

# SCOPE OF WORK BASIC CONTRACT

## CONTRACT TYPE

Specific Rate of Pay

Cost Plus Fixed Fee

Lump Sum

CONTRACT DATE: 04/01/15

PROJECT NUMBER: STM 0243-086

PROJECT LOCATION: US 24 East

PROJECT CODE: 20476

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

SECTION 1 PROJECT SPECIFIC INFORMATION

SECTION 2 PROJECT MANAGEMENT AND COORDINATION

SECTION 3 REFERENCE ITEMS NEEDED BY THE CONSULTANT

SECTION 4 GENERAL INFORMATION

SECTION 5 PROJECT INITIATION AND CONTINUING REQUIREMENTS

SECTION 6 PEL STUDY WORK TASK DESCRIPTIONS

SECTION 7 CONTRACT CONCLUSION (CHECKLIST)

APPENDICES

**TABLE OF CONTENTS**

SECTION 1 .....4

1 PROJECT BACKGROUND .....4

2 PROJECT GOALS .....5

3 PLANNED IMPROVEMENTS .....5

4 WORK DURATION .....5

5 CONSULTANT RESPONSIBILITY AND DUTIES .....5

6 WORK PRODUCT .....5

7 WORK PRODUCT COMPLETION .....6

8 SCOPE OF WORK ORGANIZATION .....7

SECTION 2 .....8

1 CDOT CONTACT.....8

2 PROJECT COORDINATION.....8

SECTION 3 .....9

1 CURRENT CDOT MANUALS, SPECIFICATIONS, STANDARDS, ETC. ....9

SECTION 4 .....10

1 NOTICE-TO-PROCEED .....10

2 PROJECT COORDINATION.....10

3 ROUTINE REPORTING AND BILLING .....10

4 PERSONNEL QUALIFICATIONS .....11

5 CDOT COMPUTER/SOFTWARE INFORMATION .....11

6 COMPUTER DATA COMPATIBILITY.....11

7 PROJECT DESIGN DATA AND STANDARDS.....12

1 PROJECT INITIATION AND CONTINUING REQUIREMENTS.....13

SECTION 6 .....17

1 EXISTING CONDITIONS REPORT .....17

2 DEVELOP A STATEMENT OF PURPOSE AND NEED AND IDENTIFY GOALS FOR THE CORRIDOR .....22

3 ALTERNATIVES REPORT .....22

SECTION 7 .....27

1 SUPPLEMENTAL WORK .....27

2 CONTRACT COMPLETION .....27

**APPENDICES ..... 28**  
**APPENDIX A ..... 29**  
**APPENDIX B..... 31**  
**APPENDIX C PEL QUESTIONNAIRE..... 34**

# SECTION 1

## PROJECT SPECIFIC INFORMATION

### **1 PROJECT BACKGROUND**

US 24 has seen traffic volume increases due to the continued growth in traffic along the corridor. This El Paso County east-west highway provides two to four travel lanes within the study area, connecting the communities of Falcon, Ramah, Peyton, Calhan and East to the City of Colorado Springs. Over the years, improvements to US 24 have been constructed in a fragmented fashion without the implementation of long-term planning. Currently there is no mutually agreed upon set of improvements for the corridor. The intent of this Planning and Environmental Linkage Study (PEL Study) is to define a vision for the future of the corridor, identify socioeconomic, environmental and resource concerns and opportunities in the corridor and use this information to develop a plan of implementation of projects to correct the operational, safety and capacity needs of the corridor.

This collaborative planning study is intended to document the specific purpose and need for improvements, develop and screen a range of reasonable alternatives, and identify a preferred alternative. This study will document relevant decisions and processes that can be utilized during the scoping process for subsequent NEPA documents. Additionally this study will develop conceptual cost estimate for the preferred alternative for ROW, design and construction.

The Colorado Department of Transportation (CDOT) will hire a consultant to prepare a plan for implementation of projects for the corridor. The selected consultant team (hereafter referred to as the Consultant) shall evaluate the existing and future operating conditions and features of the corridor. In this project, the scope of services to be provided by the Consultant shall produce a Planning Environmental Linkage (PEL) Report with the goal of identifying existing conditions, anticipated problem areas, and developing a range of improvements to reduce congestion, improve operations and safety of the corridor for all modes of transportation and provide a prioritized list of improvements, identifying potential funding sources for the improvements over a fifteen year period. The results of these efforts may ultimately be used to prepare National Environmental Policy Act (NEPA) studies and final design.

The Contract type will be Project Specific - Non Task Specific. Work will be performed on an “as needed basis”, meaning that neither CDOT nor the Consultant has any obligations under the Contract until a task order is issued. The major elements of this Contract may include the following services: development of a Work Plan that documents the approach, processes, procedures, strategies, and methodologies for preparation of the US 24 Planning and Environmental Linkage (PEL) Study; data collection; corridor traffic study / travel demand forecast; public communication process and outreach for the public, local government, state and federal agency representatives; development and screening of alternatives (including the No-Action); planning-level costs; general right-of-way analysis; land use evaluation; socioeconomic and environmental data collection for alternative development and screening, and for selection of the preferred alternative; recommendations for an amendment to the existing Access Control Plan; identification and prioritization of segments of independent utility documented in a Project Implementation Plan; final report; and preparation of resolutions with local governments and other documentation needed for adoption of a Purpose and Need statement.

This study will not result in a NEPA decision. Rather, its purpose is to provide the necessary transportation planning and early decision-making for the US 24 East corridor that can provide the basis for future projects and NEPA studies within the study area.

This study should be considered a part of a continuous process starting with planning at the MPO and Statewide levels and continuing through programming, NEPA studies, and environmental permitting. As a “bridge” between planning and NEPA, this study will focus only upon the development of a specific purpose and need and on sufficient environmental and cost analyses as well as public and agency involvement to evaluate and eliminate alternatives and arrive at a preferred alternative.

## **2 PROJECT GOALS**

This project is intended to examine the need for the following improvements to the corridor, as well as producing design, cost estimates and funding, scheduling and phasing recommendations to achieve them:

- A. Identify projects for improved capacity
- B. Identify projects for improved operations
- C. Identify projects for improved safety in the corridor

The objective of this project is to work with stakeholders to analyze and develop a range of improvements to reduce congestion, and improve operational performance and improve safety throughout the corridor. The consultant will assist CDOT, public agencies, and resource agencies in identifying issues of importance to each respective agency.

The Consultant will produce documents and deliverables in a form that can be incorporated by reference, as appropriate, in subsequent NEPA document(s) as outlined in Appendix A to 23 CFR Part 450 – Linking the Transportation Planning and NEPA Processes and according to the CDOT PEL Handbook (Dec. 2012).

The project goal is to develop a plan that can be approved and adopted by local entities (Pikes Peak Area Council of Governments, Central Front Range TPR, El Paso County, City of Colorado Springs, Federal Highway Administration, CDOT and the communities of Falcon, Peyton, Calhan, Ramah.) that identifies the capacity, operational and safety issues on US 24 and results in a list of prioritized projects that addresses the goals outlined above. With this list of projects, the Consultant will also develop project cost estimates and work with CDOT and PPACG to identify potential funding sources for each project.

The planning study will:

- Document a Purpose and Need for improvements
- Develop, evaluate, and screen a range of alternatives as discussed in Task b (Development of Alternatives) and identify a preferred alternative(s) to best improve safety, mobility, operations and traffic flow
- Establish priorities for improvements -Document each step in the collaborative planning process so that decisions made during this study will not need to be reevaluated during subsequent NEPA studies

## **3 PLANNED IMPROVEMENTS**

This project is located on US 24 (MP 310 – 350) in El Paso County. The west termini is State Highway 21 (Powers Blvd.) and the east termini is in the vicinity of Ramah in north-eastern El Paso County.

## **4 WORK DURATION**

The time period for the work described in this scope is approximately 425 calendar days from issuance of Notice to Proceed.

## **5 CONSULTANT RESPONSIBILITY AND DUTIES**

The Consultant is responsible for conducting project coordination, federal, state and local agency coordination, public participation, traffic modeling, feasibility study conceptual design and alternatives analysis, socioeconomic environmental and design data collection and analysis as described in the following sections.

## **6 WORK PRODUCT**

The work in the scope of services for this project will be contracted on an individual Task Order basis, as needed and if needed as determined by the Department. The Department reserves the right to, at its sole discretion,

decide to not issue task orders for any part of the work contained in this scope of services. The Consultant work products may include:

A. Reports

- a Existing Transportation Conditions Report – Documentation of existing issues and constraints related to traffic operations and geometrics, including summary of roadway characteristics (lanes, access, etc.), traffic operations, substandard features (sight distance, shoulders, sidewalk width, etc.) if any, and traffic safety.
- b Property Ownership Report – Plan sheets with property lines and ownership information (as available from County assessor) shown on an aerial background as information for potential property impacts.
- c Draft and Final Environmental Scan Report – Documentation of existing environmental resources in the study area with identification of critical environmental issues and next steps for environmental analysis in future NEPA processes.
- d Purpose and Need Statement – Written statement of purpose and need developed for the project.
- e Draft and Final Alternatives Report – Documentation of the development, screening, and analysis process, including evaluation criteria, decision matrices, and concerns, requirements, and estimated cost for the recommended alternative(s).
- f Traffic Analysis Report – Report of travel forecasting for the project (assumptions, methods, and results) and traffic operations for the recommended alternative(s).
- g Draft and Final Planning Environmental Linkage Report – Technical summary of the engineering and environmental considerations, assumptions, analysis methodologies, and graphic displays of the recommended alternative(s). Report to include completed FHWA PEL Questionnaire
- h Project cost, source of revenue and financing options report.
- i Public outreach documentation

B. Project Coordination

C. Schedules

D. Meeting Minutes

E. Photograph Log – Dated, labeled & logged inventory for corridor

Detailed work product requirements are described in the following sections. All work required to complete this Scope of Work requires the use of English Units.

**7 WORK PRODUCT COMPLETION**

All submittals must be accepted by the CDOT Contract Administrator or designee.

## **8 SCOPE OF WORK ORGANIZATION**

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.

**SECTION 2**  
PROJECT MANAGEMENT AND COORDINATION

**1 CDOT CONTACT**

The Contract Administrator for this project is: Mark Andrew, Region 2 North Program Resident Engineer.

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

Name: Shane Ferguson

Title: Project Manager, North Program Engineering, Region 2

Address: 1480 Quail Lake Loop, Suite A, Colorado Springs 80906

Telephone: (719) 227-3244

E-mail: shane.ferguson@state.co.us

**2 PROJECT COORDINATION**

Coordination will be required with the following:

- A. Pikes Peak Area Council of Governments
- B. Central Front Range TPR
- C. El Paso County
- D. City of Colorado Springs
- E. Federal Highway Administration (FHWA)
- F. Utilities
- G. State and Federal Resource Agencies

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.

## **SECTION 3**

### **REFERENCE ITEMS NEEDED BY THE CONSULTANT**

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

The consultant shall obtain and utilize the most recent CDOT adopted references including standards and specifications, manuals and software, electronic files of applicable standards, and all CDOT forms specified in this document or as directed by the CDOT/PM. A list of general reference material is provided in Appendix A.

## **SECTION 4**

### **GENERAL INFORMATION**

#### **1 NOTICE-TO-PROCEED**

Work will not commence until the written Notice-to-Proceed is issued by the State with certification from the Consultant that the work will be completed within the allotted time. Work may be required, night or day, on weekends, on holidays, or on 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 the time lost for:

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

#### **2 PROJECT COORDINATION**

- A. Routine Working Contact

The routine working contact will be between the CDOT Project Manager (CDOT/PM) and the Consultant Project Manager (C/PM) as defined in Appendix B.

- B. Project Manager Requirements

Each Project Manager will provide the others with the following:

- a. A written synopsis or copy of their respective contacts (both by telephone and in person) with others.
- b. Copies of pertinent written communications.
- c. Project Management Plan to be produced by the consultant

#### **3 ROUTINE REPORTING AND BILLING**

The Consultant will provide the following on a routine basis:

- A. Coordination

Coordination of all contract activities by the C/PM

- B. Periodic Reports and Billings

The periodic reports and billings required by CDOT Procedural Directive 400.2 (Monitoring Consultant Contracts).

Items and format to be included in the billing report shall be discussed with the CDOT Project Manager prior to first billings.

- C. Minutes of all Meetings:

The minutes will be completed and provided to the CDOT/PM within five (5) working days after the meeting. When a definable task is discussed during a meeting, the minutes will identify the "Action Item", the party responsible for accomplishing it, and the proposed completion date.

- D. 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 PERSONNEL QUALIFICATIONS**

The Consultant Project Manager (C/PM) must be approved by the CDOT Contract Administrator. The C/PM is not required to be Licensed Professional Engineer (PE) but certain tasks are required to be done by PE or a Professional Land Surveyor (PLS) who is registered with the Colorado State Board of Registration for Professional Engineers and Land Surveyors, National Institute for Certification in Engineering Technology (NICET).

#### **5 CDOT COMPUTER/SOFTWARE INFORMATION**

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

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

#### **6 COMPUTER DATA COMPATIBILITY**

The data format CDOT presently utilizes which Consultants shall be required to use for submitting roadway design data is: Inroads.

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

**7 PROJECT DESIGN DATA AND STANDARDS**

A. General:

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

B. Electronic data:

All electronic data will be supplied on an external hard drive to CDOT at the project conclusion as part of the project files and project administrative record.

## SECTION 5

### PROJECT INITIATION AND CONTINUING REQUIREMENTS

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’ in the consultant column, in accordance with the forms and conditions contained herein, and the applicable CDOT standards. Selected work tasks shall be assigned only after coordination and consultation with CDOT. The Consultant is also responsible for coordinating the required work schedule for those tasks accomplished by CDOT and other agencies. The Consultant should review this entire section to identify applicable material. Contact the Colorado Department of Transportation/Project Manager (CDOT/PM) if clarification is required (see Section 2.1, CDOT Contact).

The following activities of communication, consensus building, project team reviews, conceptual design, data gathering, documentation, and formal public notice should be planned by the Consultant and coordinated with the CDOT/PM. The time of their accomplishment will overlap and parallel paths of activity should be planned to finish the development phase in accordance with the shortest possible schedule. The type and number of meetings, documents, etc., will depend on the category and characteristics of the project work. A project plan and schedule shall be developed by the Consultant which satisfies the requirements of the project development. This plan must be approved by the Contract Administrator (see Section 2.1, CDOT Contact) before starting the work.

	<u>CDOT/ Other</u>	<u>Consultant</u>
<b>1 <u>PROJECT INITIATION AND CONTINUING REQUIREMENTS</u></b>		
A. Initial Project Meeting	<u>  X  </u>	<u>  X  </u>
An initial project kick-off meeting will be held, coordinated by the Consultant, and conducted by CDOT. The meeting will review the Project Management Plan, project scope, schedule, key milestones, and project study area boundary. The meeting may include an on-site inspection to familiarize the entire project team with the character and conditions of the area. The Consultant shall develop an invitation list in coordination with CDOT, send notices with a draft agenda, and provide meeting minutes to all those invited.		
B. Project Management Plan	<u>          </u>	<u>  X  </u>
The Consultant shall submit a plan for managing the project, including work assignments, project schedule, document quality assurance program, administrative record, document and agency reviews, public and agency coordination plan and other project needs.		
C. Environmental Scan Report Coordination	<u>  X  </u>	<u>  X  </u>
Consultant shall review relevant standards and specifications and document environmental requirements applicable to the project. This task shall include two meetings, one with CDOT and one with El Paso County representatives to discuss the initial work efforts of the project.		
D. Project Schedule	<u>          </u>	<u>  X  </u>
The initial project schedule, to be prepared by the Consultant, will be reviewed with the CDOT Project Manager and project team, and refined to provide detail as requested. Modifications shall be made for acceptance by CDOT. The schedule will be reviewed and discussed at regular intervals and updated as necessary.		



b. Technical Team Meetings:

Technical Team consists of CDOT, El Paso County, City of Colorado Springs, and Consultant technical task leaders responsible for coordination of technical information as needed. Team will meet on an as-needed basis to review status and progress of project technical materials.

c. Concurrence Points Meetings:

Meetings to involve FHWA and CDOT for concurrence along the PEL review process. Assume 5 meetings.

H. Public Involvement Coordination

X

X

CDOT will assist the Consultant in organizing all Stakeholder meetings and Public Meetings and a comprehensive public outreach plan. The Consultant is responsible for creating and providing all materials for these meetings. The estimated number of meetings is identified below for budgeting purposes. In addition to this, it is anticipated that numerous other contacts will need to be made with all of the public agency stakeholders, both at the staff level and the elected official level, to communicate and document the stakeholders' concerns about specific problems and visions for the corridor.

The Consultant shall provide the presentation aids, and help conduct the following meetings:

a. General Public Meeting (information and workshops)

The format of these meetings will be dictated by the project and goals for the meetings. These meetings may be used to establish communications with the public, add to the “contact list”, and gather information regarding local concerns. The meetings may also take the form of a work session or workshop with the affected parties. Up to four (4) general public meetings are anticipated with one of them dedicated to public comment prior to delivering the final report.

b. Resource Agency Meetings (information and workshops)

The format of these meetings will be dictated by the project and goals for the meetings. These meetings may be used to establish communications with the resource agencies, add to the “contact list”, and gather information regarding resources of concern. The meetings may also take the form of a work session or workshop with the resource agencies. It is estimated that two (2) meetings with each resource agency are anticipated. These may be individual meetings or meeting of grouped resource agencies, as appropriate. Some of these meetings may be held via teleconference.

c. Community Resource Panel Meetings (information and workshops)

The format of these meetings will be dictated by the project and goals for the meetings. These meetings will focus on groups directly affected by the project work to identify likely impacts and discuss possible mitigation or resolution techniques. It is estimated that two meetings each will be held with each of affected groups. The Community Resource Panel meetings will also be used to obtain feedback on communication tactics to ensure they are effective. Up to a total of four (4) Community Resource Panel meetings are anticipated as noted above.

d. Informal Stakeholder Briefings (one-on-one)

These one-on-one meetings will be held with individuals representing public agencies, property and business owners, or others directly affected by the project work to identify likely impacts and discuss possible mitigation or resolution techniques. Some meetings may occur in conjunction with regularly scheduled meetings of these groups. Up to thirty (30) one-on-one meetings are anticipated for this project.

I. Communication Aids \_\_\_\_\_     X    

a. Newsletter/Announcement/Mailings

Project announcements and newsletters will be published and distributed via mail or email to those on the contact list by the consultant. Up to three (3) announcements are assumed during the project, distributed to a contact list assumed to contain up to 1,000 contacts.

b. Website

The consultant will coordinate with CDOT to provide content and information for CDOT to post to a project specific website, initiated and maintained by CDOT. The website will post project information from the public meetings, press releases and other public information, and provide contact information to facilitate comments and questions to CDOT and consultant representatives.

J. Project Management \_\_\_\_\_     X          \_\_\_\_\_     X    

The Consultant will coordinate the work tasks being accomplished by all subconsultants to ensure project work completion on schedule.

The Consultant will provide the following on a routine basis:

- a. Coordination of contract activities.
- b. Periodic reports and billings.
- c. Minutes of all Meetings.

The minutes will be completed and will be provided to the CDOT PM within five (5) working days after the meeting. When a definable task is discussed during a meeting, the minutes will identify the "Action Item," the agency responsible for accomplishing it, and the proposed completion date.

- d. Coordination with subconsultant activities, processing of invoices, review of status reports and products.
- e. Administrative File and Record

## SECTION 6

### PEL STUDY WORK TASK DESCRIPTIONS

The Study will be conducted in accordance with the Statewide and Metropolitan Planning Regulation 23 CFR 450 and CDOT PEL Handbook. The provisions linking planning and NEPA presented in Section 318 and Appendix A of 23 CFR 450 are to be followed. The findings of the PEL Study will establish the Purpose and Need, subsequent phase study area and reasonable alternatives, logical termini and independent utility, and programming priorities/timeframes/funding to be used in updating transportation plans and transportation improvement programs (TIPs).

Based on the initial traffic data collection, travel demand forecasting, and traffic operational analyses, the consultant will identify traffic problem areas and determine the effects to the surrounding roadway network and intersections. This analysis will consider traffic volumes, travel/access patterns, LOS, delays, travel times, and speeds in neighborhoods and other areas of anticipated traffic congestion. The Consultant will coordinate this work with other studies in the immediate area.

The Study will include development and evaluation of alternatives based on a consideration of Purpose and Need, geometric, planning and environmental factors, the location of communities and other developed areas, traffic and public and agency input. PEL Study alternatives will initially be developed based on secondary source or available environmental and community data, and will be refined through agency and public input and other on-going studies. Environmental and community data will be updated for the refined corridors through photo interpretation and selected ground-truthing. The intent of the PEL Study analysis is not to identify impacts, but rather to identify potential roadblocks for those PEL Study alternatives which provide the best balance in meeting the Purpose and Need and avoiding/minimizing the potential to affect resources during subsequent study phases.

The Study will be developed and documented in a form that can be incorporated by reference, as appropriate, in subsequent NEPA document(s) as outlined in Appendix A of 23 CFR Part 450 – Linking the Transportation Planning and NEPA Processes. All final deliverables identified in this contract will be of such quality that they could be incorporated directly or by reference into these NEPA documents. The study process will comply with the requirements of the Moving Ahead for Progress in the 21st Century Act (P.L. 112-141), (MAP-21).

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’ in the consultant column, in accordance with the forms and conditions contained herein, and the applicable CDOT standards. Selected work tasks shall be assigned only after coordination and consultation with CDOT. The Consultant is also responsible for coordinating the required work schedule for those tasks accomplished by CDOT and other agencies. The Consultant should review this entire section to identify applicable material. Contact the Colorado Department of Transportation/Project Manager (CDOT/PM) if clarification is required (see Section 2.1, CDOT Contact).

The following activities of communication, consensus building, project team reviews, conceptual design, data gathering, documentation, and formal public notice should be planned by the Consultant and coordinated with the CDOT/PM. The time of their accomplishment will overlap and parallel paths of activity should be planned to finish the development phase in accordance with the shortest possible schedule. The type and number of meetings, documents, etc., will depend on the category and characteristics of the project work. A project plan shall be developed by the Consultant which satisfies the requirements of the project development. This plan must be approved by the Contract Administrator (see Section 2.1, CDOT Contact) before starting the work.

	<u>CDOT/ Other</u>	<u>Consultant</u>
<b>1 <u>EXISTING CONDITIONS REPORT</u></b>		
A. Evaluation of Existing Roadway Conditions		
a. Acquire available construction As-Built files, records, and information for the following:	_____	_____X_____
i. Accident records		

ii	Expressway and street geometry		
iii	Drainage and floodplain conditions		
iv	Structure conditions		
v	Lighting		
vi	Traffic signals		
vii	Pedestrian and bike facilities		
viii	Transit (bus stop) facilities		
ix	School walking surveys?		
b.	Base Mapping	_____	_____X_____
	Design will be based on available base mapping provided by CDOT. The Consultant will obtain available aerial photography and digital topographic mapping for the study area from available sources and compile information for use with conceptual design tasks and identification of potential issues. Base mapping will be tied to state plan coordinates.		
c.	Property Ownership Summary Report	_____	_____X_____
	Property lines and ownership will be assembled from assessor's information. A set of property owner maps will be prepared based on County Assessor tax records that identify ownerships within the study area. No title research is included in this Scope of Services.		
	The property lines will be referenced into the existing aerial photography and the plan sheets.		
d.	Existing Environmental Conditions	_____	_____X_____
	Conduct an environmental scan and list of critical environmental issues within the corridor that include the following tasks:		
	• Map environmental resources and prepare a list of environmental issues.		
	Include, at a minimum:		
	– Floodways and 100-year flood plain boundaries		
	– Likely locations of wetlands		
	– Known Archaeological and Paleontological sites		
	– Mines		
	– Hazardous waste sites		
	– Community or public wells		
	– Historical buildings, sites, and districts		
	– Rivers and lakes (identifying any designated wild and scenic rivers)		
	– State and national forests		
	– Wildlife reserves		
	– Critical wildlife habitat		
	– Threatened and endangered species (locations or likely presence)		
	– Public parks		
	– Prime agricultural land		
	– Barrier effect		

- Pedestrian and bicycle access
- Noise
- Air Quality
- Neighborhood/business displacement
- Identify those areas expected to require further analysis for NEPA purposes.
- Prepare an environmental scan report for CDOT, resource agency, and public review.
- Identify and describe any features that may require context sensitivity.
- Identify existing land use and established land use planning.

Expected Products (Results)

- An environmental scan map of key socioeconomic and environmental resources;
- A list of environmental issues within the corridor, and identification of areas that require further analysis.
- A report summarizing the results of the research of land uses and other characteristics of the region. The report should include:
  - Community profile, including population, growth trends, and employment trends, for use in future forecasts
  - Current land uses
  - Historical and cultural buildings and site
  - Potential adverse cumulative effects within the regional setting

An Environmental Scan Report will examine and document existing environmental resource conditions in the study area. The Environmental Scan document will summarize findings of the environmental data collection and critical environmental issues, including maps, figures and tables as appropriate. “Next steps” for environmental analysis in future NEPA processes will be identified.

B. Traffic Study

a Traffic data collection

The Consultant shall obtain current traffic counts for the project limits and surrounding roadway network impacted by the project to evaluate the existing traffic operations. Available traffic data shall be compiled from various state and municipal sources including CDOT automated traffic recorder locations.

The Consultant shall conduct a traffic count program to facilitate level of service evaluation at the US 24 termini and at relevant strategic major arterial intersections. Major arterial intersection locations to be evaluated are to be determined by the Consultant in coordination with CDOT and El Paso County. Daily vehicle classification counts will be collected at relevant strategic locations throughout the corridor, and AM and PM peak hour turning movement counts will be collected at relevant strategic local intersections on two consecutive weekdays. Classification count and intersection turning movement count locations are to be determined by the Consultant in coordination with CDOT, and El Paso County.

To assist in the evaluation of potential traffic impacts, up to eight 48-hour speed/volume counts may be conducted within the study area during the alternatives development and analysis tasks.

The Study shall include alternate routes, accident history, and congestion, effects of improvement on the existing interstate and highway system, effects on the adjacent

improvements, economic development impact, and local commitment to improving local roadways.

b Travel demand forecasting \_\_\_\_\_ X

Travel demand modeling shall begin at the same time as data collection. The consultant will utilize the adopted regional travel demand model maintained by the PPACG. As necessary, the consultant will develop a sub-area model specific to the US 24 corridor. The consultant shall be responsible for performing "reasonableness" checks on information developed and derived from use of the PPACG model. The primary product of this work will be 2040 travel demand forecasts approved for study use by PPACG. These forecasts will be used to develop 2035 traffic volumes on U.S. 24 and other major and other major roadways within the study area, as well as turning movements at signalized and unsignalized intersections. The Consultant shall use the approved PPACG data sets and road network to ensure that the traffic analysis is compatible with the NEPA process.

c Traffic operations \_\_\_\_\_ X

Traffic operational analysis will include an evaluation of the existing conditions as well as a 2040 analysis for the No-Action and a preferred set of alternatives. If necessary, the consultant may use the Mesoscopic/Microscopic model of choice such as TransModeler. This model should be used to help understand the regional distribution of traffic, possible diversions for different design alternatives and to help determine the limits of the micro-simulation analysis.

It is anticipated that Synchro will be used for evaluation of intersection operations and to serve as a basis for the development of a system wide micro-simulation model. The Consultant shall use a micro-simulation model to evaluate the traffic operations of the complete roadway system and report the agreed upon measures-of-effectiveness (MOE's) for the existing conditions, No-Action and preferred set of alternatives. Site specific operational analysis (i.e. turning movement delays, weaving analysis, queue length determination, etc) may also be required at strategic locations within the corridor to help identify interim improvements that may provide operational benefits while remaining consistent with the preferred set of alternatives. Specific locations will be determined by the Consultant in coordination with CDOT, and El Paso County. The Consultant is required to follow the guidelines provided in the FHWA Traffic Analysis Tools for methods for collecting traffic data, setting up and calibrating the micro-simulation models. The Consultant will also be required to coordinate with PPACG, CDOT traffic and FHWA at key milestones in the traffic modeling and approval process (i.e. model validation and calibration, MOE selections, etc) before additional work proceeds.

In addition, consideration shall be made for multimodal and maximum capacity corridor build-out. The data from these analyses shall be used to aid in the selection of the preferred alternative.

d Roadway Inventory \_\_\_\_\_ X

The Consultant will complete a general inventory of existing roadway features within the study area, including shoulder and median, guardrail, fencing, lighting, pavement condition, and access locations. Substandard features will be noted including sight distance, clear zone, turn lane lengths, sidewalk widths, and tapers. Major drainage features and area master plans will be described.

e	Pedestrian, ADA and Bicycle Facilities	_____	_____X_____
	The Consultant shall also analyze existing bicycle and pedestrian facilities within the study area for safety, adequacy, connectivity, and Americans with Disabilities Act Accessibility requirements and make recommendations for improvements.		
C.	Safety Assessment	_____X_____	_____X_____
	The consultant shall obtain all available Safety Assessment Reports from CDOT which identify existing safety problems within the project limits, available on the CDOT website. In the alternatives evaluation portion of the PEL Study, and any other sections that pertain to Safety, the consultant shall specifically identify how the "Build" alternatives propose to mitigate the existing safety problems. If CDOT or the consultant deem that existing available traffic safety reports are outdated and need to be updated; the consultant shall prepare a traffic safety assessment report in accordance with CDOT standards. CDOT shall provide all data and statistical summaries necessary to complete the report.		
D.	Existing Transportation Conditions Report	_____	_____X_____
	This report will include a summary of:		
	a Description of roadway characteristics and multi-modal transportation /traffic operations along US 24 within the study area.		
	b Description of any substandard features, sight distance, speed zones, auxiliary lane lengths, curb/gutter, shoulders, sidewalk.		
	c Number of lanes and access locations including any auxiliary lanes.		
	d Traffic and operational analysis including crossroads and other roads and streets as required to assess their ability to effectively collect and distribute traffic. Operational analysis will consider adjacent intersections and improvements.		
	e Summary of existing traffic safety reports or, if deemed necessary by CDOT or the consultant, an updated traffic safety assessment report in accordance with CDOT standards.		

2 **DEVELOP A STATEMENT OF PURPOSE AND NEED AND IDENTIFY GOALS FOR THE CORRIDOR**

Develop an Executive Summary containing the following:

\_\_\_\_\_ X \_\_\_\_\_

- a. Identify the visions CDOT and each jurisdiction have for the future of the corridor and points of disagreement and congruence.
- b. Refer to data identified in the Existing Transportation Conditions Report regarding existing and expected deficiencies in the transportation system serving the study area to compile a list of system deficiencies. Where possible, locate the deficiencies on a base map for use at the public meetings.
- c. Reference the list of issues that resulted from contacts with stakeholders and general knowledge of the corridor to identify a list of key needs in the corridor.
- d. Prepare a preliminary list of existing and anticipated deficiencies at the corridor. The list should describe the existing or anticipated deficiencies in the transportation system and the growth or changing land use needs in the study area. Prepare visual displays summarizing data compiled to date. Include key factors including the preliminary list of deficiencies already identified.
- e. Produce a written statement of purpose and need. This statement should be an "umbrella" statement for the corridor, based on identification of needs and deficiencies. The statement should reflect the context sensitivity of the study area's communities to help reach their transportation goals by encouraging the consideration of land use, transportation, environmental and infrastructure needs in an integrated manner. It should include the following:
  - a. Description of project location, length, termini, and a definition of the project study area.
  - b. Description of existing transportation facilities and services, including transit, highway, bus service, park-n-Rides, bicycles and pedestrian, ADA compliance, etc.
  - c. Identification of specific transportation problems and deficiencies (improvements, highway, pedestrian, bicycle, travel times, and transit).
  - d. System linkage information.
  - e. Existing and future capacity traffic projections from PPACG.
  - f. Social, economic, and environmental justice issues related to purpose and need.
  - g. Safety problems.
  - h. A summary of previous and current transportation studies, community plans, and planning efforts relevant to the project.
- f. Identify goals for the corridor.

3 **ALTERNATIVES REPORT**

A. Alternatives Analysis

- a. Develop Preliminary Evaluation Criteria

\_\_\_\_\_ X \_\_\_\_\_

Prior to development of reasonable alternatives, the Consultant will work with CDOT and the Stakeholders to develop preliminary evaluation criteria and submit the criteria to FHWA for review. Established criteria will be used to evaluate and screen the list of potential preliminary alternatives.

b. Develop Alternatives

X

The Consultant shall develop an agreed number of alternatives from a universe of options and meaningful implementation phases, which will satisfy the purpose and need. The alternatives shall address the project goals and objectives, account for potential impacts and any necessary roadway improvements and interchanges and the arterial system within the study area. Each alternative will include a discussion of individual component routes within that alternative, their capacities, land use impacts and multi-modal traffic impacts including current and future local access points on the arterial and highway system in the study area to maintain local planning consistency.

The Consultant shall then identify the reasonable alternatives that could be applied for the corridor.

The Consultant shall investigate corridor configurations that satisfy the project's goals and objectives. The alternative analysis will also consider the type of improvements to be used. Conceptual layouts will be developed for each with all major structures both in plan and general profile views.

These alternatives shall respond to projected design year traffic volumes as developed in the travel demand forecasting. The Consultant will evaluate the potential concerns and critical issues of each alternative concept and the degree that each accomplishes the goals and objectives of the study. The appropriateness of each alternative will be reviewed and evaluated by each of the jurisdictions as appropriate.

The Consultant shall complete an initial design of the alternatives decided upon by each of the jurisdictions as appropriate. The design parameters, such as design speed, maximum grades, and typical section will be determined at the beginning and used on each alternative. The Consultant shall prepare the conceptual design for each improvements configuration including alignments, general construction phasing requirements, and major structural requirements so that a conceptual cost estimate can be developed. The cost estimate is to include design costs, ROW identification and acquisition, and construction costs.

c. Screen Alternatives

X

The Consultant shall utilize a NEPA-appropriate screening process on the universe of alternatives to identify the feasible and significantly different alternatives, which will be later subject to a more detailed NEPA environmental assessment. The purpose of this screening is to eliminate the obviously infeasible alternatives or alternatives that do not meet the Purpose and Need. The Consultant shall develop NEPA-appropriate evaluation criteria and submit them for review and approval by CDOT and FHWA prior to beginning the screening process. The rationale for elimination shall be thoroughly discussed within the PEL documentation for those alternatives that are eliminated from further consideration.

The No-Action Alternative must be defined and carried through the entire evaluation and assessment process. For each alternative that passes the screening process, the Consultant shall incorporate conceptual design to a level that identifies the potential concerns and critical issues for each environmental area listed below. Unless otherwise indicated, the Consultant is responsible for all of the following activities on each of the alternatives that pass the screening process:

A preliminary screening process will be used on the universe of alternatives to identify a limited number of feasible and significantly different alternatives, which will be subject to more detailed evaluation in the "Test Alternatives Analysis." The purpose of this screening is to eliminate the obviously infeasible or unsuitable alternates. All feasible and significantly different options shall be carried forward into more detailed analysis. These feasible and significantly different screened alternatives are to be presented in the first public workshop, and the public's opinion on what issues should be addressed during the detailed analysis of these alternatives is to be solicited. The criteria used in the preliminary screening shall be developed jointly with each of the appropriate jurisdictions.

The Consultant shall perform a decision alternative analysis for each improvement type. The decision alternative analysis shall utilize a decision matrix of compiled (data collection phase) information, using criteria developed and approved by CDOT, FHWA, and other jurisdictions as appropriate. The decision matrix criteria shall include design components, cost (financial analysis), social-economic, and environmental concerns. The decision alternative matrix will be compiled to show the differences between each alternative improvement location in a clear fashion (to be understood by the general public).

Environmental (air, noise, water quality, open space, etc.), historic and archaeological impacts, cost, engineering feasibility, construction staging options, transportation impacts, transit impacts, design year level of service and other performance measures, socioeconomic impacts and community acceptability, consistency with and/or impact on adopted plans, urban design issues and opportunities, and phasing of improvements are examples of the considerations to be used in the screening process. The No-Build alternative must be carried through the entire evaluation and assessment process.

- |  |       |             |
|--|-------|-------------|
| d. Preliminary Sketches  | _____ | _____X_____ |
| The Consultant shall develop preliminary sketch concepts as necessary for presentation to stakeholders and the general public. The Consultant shall develop plan and elevation drawings of improvement, urban design features, planting masses, and plan access and development potential of adjacent areas.   |       |             |
| e. Before and After Views  | _____ | _____X_____ |
| The consultant shall develop a perspective view of each configuration type in a "before" and "after" illustration of existing features and proposed design, as necessary for presentation to stakeholders and the general public.  |       |             |
| f. Test Alternatives Analysis  | _____ | _____X_____ |
| Following the development of a short-list of alternatives, the Consultant shall perform a comprehensive test of each of the short-listed alternatives. This test shall utilize a decision process, which includes a compilation of all appropriate criteria. In addition to the socioeconomic and environmental concerns, the decision criteria shall include design standards. The criteria will be compiled in coordination with other activities. Following that, a decision matrix shall be created which combines a list of the alternatives under consideration with the results of the test with each criterion. The alternatives shall then be further developed with initial design and financial analysis. |       |             |

g. Initial Design of Alternatives \_\_\_\_\_ X

Once the alternatives have been tested, general profile and cross section studies will be developed for critical areas to analyze the designated alternatives. This information shall be sufficient to determine general cut and fill limits, right-of-way and easement requirements, earthwork and structural requirements. Design parameters such as design speeds, maximum grades, typical sections, intersection and pedestrian routing will be determined at the beginning of the study.

The conceptual designs for the roadways, general construction phasing, and major structures will be completed sufficiently so that preliminary cost estimates can be developed and the satisfaction of pertinent design criteria can be demonstrated. Necessary variances will be identified.

The following shall be available following completion of the design:

- Plan and profile of roadways
- Typical sections of roadways
- Preliminary hydraulic recommendations
- Preliminary right-of-way requirements
- Recommended construction sequence
- Phasing opportunities

h. Financial Analysis of Alternatives

i. Cost Estimate \_\_\_\_\_ X

A total cost estimate will be developed in whole or phases of improvement if feasible. Preliminary and final engineering, ROW, construction engineering, construction, and maintenance for the design life will be analyzed.

ii. Funding Package \_\_\_\_\_ X

A funding package will be developed in whole or phases of improvement if feasible. The funding sources necessary to construct and maintain the project will be identified and evaluated for appropriateness and feasibility.

B. Feasible Alternatives Recommendation \_\_\_\_\_ X

A "Final Alternatives Report" will be submitted which documents the analysis process. This shall include the final staging plan, socioeconomic and environmental concerns, utility conflicts, drainage, and right-of-way requirements, and total cost for the recommended alternatives. The Consultant is responsible for ensuring that the recommended alternative(s) complies with applicable standards and criteria. Where appropriate, required variances will be identified.

A draft for the report shall be submitted for review and comment prior to the submittal of the final report.

The travel forecasting for the project (assumptions, methods, and results) and traffic operations for existing conditions and the recommended alternative(s) will be summarized in a Traffic Analysis Report.

C. Interim Improvements Operational Analysis

X

The Consultant shall complete the tasks listed in the Alternatives Analysis section on the previous pages in order to provide feasible alternatives to recommend and prioritize operational improvements for the existing improvement that may be implemented in phases that do not preclude the ultimate configuration.

**4. PLANNING ENVIRONMENTAL LINKAGE (PEL) REPORT**

X

The PEL Report will be a technical summary of the engineering and environmental considerations, assumptions, analysis methodologies and graphic displays of the final recommended improvements. A draft report will be prepared for CDOT review and approval prior to distribution to the Technical Team. Specific variances will also be identified to clearly define the limitations and specific considerations of alternatives. The report will be revised as necessary based on the review comments received and a Final PEL Report completed.

The consultant will assist CDOT in presentation of the Final PEL Report to CDOT Transportation Commissioners, and local Corridor agency elected officials as needed for concurrence.

The consultant will complete the FHWA PEL Questionnaire for documentation of the PEL Study and use with future NEPA for the recommended improvements. A draft questionnaire will be prepared for CDOT and FHWA review. The questionnaire will be revised as necessary based on the review comments received and a Final PEL Questionnaire completed.

**SECTION 7**  
**CONTRACT CONCLUSION (CHECKLIST)**

**1 SUPPLEMENTAL WORK**

It is anticipated that this contract may be supplemented for additional study and/or design efforts above any assumed quantities noted in the current contract scope. Additional efforts will require CDOT approval prior to beginning any work efforts.

**2 CONTRACT COMPLETION**

This Contract will be satisfied upon acceptance of the following items if applicable:

1. Periodic Reports
2. Billings
3. Meeting Minutes
4. Project Management Plan
5. Project Schedule
6. Existing Transportation Conditions Report
7. Property Ownership Report
8. Traffic Model
9. Environmental Scan Report
10. Logical Termini Memo
11. Purpose and Need Statement
12. Planning Environmental Linkage (PEL) Report
13. Final Alternatives Report
14. Traffic Analysis Report
15. Preliminary Sketches
16. Before and After Views
17. Conceptual Design Plans
18. Cost estimate
19. Funding Package
20. Correspondence with Agencies, Entities, and Public
21. Summary of Public Meetings (including notice, handouts, graphics, comments received)

## **APPENDICES**

- A. REFERENCES
- B. DEFINITIONS
- C. PEL QUESTIONNAIRE

## **APPENDIX A**

### REFERENCES

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

**APPENDIX A**  
REFERENCES (CONTINUED)

- U. Utility Manual
- V. TMOSS Generic Format
- W. Field TMOSS Topography Coding
- X. Topography Modeling Survey System User Manual
- Y. Interactive Graphics System Symbol Table

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

- A. No. 400.2            Monitoring Consultant Contracts
- B. No. 501.2            Cooperative Storm Drainage System
- C. No. 514.1            Field Inspection Review (FIR)
- D. No. 516.1            Final Office Review (FOR)
- E. No. 1217a            Survey Request
- F. No. 1304.1           Right-of-Way Plan Revisions
- G. No. 1305.1           Land Surveys
- H. No. 1601             Interchange Approval Process
- I. No. 1700.1           Certification Acceptance (CA) Procedures for Location and Design Approval
- J. No. 1700.3           Plans, Specifications and Estimates (PS&E) and Authorization to Advertise for Bids under Certifications Acceptance (CA)
- K. No. 1700.5           Local Entity/State Contracts and Local Entity/Consultant Contracts and Local Entity/R.R. Contracts under C.A
- L. No. 1700.6           Railroad/Highway Contracts (Under Certification Acceptance)
- M. No. 1905.1           Preparation of Plans and Specifications for Structures prepared by Staff Bridge Branch

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

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

5 **TRANSPORATION RESEARCH BOARD:**

- A. Access Management Manual

## APPENDIX B

### DEFINITIONS

1	AASHTO-	American Association of State Highway & Transportation Officials
2	ADT-	Average two-way 24-hour Traffic in Number of Vehicles
3	AREA-	American Railway Engineering Association
4	ATSSA-	American Traffic Safety Services Association
5	AT&SF-	Atchison, Topeka & Santa Fe Railway Company
6	ADAAG-	Americans with Disabilities Accessibility Act Guidelines
7	BAMS-	Bid Analysis and Management Systems
8	BLM-	Bureau of Land Management
9	BNRR-	Burlington Northern Railroad
10	CA-	Contract Administrator. The CDOT Manager responsible for the satisfactory completion of the contract by the consultant.
11	CAP-	CDOT's Action Plan
12	CBC-	Concrete Box Culvert
13	CDOT-	Colorado Department of Transportation
14	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.
15	CDOT/STR-	Colorado Department of Transportation Structure Reviewer – The CDOT Engineer responsible for reviewing and coordinating major structural design
16	CDPHE-	Colorado Department of Public Health and Environment
17	CEQ-	Council on Environmental Quality
18	COG-	Council of Governments
19	COGO-	Coordinate Geometry Output
20	CONSULTANT-	Consultant for this project
21	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.

**APPENDIX B**  
DEFINITIONS (CONTINUED)

22	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.
23	DEIS-	Draft Environmental Impact Statement
24	DHV-	Future Design Hourly Volume (two-way unless specified otherwise)
25	GVMPO-	Grand Valley Metropolitan Planning Organization
26	UPRR-	Union Pacific Railroad
27	EA-	Environmental Assessment
28	EIS-	Environmental Impact Statement
29	ESAL-	Equivalent Single Axle Load
30	ESE-	Economic, Social and Environmental
31	FEIS-	Final Environmental Impact Statement
32	FEMA-	Federal Emergency Management Agency
33	FHPG-	Federal Aid Highway Policy Guide
34	FHWA-	Federal Highway Administration
35	FIPI-	Finding In Public Interest
36	FIR-	Field Inspection Review
37	FONSI-	Finding of No Significant Impact
38	FOR-	Final Office Review
39	GPS-	Global Positioning System
40	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.

**APPENDIX B**  
DEFINITIONS (CONTINUED)

41	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).
42	MS4-	Municipal Separate Storm Sewer System
43	NEPA-	National Environment Policy Act
44	NGS-	National Geodetic Survey
45	NICET-	National Institute for Certification in Technology
46	NOAA-	National Oceanic and Atmospheric Administration
47	PAPER SIZES-	See Computer-Aided Drafting Manual (CDOT); Table 6-13 and Table 8-1
48	PE-	Professional Engineer registered in Colorado
49	PM-	Program Manager
50	PLS-	Professional Land Surveyor registered in Colorado
51	PRT-	Project Review Team
52	PS&E-	Plans, Specifications and Estimate
53	PROJECT-	The work defined by this scope
54	ROR-	Region Office Review
55	ROW-	Right-of-Way: A general term denoting land, property, or interest therein, usually in a strip acquired for or devoted to a highway
56	ROWPR-	Right-of-Way Plan Review
57	RTD-	Regional Transportation Director
58	T/E-	Threatened and/or Endangered Species
59	SH-	State Highway Numbers
60	TMOSS-	Terrain Modeling Survey System
61	TOPOGRAPHY-	In the context of CDOT plans, topography normally refers to existing cultural or man-made details.
62	UD & FCD-	Urban Drainage and Flood Control District
63	USCOE-	United States Army Corp of Engineers

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

## APPENDIX C

### PEL QUESTIONNAIRE

This questionnaire is intended to act as a summary of the Planning process and ease the transition from the planning study to a NEPA analysis. Often, there is no overlap in personnel between the planning and NEPA phases of a project, and much (or all) of the history of decisions, etc., is lost. Different planning processes take projects through analysis at different levels of detail. Without knowing how far, or in how much detail a planning study went, NEPA project teams often re-do work that has already been done. Planning teams need to be cautious during the alternative screen process; alternative screening should focus on purpose and need/corridor vision, fatal flaw analysis and possibly mode selection. This may help minimize problems during discussions with resource agencies. Alternatives that have fatal flaws or do not meet the purpose and need/corridor vision cannot be considered viable alternatives, even if they reduce impacts to a particular resource. This questionnaire is consistent with the 23 CFR 450 (Planning regulations) and other FHWA policy on Planning and Environmental Linkage process.

*Instructions: These questions should be used as a guide throughout the planning process, not just answered near completion of the process. When a PEL study (i.e. corridor study) is started, this questionnaire will be given to the project team. Some of the basic questions to consider are: "What did you do?", "What didn't you do?" and "Why?" When the team submits the study to FHWA for review, the completed questionnaire will be included with the submittal. FHWA will use this questionnaire to assist in determining if an effective PEL process has been applied before NEPA processes are authorized to begin. The questionnaire should be included in the planning document as an executive summary, chapter, or appendix.*

1. Background:
  - a. What is the name of the PEL document and other identifying project information (e.g. sub-account or STIP numbers)?
  - b. Provide a brief chronology of the planning activities (PEL study) including the year(s) the studies were conducted.
  - c. Provide a description of the existing transportation corridor, including project limits, modes, number of lanes, shoulder, access control and surrounding environment (urban vs. rural, residential vs. commercial, etc.)
  - d. Who was the sponsor of the PEL study? (CDOT, Local Agency, Other)
  - e. Who was included on the study team (Name and title of agency representatives, consultants, etc.)?
  - f. Are there recent, current or near future planning studies or projects in the vicinity? What is the relationship of this project to those studies/projects?
2. Methodology used:
  - a. Did you use NEPA-like language? Why or why not?
  - b. What were the actual terms used and how did you define them? (Provide examples or list)
  - c. How do you see these terms being used in NEPA documents?
  - d. What were the key steps and coordination points in the PEL decision-making process? Who were the decision-makers and who else participated in those key steps? For example, for the corridor vision, the decision was made by CDOT and the local agency, with buy-in from FHWA, the Corps, and USFWS.
  - e. How should the PEL information below be presented in NEPA?
3. Agency coordination:
  - a. Provide a synopsis of coordination with federal, tribal, state and local environmental, regulatory and resource agencies. Describe their level of participation and how you coordinated with them.
  - b. What transportation agencies (e.g. for adjacent jurisdictions) did you coordinate with or were involved in the PEL study?
  - c. What steps will need to be taken with each agency during NEPA scoping?
4. Public coordination:
  - a. Provide a synopsis of your coordination efforts with the public and stakeholders.
5. Corridor Vision/Purpose and Need:
  - a. What was the scope of the PEL study and the reason for doing it?
  - b. Provide the corridor vision, objectives, or purpose and need statement.
  - c. What steps will need to be taken during the NEPA process to make this a project-level purpose and need statement?
6. Range of alternatives considered, screening criteria and screening process:
  - a. What types of alternatives were looked at? (Provide a one or two sentence summary and reference document.)
  - b. How did you select the screening criteria and screening process?

## **APPENDIX C**

### **PEL QUESTIONNAIRE (CONTINUED)**

- c. For alternative(s) that were screened out, briefly summarize the reasons for eliminating the alternative(s). (During the initial screenings, this generally will focus on fatal flaws)
  - d. Which alternatives should be brought forward into NEPA and why?
  - e. Did the public, stakeholders, and agencies have an opportunity to comment during this process?
  - f. Were there unresolved issues with the public, stakeholders and/or agencies?
7. Planning assumptions and analytical methods:
- a. What is the forecast year used in the PEL study?
  - b. What method was used for forecasting traffic volumes?
  - c. Are the planning assumptions and the corridor vision/purpose and need statement consistent with the long-range transportation plan?
  - d. What were the future year policy and/or data assumptions used in the transportation planning process related to land use, economic development, transportation costs and network expansion?
8. Resources (wetlands, cultural, etc.) reviewed. For each resource or group of resources reviewed, provide the following:
- a. In the PEL study, at what level of detail was the resource reviewed and what was the method of review?
  - b. Is this resource present in the area and what is the existing environmental condition for this resource?
  - c. What are the issues that need to be considered during NEPA, including potential resource impacts and potential mitigation requirements (if known)?
  - d. How will the data provided need to be supplemented during NEPA?
  - e. List resources that were not reviewed in the PEL study and why? Indicate whether or not they will need to be reviewed in NEPA and explain why.
  - f. Were cumulative impacts considered in the PEL study? If yes, provide the information or reference where it can be found.
  - g. Describe any mitigation strategies discussed at the planning level that should be analyzed during NEPA.
  - h. What needs to be done during NEPA to make information from the PEL study available to the agencies and the public? Are there PEL study products which can be used or provided to agencies or the public during the NEPA scoping process?
  - i. Are there any other issues a future project team should be aware of?  
Examples: Utility problems, access or ROW issues, encroachments into ROW, problematic land owners and/or groups, contact information for stakeholders, special or unique resources in the area, etc.