
- Xcel Energy – Distribution Gas
- Xcel Energy – Transmission Gas

- Zayo
- 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

At least one unnamed irrigation ditch parallel to Federal Boulevard in Westminster/Adams County

3.4. Railroads

None Anticipated

3.5. Permanent Water Quality Control Measures

Existing Permanent Water Quality Features exist within the Project Limits. Each will have to be evaluated using current design criteria and determination made on incorporation. No additional water quality features will be required by CDOT based on the projected increase in impervious surface area. Work outside of CDOT right of way could trigger City of Denver permanent water quality requirements. The project team is not anticipating these requirements to be triggered.

3.6. Water Features

- Harvard Gulch
- Sanderson Gulch
- Lakewood Gulch
- Clear Creek
- Little Dry Creek

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:

- Coordination:
  - Coordination of all contract activities by the C/PM
- Periodic Reports and Billings:
  - The periodic reports and billings required by CDOT Procedural Directive 400.2 (Monitoring Consultant Contracts), including monthly drawdown schedules.
  - Consultant Invoicing Guidelines. Please provide the following seven sections and information in each invoice in the following order:
    1. Form 1313
    2. Invoice
       - Provide invoice in a similar format to the original PCW
         - Noting each employee, time worked, multiplier, Fee

        - Sum total hours worked and labor, subtotal fixed fees, subtotal sub-consultants, subtotal vendor under prime (sub consultants should note their own vendors on their invoices), provide invoice total, total billed to date and total amount left on TO for Prime, Sub and Vendor for ease of tracking
    - Provide columns next to employees ensuring Consultant has reviewed for:
        - Employee on original TO
        - Employee on MPA and date
        - Employee added to TO by letter and date
        - Employee added to MPA Date and documentation
    - Provide a header for the invoice noting:
        - SAP OL#, SAP PO#, Invoice Date, Invoice #, Project # and subaccount #, current billing period, TO# and any other pertinent information
3. Progress Report shall be submitted per the contract documents. The progress report shall also summarize all the work performed by the Prime, Sub Consultants and Vendors. Provide header as noted in 2c. Each item below requires a section in the Progress Report.
    - Report on Progress of each work activity or milestone identified in the contract, to show the amount of work accomplished during the current month and the amount of work accomplished overall.
    - A report on the time scheduled for each work activity or milestone identified in the contract to show planned time completion and actual times used to do the work.
    - A description of the cause for delays beyond the planned completion of time of work activities or millstones contained in the project.
    - A report on the cost incurred to date on each work activity or milestone contained in the contract and a comparison to the cost estimates for such activity or milestone. Monthly billings will include a monthly budget forecast sheet showing invoicing from start estimated through completion tracking the project budget. In other words, verify the burn rate of prime, subs, and vendors to ensure they are on track and on task.
    - A description of possible remedies to get activities or milestones that are behind schedule, back on schedule, and to get activities or milestones that are exceeding cost estimates, back within planned costs.
    - Documentation of meetings that were held during the subject time period.
4. Letter(s) adding employee(s) to task order with all required information (should have been approved by CDOT PM prior to any work done by employee per HQ Contract/Agreement Unit-see Add Employee Process document)
5. Labor backup – timesheets
    - The Prime, Sub-consultants and Vendors shall submit detailed hourly back up of effort noting time/date of activities and number of hours or costs. Lodging backup shall be submitted through ODC backup.
6. ODC backup – Only Submit documentation pertaining to the project and the invoice
    - Provide a summary of ODC Cover sheet
        - Purpose of trip, Date of Trip, Who went
    - Mileage logs, per diem and/or meals documents (listing of days and rates or receipts for actuals), lodging receipts, receipt or documentation of other ODC items including vendor receipts/invoices.
7. Sub-consultant billings and Vendors - should have the same documentation as prime, except Form 1313, which is optional.

- 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.

4.3. 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

This list establishes the consultant's individual task responsibility. The consultant shall maintain the ability to perform all work tasks which are indicated below by an 'X' mark in the consultant column in accordance with the applicable CDOT standards. Selected work tasks shall be assigned only after coordination and consultation with CDOT. The Project Team is responsible for coordinating the required work schedule for those tasks accomplished by CDOT and other agencies.

Preconstruction	CDOT/Other	Consultant	Notes
A. Project Initiation and Continuing Requirements:			
● Initial Project Meeting		X	
○ Review Environmental Permitting and Mitigation Requirements		X	
○ Independent Design Review		X	
○ Project Schedule		X	
○ Develop Design Criteria		X	
○ Initiate Survey (Map Preparation)	X	X*	
○ Right-of-Entry and Permits		X	
● Traffic Control		X	
● Initial Submittals		X	
○ Progress Meetings		X	
○ Structure Review Meetings		X	
○ Project Management		X	
B. Project Development:			
● Communication and Consensus Building			
○ Contact List		X	
○ Public Notices/Advertisements	X	X	Coordinate with CDOT Communications
○ General Meetings		X	
○ Small Group		X	
○ General Public		X	
● Project Review		X	
● Communication Aids			
○ Graphics Support		X	
● Newsletter		X	
● Study Model		X	
● Project Review Team		X	
● Survey			
○ Presurvey Conference	X		Survey being completed in prior design phase
○ Survey Data Research	X	X	CDOT to obtain title; Consultant to review/process title
Work Activity	**CDOT/Other**	**Consultant**	**Notes**

○ Secure Rights of Entry	X		
○ Project Control Survey	X		
● Locate or establish HARN Stations	X		
● Monumentation	X		
● Project Control	X		
○ Supplemental Surveying		X	
○ Accuracy Tests		X	Confirmation of existing information
○ Review (by Registered Professional Land Surveyor)		X	
● Water Quality			
○ Quality Analysis		X	Documentation in the hydraulic report required
● Historical Study & Clearance (Section 106)		X	Finalize impacts and construction discovery
● Section 4(f) Historic, Section 4(f) Recreational and Section 6(f) Activity			Finalize impacts and construction discovery
● Visual and Aesthetic Considerations		X	
● Farmland	X		
● Energy Usage		X	
C. Preliminary Design:			
● Design Field Surveys			
○ Presurvey Conference		X	
○ Survey Data Research		X	
○ Secure Rights of Entry		X	
○ Project Control Survey	X		
● Locate or Establish HARN Stations	X		
● Monumentation		X	
● Local Project Control		X	
● InRoads TMOSS Survey Openroads Designer		X	
● Terrain Survey		X	
● Utility Survey		X	
● Hydraulic Survey		X	
● Material Survey		X	
● Supplemental Surveying		X	
● Survey Report		X	
● Accuracy Tests		X	
● Review (by Registered PLS)		X	
● Traffic Engineering		X	
● Materials Engineering		X	
● Preliminary Soil Investigation		X	
Work Activity	**CDOT/Other**	**Consultant**	**Notes**

● Pavement Rehabilitation		X	
○ New Pavement Structure		X	
○ Pavement Justification		X	
○ Pavement Design Report		X	
● Existing Bridge Investigation		X	
● Foundation Investigation		X	
● Geotechnical		X	
● Hydrology/Hydraulics Engineering		X	
○ Hydrology		X	
○ Hydraulics		X	
○ Preliminary Hydraulics Report		X	
● Utility Coordination		X	
○ Location Maps		X	
○ Reviews and investigations		X	
● "Potholing"-Excavation		X	
● "Potholing"-Surveying Utility Locations		X	
○ Relocation recommendations		X	
○ Ditch Company coordination		X	
● Roadway Design and Roadside Development		X	
○ Roadway Design		X	
○ Roadside Development		X	
● Guardrail and delineator		X	
● ADA Curb Ramps and Sidewalk		X	
● Landscaping		X	
● Bike paths		X	
● Safety analysis		X	
● Lighting Plan		X	
● Right-of-Way		X	
○ Research		X	
○ Ownership Map		X	
○ Appraisal		X	
○ Acquisition		X	
● Structural Transit Station Design		X	
● Structural Data Collection		X	
○ Structure concept study		X	
○ Value Engineering		X	
○ Structure Selection Report		X	
○ Foundation Investigation Request		X	
● Construction Phasing Plan		X	
● Preparation for the DOR		X	
Work Activity	**CDOT/Other**	**Consultant**	**Notes**
● Field Inspection Review		X	

● Post DOR Revisions		X	
D. **Final Design:**			
● Project Review		X	
○ Design Coordination		X	
● Utility Coordination		X	
● Hydraulic Design			
○ Data Review		X	
○ Stormwater Pollution Prevention Plan		X	
○ Final Hydraulics Report		X	
● Initiate ROW Authorization Process		X	
○ Final Utility Plans		X	
● Right-of-Way			
○ ROW Plans Content		X	
○ Title Insurance and Closing Services	X		
○ Authorization Plan	X		
○ Appraisal Staking		X	
○ ROW Plan Revisions (During Negotiations)		X	
○ ROW Acquisition	X		
● Materials Engineering			
○ Materials Data		X	
○ Stabilization validity		X	
○ Stabilization Plan		X	
● Traffic Engineering		X	
○ Permanent Signing/Pavement Marking Plans		X	
○ Signalized Intersections and Transit Signal Priority Systems		X	
○ Traffic Control Plan		X	
● Roadside Planning			
● Stormwater Management Plan		X	
● Landscaping		X	
○ Other		X	
○ Sprinkler systems/Liquid Anti-Icing		X	
● Guardrail and delineator		X	
● Safety analysis		X	
● Lighting Plans		X	
● Roadway Design		X	
Work Activity	**CDOT/Other**	**Consultant**	**Notes**
● Construction Phasing Plan		X	
● Plan Preparation for FOR		X	

● Final Office Review		X	
● Construction Plan Package		X	
● Respond to Job Showing Questions		X	
● Revise Plans during Advertisement – if necessary		X	
E. **Corridor Management Support:**			
● Design Control		X	
○ Information Services		X	
○ Budget Planning Support		X	
F. **Value Engineering**		X	

Services After Design	CDOT/Other	Consultant	Notes
. **Review of Shop Drawings**		X	
B. **Construction Services**			
● Design Support during Construction		X	Provide services after submittal of construction package, not full CM services
● Coordinate Schedule		X	
○ Provide field observation		X	
○ Submittals		X	
○ Diary		X	
● Documentation/justification		X	
● Progress reports		X	
● Calculations, drawings, and specifications		X	
● Daily time sheets		X	
C. **Post Design Plan Modifications**		X	
D. **Post Construction Services:**			
● Final earthwork determination		X	
○ As-built plans		X	
○ Revisions to Right-of-Way Plans (Excess Land)		X	
○ Monument ROW		X	
○ Set Property Corners (Remainders)		X	
○ Deposit ROW Plans		X	
E. **Construction Engineering**		X	

Section 6 – Submittals

Submittal	CDOT/Other	Consultant	Notes
. **Project Initiation and Continuing Requirements:**			
● Periodic Reports & Billings		X	
○ Meeting Minutes		X	
○ Project Schedule		X	
○ Completed Specific Design		X	
○ Survey Plan		X	
○ Permissions to Enter (Form 730)		X	
● Traffic Control Plan		X	
● Initial Submittal of InRoads TMOSS and/or MOSS Compatible Data – Openroads Designer	X		Completed in previous stage of design
B. **Project Development:**			
● Public Communication Contact List		X	
● Route Location Survey:			
○ Electronic Survey Files		X	
● Survey InRoads TMOSS Data Openroads Designer		X	
○ Monument Records		X	
○ Control & Monumentation Plan Sheets		X	
● Design Report Process			
○ Preliminary Design Report		X	
○ Final Design Report		X	
● Wildlife Certification		X	
● NPDES Stormwater Permit		X	
● Preliminary Design		X	
● Traffic Data & Recommendations		X	
● Soils Investigation Report		X	
● Pavement Design Report		X	
● Existing Bridge Condition Report		X	
● Foundation Investigation Report		X	
● Engineering Geology Plan Sheet(s)		X	
● Preliminary Hydraulics Report		X	
● Utility Relocation Recommendations		X	
● Ditch Structure Plans		X	
● Stabilization Plan		X	

Submittal	CDOT/Other	Consultant	Notes
● Plan Set		X	
○ Final Design			
○ Corrected DOR Plan Set		X	
○ Preliminary Cost Estimate		X	
○ List of Deviations from Standard Design Criteria		X	
○ Final Hydraulics Report		X	
○ Signing/Pavement Marking Plans		X	
○ Signal Warrants			
○ Signalized Intersection Plans and specifications		X	
○ Traffic Control Plan		X	
○ Structural Selection Report		X	
○ Foundation Investigation Request		X	
○ Structure Final Review Plans and Special Provisions		X	
○ Construction Phasing Plan		X	
○ FOR Plan Sheets and Special Provisions		X	
○ FOR Cost Estimate		X	
○ FOR Revised Plans and Special Provisions		X	
○ Final Review Revisions		X	
○ Final Utility Plan Set		X	
● Roadside Planning			
● SWMP Plans & Specs.		X	
○ Certification of plant Availability		X	
○ Sprinkler System Plans & Specs.		X	
○ Lighting Plans		X	
C. **Right-of-Way**			
● Title Commitments	X	X	CDOT obtained title and consultant will review and process said title
○ Preliminary Ownership Map		X	
○ Area Calculations		X	
○ Authorization Plans		X	
○ Legal Descriptions		X	
○ ROW Authorization Plans		X	
D. **Construction Plan Package**			

Submittal	CDOT/Other	Consultant	Notes
● Roadway Design Data Submittal (Form 463)		X	
○ Major Structure Design Final Submittal		X	
○ Record Plan Sets		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 1, 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
- I-70 Mountain Corridor Design Criteria and Aesthetics Guidance

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. 400.2 Monitoring Consultant Contracts
- 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)

A.5. Area Jurisdiction Publications:

- Denver Transportation Standards and Details for the Engineering Division
- Denver Complete Streets Design Guidelines
- RTD Bus Infrastructure Design Guidelines and Criteria

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
ADAAG	Americans with Disabilities Accessibility Act Guidelines
BAMS	Bid Analysis and Management Systems
BFE	Base Flood Elevation
BLM	Bureau of Land Management
CA	Contract Administrator – The CDOT Manager responsible for the satisfactory completion of the contract by the Consultant.
CAP	CDOT's Action Plan
CATEX	Categorical Exclusion (Expedited review under NEPA)
CBC	Concrete Box Culvert
CCD	City and County of Denver
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
DOTI	Denver Department of Transportation & Infrastructure
DRCOG	Denver Regional Council of Governments
D&RGW	Denver & Rio Grande Western Railroad
ESAL	Equivalent Single Axle Load

ESE	Economic, Social and Environmental
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
FTA	Federal Transit Administration
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
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 / Regional Transportation District
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

Appendix C: Federal Blvd BRT Partnership Charter

I. Project Purpose

The purpose of the Federal Boulevard Bus Rapid Transit (BRT) Project (the Project) is to create positive change in the Federal Boulevard Corridor through implementation of BRT, creating safe, fast, and reliable bus service that connects communities and is supported by and benefits local stakeholders. Project improvements will prioritize transit and transit users to complete a critical component of the regional vision for transit in Metro Denver.

II. Project Vision and Goals

Vision: Federal Boulevard's bus rapid transit system is a premier regional asset connecting residents and visitors to metro Denver's vibrant and thriving cultural corridor.

Mission: Provide the community with fast, reliable, and safe bus rapid transit service by implementing dedicated bus lanes, transit signal priority, enhanced stations, and other high-quality features benefiting the public including disproportionately impacted communities.

Goals/Needs:

- Improve safety along the corridor and at transit station areas
- Increase transit reliability and ridership
- Decrease transit travel times
- Promote cultural vibrancy and quality of life along the corridor
- Increase accessibility via transit
- Improve connectivity and mobility

III. Partnership Charter Purpose

The Partnership Charter sets forth the parameters the project partners will use to collaborate and build consensus to provide process and technical guidance to the Colorado Department of Transportation (CDOT) Region 1 team leading the Project. The Partners to CDOT include Adams County, the City and County of Denver, Denver Regional Council of Governments (DRCOG), City of Englewood, City of Federal Heights, Regional Transportation District (RTD), and the City of Westminster.

The partners will:

- Assist in identifying technical team members, key stakeholders, and community members,
- Identify the actions and decisions needed to reach the project goals,
- Establish coordinated communications and outreach plans,
- Provide insight and guidance during key study work efforts and milestones,
- Coordinate with the Regional BRT Partnership to support a seamless BRT network and resolve network/system conflicts, and
- Strive to use inclusive language and avoid technical jargon, terms of art, and acronyms both internally and in meetings with the public.

Each Partner has shared and equitable ownership and responsibility for project outcomes leading to community level success. The Partnership Charter should be read in conjunction with The Project Scope of Work, which will define the work products. CDOT will also execute Inter-Governmental Agreements (IGAs) with the project partners providing funding to the Project, setting forth commitments to the Project between organizations.

IV. Objectives of the Federal Boulevard BRT Process

The Partners identified the following objectives to ensure the Federal Boulevard BRT process is successful:

- Coordinate with key partners, including local agencies and the Federal Transit Administration (FTA), to provide clarity on technical options and outcomes and articulate a common set of facts,
- Manage expectations through robust communication, clarity around outcomes and goals, and establishing project parameters for discussion, and
- Engage local communities and public voices throughout the duration of the Project to better understand ideas, interests, and challenges.

V. Partnership Charge

To promote transparency and accountability, the Partners agree to the following to guide the Project:

- Be a liaison between the community and the Project – The Partners will provide a connection between their community, constituents, elected officials, and the project team by promoting engagement opportunities and study progress. The Partners will also communicate interests and ideas on behalf of the community to the project team.
- Focus on Project Goals – The Partners will establish project goals based on the agreed upon Scope of Work for the Project.
- Meet Deadlines – CDOT and their consultants will provide information, feedback, and other data to the Partners in a timely and transparent manner to ensure an appropriate time for review. The Partners agree to respect timelines for comments and feedback as outlined at each study milestone.
- Share Information and Feedback – CDOT will engage with the Partners and share the progress of the agency in implementing the Scope of Work. The Partners will serve as project ambassadors by facilitating decision-making through participation and active listening, and sharing information with peers, constituents, and public officials.
- Resolve Challenges and Work Together – The Partners will work in the spirit of collaboration by raising issues or concerns in a productive fashion and as early as possible, initiating problem-solving dialogue with other Partnership and project team members before discussing those issues in public forums. The Partners will use facts and data to support decision making and seek to understand the viewpoint of others when there is a disagreement. All communication will be transparent, with the Partners being made aware of smaller group meetings and discussions/decisions from small group meetings reported back out to the Partners. Discussions and lessons learned regarding coming to resolution throughout the process will be tracked to streamline future conversations.
- Achieve Consensus and Acknowledge Differing Opinions – The Partners recognize compromise will be required and will strive to reach consensus recommendations for the project. A consensus is reached when all parties agree that their major interests have been taken into consideration and addressed in a satisfactory manner. An escalation process will be defined for when consensus is not achieved so that the project team can continue to move toward timely project completion. When decisions are made, they will be input into a Decision Log to document everything that was considered/addressed; this log will be referenced throughout the project and used to bring any new team members throughout the project up to speed on decisions previously resolved. While it is okay for changes to occur throughout the project, this Decision Log will help to minimize time intensive rework.
- Consider All Communities – The Partners will work diligently to understand and consider the needs of all study area communities including documenting how the project addressed the need

identified. The Partners will work towards integrating jurisdictional land use and development initiatives with the Project engineering and operational plans.

VI. Collaborative Decision Making

The following guidelines will be used to encourage productive deliberation and decision-making. It is crucial that everyone has a chance to be heard and to hear others.

- Pay attention to what is being discussed in the meeting and avoid separate conversations or distractions (phone calls, emails, etc.).
- Allow people to speak and refrain from interrupting others.
- Be brief and speak to the point.
- Be respectful and polite.

It is important to find creative, innovative solutions.

- Avoid judging ideas prematurely and try to remain open minded.
- Look for ways to improve ideas.
- Promote positive behaviors.

Differences in opinion are inevitable; however, they should be focused on the issues involved rather than on the people holding a particular view.

- Address one another in respectful ways.
- Clearly articulate, after deliberation and when appropriate, whether a particular recommendation can be supported.