

# SCOPE OF WORK BASIC CONTRACT

CONTRACT TYPE

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

CONTRACT DATE: TBD

PROJECT NUMBER: 0252-461

PROJECT LOCATION: I-25 Central: Santa Fe to 20<sup>th</sup> Street

PROJECT CODE: 21840

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

SECTION 1: PROJECT SPECIFIC INFORMATION

SECTION 2: PROJECT MANAGEMENT AND COORDINATION

SECTION 3: EXISTING FEATURES

SECTION 4: REFERENCE ITEMS NEEDED BY THE CONSULTANT

SECTION 5: GENERAL INFORMATION

SECTION 6: STUDY WORK TASK DESCRIPTIONS

APPENDICES

Comments regarding this scope may be directed to:

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(303)757-9480

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## SECTION 1 - PROJECT SPECIFIC INFORMATION

### 1. PROJECT BACKGROUND

Interstate 25 (I-25) in downtown Denver, roughly between Santa Fe and 20<sup>th</sup> Street, has among the highest annual average daily traffic (AADT) in Colorado and experiences frequent congestion and costly travel delays. Anticipating continued regional growth and travel demand in this I-25 corridor, a vision and plan for future improvements is needed.

This proposed “I-25 Central” Planning and Environmental Linkage (PEL) Study will examine alternatives to reduce overall congestion on this central connection in the regional highway network, to serve existing and future needs, with intent to improve traffic operations, travel time, multi-modal person-trip capacity, and safety. Root causes of congestion will be identified through detailed analysis of current and projected traffic in relation to current facility deficiencies, including structural bottlenecks, substandard roadway design, and system capacity.

The PEL process will include the creation of a coalition of stakeholders and public involvement. Project study scope as well as purpose and need will be developed with the multi-disciplinary group of stakeholders and agencies. Alternatives will be identified and analyzed, with macro, meso, and micro-level traffic studies and facility improvement options. Alternatives for improvements meeting the identified needs will be vetted through stakeholder coordination. The PEL Study will conclude with the identification of alternatives and key issues for future analyses, and will propose phases, early action items, and priorities.

This corridor parallels the South Platte River and Greenway Trail; crosses many local roadways, bike routes, and rail and bus transit corridors; and is adjacent to Downtown Denver, environmental justice communities, and areas of ongoing or potential redevelopment. The analysis of the social, environmental, and economic impacts of the various alternatives – and consistency with local plans – will be critical for decision-making.

Traffic study limits are likely to extend well beyond the core study area in the project title, to accurately reflect overall transportation mobility within the region and potential effects on local street networks. To the north, beyond 20<sup>th</sup> Street, the study will require consideration of pending I-70 improvements and high occupancy toll (HOT) lane interfaces. Similarly, analysis will likely extend south on I25 beyond Santa Fe (US85), and south on Santa Fe (US85), to consider possible future improvements. The scope of the traffic analysis will be determined through iterative data review and purpose and need creation, with stakeholder involvement, which will subsequently define the range of proposed alternatives to be considered.

Within the study limits, the PEL will consider the past conclusions of the Valley Highway EIS, completed in 2006, and evaluate if improvements contemplated for I-25, Santa Fe, the Consolidated Railroad, and Alameda, are still ideal and viable with proposed PEL alternatives. The PEL Study will also give particular attention to the interchanges at 23<sup>rd</sup> and Speer, which have many deficiencies and may have opportunity for early-action. Future private development pursuits within the corridor will be considered. Transit considerations may include foreseeing the need for and/or accommodating mass transit service, such as bus on shoulder options, additional RTD light rail interfaces, and Park & Ride facilities. Access to and from the facility will be an integral part of the study. Anticipating the need for additional capacity, managed lanes are likely to be an alternative to be analyzed for the corridor, and the future of connected and autonomous vehicles will be considered.

## 2. PROJECT GOALS

The primary goal of this Planning and Environmental Linkage (PEL) Study is to develop both short term and long term alternatives and identify proposed actions for reducing congestion, improving operational performance, and addressing future transportation needs in this Central I-25 Corridor. As part of the Study process, it will be necessary to identify public, environmental, and resource concerns and opportunities in the corridor and to use this information with public/stakeholder involvement to develop alternatives to address the purpose and need.

The Study will involve identifying and working with stakeholders to develop and evaluate improvement alternatives. CDOT anticipates participation in the study by various stakeholders, including those identified in Section 2.2.

The Study will also include documenting the goals, objectives, and visions of stakeholders and resource agencies in the corridor. The study will be completed in accordance with the Federal Highway Association (FHWA) Planning and Environmental Linkage (PEL) process, including:

- Public Outreach
- Outreach to Local, State and Federal Resource agencies
- Documentation consistent with commonly accepted PEL standards so information developed in this study can be appended or referenced in a later National Environmental Protection Agency (NEPA) document.
- Assist CDOT in completing the PEL questionnaire for submittal to FHWA. This questionnaire has been included in Appendix B, but the questionnaire to be completed shall be the most current version published on the FHWA web site as of six months after notice to proceed.
- Identification of existing and future problem areas in the corridor from an operational, maintenance, and safety perspective.
- Identification of the existence of any major environmental and/or resource agency concerns which could have a substantially negative impact on implementing improvements in the corridor.
- Assist CDOT, Public Agencies, and resource agencies in identifying issues along the highway and interchange complex of importance to each respective agency.
- Recommend a set of alternatives which provide economical, immediate, and long-term benefits.
- Identify possible future approvals, permits, and mitigation requirements for the various alternatives.
- Recommend alternatives for the highway and interchange complexes that address both the short-term and long-term needs, as identified by stakeholders and analysis, and considers funding sources that can be implemented.
- Prepare a prioritized list of all proposed improvements with accompanying evaluation criteria and time lines.

In order to meet these objectives, the PEL Study shall:

1. Document the existing transportation system in the study area including highway through lanes, managed lanes, auxiliary lanes, interchanges, right-of-way, arterial lanes, accesses, transit, and bike/pedestrian facilities. Collect information from other applicable plans and studies in the region.
2. Document the travel markets that use the transportation system. Travel markets may be defined in terms of:
  - Geographic locations of the origins and destinations
  - Trip purpose
  - Length of trip
  - Mode of travel
3. Estimate future travel demands in the study area will use the Denver Regional Council of Government's (DRCOG) 2015 base year model and a validated and calibrated 2040 out-year model, using the most current local agency land use projections.
4. Estimate the present and future Levels Of Service (LOS) for roadway segments for the peak periods of travel in the study area to identify problem locations which operate or may operate in the future at unsatisfactory levels. Recently completed traffic studies and information from DRCOG and CDOT may be available and used to collect this information.
5. Compare future travel demands to existing highway capacity at select screen lines and identify the kinds of travel patterns that are inadequately served.
6. Indicate current highway and interchange complex features, including functional classifications, lane configurations, roadway and right-of-way widths, bicycle and pedestrian facilities, traffic volumes (roadway and intersection counts), utilities, structures, irrigation ditches, water quality and drainage facilities, environmental factors/conditions, and any safety concerns that may be identified in a CDOT Safety Assessment Report. Survey will likely be required, with scope and methodology to be determined.
7. Advise agencies as to the existence of environmental concerns discovered during the course of the study which could have a substantial negative impact on immediate and future implementation.
8. Recommend appropriate highway and interchange alternatives which will enable Colorado Department of Transportation (CDOT) and Local Agencies to preserve and enhance Right-Of-Way (ROW) to accommodate projected future needs.
9. Prepare a list of transportation improvements planned for I-25 and for other adjacent and connecting arterials that may cause secondary impacts to the corridor.
10. Provide an easy-to-read pictorial summary guide that helps evaluate the costs, benefits, and trade-offs of each alternative to the highway and local systems, in a meaningful way for the general public.

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

This scope of work was developed to provide guidance to the selected consultant in managing and conducting a PEL Study to provide an improved overview and understanding of I-25 from Santa Fe to 20<sup>th</sup> Street. The consultant team (hereinafter referred to as the Consultant) shall evaluate the existing and future operating conditions and features of this segment of I-25. In the course of this Study, the consultant shall produce an Existing Conditions Assessment Report with the goal of identifying existing and anticipated problem areas and identifying both the conflicting and the congruent visions of each local agency and CDOT for the corridor. Other interim stand-alone reports and electronic files, such as those related to the traffic analysis details, may also be required. The consultant shall ultimately produce a PEL Report for I-25 with the goal of expressing a common vision for the corridor and provide recommended phasing that should be implemented.

The Consultant is responsible for conducting project coordination, agency coordination, public participation, conceptual designs, environmental and design data collection, and alternatives analysis as described in the following sections.

### **4. WORK DURATION**

The time period for the work described in this scope is approximately 24 months.

### **5. WORK PRODUCT**

The work in the scope of services for this project will be contracted on an individual Task Order basis, as needed and as determined by the 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. Similarly, additional funding for this project may become available during its progress. The nature of the work that would be performed by the consultant is not expected to expand beyond the disciplines described in this Scope. Schedule milestones and deliverable deadlines may need to be adjusted to meet the issued task orders. The Consultant work products may include:

- 1) Project initiation and management plans
- 2) Project Management and Quality Control Plan
- 3) Agency Coordination and Public Outreach
- 4) Schedules
- 5) Monthly Progress Reports
- 6) Meeting Minutes
- 7) Reports
  - Existing Conditions Assessment Reports/Memos
  - Traffic modelling calibration, validation and assumptions report
  - A narrative for each type of model (FOCUS, DTA, Micro-sim and synchro) describing how the study area was determined.

- Traffic analysis reports
  - PEL Study Report
- 8) Other reports and documentation as described in following Work Product discussions related to specific Tasks.

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.

Detailed work product requirements are described in the following sections.

## **6. WORK PRODUCT COMPLETION**

All submittals must be reviewed and determined acceptable by the CDOT Contract Administrator or designee.

## **7. 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 the 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: Mr. Paul Jesaitis, Region 1 Regional Transportation Director. Active day-to-day administration of the contract will be done by:

Steve Sherman  
Resident Engineer, Central Program, CDOT Region 1  
2000 South Holly Street, Denver Colorado 80222  
(303) 512-5986

### **2. AGENCY COORDINATION AND PUBLIC OUTREACH**

Coordination will likely be required with the following:

- A. Cities/Towns/Other
  - a) City and County of Denver staff and teams
  - b) Elected officials
  - c) Neighborhood/Community Coalitions
  - d) Sports venues
  - e) Chambers of Commerce
  - f) Greenway Foundation
  
- B. Resource Agencies
  - a) Colorado Department of Public Health and Environment (CDPHE)
  - b) Colorado Parks and Wildlife (CPW)
  - c) Colorado State Historic Preservation Officer (SHPO)
  - d) US Army Corps of Engineers (USACE)
  - e) US Fish and Wildlife Service (USFWS)
  - f) Regional Transportation District (RTD)
  - g) Denver Regional Council of Governments (DRCOG)
  - h) Federal Highway Administration (FHWA)
  - i) Urban Drainage and Flood Control District (UDFCD)
  - j) CDOT Division of Transit and Rail
  - k) Bike/Ped advocacy groups
  
- D. Private Partners
  - a) Plenary Group
  - a) Motor Carrier Association
  - b) Union Pacific Railroad
  - c) Burlington Northern Santa Fe Railroad
  - d) Private developers

## **SECTION 3 - EXISTING FEATURES**

### **1. STRUCTURES**

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

### **2 UTILITIES**

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

### **3. IRRIGATION DITCHES**

To be determined. None known.

### **4. RAILROADS**

Burlington Northern Santa Fe (BNSF) Railway  
Union Pacific (UP) Railroad  
Platte Valley Trolley

### **5. OTHER**

RTD  
ITS Features, including fiber optic facilities

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

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

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

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

### **2. PREVIOUS STUDIES**

A search for previous relevant studies will be conducted by the Consultant. Known studies include:

Valley Highway EIS and ROD  
23<sup>rd</sup> over I-25 Structure Pre-scoping Report  
Speer over I-25 Structure Pre-scoping Report  
DenverMoves Bicycles Master Plan (update 2014)  
City and County of Denver Station Area Plans, including Broadway Station, Alameda Station, 10<sup>th</sup> & Osage, and Decatur/ Federal  
City and County of Denver Strategic Transit Oriented Development Plan  
Alameda Underpass Structure Report  
CCD Infrastructure Assessment Report  
Alameda Underpass Structure Report (CCD)  
Infrastructure Assessment Report (CCD)  
Colfax Viaduct Assessment

## **SECTION 5 - GENERAL INFORMATION**

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

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

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

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

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

### **3. PROJECT COORDINATION**

- A. Routine Working Contact

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

- B. Project Manager Requirements

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

- 1. A written synopsis or copy of their respective contacts (via email, telephone, or in person) with others.
- 2. Copies of pertinent written communications.

### **4. 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  
Reporting and Billings will be as agreed to by the Project Managers.
- C. Minutes of all Meetings:  
The minutes will be completed and provided to the CDOT/PM within ten (10) 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.

**5. PERSONNEL QUALIFICATIONS**

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

All tasks assigned to the Consultant must be conducted by a qualified person on the Consultant team. The qualified person is a professional with the necessary education, certifications (including registrations and licenses), skills, experience, qualities, or attributes to complete a particular task.

**6. CDOT COMPUTER/SOFTWARE INFORMATION**

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

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

## **7. COMPUTER DATA COMPATIBILITY**

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

The data format used by the Consultant to submit 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.

The consultant shall prepare a document describing the traffic modeling software proposed for use in the study.

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

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

## **SECTION 6 - STUDY WORK TASK DESCRIPTIONS**

The Study will be conducted in accordance with the Statewide and Metropolitan Planning Regulation 23 CFR 450. The provisions linking planning and NEPA presented in Section 450.318 and Appendix A of 23 CFR 450 are to be followed. The findings of the PEL Study will establish the Purpose and Need, early action items 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).

The Study will include development and evaluation of alternatives based on a consideration of Purpose and Need, geometric, traffic, planning and environmental factors, the location of communities and other developed areas, and public and agency input.

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.

This section establishes the consultant's individual task responsibility. The consultant shall maintain the ability to perform all work tasks which are indicated below, in accordance with the forms and conditions contained herein, and the applicable CDOT standards. Selected work tasks shall be assigned only after coordination and consultation with 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 CDOT/PM if clarification is required. (See Section 2.01).

A Project Management Plan shall be developed by the Consultant which satisfies the requirements of the project development. This plan must be approved by the CDOT/PM before starting the work. The activities of communication, consensus building, project reviews, conceptual design, data gathering, documentation, and formal public notice should be planned by the Consultant and coordinated with the 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.

### **1. TASK 1 - PROJECT INITIATION AND CONTINUING REQUIREMENTS**

#### **A. Initial Project Meeting**

An initial project kick-off meeting will be held with the appropriate disciplines, 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 (CDOT personnel, Consultant personnel, and key stakeholders) 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

The Consultant shall provide a Project Management Plan for management coordination and control to ensure successful and timely completion of this study. The Project Management Plan shall:

1. Include a detailed work plan, including schedule and cost breakdown for each sub-task described in this scope of services
2. Identify the method for tracking budget and schedule for the duration of the project
3. Establish key project contacts within the Project Team and other stakeholders
4. Establish the project milestones
5. Include a Quality Control Plan that describes the Quality Control Process to be used on the project

## C. Project Management Communication

1. The Consultant and the CDOT Project Manager shall meet at least monthly to review the cost, schedule status and progress of the work, as well as address unanticipated problems and potential solutions. Approximately eighteen (18) Project Management meetings with the Project Team will be held. The Consultant shall prepare status presentations at key milestones to update CDOT, Stakeholders, and Resource Agencies on the status and progress of the work. The project milestones include: Scoping, Purpose and Need Statement, Existing Conditions Assessment Report, Alternatives Development/Analysis, Proposed Action(s), Funding/Prioritization/Phasing, and PEL Report. The Consultant shall prepare for and participate in these meetings, and shall provide documentation of the meetings such as agendas, presentation materials and meeting minutes.
2. The Consultant shall submit monthly cost and schedule reports to enable project monitoring. The contract budget and schedule shall be regarded as the baseline against which status and progress are measured and reported.
3. The Consultant shall submit working and final drafts on all work products in a timely manner to allow for adequate review and revision prior to final submittal schedules. The Consultant invoices shall be prepared to show cost against major milestone tasks.

## D. Consensus Building and Public Outreach

1. Key Stakeholder Interviews: Understanding ideas, perspectives and needs of the key stakeholders in the corridor is critical for broadly supported decisions. At the start of the project, as coordinated with and approved by the CDOT Project Manager, interviews will be conducted with key stakeholders (identified in Section 2) to understand their respective interests, goals, issues and desired outcomes for the PEL Study. An interview template will be prepared prior to conducting interviews. An overall summary of interview issues will be prepared after the interviews take place and results will be part of both the public participation plan and the Innovation

Brainstorming Workshop agenda. It is anticipated that up to 6 (six) Key Stakeholder Interviews will be held.

2. Innovation Brainstorming Workshop: An interactive Innovation Brainstorming Workshop will be held with design professionals, CDOT, and key stakeholders to explore Managed Lanes, Intelligent Transportation Systems (ITS), Active Traffic Management (ATM), Transportation Demand Management (TDM), transit, bicycle/pedestrian corridors, land use, and short-term and long-term alternatives to forward into the alternative analysis. The Consultant will prepare and facilitate the Innovation Brainstorming Workshop and lay the foundation for the workshop by identifying potential concepts for discussion, and key issues and concerns from the interviews. A summary of the Innovation Brainstorming Workshop will be produced and distributed.
3. The Agency Coordination and Public Outreach Plan shall at a minimum include:
  - Preliminary identification of critical issues and problems in need of resolution.
  - Recommend the proper level and means of involvement in the study by the public.
  - Identification of Resource Agencies with an interest in the corridor and the level of consultation required with each agency for successful completion of the study.
  - Identification of Stakeholders, Resource Agencies, community leaders, elected officials and key community groups and recommend the level and means of involvement in the study by those identified.
  - Identification of planned community events near the highway and interchange complex that are scheduled during the study, for project team involvement.
  - Description of participation methods, objectives, and where each fits into the schedule.
4. Technical Working Group (TWG) Coordination and Meetings: The TWG, composed of corridor and interchange complex communities' technical staff and resource agency representatives, will serve as the focal point for the stakeholder engagement process and is the primary mechanism to directly interact and engage the corridor communities and stakeholders. The Project Team will coordinate with the TWG to determine the proper level of involvement and engagement required for their respective elected officials and other associated stakeholder groups. It is anticipated that there will be eighteen (18) facilitated TWG meetings that will be the forum for addressing corridor-wide issues and making recommendations as a group. As coordinated with and approved by the CDOT Project Manager, segment-specific issues can be addressed through consultation with the affected jurisdictions as needed. Meeting agendas, associated materials and summaries will be prepared for each meeting. Community coordination and follow up will occur for each meeting as needed. Operating guidelines and a TWG work plan will be established to define the group's goals and how it will function.
5. Resource Agency Scoping Meetings: As coordinated with and approved by the CDOT Project Manager, approximately ten (10) total individual meetings will take place to coordinate and consult with resource agencies identified in Section 2.

6. **Public Meetings:** Public meetings will be held at the beginning of the process to educate the public on the PEL process and to collect input about the vision for the highway and interchange complex and associated concerns, and later to present the range of short-term and long-term alternatives to the public and collect input for recommendations. It is anticipated that there will be four (4) meetings total throughout the corridor. Community coordination and communication efforts will be carried out in conjunction with the meetings. Public meetings will include corridor wide public notifications such as press releases, post card mailing, social media, telephone Town Hall Meetings, or other methods.
7. **Outreach to Regional Partners and Small Groups:** The consultant will coordinate closely with the TWG to develop effective strategies for involving their respective constituencies and other key stakeholders groups. Various approaches may be used to engage and interact with the broader community including utilizing existing communication channels, such as planned events or pre-existing meetings when necessary. It is anticipated that up to ten (10) separate meetings will be required.
8. **On-going Outreach and Public Involvement Efforts:** The consultant team will support CDOT staff by serving as a secondary project point of contact for the distribution of information to key stakeholders, agencies or the general public; to populate and manage the email/ mailing lists and the contact database; to create content for CDOT's project website if one is established; to support the creation and distribution of media advisories; and to advertise and communicate the public meetings.
9. **Policy Meeting:** Approximately six (6) Elected Officials/Policy Committee Meetings will be required.

**TASK 1 WORK PRODUCT:**

1. Project Management and Quality Control Plan
2. Monthly Progress/Status Reports with cost and schedule reports
3. Innovative Brainstorming meeting materials, facilitation, and reports
4. Agency Coordination and Public Outreach Plan
5. TWG meeting materials, facilitation, and minutes
6. Resource Agency, small group, and policy meeting materials, facilitation, and minutes
7. Public meeting materials, facilitation, and minutes
8. Miscellaneous meeting materials, facilitation, and minutes

All of the deliverables discussed in this task will be submitted to the CDOT Project Manager or appropriate stakeholders once (1) for review and revisions will be made, as appropriate.

**NOTE:** *For Tasks 2 and 3, the Agencies will assist the Consultant in the preparation of the different work products. For these tasks, the responsibilities of the Agencies and of the Consultant are defined.*

## 2. TASK 2 – CORRIDOR CONDITIONS ASSESSMENT REPORT

### A. Obtain Necessary Trespass Rights and Permits

The consultant will apply for and obtain a CDOT Special Use Permits (Region 1) for any work done within CDOT Right of Way.

Some activities may require work on land not controlled by CDOT. In such cases the consultant shall prepare the necessary paperwork and coordinate with the property owner or municipal entity in order to obtain the necessary written permission to enter the premises. CDOT Form 730 may be used for this purpose. The Consultant shall obtain any other permits, as required, for fieldwork activities.

### B. Traffic Control

The Consultant shall be prepared to provide traffic control for any of their field activities or for any supplemental survey that CDOT may perform during the course of this project. Any Traffic Control Plans required for this work shall be submitted to CDOT for acceptance prior to the work.

### C. Traffic and infrastructure data collection and reporting

1. The Consultant shall review the Safety Analysis performed by CDOT, discuss applicability of conclusions with the project team, identify potential gaps, and incorporate conclusions as necessary. The consultant may be required to collect additional data from local municipalities, including crash data and traffic counts, within the project limits and surrounding roadway network impacted by the project. The Consultant may then be required to augment the CDOT LOSS analysis using current CDOT methodologies. Ultimately the consultant will prepare a report outlining the safety analysis findings, and 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 based on the Safety Assessments and on crash data collected.
2. Available traffic data shall be compiled from various State and municipal sources, or counted in the field as required for the purposes of the Study. CDOT shall provide the consultant access to INRIX for travel speed data, COGNOS lane volume and speed data, and ramp meter traffic data. The consultant shall compile the available traffic data and determine additional data needs, if any. Multiple recordings will most likely be necessary to establish a "typical" condition. In some cases origin and destination traffic data may be needed to evaluate an existing condition. Daily vehicle classification counts will be collected at locations determined to be relevant to the Study. Intersection turning movement count locations and origin/destination data are to be determined by the Consultant in coordination with CDOT.
3. The Consultant, with CDOT staff, shall map the existing lane volumes and speeds on I-25 within the project boundaries. At a minimum, this will include the mainline of I-25, all entering and exiting ramp volumes at the merge/diverge points, and weave areas at all

interchanges in the project limits. Additional locations to be evaluated will be determined by the Consultant in coordination with CDOT, with input from the project stakeholders.

4. Inventory shall be taken of the existing and planned infrastructure in the corridor including, but not limited to: highway through and auxiliary lanes; interchanges, accesses, and connecting arterials; right-of-way widths; major utilities; Bicycle and pedestrian facilities; structural constraints; adjacent land ownership characteristics (including future development); railroad facilities; and transit types / service levels including station locations, routes and frequency.
5. Traffic data and infrastructure inventory will be summarized in a report and in graphics in a simple and readily understandable format.

#### D. Travel Demand Forecasting

1. The consultant shall document the existing travel markets that use the transportation system by using the DRCOG travel demand model (not field surveys) to establish:
  - a. Geographic locations of the origins and destinations
  - b. Trip purpose (Commuter/Non-commuter trips)
  - c. Local versus regional trips
  - d. Average Length of Trip
2. The consultant shall summarize land use and modeling data as provided by the DRCOG travel demand model (Years 2015 and 2040).
3. If it is determined necessary to perform any additional Travel Demand Forecasting (e.g. to account for changed planned land use or travel network conditions), the consultant shall develop a sub-area model specific to the project study area and will utilize one of the DRCOG models that is available for such purposes. This may include:
  - a. Local agency transportation models, integrated into adopted 2040 regional DRCOG FOCUS II, and COMPASS, models
  - b. The primary product of this work will be the 2040 travel demand forecasts approved for study use by CDOT, DRCOG and FHWA. These forecasts will be used to develop 2040 AADT and peak hour traffic volumes for the corridor and arterial roadways, and as determined necessary, peak hour turning movements at signalized intersections and freeway ramp terminals
  - c. Previously projected transit utilization may be incorporated into the study without new transit modeling being performed, pending discussions and approval with RTD.
4. The consultant shall be responsible for performing "reasonableness" checks on information developed and derived from use of the DRCOG model. The Consultant shall use the approved DRCOG data sets and road network to ensure that the traffic analysis is compatible with the NEPA process.
5. The Consultant will be required to coordinate with CDOT, FHWA, and key stakeholders at determined milestones, which will require full documentation at each step.
6. Modeling shall 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. The specific model(s) to be used will be determined during the course of the study and must be acceptable to both CDOT and FHWA.

## E. Traffic Operations

1. The Consultant shall develop an appropriate mesoscopic model and provide justification for the proposed model selection to CDOT, DRCOG, Denver, and FHWA. The use of the proposed model is subject to the approval of these agencies. Explanation will be required as to why this model could be used to assess traffic redistribution and assignment changes in regard to alternatives that implement access changes to the freeway and/or connecting roadway system. It is expected this model could be used for future I-25 studies and must therefore be transferrable.
2. Using 2016 data, the Consultant shall perform a corridor travel time reliability analysis developed from INRIX travel time data that screens crashes, police action, and other incidents, weather events, special events, and establishes travel times for regularly occurring congestion. This will become the travel time baseline for evaluating potential alternatives.
3. The Consultant shall prepare a report identifying the existing AM and PM peak period operational characteristics and roadway geometric assessment along with identified safety issues and provide a summarized problem statement of existing operational, safety and geometric deficiencies.
4. "Measures of Effectiveness" for proposed traffic improvement alternatives shall be determined with CDOT, FHWA, and other stakeholders.
5. The Consultant shall use a micro-simulation model to evaluate the traffic operations of the transportation system and report the agreed upon "Measures of Effectiveness." The Consultant shall be required to use state-of-the-practice modeling calibration techniques for the existing conditions, including following the guidelines provided in the FHWA Traffic Analysis Toolbox as a framework for methods regarding traffic data collection/validation, and setting up and calibrating the micro-simulation model within the agreed upon spatial and temporal limits of the model. The Consultant shall perform corridor and site-specific operational analyses using the appropriately calibrated micro-simulation model for the 2040 model volumes to help develop and screen alternatives that provide safety and operational benefits. Future travel demands shall be compared to existing corridor capacity and inadequately served traffic patterns shall be identified. (I.e. No-Build Alternative). It is anticipated that Synchro and/or micro-simulation software will be used for evaluation of intersection operations at ramp terminals and adjacent intersections as necessary.
6. The Consultant will be required to coordinate with CDOT Traffic, Denver Transportation and Mobility, 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.

7. The Consultant shall prepare a preliminary list of existing and anticipated deficiencies in the corridor, describing operational deficiencies of the transportation system, in both traffic and roadway design, with reflection on the growth or changing needs in the corridor along with an estimate as to the timeframe in which deficiencies will occur.
8. The Consultant shall identify short-term improvements that may provide operational benefits while remaining consistent with the long-term preferred alternative. Specific locations will be determined by the Consultant in coordination with CDOT. Access changes to special event venues may require additional operational analyses as deemed necessary.

F. Conduct an Environmental Overview of the Corridor

The analysis for this environmental overview shall build from and be consistent with other environmental studies completed or nearing completion in the project area. The overall study area for this PEL project includes I-25 from south of US85/Santa Fe (approx. milepost 207) to north of 20<sup>th</sup> Street (approx. milepost 213). However, the Environmental Overview limits may be reduced, or expanded, depending upon the alternatives actually being studied. The use of GIS techniques is highly encouraged.

The following environmental resources are resources likely to be inventoried and analyzed, with technical memos for each required as part of the PEL Study. This list is not all-inclusive and is subject to change based on meetings with project stakeholders. Modifications to the list may be necessary depending on the results of the Innovation Brainstorming Workshop. A scoping meeting with CDOT Region 1 and HQ will be required to define the levels of environmental analysis for each resource area:

- **Right of Way**
- **Land Use and Zoning**
- **Utilities**
- **Air Quality**
- **Noise**
- **Water Resources and Water Quality**
- **Floodways and 100-year floodplain boundaries**
- **Wetlands and Other Waters of the US**
- **Parks, Open Spaces, Trails, Recreational Resources/4(f) and 6(f)**
- **Bicycle and Pedestrian Facilities**
- **Historic and Archeologic Resources**
- **Paleontological Resources**
- **Hazardous Substances (including oil/gas wells)**
- **Social Conditions and Environmental Justice Communities**
- **Wildlife and Threatened and Endangered Species**
- **Cumulative Impacts**

Technical Memos shall refer to and restate related issues heard from communications with the public, stakeholders, or otherwise.

NOTE: Agency Data Requests - The Consultant may request that Agencies provide the Consultant with existing local land use and transportation plans, traffic counts, roadway striping

plans (illustrating lane/roadway/right-of-way widths), on-street parking inventory/utilization, digital photographs of different roadway segments, information on sidewalk and parkway features, and building set-back, when available. The Agencies may identify different segments along I-25 for detailed analysis and provide the Consultant with Level of Service (LOS) and travel time information for these study segments, if available. The Agencies may assist the Consultant in obtaining any other data which may be necessary in completing the existing conditions report. The Consultant will request that Agencies appoint one individual as their designated liaison to CDOT and the Consultant in order to better facilitate communication.

### TASK 2 WORK PRODUCT:

Reports presenting the findings from the Responsibilities described above, in a clear and concise manner, including:

1. A stand-alone existing conditions assessment report that identifies the existing safety, operational, travel time, geometric, and infrastructure issues of the corridor.
2. A stand-alone modeling report that describes the approach and methodologies used for the macro, meso, and micro modeling.
3. Interim lists and documentation of travel demand forecasting and traffic operations modeling, including results and effects from proposed improvements in relation to the no-action alternative.
4. Environmental resource technical memos describing the assessment of existing environmental resources and conditions in the corridor. A summary of comments and key issues received at Public-Stakeholder meetings will be included.

All of the deliverables discussed in this task will be submitted to CDOT twice (2) for review and revisions will be made, as appropriate.

### **3. TASK 3 - DEVELOP A STATEMENT OF PURPOSE AND NEED AND IDENTIFY GOALS FOR THE TRANSPORTATION SYSTEM**

The Consultant shall develop and collaborate with Stakeholders on the following:

- A. Documentation and presentation of existing and expected deficiencies in the transportation system serving the corridor area.
- B. Identification of goals and visions for the highway and interchanges.
- C. Development of logical termini for possible improvements
- D. Production of a written statement of purpose and need, to serve as a vision statement for the corridor, based in identification of needs and deficiencies. The statement should reflect the context sensitivity of the corridor's communities to help reach their transportation goals by encouraging the consideration of land use, transportation, environmental and infrastructure needs in an integrated manner.

### TASK 3 WORK PRODUCT:

1. Documentation and presentation of existing conditions and deficiencies in a clear and concise manner.
2. A summary of comments and key issues received at stakeholder/public meetings.
3. Memorandum documenting the decisions made regarding goals and visions of the highway, logical termini, and Purpose and Need statement.

All of the deliverables discussed in this task will be submitted to CDOT twice (2) for review and revisions will be made, as appropriate. The Consultant should assume that CDOT Environmental Programs Branch, CDOT Regions 1, and stakeholder review will happen concurrently; and FHWA review will occur consequently.

#### **4. TASK 4 - PLANNING ENVIRONMENTAL LINKAGE (PEL) STUDY**

A PEL Study will express a common vision between CDOT and stakeholders for the future operational functionality of the I-25 corridor and accesses.

##### **A. Alternative Creation**

The consultant shall lead efforts to develop basic concepts for alternatives through the project's Technical Working Group, Stakeholders, Project Managers and the Consultant. In addition to the No-Action Alternative, the Consultant shall develop short-term and long-term alternatives at both the corridor and micro levels (where necessary), which:

- Meet the Purpose and Need identified in Task 3.
- Balance regional mobility with local connectivity needs and access management.
- Enhance corridor aesthetics and safety
- Consider unconventional and innovative approaches including managed lanes, ITS, ATM and TDM as part of the solution, and reflecting on possible futures in the transportation industry.
- Consider most appropriate use of the existing right-of-way, maximum right-of-way capacity, and need for additional right-of-way.
- Consider context sensitive solutions.

##### **B. Alternative Development**

The consultant shall be prepared to perform survey work in specific areas and to the level needed to support design work. Some survey exists south of 6<sup>th</sup> Avenue, but survey north of 6<sup>th</sup> Ave will be required in order to analyze alternatives. An aerial survey will largely suffice, to 6" resolution, and CDOT may be able to provide this, with additional field survey as necessary of important features such as hydraulic and utility facilities. Additional field survey may use technologies such as LiDAR.

It is CDOT's intention to lead the basic roadway engineering for the conceptual level alternatives. More detail will be needed in some areas to support screening, and the Consultant shall be prepared to participate in roadway engineering and provide other design disciplines up to and including performing the full range of basic engineering for specific alternatives. Details of the Consultant's level of involvement will be determined at the time in which the Task Order for this work is written.

The conceptual design for the roadway alignments, interchange configurations, roadway templates, lane additions, pedestrian facilities, bicycle facilities, and major structures (bridges, grade separations, retaining walls, etc.) included in the Proposed Action(s) will be completed to approximately five (5)% design so that planning-level cost estimates can be established by CDOT, in coordination with the Consultant as needed. This may also include short term improvements as identified in the analysis.

For a limited number of early action projects the consultant shall be prepared to perform a full range of engineering design services up to and including final design.

### C. Alternatives Screening

The Consultant shall utilize a NEPA-appropriate screening process. A two-step or three step screening process through which the level of analysis detail becomes greater as the number of alternatives reduces shall be considered. Several basic measures shall be used to judge alternatives. This evaluation is intended to illuminate the issues and provide a coherent discussion prior to selecting a preferred corridor strategy. The Consultant will work with CDOT and stakeholders to develop evaluation criteria and will submit the criteria to FHWA for review. The following measures shall be included:

- Operational Effectiveness – This analysis should quantify how each alternative addresses deficiencies and needs as identified in Tasks 2 and 3. The analysis should also identify negative upstream, downstream and any other roadway network consequences of proposed improvements. For estimating purposes, it is anticipated that a general analysis will be done on initial screening of alternatives and a more detailed analysis will be required for up to three (3) short-term alternatives and three (3) long-term alternatives. The detailed analysis will consider the AM and PM peak hour to determine how well each alternative addresses the deficiencies and needs as identified in Tasks 2 and 3.
- Land Use Consequences - This analysis should quantify how the alternatives will affect accessibility and mobility in the corridor. Resultant land use implications should then be assessed and compared to adopted comprehensive plans and zoning. Any inconsistencies between the proposed transportation investment and levels or types of development in local plans should be clearly identified and understood by all decision-makers. It should be noted that land use planning is not the purview of CDOT. Consequently, CDOT staff can only assist by providing information useful to those agencies with jurisdiction over land use and development policies, planning and decision-making.
- Economic Feasibility – This analysis should compare the alternatives in terms of whether the benefits are commensurate with the costs. It also should consider the availability of funds for construction and operation as well as equity – the distribution of costs and benefits.
- Environmental Feasibility - Impacts of each alternative on important environmental resources and feasibility regarding environmental issues and regulations. Conceptual avoidance and minimization measures should be developed following the identification of impacts and concerns.

### D. Documentation of the Proposed Action(s)

Following screening, the Proposed Action, or Actions, will be documented and the conceptual design will be refined as needed to avoid impacts and/or provide mitigation. The consultant shall:

- Provide an easy-to-read pictorial summary guide that helps evaluate the pros and cons of each alternative in a creative and meaningful way.

- Recommend ROW needs along the corridor expressed as typical sections and as part of any proposed interchange reconstruction concept. The recommended ROW for the Proposed Action(s) will be identified (including physical environmental mitigation like Storm water controls). These elements will combine to allow for corridor preservation by the local communities.
- For the Proposed Action(s), a three-dimensional (3D) model will be developed where possible. This will be done by CDOT and the Consultant as directed by CDOT. This information shall be sufficient to determine general cut and fill limits, toe of slope locations, right-of-way needs and easement requirements, earthwork requirements, structural requirements, and water quality facilities.

#### E. Proposed Action(s) phasing/financing/funding options

The Consultant shall establish meaningful project phases and connect them with potential funding packages. Given the variability in the amount and timing of funding, the Consultant will identify and prioritize projects for a range of funding scenarios to ensure that the corridor is getting maximum benefit for the available dollar. As a part of this, the Consultant will investigate various state and federal funding mechanisms such as RAMP, FASTER, surface treatment, enhancement, STP metro, etc., that can be used in part or combination to develop larger project packages. Other options such as Business Improvement Districts, Tax Increment Financing, Public/Private partnerships, tolling and new federal programs such as livable communities, will also be reviewed for applicability on the corridor. It is also possible that the consultant will be required to perform a conceptual-level Tolling and Revenue study.

#### F. Prepare the PEL Study report

The consultant shall prepare the final PEL report that includes an Executive Summary and the following chapters: Introduction including Purpose and Need Statement, Alternative Development and Analysis including the No-Action Alternative, Study Recommendations, Affected Environment and Environmental Consequences, Agency Coordination and Public Involvement, and Next Steps. In addition to the PEL Study report, technical memos/reports will be updated to include environmental consequences, public and agency comments, and potential mitigation measures. The level of detail in each technical report will be determined through a scoping meeting with CDOT R1 and HQ. The reports shall be provided in a software format that can also be read on an electronic device.

#### TASK 4 WORK PRODUCT:

1. A stand-alone alternatives assessment report that describes the short term and long term alternatives screening process used and summarizes the findings of the analyses and provide a recommendation for a preferred alternative.
2. PEL Study Report, which presents the findings from the responsibilities described above in a clear and concise manner
3. Traffic and Environmental Resource Technical Memos/Reports; and a summary of comments and key issues received as a result on the implementation of the Public Participation Work Plan as per Task 1.

## **5. TECHNICAL AND PEER REVIEW**

All study reports and design work products will be reviewed by CDOT, Stakeholders, and Resource Agencies.

## **6. PROJECT SCHEDULE**

The contract period shall be twenty four (24) months from the date of execution of the contract.

## **7. CONTRACT COMPLETION**

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

- A. Project Schedule
- B. All work products as described above
- C. Project Progress Meeting Minutes
- D. All documents found In Research
- E. All Permission to Enter forms
- F. Photography Products
- G. Ownership Map
- H. Original Field Notes
- I. Completion of review and consultant revision of contract submittals

## APPENDIX A – REFERENCES

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

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

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

- A. No. 400.2 Monitoring Consultant Contracts
- B. No. 501.2 Cooperative Storm Drainage System
- C. No. 514.1 Field Inspection Review (FIR)
- D. No. 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 CA
- K. No. 1700.5 Local Entity/State Contracts and Local Entity/Consultant Contracts and Local Entity/R.R. (Contracts under CA)
- L. No. 1700.6 Railroad/Highway (Contracts under CA)
- 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. TRANSPORTATION RESEARCH BOARD:**

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

## APPENDIX B - PEL QUESTIONNAIRE

Downloaded February 14, 2012

This questionnaire is intended to act as a summary of the Planning process and ease the transition from planning to a National Environmental Policy Act (NEPA) analysis. Often, there is no overlap in personnel between the planning and NEPA phases of a project, so consequently much (or all) of the history of decisions made in the planning phase is lost. Different planning processes take projects through analysis at different levels of detail. NEPA project teams may not be aware of relevant planning information and may re-do work that has already been done. This questionnaire is consistent with the 23 CFR 450 (Planning regulations) and other FHWA policy on Planning and Environmental Linkage (PEL) process.

The Planning and Environmental Linkages study (PEL Study) is used in this questionnaire as a generic term to mean any type of planning study conducted at the corridor or subarea level which is more focused than studies at the regional or system planning levels. Many states may use other terminology to define studies of this type and those are considered to have the same meaning as a PEL study.

At the inception of the PEL study, the study team should decide how the work may later be incorporated into subsequent NEPA efforts. A key consideration is whether the PEL study will meet standards established by NEPA regulations and guidance. One example is the use of terminology consistent with NEPA vocabulary (e.g. purpose and need, alternatives, affected environment, environmental consequences).

*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 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 a PEL study to FHWA for review, the completed questionnaire will be included with the submittal. FHWA will use this questionnaire to assist it in determining if the study meets the requirements of 23 CFR §§ 450.212 or 450.318. The questionnaire should be included in the planning document as an executive summary, chapter, or appendix.*

### 1. BACKGROUND:

- A. Who is the sponsor of the PEL study? (state DOT, Local Agency, Other)
- B. What is the name of the PEL study document and other identifying project information (e.g. sub-account or STIP numbers, long-range plan, or transportation improvement program years)?
- C. Who was included on the study team (Name and title of agency representatives, consultants, etc.)?
- D. Provide a description of the existing transportation facility within the corridor, including project limits, modes, functional classification, number of lanes, shoulder width, access control and type of surrounding environment (urban vs. rural, residential vs. commercial, etc.)
- E. Provide a brief chronology of the planning activities (PEL study) including the year(s) the studies were completed.

- 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. What was the scope of the PEL study and the reason for completing it?
- B. Did you use NEPA-like language? Why or why not?
- C. What were the actual terms used and how did you define them? (Provide examples or list)
- D. How do you see these terms being used in NEPA documents?
- E. 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 state DOT and the local agency, with buy-in from FHWA, the USACE, and USFWS and other resource/regulatory agencies.
- F. How should the PEL information 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 during 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. PURPOSE AND NEED FOR THE PEL STUDY:**

- A. What was the scope of the PEL study and the reason for completing it?
- B. Provide the purpose and need statement, or the corridor vision and transportation goals and objectives to realize that vision.
- 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:** 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 will not be considered reasonable alternatives, even if they reduce impacts to a particular resource. Detail the range of alternatives considered, screening criteria, and screening process, including:

- 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?
- 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 each other and with the long-range transportation plan? Are the assumptions still valid?
- 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. ENVIRONMENTAL 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 planning data provided need to be supplemented during NEPA?

9. List environmental resources you are aware of 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.

10. Were cumulative impacts considered in the PEL study? If yes, provide the information or reference where the analysis can be found.

11. Describe any mitigation strategies discussed at the planning level that should be analyzed during NEPA.

12. 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?

13. Are there any other issues a future project team should be aware of?

- A. Examples: Controversy, 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.