



COLORADO

Department of Transportation

REQUEST FOR PROPOSAL
Design Manager Services

PROJECT LOCATION: SH 119 Diagonal Boulder County

PROJECT NUMBER: STA 1191-033

PROJECT CODE: 21497

July 1, 2020

Colorado Department of
Transportation
10601 W 10th St, Greeley, CO 80634
Greeley, CO 80634

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1.0 Project Information and Scope of Work

1.1 Introduction

Colorado Department of Transportation (CDOT or the Department) is requesting consultant services to perform engineering project management and design for corridor improvements along SH 119 between Longmont and Boulder. The Consultant may suggest modifications to the proposed scope based on their experience with similar projects. Any proposed scope change shall have a detailed explanation regarding the rationale for the proposed change. Furthermore, this Scope of Work also includes coordination with Boulder County and their Consultant on design work for a new bicycle and pedestrian facility within the CDOT SH 119 right of way between Longmont and Boulder.

1.2 Description of Project Area

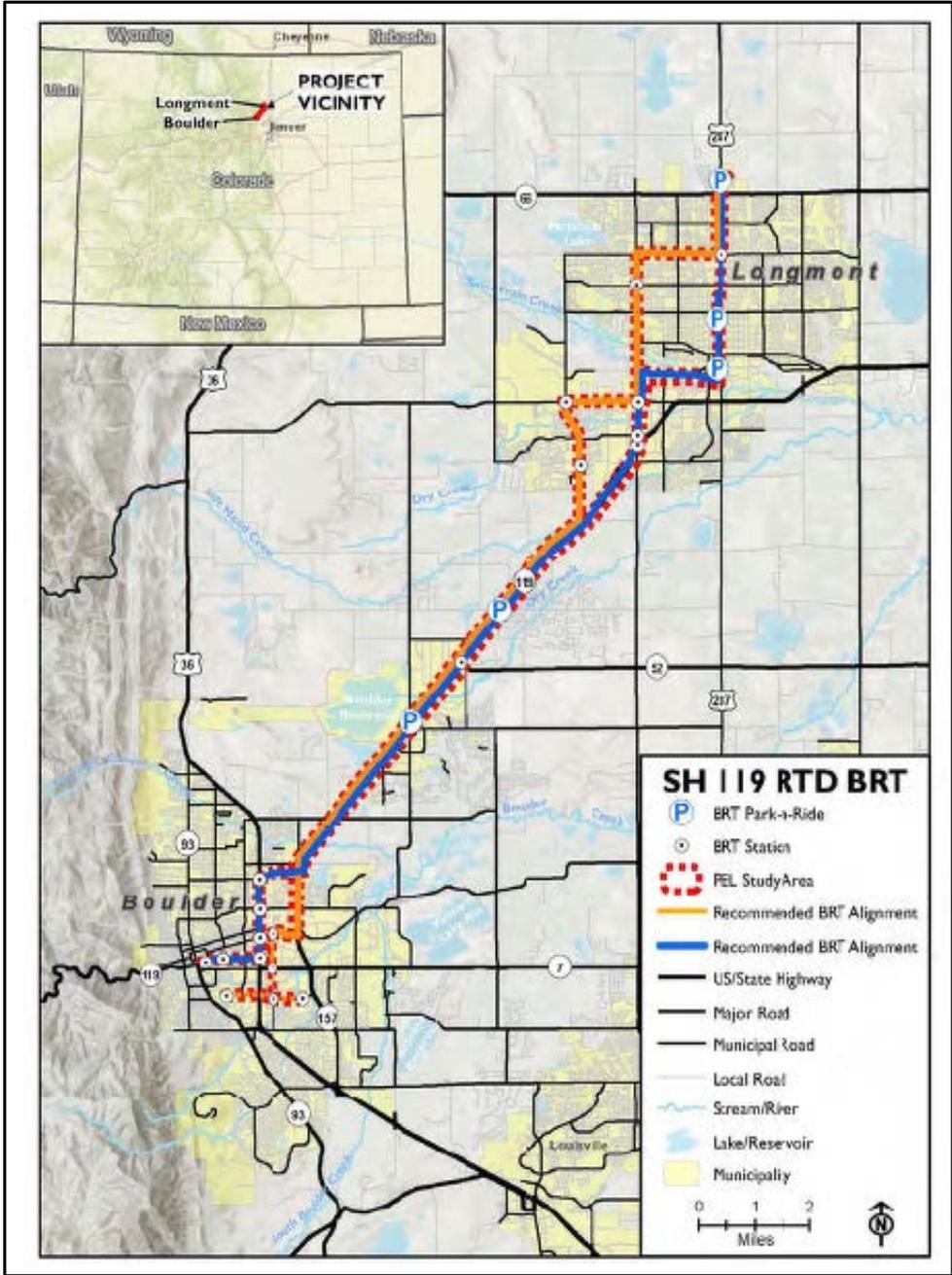
This project is located in Boulder County and partially in the City of Boulder on the south end and the City of Longmont on the north end.

Along with highway improvements and solutions for increased capacity and safety, transit facilities will be a part of the overall design and RTD Standards and Specifications shall be used accordingly.

Bicycle and pedestrian path will run along the whole length of the highway and will be connected, as appropriate, to the existing trails in Boulder and Longmont respectively. Boulder County is currently in the process of starting the design for the corridor bikeway.



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SH 119 Multi-Modal PEL Study Area

1.3 Project Background

This proposal will be for the design of the SH 119 corridor managed lanes/BRT/queue jumps from M.P. 44.238 to M.P. 54.430, which is approximately from Foothills Parkway in Boulder to Hover Street in Longmont.

This proposal will include all possible design disciplines potentially needed as this design project progresses. The Department may elect to perform portions of the design in-house. Design work for the corridor shall be completed under this contract; however, CDOT anticipates the corridor may be divided into smaller projects for design and construction, as determined by the design team and available funding. The successful Consultant will need to be well versed in innovative contracting methods and help to determine the most beneficial delivery method for each project.

The Consultant shall support CDOT in finding the best solutions and making decisions that would help in reaching the following goals:

- Maintain or improve safety by minimizing conflict areas and conflict points as well as designing for safe bicycle and pedestrian facilities
- Maximize operational efficiency at the intersection level by balancing the needs of the corridor with the crossroads, measured using intersection delay, volume capacity ratio, and queue lengths
- Maximize corridor-wide operational efficiency, measured by overall network delay, average travel speed by vehicle class, and average travel time by lane type
- Maximize person throughput multimodally not just vehicles
- Minimize transit travel time and maximize ridership, measured by transit delay and travel time, and transit travel time reliability.

This corridor was identified as the top candidate for future Bus Rapid Transit (BRT) through the Northwest Area Mobility Study (NAMS) completed in 2014 by Regional Transportation District (RTD) and the Northwest area stakeholders.

RTD Planning and Environmental Linkage Study (PEL) was completed and approved by FHWA and FTA in 2019 and includes the vision for SH 119, including regional BRT, managed express lanes, and commuter bikeway.

The scope of work will incorporate transit facilities (i.e. bus stops, park and ride, etc.) along with other highway improvements.

CDOT has contracted CDM Smith and Apex to work on a Traffic Alternatives Analysis Study (the Study) and their scope includes:

- Perform traffic analysis of alternatives and estimate user-delay costs for each alternative
- Perform preliminary life-cycle cost analysis (LCCA) of each alternative
- Existing Conditions Safety Analysis and Future Alternatives Safety Analysis.
- Develop a report summarizing these analyses
- Support selection of preferred alternative

The following scenarios are being proposed to be evaluated in the Study:

1. 2020 Existing Conditions
2. 2040 No Action
3. 2040 Intersection Operations Optimization Analysis along SH 119
4. 2040 Transit queue jumps and bypass lanes
5. 2040 3 GP Lanes (alternate base condition)
6. 2040 Tolled Express Lanes (TEL) and At-Grade Crossings (Add Lane)
7. 2040 TEL and At-Grade Crossings (Lane Conversion)
8. 2040 TEL and Grade-Separated Crossings (overpasses at major cross streets)

The consultant will need to work with this team to incorporate and interpret the findings to develop the design lane configurations for the corridor and at

intersections. It is expected to have this work done in a time period of approximately 18 – 24 months.

The environmental and NEPA work in the proposed scope of work is only anticipated to be needed if the design activities result in new impacts that were not identified in previous studies or if there are new circumstances (such as the designation of a new endangered species) that would result in new impacts.

The Consultant and CDOT will work with the appropriate federal agencies to determine the applicable level of NEPA analysis required. For the purposes of response to this submittal, CDOT is anticipating that a Categorical Exclusion level (CatEx) of analysis will likely be required.

CDOT projects availability of \$30 million from SB 267 and \$10 million from SB 01 Transit funding for this project. This is subject to change based on availability of SB267 funds year 3&4. In addition, RTD has budgeted \$30 million to be available in 2023 for transit stations, vehicles etc. for the corridor. Other contributions are expected from Stakeholders which will bring the funding up to a total of potentially \$80 million; however many of these funds are earmarked for Local Agency improvements in each municipality.

Boulder County received DRCOG TIP funding to take CDOT's ~20% design of the SH 119 Bicycle and Pedestrian Path to advertisement level design from Boulder to Airport Road. This grant funding was allocated to Boulder County FY2020 (which started October 2019). In addition, this project needs to coordinate with the local projects within the cities of Boulder (28th Street project) and Longmont (Coffman Street project).

Coordination will be required with the following stakeholders:

Agency/Stakeholder	Role or Involvement
Colorado Department of Transportation (CDOT)	<ul style="list-style-type: none"> • Project oversight
Federal Highway Administration (FHWA)	<ul style="list-style-type: none"> • Project involvement on Interstate projects
Boulder County	<ul style="list-style-type: none"> • Project limits all within Boulder County
City of Boulder	<ul style="list-style-type: none"> • City south of the project
City of Longmont	<ul style="list-style-type: none"> • City north of the project
Regional Transportation District (RTD)	<ul style="list-style-type: none"> • Involved with BRT components
Railroad (BNSF)	<ul style="list-style-type: none"> • Owner of the railroad tracks directly adjacent to the corridor
Colorado Parks and Wildlife (CPW)	<ul style="list-style-type: none"> • Involved with the evaluation of Threatened & Endangered, Candidate and Colorado State Sensitive Species
United States Forest Service (USFS)	<ul style="list-style-type: none"> • Ensure that project actions do not impact or jeopardize existence of any listed species or critical habitat

US Fish and Wildlife Service (USFWS)	<ul style="list-style-type: none"> Involved with the evaluation of Threatened & Endangered, Candidate and Colorado State Sensitive Species
Utilities/Ditch Companies	<ul style="list-style-type: none"> Could be directly affected by the project
Other Stakeholders	Role or Involvement
Commuting Solutions	<ul style="list-style-type: none"> Transportation Management Organization involved in coalition building and Transportation Demand Management
TransFort	<ul style="list-style-type: none"> City of Fort Collins Transportation/Transit agency
Traveling public	<ul style="list-style-type: none"> Roadway safety/trip reliability input Will want to know travel impacts/delay/detours People using all modes of travel Quality of life impacts
Emergency responders	<ul style="list-style-type: none"> Emergency response/access input Will want to know travel impacts/delay/detours
Other Interest Groups	<ul style="list-style-type: none"> Included but not limited to Niwot Business Association, Chamber, etc.

The Consultant should anticipate that a design which affects an agency will have to be accepted by that agency prior to its acceptance by the Colorado Department of Transportation. Submittals to affected agencies will be coordinated with CDOT.



1.4 Project Goals

CDOT's vision along with its Stakeholders is to improve and manage highway capacity, safety and mobility in the corridor through a variety of means including intersection improvements, possible managed lanes and multimodal improvements, including but not limited to regional BRT, commuter bikeway, etc. Therefore the design of the whole corridor should keep these goals in mind:

- Maintain and improve safety in accordance with the State and local safety plans and Vision Zero goals; Minimize conflict areas (weave and merge areas) and conflict points (evaluate interchange or intersection types with simple geometrics)
- Increase and manage capacity; Maximize person throughput, minimize transit time and maximize ridership. Maximize PMT(person-miles-traveled) while lowering overall VMT (vehicle-miles-traveled)
- Maximize operational efficiencies at intersections and at corridor-level (improve general throughput to reduce unintended consequences, like air quality degradation),balance the needs of corridor with cross roads
- Maximize the scope of the project
- Provide congestion mitigation measures
- Expand travel options and mode choices
- Increase efficiency of transit service
- Update outdated highway facilities
- Improve level-of-service
- Improve riding surface (smoother or stronger pavement)
- Resurfacing, restoration, rehabilitation, reconstruction
- Devise ITS and tolling elements needed for Managed Lanes
- Improve bicycle and pedestrian connectivity
- Ensure safe bicycle and pedestrian connectivity to existing infrastructure
- Provide a quality product that minimizes maintenance costs
- Enhance community values and project benefits
- Protect safety of workforce and public

- Minimize impacts to travelers and nearby communities

As noted above, for the purposes of response to this submittal, CDOT is anticipating that a CatEx of analysis will likely be required.

1.5 Project Cost

The construction cost indentified in the PEL study performed by RTD estimates all the improvements including managed lanes on SH119, BRT system, park and rides, corridor bikeway, First and Final Mile Study recommendations, Bussiness Access and Transit (BAT) Lanes in Boulder, Coffman Street and SH119/Hover Street intersection improvements in Longmont to be \$250M. This number did not include improvements at SH52/SH119. The scope of this work will be to develop a corridor cost estimate and phased improvement cost for implementation, understanding there is ~\$40M available for SH119 infrastructure and \$30M from RTD for BRT infrasture improvments including capital for buses.

1.6 Work Duration

The duration for the work described in the proposed scope is estimated to begin November 2020 and end December 2022. However, the Consultant is expected to start participating in project meetings and all other activities as soon as the contract is awarded.

1.7 Project Milestones and Proposed Schedule

The Consultant shall develop a preliminary schedule as part of its proposal. CDOT has assumed an overall schedule of 24 months to complete the project. The schedule will include the following:

- All project activities and deliverables shall be incorporated.
- Steps necessary to comply with Federal NEPA requirements
- A timeline outlining amount of time required to complete each task.
- A phased project construction plan timeline.
- Proposed project outreach plan and calendar (open house meetings, etc.)
- Preparation of public notices and required notices for required public comment periods
- Coordination with the project milestones and schedule for the corridor bikeway project

The Consultant shall provide a schedule which addresses the items above over a 18 – 24 month period. If the Consultant determines that it cannot accomplish the schedule in the proposed 18 – 24 month period then the Consultant will be required to provide the reasons as to why it is not feasible. The Consultant should also identify impacts to the proposed schedule if the level of NEPA analysis is changed from an CatEx to EA.

1.8 Consultant Responsibility and Duties

The Consultant is responsible for:

- Project Management
- Data Collection
- Project Coordination
- Preliminary/Final Design Coordination with CDOT Design Team

- Right of Way/Survey
- Design-build procurement process (if needed)
- Services after design
- Public Relations and outreach
- All other efforts and deliverables as indicated in this contract

2.0 Project Management

The Consultant will be required to work closely and coordinate with CDOT design staff, other CDOT consultants throughout the project and Stakeholders involved in this project. In general, Project Management activities will include, but not limited, to the following:

- The Consultant shall prepare monthly project progress reports, billings, establish and maintain the project schedule with key milestones, a contact reporting system, an issues tracking system, and a schedule for bi-weekly progress meetings.
- The Consultant Project Manager shall attend all corridor public meetings held throughout the environmental and engineering design process, unless otherwise specified by CDOT. The Consultant will be responsible for preparing appropriate presentation materials for all meetings.
- The Consultant shall take minutes at all meetings and provide the CDOT Project Manager with a completed copy within five (5) working days after each meeting. When a definable task is discussed during a meeting, the minutes will identify the “Action Items”, the agency responsible for accomplishing them, and the proposed completion date.
- The Consultant Project Manager shall attend coordination meetings with CDOT, local governments and stakeholder groups.
- The Consultant shall initiate and schedule all Public Relations efforts including setting up meetings with the internal and external stakeholders (see Section 3).

- The Consultant Project Manager shall provide monthly progress reports that will include summaries of work accomplished, task percent complete, task percent expended, work planned in the upcoming month and problems identified and solutions to the problems. The monthly progress report shall also include a schedule status, and, if behind schedule, a schedule recovery plan.

2.1 CDOT Oversight

CDOT will conduct reviews of contract submittals to determine the extent to which contract requirements are being met by the work products, and ultimately to provide CDOT with the necessary confidence for acceptance. The Consultant shall review CDOT's comments on submitted work products, provide a written response utilizing the medium in which these comments were provided, and implement corrective actions as required. CDOT design review comments will be recorded. However, these reviews are not intended to replace the Consultant's own quality assurance/quality control activities.

2.2 Document Control / Information Management

To ensure efficient information management on the project, CDOT will use ProjectWise, a web-based information management system.

The Consultant's proposal must include agreement to use the ProjectWise when communicating with CDOT on its respective projects. This includes use for all Document Control related for the duration of the project. ProjectWise will be used by all participants engaged on this project, including contractors, subcontractors, and their subsequent legal successors in title. It is the Consultant's responsibility to ensure this is the case.

Access to the ProjectWise system for the respective CDOT project will be provided to all contractors, subcontractors and subconsultants free of charge for the duration of the project.

3.0 Public Information/Public Involvement

The proposal shall include a process for engaging agencies, stakeholders and the public in the project. This is a diverse group of stakeholders and proposed solutions may not align with each stakeholder's solution for the corridor. Context Sensitive Solutions and consensus building will be paramount in facilitating conversations with stakeholders, local agencies and the public. Public involvement for this project should be coordinated with the community engagement process for the corridor bikeway project and corridor related studies including but not limited to the SH 52 PEL Study, First and Final Mile Study, etc. at applicable milestones.

3.1 Public Involvement Plan

The Consultant shall develop a public involvement plan.

Public, agency, neighborhood association and special interest meetings throughout the study process shall be anticipated. Exact number of meetings will be determined by CDOT with input from the Consultant but estimated at 4 public meetings. The Consultant will prepare all graphic, presentation and technical materials required by CDOT. Interested people shall be notified of project activities through e-mail blasts, social media announcements and organizational newsletters. In addition, a project page will be established on the CDOT web site that shall be updated throughout the project. All public information documents will be ADA compliant and shall be translated to Spanish to accommodate Spanish-speaking residents. CDOT's goal is to have four public meetings throughout the duration of the project.

CDOT will rely on the Consultant to develop a public involvement approach which responds to the unique characteristics of the project area. Consultant

shall collaborate with all Project Partners. To that end, CDOT will not prescribe a specific public involvement strategy, but will expect the Consultant to develop an innovative approach that expands outreach beyond just a project website, public meetings, newsletters and mailings. Such approaches might include telephone and online town halls, text-based survey tools and the use of social media as a way to most effectively reach interested parties. Special consideration should be given to reaching underserved and low-income populations that are more difficult to reach through traditional public involvement processes. Also, Consultant shall present their approach to handling public outreach that would align with the current COVID-19 situation and ways to conform to the protocols in place.

All public facing materials, including Power Point presentations, reports, graphic materials and other documents, that are shared with the general public shall be made accessible for the visually impaired. This shall be the responsibility of the Consultants and not CDOT staff.

Deliverables

- Public involvement plan
- An accurate and timely Website updates (the initial Website setup would be provided by CDOT)
- Electronic copies of all outreach materials created (including maps, posters, etc.)
- Public involvement report, including public comments received, for inclusion in NEPA documents.
- Public Hearing(s) transcripts and appropriate responses.

4.0 Design

4.1 Identification of Design Criteria

Preliminary Design Criteria will be developed by the Consultant and coordinated with the CDOT/PM prior to starting the design. The Consultant shall develop the CDOT Form 463 and insert a copy upon completion. The design criteria will include all State and Federal standards used on CDOT projects as well as RTD's design criteria.

4.2 Project Design Data and Standards

The consultant is responsible for obtaining and ensuring compliance with the most recent CDOT and RTD adopted versions 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. The Consultant shall submit any proposed changes to the pertinent criteria to the CDOT/PM at one of the periodic progress meetings prior to initiating design.

4.3 Project Computer Software Requirements

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

- A. Earthwork OpenRoadsDesigner
- B. Drafting/CADD OpenRoadsDesigner with CDOT's formatting configurations and standards.
- C. Survey/photogrammetry CDOT TMOSS, OpenRoadsDesigner

- D. Bridge CDOT Staff Bridge software shall be used in either design or design check
- E. Estimating AASHTOWare Project Applications used by CDOT and P70 tools
- F. Specifications Microsoft Word
- G. Scheduling Microsoft Project
- H. Document Control and Information Management ProjectWise

Deliverables

CONTRACT COMPLETION

The contract will be satisfied upon acceptance of the following items if applicable:

- A. Reports
- B. Environmental Documents
- C. Field Inspection Review (FIR) Plans and Estimates
- D. Final Office Review (FOR) Plans, Specifications, and Estimates
- E. AD/Bid Plans, Specifications, Final Cost Estimate
- F. Project Coordination
- G. Project Schedule
- H. Project Progress Meeting Minutes
- I. Professional Engineer Stamped Record Sets
- J. Right of Way Plans

- K. Hydrologic/Hydraulic Floodplain Analysis
- L. Potential CLOMR/LOMR – to be determined
- M. Traffic Control Plan (s)
- N. All documents found in research
- O. All Permission to Enter Property forms
- P. Completion of review of contract submittals
- Q. All Environmental Permits
- R. All environmental, Utility and ROW Clearances
- S. Hydraulic Report
- T. Structural Report
- U. Geotechnical Report
- V. Materials Report

All work required to complete this Scope of Work requires the use of English Units.

5.0 Affected Environment and Mitigation Measures

The Consultant will work with CDOT to determine the appropriate level of NEPA analysis that will be required for the corridor. This scope of work assumes a CatEx level of review; however, if significant impacts are determined, an EA will need to be prepared. CDOT's expectation is that the design that is within the transportation right-of-way may require substantially less environmental review.

If impacts are found, appropriate mitigation measures will be determined. Those resources not present within the limits of the project should be noted. Additionally, those resources present, but not impacted should be discussed.

- a. Land Use
- b. Economic Considerations
- c. Right-of-Way and Relocations
- d. Social Impacts and Community Facilities
- e. Environmental Justice
- f. Cultural / Historic / Section 106
- g. Parklands, Recreation Resources and 4(f) / 6(f) Evaluation
- h. Public Safety and Security
- i. Visual and Aesthetic Resources
- j. Air Quality
- k. Noise and Vibration
- l. Biological Assessment
- m. Mineral Resources / Geology / Soils
- n. Farmlands
- o. Hazardous Materials
- p. Utilities
- q. Energy
- r. Water Resources and Water Quality
- s. Wetlands / Waters of the U. S.

Deliverables

- Documentation for each resource.

6.0 Design Process

The goal of the design process is to prepare an engineering design package to help establish budget and right-of-way needed for the project, conduct

sufficient engineering to document environmental impacts, and to prepare the corridor to enter final design or a design build phase.

Survey

Survey will be done in-house by CDOT Survey Unit in Greeley.

Utilities

Determine existing utility relocations, abandonments, and proposed utilities. Proposed utilities are to be shown including water, sanitation, fiber, and electrical. Utility plans shall be at least Quality Level B with Quality Level A Test Hole plans provided in areas where proposed changes deem utility conflicts likely.

Hydraulics

A drainage study shall be conducted using the drainage methodology used by CDOT. Where existing drainage, hydraulic and hydrology information is provided from other studies within the project limits, this information shall be used in lieu of conducting a new drainage study. Floodplain Development Permits and CLOMR/LOMR may be required for this project.

Geotech

Existing soils information from within the study area shall be obtained and included in the information provided. Additional soil boring shall not be required for design process.

Traffic

Based on the results and recommendations of the Study that CDM Smith and Apex are working on, modifications to the traffic signals shall be analyzed and documented to accommodate proposed capacity improvements or any other signal modifications as identified in the Study. To optimize the operations of the existing intersections along SH 119, the Study will evaluate potential alternative intersection designs (Jay Road, 63rd Street, Niwot Road and Airport Road intersections) It is anticipated that the optimization at these intersections will include more minor improvements than the SH 119 & SH 52 intersection. Improvements to be considered include adjusting the number and length of turn lanes as well as additional signal timing optimization and Transit Signal Priority (TSP).

BRT Stations

Proposed BRT Stations shall include the following components and should be shown in the site plans:

- Grading
- Access
- Parking spaces at Park and Ride BRT Stations (Assume 70 vehicles per acre)
- Paving
- Bus bays
- Plazas
- Bicycle facilities, including integration with regional commuter bikeway/secure bicycle parking
- Pedestrian access
- Canopies, benches, shelters, pay stations
- Programmable information displays



- E-scooter/micromobility rentals
- Lighting
- Driver relief kiosks
- Electric Vehicles charging stations
- Utilities
- Landscaping areas
- Right of Way
- ADA
- Use of curb spaces for Transportation Network Companies (TNCs)

Note that the elements listed above are provided to instruct the level of design anticipated but all station elements shall be agreed upon by the project team.

A tabulation shall be provided listing the following quantities for:

- Bus canopies
- IT infrastructure
- Conduit bank layout for the backbone and laterals for each agency
- Spare backbone and lateral conduits based on each agency's needs, pull boxes, fiber optic cables including spare capacity based on each agency's needs, splicing devices and electronic cables
- Security cameras and network video recorders
- Ticket vending machines
- Programmable information displays
- Furniture
- Trash receptacles
- Lighting
- Right of Way acquisition

Typical Sections

Typical sections shall show existing and proposed sections for the highway and bicycle and pedestrian path, and bus stops and bus ramps at BRT stations.

Plan and Profile

Plan and profile sheets shall at a minimum contain:

- Existing and proposed roadways, striping, intersections, right of way, storm drainage and culverts, ditches, direction of flow, structures, utilities (location, type, size, buried or aerial), bus stops and park-n-rides, access roads, railroad tracks, additional topography(i.e. trees, fences, sidewalks, bike paths, signals, other significant features),.
- Proposed roadway geometry shall be shown on the plan sheets.
- Profile grades shall be shown for any roadway, bus ramps and busways, and intersection improvements.
- Proposed drainage improvements shall be shown on the plan and profile sheets and shall include culverts, storm sewers, inlets, drainage ditches, and detention/retention ponds.
- Proposed structures shall be shown on the plan and profile sheets.
- Proposed utility improvements shall be shown on the plan and profile sheets (i.e. power, communication conduit, lighting, water, sanitary).
- Property ownerships and utility ownerships and contacts shall be indicated.
- Horizontal and vertical control line shall be located between the inside travel lane and inside shoulder or center line of arterial streets.
- BRT stations with boarding areas (assume lighting, cameras, fare collection devices, canopies, and next bus information displays) shall be shown.

Cross Sections

Along highway, cross sections shall be cut every 100 feet showing proposed roadway, drainage, utilities, structures, and other predominant features.

Commuter Bikeway

The proposed regional commuter bikeway shall be shown on the plan and profile sheets along with typical sections. Coordination with the Consultant hired by Boulder County to design the bikeway shall be required as well as coordination with recommendations from other studies in the Corridor as needed (i.e. First and Final Mile Study, SH 52 PEL, etc.).

Cost Estimates

Cost estimates shall be developed based on the design plans specified above. CDOT's P70 tool shall be used throughout the design process and at the various stages of design from scoping to final.

Deliverables:

- Design Plan Set(s)
 - Field Inspection Review (FIR) Plans and Cost Estimate and
 - Final Office Review (FOR) Plans, Specifications and Cost Estimate
 - AD/Bid Plans, Specifications, Final Cost Estimate
- Appropriate reports (i.e. hydraulics report, flood plain analysis, geotechnical report, structural report, materials)
- All Environmental Permits
- All Environmental, Utility and ROW Clearances
- Proposed construction schedule establishing duration and sequencing of construction activities
- Phasing plan