Date: February 20, 2020

To: High-Performance Transportation Enterprise Board / Colorado Transportation Commission

From: Nicholas Farber, Director, HPTE; Andrew Gomez, HPTE General Counsel

Subject: Intra-Agency Agreement Between HPTE and CDOT regarding I-270 Traffic and Revenue Study and Direct Connects Alternatives Analysis

Purpose

The purpose of this memo is to describe the Intra-Agency Agreement (IAA) between the Colorado Department of Transportation (CDOT) and the High-Performance Transportation Enterprise (HPTE) regarding CDOT's contribution towards an intermediate grade traffic and revenue study on I-270, and a HPTE contribution toward a Region 1 Direct Connects Alternatives Analysis on I-270.

Action

The HPTE Board and Transportation Commission are asked to adopt a resolution that supports the staff recommendation to approve the IAA.

Background

CDOT Region 1 is currently moving forward on an Environmental Assessment on I-270 that will clear the corridor for a construction project from Central 70 to I-76. The Region is not studying tolled Express Lane direct connects from I-270 to either US 36 or I-25 in order to expedite a construction project on the corridor; however, as was demonstrated in the Express Lanes Master Plan, direct connects to and from I-270 have the potential to determine whether or not HPTE can raise enough revenue on the corridor to contribute towards a project. Region 1 agrees with this assessment, but would like to get a construction project going as soon as possible. To that end, Region 1 has agreed to contribute $600,000 towards a traffic and revenue study to determine how much HPTE can contribute towards the project (with and without direct connects), and HPTE is contributing $600,000 of I-25 Segment 2 toll revenue towards a tolled express lane direct connect alternatives analysis. The alternatives analysis will provide low level design on different direct connect alternatives at the I-270/US 36/I-25 interchange, examine what structures can still be used, determine potential project phasing, and provide construction estimates.

Overview of the IAA

IAAs between CDOT and HPTE document the substantive terms of how CDOT and HPTE work together and allocate rights and responsibilities on shared projects. This IAA states because of HPTE's expertise and legal powers unavailable to CDOT, as well as HPTE's experience in procuring and administering traffic and revenue studies as well as financial services, CDOT desires to provide funding to HPTE for an intermediate traffic and revenue study on I-270, and HPTE desires to contribute $600,000 towards Region 1's Direct Connect Alterative Analysis.

Options / Decision Matrix

1. **Staff Recommendation**: Approve the IAA between CDOT and HPTE.
2. Review but do not approve the IAA. Provide instructions on changes or revisions.

Attachment

Amended I-270 Intra-Agency Agreement

I-270 TRAFFIC AND REVENUE STUDY
INTRA-AGENCY AGREEMENT

THIS I-270 TRAFFIC AND REVENUE STUDY INTRA-AGENCY AGREEMENT (the "Agreement") is made this ___ day of _____, 2020 by and between the COLORADO DEPARTMENT OF TRANSPORTATION ("CDOT" or the "Department"), an executive agency of the State of Colorado ("State"), and the COLORADO HIGH PERFORMANCE TRANSPORTATION ENTERPRISE, a government-owned business and a division of CDOT ("HPTE"). CDOT and HPTE are hereinafter referred to individually as a "Party" and collectively as the "Parties."

RECITALS

A. CDOT is an agency of the State authorized pursuant to C.R.S. § 43-1-105, to plan, develop, construct, coordinate, and promote an integrated transportation system in cooperation with federal, regional, local, and other state agencies.

B. Pursuant to C.R.S. § 43-1-110 the executive director of CDOT is authorized to execute certain agreements on behalf of CDOT.

C. HPTE was created pursuant to C.R.S. § 43-4-806(2) and operates as a government-owned business within CDOT.

D. The business purpose of HPTE, as provided for in C.R.S. § 43-4-806(2)(c), is to pursue public-private partnerships and other innovative and efficient means of completing surface transportation infrastructure projects, which HPTE may agree to complete for CDOT under agreements entered into with the Department in accordance with C.R.S. § 43-4-806(6)(f).

E. Pursuant to C.R.S. § 43-4-806(6)(g) HPTE is empowered to prepare, or cause to be prepared, detailed plans, specifications, or estimates for any surface transportation infrastructure project within the state.

F. HPTE is further empowered, pursuant to C.R.S. § 43-4-806(6)(h) to make and enter into all other contracts and agreements, including intergovernmental agreements under C.R.S. § 29-1-103 that are necessary or incidental to the exercise of its powers and performance of its duties.

G. CDOT acknowledges that HPTE possesses expertise and legal powers unavailable to CDOT, which enable it to accelerate the development and delivery of critical surface transportation infrastructure projects.

H. CDOT has identified Interstate 270 ("I-270") as part of its "Your Transportation Priorities" project to address the operational and infrastructure issues that hamper travel time reliability, safety, and mobility on one of Colorado's key corridors.

I. As part of CDOT's development plan in Region 1, CDOT desires for HPTE to implement a traffic and revenue study (the "T&R Study") to evaluate the feasibility of tolling I-270 based on revenue generation and traffic demand management as a means to shrink the existing funding gap.

J. Previously, HPTE has selected and commissioned contractors to complete traffic and revenue studies for several of CDOT's corridors, including, but not limited to, the Interstate 70 Mountain Corridor Project, the Interstate I-25 "Gap" Project, the C-470 Express Lanes Project, and State Highway 119.

K. The Parties further desire to enter into this Agreement to define their respective roles and responsibilities with respect to the T&R Study, specifically related to funding the Study and to allocate the costs related thereto.

L. HPTE has prepared a scope of work describing the services it intends to provide during the T&R Study (the "Study Services"), which is attached hereto and incorporated herein as **Exhibit A** (the "HPTE Scope of Work").

M. Conversely, HPTE acknowledges that CDOT possesses design expertise unavailable to HPTE, which enable it to plan for the development and delivery of critical surface transportation infrastructure projects.

N. Recognizing the need to be Region 1's partner in the development of the I-270 infrastructure, HPTE further desires to contribute to the project by providing financial assistance to CDOT to examine the feasibility of direct connection ramps ("direct connects") on I-270.

O. CDOT has prepared a scope of work describing the services it intends to provide during the direct connects analysis (the "Direct Connects Alternatives"), which is attached hereto and incorporated herein as **Exhibit B** (the "CDOT Scope of Work").

P. In order to further the efficient completion of surface transportation infrastructure projects necessary to CDOT's development of an integrated transportation system: (1) CDOT desires that HPTE utilize its expertise to provide the T&R Study, in exchange for which CDOT agrees to compensate HPTE in the amounts set forth in the HPTE Scope of Work; and (2) HPTE desires to contribute financially to Region 1 an alternatives analysis for direct connection ramps on I-270, in exchange for which HPTE agrees to compensate CDOT in the amounts set forth in the CDOT Scope of Work.

Q. Both CDOT and HPTE are authorized under law to execute this Agreement.

NOW, THEREFORE, IN CONSIDERATION OF THE FOREGOING RECITALS, THE PARTIES TO THIS AGREEMENT HEREBY AGREE AS FOLLOWS:

1. Scope of Work and Responsibilities.

a. HPTE shall provide the Study Services set forth in Exhibit A.

b. CDOT shall provide the Direct Connects Alternatives set forth in Exhibit B.

c. The Parties may agree to modify the specific tasks set forth in either Scope of Work to be undertaken by the Parties during the term of this Agreement, provided that such modifications do not result in an increase or decrease in the overall maximum dollar contributions to be provided under this Agreement. Any modifications to either Scope of Work resulting in an increase or decrease in the overall maximum dollar amount shall not be undertaken unless agreed to in writing by the Parties in an amendment to this Agreement.

2. Payment Amount and Procedures.

a. CDOT agrees that it shall contribute payment of no more than six hundred thousand dollars ($600,000.00) to HPTE for the provision of the Study Services in fiscal year 2020 under this Agreement (the "CDOT Maximum Payment Amount").

b. The Study Services to be provided, and the CDOT Maximum Payment Amount thereof, may be amended from time to time. The Study Services provided by HPTE shall be compensated as part of the CDOT Maximum Payment Amount provided for herein.

c. HPTE agrees that it shall contribute payment of no more than six hundred thousand dollars ($600,000.00) to CDOT for the provision of the Direct Connect Alternatives in fiscal year 2020 under this Agreement (the "HPTE Maximum Payment Amount").

d. The Direct Connect Alternatives to be provided, and the HPTE Maximum Payment Amount thereof, may be amended from time to time. The Direct Connect Alternatives provided by CDOT shall be compensated as part of the HPTE Maximum Payment Amount provided for herein.

e. The Parties shall initiate payment requests by invoice, in a form and manner approved by the Parties. Each Party shall pay each invoice within 45 days following receipt of that invoice.

3. Availability of Funds. Payment pursuant to this agreement is subject to and contingent upon the continuing availability of funds appropriated for the purposes hereof. If any of said funds become unavailable, as determined by CDOT and HPTE, either Party may immediately terminate or seek to amend this Agreement.

4. Record Keeping Requirements. The Parties shall maintain a complete file of all books, records, papers, accounting records, and other documents pertaining to its execution of the Scope of Work under this Agreement, and shall make such materials available to either Party upon request for a period of three years.

5. Right to Audit. The Parties shall permit either Party, the State Auditor and/or their designee(s) to inspect all records and audit all activities that are or have been undertaken pursuant to this Agreement.

6. Consideration; Exchange Transaction. The Parties acknowledge that the mutual promise and covenants contained herein, and other good and valuable consideration, are sufficient and adequate to support this Agreement. The Parties further acknowledge that, for accounting purposes, this Agreement represents an exchange transaction for CDOT's purchase of specific services provided by HPTE at the market value of such services.

7. Dispute Resolution. Any dispute concerning the performance of this Agreement shall be referred to the CDOT Chief Engineer and the HPTE Director. Failing resolution by such officers, the dispute shall be submitted in writing by both parties to the State Controller, whose decision on the dispute shall be final.

8. Default; Termination. Any failure of either Party to perform in accordance with the terms of this Agreement shall constitute a breach osf the Agreement. CDOT reserves the right to terminate this Agreement upon thirty (30) days written notice to HPTE of its nonperformance of the Study Services; provided, however that HPTE shall not be in default under this Agreement if it has promptly commenced a cure of such nonperformance and is diligently pursuing the same. Any finding of nonperformance and failure to cure under this Section shall be referred for dispute resolution as provided for in Section 7 prior to any termination becoming effective. In the event of termination, the Parties shall be required to reimburse either Party for the value of the Study Services or Direct Connect Alternatives not yet completed as of the date of termination.

9. Delegation. Except as identified or otherwise implied in the Scope of Work, the duties and obligations of the Parties under this Agreement shall not be assigned, delegated or subcontracted without the prior consent of either Party. All subcontractors will be subject to the requirements of this Agreement.

10. Modification. This Agreement is subject to such modifications as may be required by changes in federal or state law, or their implementing regulations. Any such required modification shall automatically be incorporated into and be part of this Agreement on the effective date of such change as if fully set forth herein.

11. Severability. To the extent that this Agreement may be executed and performance of the obligations of the Parties may be accomplished within the intent of the Agreement, the terms of this Agreement are severable, and should any term or provision hereof be declared invalid or become inoperative for any reason, such invalidity or failure shall not affect the validity of any other term or provision hereof.

12. Waiver. The waiver of any breach of a term, provision, or requirement of this Agreement shall not be construed or deemed as a waiver of any subsequent breach of such term, provision, or requirement, or of any other term, provision or requirement, or the same term, provision or requirement upon subsequent breach.

13. No Third Party Beneficiaries. This agreement shall inure to the benefit of and be binding only upon the Parties hereto and their respective successors and assigns. No third party beneficiary rights or benefits of any kind are expressly or impliedly provided herein. It is expressly understood and agreed that the enforcement of the terms and conditions of this Agreement and all rights of action relating to such enforcement, shall be strictly reserved to CDOT and HPTE. Nothing contained in this Agreement shall give or allow any claim or right of action whatsoever by any other third person. It is the express intention of CDOT and HPTE that any such person or entity, other than CDOT or HPTE, receiving services or benefits under this Agreement, shall be deemed an incidental beneficiary only.

14. Entire Understanding. This Agreement is intended as the complete integration of all understandings between the Parties. No prior or contemporaneous addition, deletion, or other amendment hereto shall have any force or affect whatsoever. Except as otherwise provided in this Agreement, no subsequent renewal, addition, deletion, or other amendment hereto shall have any force or effect unless embodied in a writing executed and approved by the Parties.

15. Governmental Immunity. No term or condition of this Agreement shall be construed or interpreted as a waiver, express or implied, of any of the immunities, rights, benefits, protections, or other provisions, of the Colorado Governmental Immunity Act, C.R.S. § 24-10-101 *et seq.*, or the Federal Tort Claims Act, 28 U.S.C. §§ 1346(b) and 2671 *et seq.*, as applicable now or hereafter amended.

16. Adherence to Laws. At all times during the performance of this Agreement, HPTE shall strictly adhere to all applicable federal and state laws, rules, and regulations that have been or may hereafter be established, including, but not limited to state and federal laws respecting discrimination and unfair employment practices.

17. Legal Authority. The Parties each warrant that they possess the legal authority to enter into this Agreement and that each has taken all actions required by its procedures, by-laws, and/or applicable law to exercise that authority, and to lawfully authorize its undersigned signatory to execute this Agreement and to bind CDOT or HPTE, as applicable, to its terms. The persons executing this Agreement on behalf of CDOT and HPTE each warrant that they have full authorization to execute this Agreement.

18. Notices. All communications relating to the day-to-day activities for the work shall be exchanged between representatives of CDOT and HPTE. All communication, notices, and correspondence shall be addressed to the individuals identified below. Either Party may, from time to time, designate in writing new or substitute representatives.

If to CDOT:	If to HPTE:
Region 1 Regional Transportation Director Colorado Department of Transportation 2829 W. Howard Place, 2nd floor Denver, CO 80204	Nicholas Farber, Director HPTE Colorado Department of Transportation 2829 W. Howard Place, 5th floor Denver, CO 80204

Email: nicholas.farber@state.co.us

19. Controller's Approval. This agreement shall not be deemed valid until it has been approved by the State Controller or such assistant as he or she may designate.

[Signature page follows.]

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year first above written.

STATE OF COLORADO
Jared S. Polis, Governor

By: _____
SHOSHANA LEW
EXECUTIVE DIRECTOR
DEPARTMENT OF TRANSPORTATION

COLORADO HIGH PERFORMANCE
TRANSPORTATION ENTERPRISE

By: _____
NICHOLAS J. FARBER
HPTE DIRECTOR

APPROVED:

Philip J. Weiser
ATTORNEY GENERAL

By: _____
ASSISTANT ATTORNEY GENERAL

ALL CONTRACTS REQUIRE APPROVAL BY THE STATE CONTROLLER

§ 24-30-202, C.R.S. requires the State Controller to approve all State Contracts. This Agreement is not valid until signed and dated below by the State Controller or delegate of the State of Colorado.

STATE CONTROLLER
Robert Jaros, CPA, MBA, JD

By:_____

Date:_____

EXHIBIT A

HPTE Scope of Work for T&R Study

Level 2/Intermediate Grade Traffic and Revenue Studies (and associated data collection)

The purpose of the Level 2/Intermediate Grade study is to refine toll traffic forecasts and revenue estimates to strengthen and support the project financial plan feasibility activities and provide traffic operations support for the final design process. The traffic and revenue analysis at this level includes data collection to validate travel demand forecasts, desired travel patterns, and economic development assumptions. Level 2/Intermediate Grade may include conducting manned field traffic survey stations with origin and destination interviews and questionnaire surveys. Service orders completed under this work item will cover technical assistance and support activities related to survey design, development, administration, analysis, and application. Work activities may include:

- Utilize and reevaluate data and information gathered and processed in Level 1/Sketch-Level, enhancing traffic, revenue, and budget estimates to a higher degree of accuracy probability, hereinafter referred to as "forecasts."
- Make maximum use of previous studies, reports, databases, and computer programs commissioned by city, county, state, and federal governments, COGs, MPOs, transportation authorities, public utilities, private enterprises, research organizations, and universities.
- Traverse and visually investigate all existing travel corridors that will either compete with or complement the tolled corridor.
- Conduct travel speed and travel time surveys and highway design, capacity, and condition evaluations.
- Develop an inventory/database of travel times and distances among the town, cities, and neighborhoods on direct or proximate roadways that will compete with the tolled corridor.
- Assemble development plans of cities and counties within the tolled corridor sphere of influence (as identified by HPTE in each individual work authorization) and analyze their impact on tolled corridor traffic demand.
- Research and develop a schedule of planned roadway improvements in the geographic region that will (i) enhance use of the tolled corridor or (ii) draw traffic from the tolled corridor. Develop a time schedule of funding by others of all such roadway improvements through construction.
- Perform demographic studies and traffic modeling to forecast tolled corridor usage and revenue earning potential by applying proven toll restraint factors.
- Analyze traffic passing through the tolled corridor's sphere of influence (as identified by HPTE in each individual work authorization). Develop a diversion model tabulating traffic that will be attracted to the tolled corridor from existing travel paths outside of the tolled study corridor, thus identifying and demonstrating the traffic inducement power of the tolled corridor.
- Conduct, record, and analyze hourly machine or manually recorded traffic counts.

- Origin/destination data collection or surveys, as deemed necessary.
- Develop computer models and trip tables that will produce annual tolled corridor traffic growth trends for a minimum of 40 years (or longer term, to be determined by HPTE) by vehicle class. Provide forecasts of traffic volumes and revenue separately for two-axle vehicles and for vehicles with more than two axles, as warranted.
- Run computer studies under various toll rates and prepare a schedule of optimum tolls to fit the recommended toll collection plan. Prepare a recommended schedule of tolls by vehicle class. Provide an abstract of pros and cons and industry experience of computing and collecting tolls from commercial vehicle classes on the basis of weight.
- Integrate all research, trip table data, traffic modeling products, and other data collected into 40-year (or longer term, to be determined by HPTE) tables tabulating and forecasting traffic and revenue generated on the tolled corridor under various toll rate regimes, as warranted/recommended.
- Based upon the traffic volume forecasts produced by this study, provide recommendations of the number of tolled express lanes which should be initially constructed. Provide recommendations for opening year plaza configurations and toll rate schedules based on traffic growth forecasts over time. Provide a schedule for implementation of toll lane expansions and revisions to the toll rates.
- Develop all maps, tables, graphs, curves, illustrations, and text necessary to clearly report the results of the Level 2/Intermediate Grade Traffic and Revenue study.

When required by HPTE, the Consultant will prepare a printed draft of the Level 2/ Intermediate Grade Traffic and Revenue Study report. This draft report will be delivered to HPTE accompanied by the unbound master clearly marked DRAFT. HPTE will review and provide comments to the Consultant on the draft report. The Consultant will address any comments made by HPTE and update the report and resubmit to reflect those changes. Final printing and binding will not occur until HPTE advises the Consultant that HPTE staff has fully and finally accepted the latest edition of the draft report.

EXHIBIT B

CDOT Scope of Work for Direct Connects Alternatives

CONTRACT TYPE

Specific Rate of Pay ☐

Cost Plus Fixed Fee ☒

Other ☐

SCOPE DATE: January 15, 2020

PROJECT NUMBER: XXXXX

PROJECT LOCATION: Express Lanes Direct Connects Package 1 - I-25/I-270/US36 Interchange

PROJECT CODE: 23476

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

Contents

INTRODUCTION

This Task Order includes tasks associated with the development of stakeholder goals, operational constraints, conceptual alternatives development and screening, pre-National Environmental Policy Act (NEPA) scoping process, operational analysis using existing microsimulation models, concept design of selected interchange alternative, cost estimates, and concluding with an Interchange Development Plan.

The tasks and work products will be prepared in coordination with the I-270 corridor project, with the flexibility to be included into the I-270 NEPA clearance.

The goal of the project is to assist with the scoping of the next phase of preconstruction NEPA and design.

Additional activities, such as the development of the NEPA Documents, 30% Design, and other associated elements are anticipated to be included in a future project.

Below is a high level summary of the project development process associated with the Interchange Development Plan, which is further detailed in the appropriate sections of the scope.

Phase	Major Task	Deliverable	Task Included in Project (by CDOT)	Task Included in Project (by Consultant)	Task Assumed for Future Project
Existing Conditions	Survey/ROW	Microstation DGN & InRoads DTM (Compile existing surveys only)	✓		
	Materials/Pavement	Recommendation for report	✓		
	Utilities	Quality Level D DGN/CAD map		✓	
Environmental & Public Outreach	Existing Conditions	Environmental Overview (summary of agencies, resources, NEPA pre-scoping considerations, etc.) for each resource		✓	
	Public & Agency Scoping	N/A			✓
	Purpose & Need	N/A			✓
	Transportation Needs	Pre-Purpose & Need Summary		✓	
	Public Outreach	Attend I-270 Public Meetings, with display boards for Transportation Needs, Alternatives/Screening, Concept Design and general information.	✓	✓	✓
Alternatives	Screening Criteria	Screening Criteria Table		✓	
	Alternatives Analysis	Level 1 (Assume 5), Level 2 (Assume 2), and Recommended Alternative		✓	
Concept Design	Conceptual Design	Concept Design & Plans of Recommended Alternative		✓	
	Cost Estimates	Detailed concept const estimate, including independent cost estimate from constructability review team		✓	

	Interchange Development Plan Report	Summary of all the above items, documenting the process, next steps and considerations for NEPA		✓	
NEPA & 30% Design	N/A	N/A			✓

Section 1 – Project Specific Information

1. Project Background

CDOT North Program and HPTE are looking to develop an interim base project that is compatible with and maximizes the infrastructure to connect the tolled express lanes.

The following Express Lane Direct Connections will be evaluated as part of this design:

- I-270 WB to US36 WB
- US36 EB to I-270 EB
- I-270 WB to I-25 NB
- I-25 SB to I-270 EB
- I-25 SB to US 36 WB (Broadway)

Project deliverables will include the following:

- Develop a Concept design package with focus on innovative phasing and constructability alternatives with the intent to incorporate some or all direct connects into a surrounding project. Ultimate goal is cost effective and innovative construction delivery.
- Project cost estimate.
- Identify right-of-way impacts and neighborhood/stakeholder impacts.
- Conduct an assessment of existing environmental resources in the area utilizing past NEPA documents and available CDOT GIS data layers.

The project team will coordinate with the I-270 project team and use the existing Traffic Study for the study area.

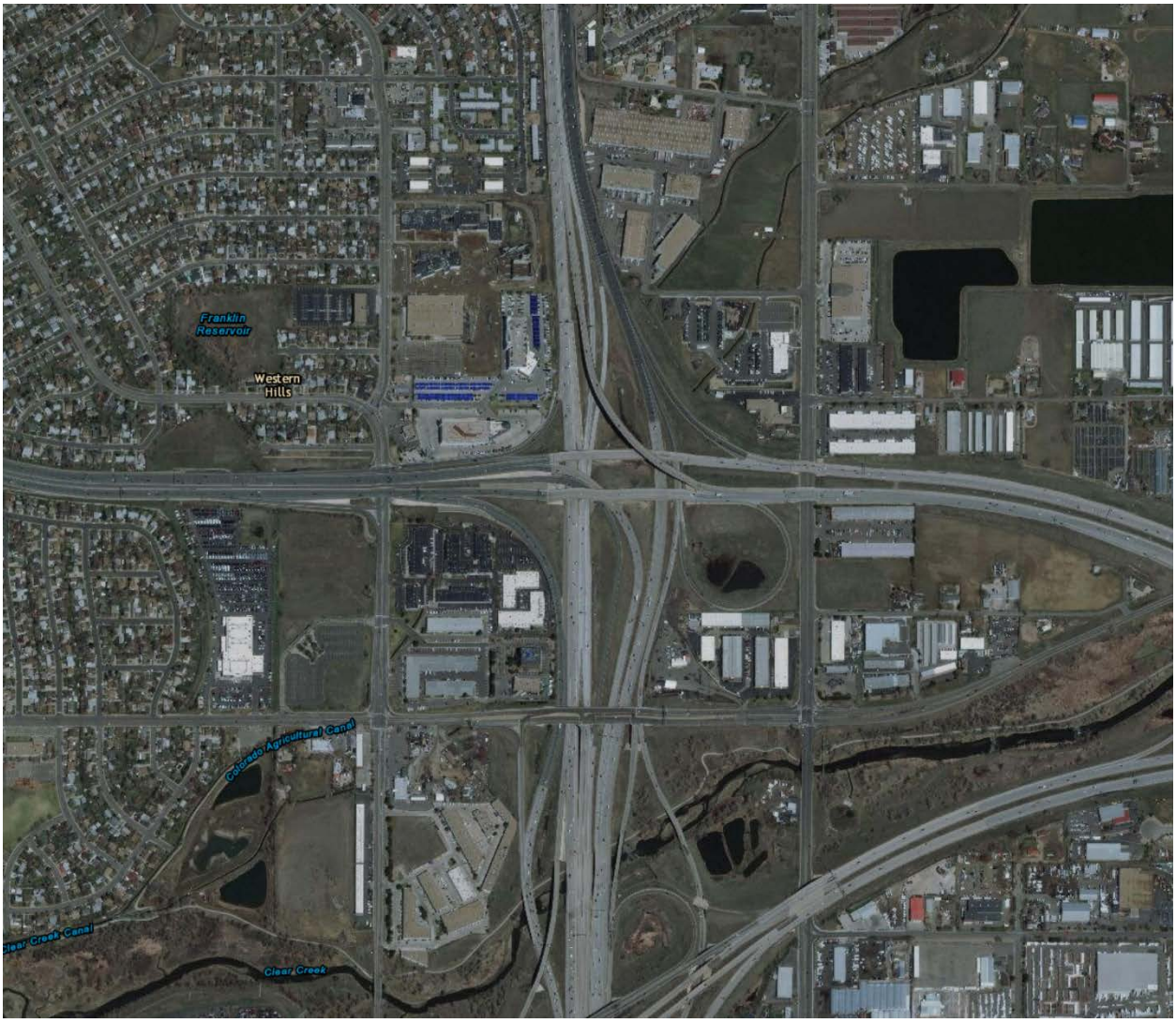
This project will be delivered via NPS General Engineering Contracting with the intent to define a Scope to be used for RFP Project Specific selection. The contract will be two years in duration. The first year will contain the bulk of the work and complete project deliverables; the second year will consist of project coordination and deliverable updates as needed with the 270 project with possible overlap with RFP Project Selection.

2. Project Goals (to be refined during project kick off)

- Improve Traffic Operations & Safety
- Minimize Impacts to Traffic During Construction.
- Maximize Use of Existing Infrastructure
- Minimize Impacts to Residents and Communities
- Develop Direct Connection Alternatives with Flexibility for Phased Implementation and/or NEPA clearance with I-270 project.

3. Project Limits

The project limits will be developed in coordination with CDOT, HPTE, I-270 project, and stakeholders. The image below represents the general vicinity of the project. The actual limits will be refined as the Direct Connection Alternatives are developed during the project and through project scoping. It is assumed that the Direct Connections project limits will be coordinated with the I-270 EA project limits (currently assumed at I-76).



4. Work Duration

The time for the work described in this scope is approximately 24 months, including 12 months for the work and 12 months of further coordination with the I-270 NEPA clearance.

5. Consultant Responsibilities and Duties

- Data collection
- Utilize and update existing Microsimulation models
- Stakeholder coordination including FHWA, HPTE and who else? Too early to scope with resource agencies
- Alternatives development and screening

- Identify impacts and ROW
- Structures, phasing, and constructability optimizations
- Costs estimates and independent cost estimate reviews
- Opportunities to clear with surrounding project
- Final concept design & Interchange Development Plan

6. Work Product

The Consultant Work Products generally include the following (see sections below for additional details):

A. Existing Conditions - Desktop review/research of existing environmental resources

B. Project Coordination

C. Schedules

D. Meeting Minutes

E. Project Meetings

F. Concept Design & Interchange Development Plan

7. Work Product Completion

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

Section 2 – Project Management and coordination

1. CDOT Contact

The Contract Administrator and CDOT/PM for this project is:

Boni Montano

CEPM 1, Region 1

4670 Holly Street

Denver, CO 80216

303-398-6754

2. Project Coordination

Coordination will be required with the following:

A. CDOT

B. HPTE

C. I-270 Project Team

D. Federal Highway Administration (FHWA)

E. Utilities

Section 3 – Existing Features

1. Structures

The table below is a summary of all structures in the area. It is assumed the limits of the project will affect fewer structures associated with the specific Direct Connections in the scope in the I-25/US36/I-270 Interchange Area.

ROUTE	REFPT	ID	TYPE	YEAR	SUFFRATE	Facility Carried	Feature Intersected	LENGTH
076A	7.095	E-17-GV	CSGC	1967	60.1	I 76 ML WBND	YORK STREET	156
076A	7.092	E-17-GW	CSGC	1967	62.2	I 76 ML EBND	YORK STREET	156
076A	7.106	E-17-QF	CSGC	2000	94.2	I-76 EB ON RAMP	YORK STREET	200
076A	7.106	E-17-QG	CSGC	2003	92.8	Rmp to I76 ML EBND	YORK ST	163
025A	217.006	E-17-JK	CBGC	1972	70.4	US 36 HOV	I25 SBND ML AND I25 HOV	246.1
036B	57.011	E-17-NB	CICK	1986	96	US 36 ML	SH 224 ML/BRDWY.	145.5
025A	216.543	E-17-NY	CBGCP	1992	97.7	RAMP TO I 25 SBND	CLEAR CREEK R	315.5
076A	5.99	E-17-PV	CS	1993	92	ACCESS ROAD	RAMP TO I 25 NBND R	51.2

ROUTE	REFPT	ID	TYPE	YEAR	SUFFRATE	Facility Carried	Feature Intersected	LENGTH
224A	0.45	E-17-OO	SBGC	1991	93.8	US 224 ML	I 25 ML	695
025A	216.532	E-17-OZ	CBGC	1993	92.5	I 25 ML NBND	CLEAR CREEK	278.3
025A	216.607	E-17-PA	CBGC	1993	80.7	I 25 ML SBND &	CLEAR CREEK	274.9
025A	216.673	E-17-PU	CBGP	1993	86.4	HOV RAMP	I25 ACCESS	156
036B	57.191	E-17-QA	SBGC	1994	89.4	I 270 EBND ML	I 25 ML, RAMPS	916
076A	6.929	E-17-QB	CBGP	2003	95.2	I76 EB ML	I76 WB ON RAMP FROM I270	148.6
076A	6.923	E-17-QC	CBGP	2003	95.8	I76 WB ML	I76 EB ON RAMP FROM I270	148.6
070A	273.92	E-17-QD	CBGP	2003	96.4	I76 ONRMP FROM 270	I270B RAMP TO I76 WB	158.6
270B	0.209	E-17-QH	CBGP	2003	84.6	I 270 EBND ML	WASHINGTON STREET	172.3
270B	0.745	E-17-QI	CPGC	1999	89.4	I 270 EBND	I76 RAMP,SH224,CLEAR CRK	819
036B	57.296	E-17-QJ	CBGCP	2009	95.9	I 270 EBND ML	I25ML/I25HOV/WB I 270	1425
270B	0.893	E-17-QK	CTGC	2010	56	270SB _76EB RMP Y	I76,RMPS,SH224,CLR.CRK.	2281.5
036B	57.216	E-17-QM	SBGC	1998	96.6	I 270 WBND ML	I 25 ML, RAMPS	841
025A	217.006	E-17-QN	SBGC	1998	66.6	RAMP TO US 36 WB	I 25 SBML, HOV lanes	311.6
270B	0.21	E-17-QO	CBGP	1998	94.6	I 270 ML WBND	WASHINGTON STREET	183
270B	0.76	E-17-QP	CPGC	1998	89.4	I270 WBND ML	I76 RAMP,SH224,CLEAR CRK	828.8

ROUTE	REFPT	ID	TYPE	YEAR	SUFFRATE	Facility Carried	Feature Intersected	LENGTH
076A	6.793	E-17-QS	WGCK	2003	95.2	I76 ML EBND	I 270 ML	332.3
076A	6.78	E-17-QT	WGCK	2003	95.2	I76 ML WBND	I 270 ML	332.3
025A	216.601	E-17-NW	CBGCP	1992	94.7	RAMP TO I 25 NBND	CLEAR CREEK R	239
025A	216.607	E-17-VS	CBGC	1998	94.9	I25 NBND TO SH224	CLEAR CREEK R	302.1
025A	216.673	E-17-VT	CBGP	1998	50.9	I 25 RAMP	HOV RAMP R	139.2

2. Utilities

3. Irrigation Ditches

- Lower Clear Creek Canal
- Colorado Agricultural Canal

Section 4 – General Information

1. Notice to Proceed

Work shall not commence until the written Notice-to-Proceed is issued by CDOT. Work may be required, night or day, and/or weekends, and/or holidays, and/or split shifts. CDOT must concur in time lost reports prior to the time lost delays being subtracted from time charges. Subject to CDOT prior approval the time charged may exclude the time lost for:

A. Reviews and Approvals

B. Response and Direction

2. Project Coordination

A. Weekly Working Contact

Weekly written working contact shall be between the CDOT/PM and the Consultant Project Manager (C/PM).

B. Project Manager Requirements

The Consultant Project Manager shall provide the appropriate parties with the following:

i. A written synopsis or copy of their respective contacts by telephone and in person with others

ii. Copies of pertinent written communications

3. Routine Reporting and Billing

The Consultant shall 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), including monthly drawdown schedules.

C. 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 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. National Institute for Certification in Engineering Technology (NICET) or other certifications may be required for project inspectors and testers.

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

This contract requires that the prime firm or any member of its team, be pre-qualified in the following disciplines for the entire length of the contract. AC – Acoustical engineering, AR – Architecture, BR – Bridge Design, BI – Bridge Inspection, CE – Civil Engineering, EL – Electrical Engineering, EN – Environmental Engineering, GE – Geotechnical Engineering, HD – Highway & Street Design, HY – Hydraulics, LA – Landscape Architecture, MA – Management (Contract Admin), MC – Management (Construction), ME – Mechanical Engineering, MT Materials Testing, SA – Sanitary Engineering, SO – Soils Engineering, SE – Structural Engineering, SU – Surveying, TP – Transportation Engineering, TR – Traffic Engineering, TU – Tunneling

5. CDOT Computer/Software Information

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

- Earthwork InRoads
- Drafting/CADD InRoads and Microstation with CDOT's formatting configurations and standards
- Survey/photogrammetry CDOT TMOSS, InRoads
- Bridge CDOT Staff Bridge software shall be used in either design or design check
- Estimating Transport (an AASHTO sponsored software) and Excel
- Specifications Microsoft Word
- Scheduling Microsoft Project
- Cartography ESRI ArcGIS

6. Computer Data Compatibility

The data format for submitting design computer files shall be compatible with the latest version of the adopted CDOT software as of Notice to Proceed for the contract. The Consultant shall immediately notify the CDOT/PM if the firm is unable to produce the desired format for any reason and cease work until the problem is resolved. Refer to Section 8, Table 1 - Submittals, for additional information regarding current formats and the acceptable transmittal media. It is assumed that the design work associated with the development of alternatives will be completed in InRoads/Microstation.

7. Project Design Data and Standards

A. General:

Appendix A provides a comprehensive list of state and federal reference material. However, Appendix A does not contain local agency reference material which may be pertinent to some projects. The consultant is responsible for obtaining and ensuring compliance with the most recent CDOT adopted version of the listed references including standards and specifications, manuals, and software or as directed by the CDOT/PM. Conflicts in criteria shall be resolved by the CDOT/PM.

B. Specific Design Criteria:

Appendix B is a list of specific design criteria. The list is comprehensive and may include items that are not required for tasks defined in this scope. The Consultant shall submit any proposed changes to the pertinent criteria to the CDOT/PM at one of the periodic progress meetings prior to initiating design

C. Construction Materials/Methods:

The materials and methods specified for construction will be selected to minimize the initial construction and long-term maintenance cost to the State of Colorado. Non-typical construction materials and methods must be approved in writing by CDOT.

Section 5 – Project Initiation and continuing requirements

For all meetings, in consultation with the CDOT Project Manager or designee, the Consultant will provide an invitation list, agenda, graphics or supporting material as appropriate, meeting minutes, and maintain action item and decision item logs. During the Interchange Development Plan process, for Task Order 1, it is assumed that travel will be required bi-monthly, consolidating as many meetings as possible for each trip.

The following is a summary of the anticipated meeting schedule and trips.

The actual duration will be determined by the approved schedule. A hypothetical 12-month schedule is shown for illustration purposes.

	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 12
Kickoff Meeting	1										
Project Update Meetings	1	1	1	1	1	1	1	1	1	1	1
PMT Meetings	1	1	1	1	1	1	1	1	1	1	1
Small Group Meetings (one-on-one) (as-needed)			1		1		1		1		1

1. Project Meetings

For the development and conceptual design of interchange alternatives, the Consultant will participate in the following meetings with the project team:

A. Initial Project Meeting (Project Kickoff with CDOT Specialties)

The meeting will review the project scope, schedule, key milestones, and project study area boundary to facilitate input from CDOT Specialty Unit Leads. The meeting may include an on-site inspection to familiarize the entire project team with the character and conditions of the area.

The meeting will be attended in person by the Consultant.

B. Progress Meetings

i. Project Update Meetings

Monthly meetings will be conducted with CDOT and Consultant Project Manager using phone or video conference technology. These meetings will be as needed to discuss on-going project requirements and updates.

ii. Project Management Team (PMT) Meetings

Monthly meetings will be conducted with the CDOT and Consultant Internal Management Team using video conference technology. At a minimum, these meetings will include the CDOT Project Manager, Resident Engineer, and Environmental Lead, HPTE, FHWA, and Consultant Project Manager, Principal, and Traffic Lead to discuss on-going project requirements or technical issues.

C. Public Meetings

This section includes participation in the I-270 Public Meetings for up to a total of two Public Open House meetings, which are anticipated to include the following:

- Public Meeting/Open House for presentation/comments on alternatives
- Presentation of the "Proposed Action" or earlier in the screening process.

It is assumed that up to two display boards will be developed and printed for each meeting.

It is assumed that CDOT and/or the I-270 EA team will lead the outreach, meeting logistics, etc., and the Consultant will participate in their public meeting with a display board station.

D. Meeting Minutes

Project meeting minutes shall be completed by the Consultant and provided to the CDOT/PM within one week of the actual meeting. When a definable task is discussed during a meeting, the minutes will identify the "Action Item", the party responsible for accomplishing it, and the proposed completion date

E. Contact List

Establish and maintain a computerized list of all appropriate interested parties for the communication process.

F. Communications Aids

i. Graphics Support

Provide graphics for presentations and project documents. This may include slides, overhead projector slides, maps and plan views of conceptual design, computerized presentations and other displays for visual presentations at meetings.

2. Project Management

At the kick-off meeting, or shortly thereafter, create and provide an approach for managing the project (i.e. involved staff, key team positions), including task orders, a schedule, document and agency reviews and other project needs. The Consultant shall coordinate all the work tasks being accomplished by all parties to ensure project work completion stages are on schedule. The consultant shall provide brief weekly written project updates to the CDOT Project Manager.

3. Project Schedule

The Consultant is responsible for coordinating the required work schedule for project design. Prepare the initial project schedule for review by the CDOT/PM, and refine to provide detail as requested. Modifications will be made as necessary in collaboration with CDOT and appropriate justification.

4. Quality Assurance/Quality Control (QA/QC)

A formal, customized QA/QC plan will not be completed for the project, due to the nature of the work within the scope. The consultant will complete the work following internal, Consultant QA/QC procedures and follow for all deliverables.

5. Right-of-Entry and Permits

It is assumed that CDOT will lead the development and approval of right-of-entry permits and other permits as required, with input from the Consultant.

6. Travel and Expenses

Expenses for travel, such as mileage will follow current CDOT and GSA Rates in accordance with the Contract.

section 6 - ENVIRONMENTAL WORK TASK DESCRIPTIONS

This environmental overview will build from and be consistent with other environmental studies completed or nearing completion in the project area, including the North I-25 EIS, North I-25 PEL, US 36 EIS, I-25 US 36 to 104th EA, and the I-270 EA. The Consultant will collect, summarize, and source relevant data along the corridor.

Additionally, the project includes environmental scoping and planning for flexibility to advance NEPA into a surrounding project, such as I-270 EA or North I-25 EA. The following is a list of tasks and deliverables for the Environmental Work Tasks:

1. Environmental Work Tasks

- CDOT, with minimal consultant support, will prepare an Environmental Overview for the I-25/I-270/US 36 Direct Connects project.
- CDOT, with minimal consultant support, will utilize existing geospatial data from the
    - North I-25 Environmental Assessment I-25 (US 36 to 104th Avenue) (not yet completed)
    - US 36 EIS and ROD: https://www.codot.gov/projects/archived-project-sites/us36eis/documents
    - North I-25 Planning and Environmental Linkage Study (PEL): https://www.codot.gov/library/studies/study-archives/northI25PEL/north-i-25-us-36-to-sh-7-pel-study
    - North I-25 EIS and ROD: https://www.codot.gov/projects/archived-project-sites/north-i-25-eis
    - and other recently completed NEPA documents as well as publicly and privately available data sources to identify environmental resources in the vicinity of the interchange.

- CDOT, with the consultant, will conduct a "windshield" survey of the project area to verify and refine the geospatial data with focus on those environmental resources that would potentially affect the alternatives evaluation process and have a lengthy environmental clearance and permitting processes. These resources include:
    - Geohazards
    - Floodplains and water quality
    - Wetlands and other waters of the U.S.
    - Biological Resources (wetlands, T&E species)
    - Historic properties listed in COMPASS or that are age eligible
    - Community facilities
    - Environmental Justice using EJScreen
    - Section 4(f) and 6(f) parks, open space, and other recreational facilities
    - Noise receptors
    - Hazardous Materials Sites
    - Land Use
- For each resource, the Environmental Overview will identify potential agency and stakeholders; resource findings; resource locations; critical schedule considerations; regulatory setting and general context; NEPA pre-scoping considerations; and funding, design, construction, and mitigation implications. It is assumed that Public and Agency Scoping will be included in a future phase of the project.
- A discussion of potential NEPA Class of Actions depending on specific project types in response to potential future funding scenarios will be prepared with alternatives; however, it is important to note that final identification of a NEPA Class of Action would be done by CDOT in coordination with FHWA.
- It is assumed that the Direct Connections project will participate in the I-270 public meetings, with a station of up to two display boards for up to 2 public meetings.

A. Environmental Deliverables

The deliverables will include the following:

- Maps for resources listed above
- Memo summarizing the findings and identifying areas of concern

Section 7 – Conceptual development of alternatives and design

The Consultant will complete the following items:

1. Surveying, Mapping, and Right of Way Work Tasks

It is assumed that CDOT Region 1 Survey/ROW will assist with the compilation of existing surveys, LiDAR mapping, and other available data sources for use by the Consultant.

2. Materials and Pavement Work Tasks

It is assumed that CDOT Region 1 Materials/Pavement will assist with a high-level overview of existing geotechnical and soil conditions to identify high-cost implications and risk associated with the earthwork and pavement for the conceptual design, quantities, and cost estimates. CDOT will also provide an assumed pavement design for new asphalt and concrete pavement reconstruction areas.

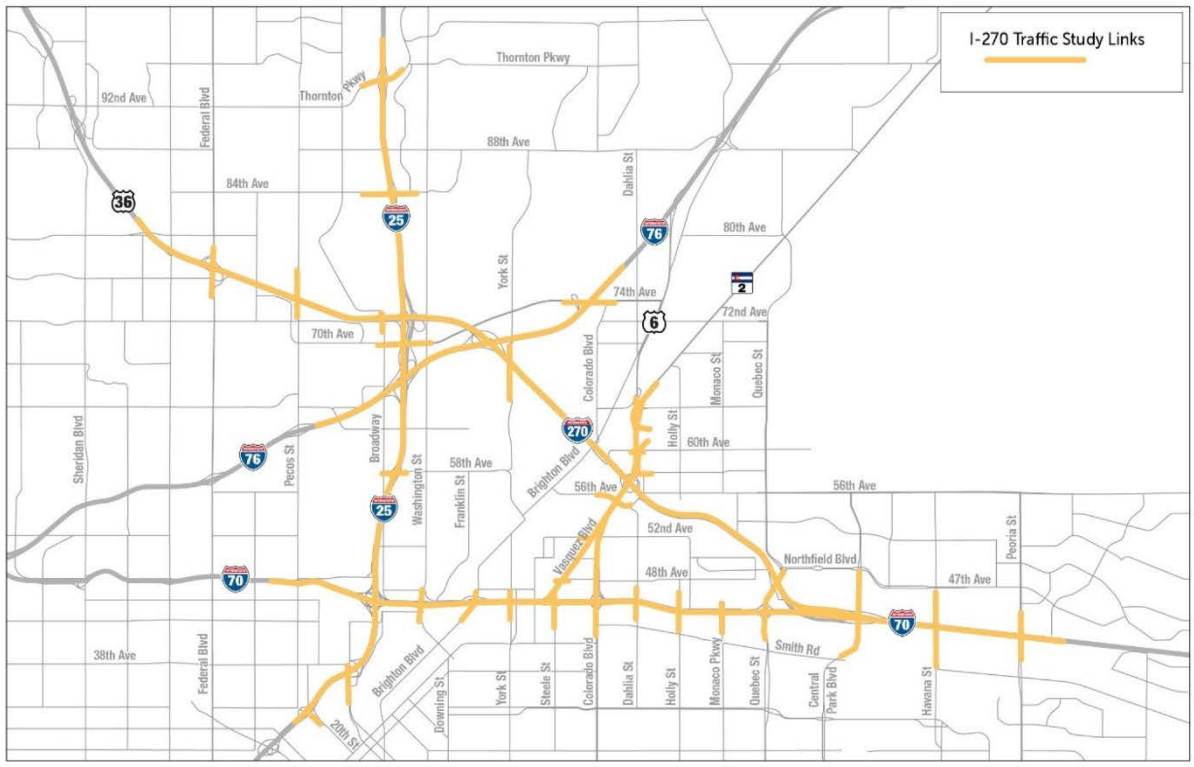
3. Utilities

The Consultant will prepare a Quality Level D CAD drawing of existing utilities in the project study area, using existing surveys, key maps, and as-builts.

4. Traffic and Operations Work Tasks

CDOT will provide the previously completed I-270 Traffic Study (completed by Atkins in October 2019) to the consultant for use in the conceptual design and analysis of alternatives. The figure below is from the Atkins study showing the limits of the I-270 Traffic Study, which covers the limits of the Direct Connects Study Area:

Figure 1: Study Area Limits for the I-270 Traffic Study



It is assumed that the Atkins Transmodeler model covers the study area for the project, and larger extents will not be required.

The consultant will complete the following tasks associated with the development and evaluation of alternatives, as well as a summary of the phased implementation of the recommended alternative:

- The Consultant completed a Transmodeler model of I-25 associated with the 21180 I-25 EA project. The Consultant will review the Atkins model and the FHU model for consolidation. The FHU model will extend the model limits to the I-25/104th Avenue interchange to ensure that the impacts to the I-25 (US 36 to 104th Avenue) Project are fully understood in the context of the EA.

- The Consultant will develop a full range of improvements that can help to satisfy the transportation needs of the project, including, but not limited to, those identified in previous and on-going studies. Level 1 Alternatives will evaluate high level operations of the various improvements. Additional improvements may be developed as needed. The Consultant will assist with qualitative screening of Level 1 alternatives, which are not assumed to include detailed model runs and quantitative results for comparison.
- In Level 2, the improvements will be consolidated to form up to 2 alternatives for operational analyses using the consolidated microsimulation model, with appropriate modifications and traffic forecast adjustments. The alternatives will be defined, and operational analyses will be summarized in the Interchange Development Plan.

A. Traffic and Operations Deliverables

The deliverables will include the following:

- Initial matrix of operational results and impacts associated with Level 2 alternatives to be used in evaluation and screening.
- The information above will be included in the Interchange Development Plan memo and provided to CDOT for review, comments, and revisions.
- The consolidated Transmodeler models will be provided for use in future projects.

5. Alternatives Development and Screening Work Tasks

The Consultant will develop a full range of alternatives that will satisfy the transportation needs of the project, including, but not limited to, those identified in previously and ongoing studies and conduct internal and external coordination to determine if additional alternatives should be evaluated.

The Consultant team, in coordination with CDOT, HPTE and FHWA, will determine the design year to use for the project. Changes in the design year during the project may be subject to a Scope of Work modification.

Alternatives will be evaluated according to the transportation needs, while considering practical, feasible, technical, and economical elements. The consultant shall take into account the projected design-year traffic volumes and projected opening day traffic volumes for new facilities as developed for this Scope of Work, or as modified through later studies and calculations by CDOT. Set out these

evaluations both schematically and in narrative form for review within a reasonable time after the notice to proceed.

The following includes the tasks associated with the alternatives development and screening:

- Develop Transportation Needs
    - The Consultant will work with CDOT and HPTE to identify the transportation needs to be used the development of screening criteria and alternatives. A Purpose and Need Statement will not be developed; however, the transportation needs will be identified and documented to set the stage for development of a Purpose and Need Statement.
- Develop Preliminary Evaluation Criteria
    - 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 CDOT for review. Established criteria will be used to evaluate and screen the list of potential preliminary alternatives.
- Develop Reasonable Alternatives (Level 1)
    - The Consultant shall develop Level 1 alternatives from a universe of options and meaningful implementation phases, which will satisfy the operational requirements and goals of the project. The alternatives shall address the transportation needs, project goals and objectives, account for potential environmental impacts and any necessary roadway improvements, bridge structure types and phasing considerations. The following Direct Connections will be developed for further considerations:
        - I-270 WB to US36 WB
        - US36 EB to I-270 EB
        - I-270 WB to I-25 NB
        - I-25 SB to I-270 EB
        - I-25 SB to US 36 WB (Broadway)
    - 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 design parameters, such as structure type, 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 improvement configuration with a magnitude of cost.
    - It is assumed that up to 5 alternatives will be developed in this phase.

- The level of design for these alternatives is a high-level concept, using CAD/design software as appropriate. Conceptual design for these alternatives will be mostly 2-dimensional. 3D visualizations, etc. are assumed to be included the Level 2 and Concept Design development stages.

- Alternatives Evaluation/Screening (Level 1/Fatal Flaw)
  - The Consultant shall utilize a NEPA-appropriate evaluation process on the alternatives developed to identify the ultimate Recommended Alternative. The Level 1/Fatal Flaw screening will focus on evaluation criteria developed from the transportation needs.
- Refine Alternatives (Level 2)
  - It is assumed that up to 3 alternatives will be developed in this phase, which will combine the alignments selected in Level 1 as well as the "yes/no" alternatives, such as left-hand vs right hand exits/entrances.
  - The level of design associated with these alternatives is assumed to include concept-level horizontal planimetrics and vertical geometry/basic roadway modeling to generally define the associated limits and impacts. The Consultant shall develop preliminary concepts of structure and highway improvements for the project area, as necessary for presentation to stakeholders and the general public. The Consultant shall develop plan and elevation drawings of improvements.
- Alternatives Evaluation/Screening (Level 2)
  - Following the development of a short-list of alternatives, the Consultant shall perform a comprehensive test of each of the short-listed alternatives. Once the alternatives have been tested, initial design will be performed to analyze the designated alternatives. The level of design associated with these alternatives is concept-level (approximately 10%).
  - 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 and implementation opportunities
  - Final Refinement of alternatives will be provided for up to 2 alternatives as part of the Level 2 Screening Process. A final screening will be provided for identification of the Proposed Action.

6. Conceptual Design of Recommended Alternative Work Tasks

It is anticipated the alternatives will include analysis of the following:

- Typical section options for Express Lanes, Buffers, General Purpose Lanes and Ingress/Egress Zones
- Interchange/ramp geometrics balancing Direct Connection fly-over bridges and site constraints.
- Locations and skew of structures, including a general evaluation of mobility, appropriate typical section, and location based on site constraints.
- Alignment and lane configuration of ramps
- Compatibility with future infrastructure such as I-270 Express Lanes and considerations for conversion of reversible Express Lanes on I-25 to directional Express Lanes.
- Vertical alignment, grading, and wall options to minimize impacts.
- Transitions of proposed, interim typical sections
- Locations of ITS/Tolling Zones, in coordination with the I-270 ConOps (to be developed by others), Express Lanes Master Plan, and/or input from HPTE.
- Maximizing interim construction package with various budget and funding scenarios.

The Consultant will perform the following tasks for the configuration of the Direct Connections

Recommended Alternative:

- Develop conceptual alternatives to assist the design charrette process.
- Establish horizontal and vertical geometrics for I-25, I-270, US36 and Interchange Ramps
- Define typical section requirements and dimensions.
- Establish ramp geometrics, gore locations, and accommodate ramp metering as appropriate.
- Develop conceptual design planimetrics for highways, ramps, and other design elements.
- Layout bridge planimetrics of superstructure and substructure elements.
- Locations of toll infrastructure, ingress/egress zones, sign structures and other ITS/technology equipment.
- Develop conceptual three-dimensional model of interchange to evaluate the design, impacts, slope limits, and earthwork.
- Calculate major quantities and develop cost estimates.
- Delineate ROW needs.
- Provide graphics and exhibits as necessary (assume 15 exhibits).

- Develop 100 scale overview plan and profile sheets, typical sections, geometric plans, and critical cross sections.

A. Conceptual Design of Recommended Alternative Deliverables

The Consultant will develop a plan set reflecting the design for each discipline and distribute for review. We will incorporate comments in the plans as agreed upon during the plan review.

Generally, it is assumed the plan sheets will provide a 100 scale overview of the project area.

- Title Sheet
- Project Site Plan
- Standard Plans List
- General Notes
- Roadway Typical Sections
    - Detailing includes basic roadway configuration and dimensions to convey concept
- Summary of Approximate Quantities (Not included in this scope)
- Project Tabulations (Not included in this scope)
- Typical Roadway Details (Not included in this scope)
- Boring Location Plans (Not included in this scope)
- Survey Tabulation (Not included in this scope)
- Roadway Geometric Plans
    - Detailing includes alignment planimetrics, stationing, and geometric control report
- Removal and Reset Plans (Not included in this scope)
- Roadway Plan Sheets (100 Scale Overview)
    - Includes planimetrics only of roadway, structures, utilities, striping, etc. elements with minimal detailing and dimensioning.
- Roadway Profile Sheets
    - Detailing includes vertical alignment geometry and annotation
- Gore and Area Details (Not included in this scope)
- Paving Plans (Not included in this scope)
- Bridge Plans
    - General Layout Sheets only including plan, profile, and typical section
- Wall Plans (Not included in this scope)
- Grading Plans
    - Conceptual contours from roadway modeling output only with rough grading and toes of slope.
- Drainage Plans (Not included in this scope)
- SWMP (Not included in this scope)
- Utility Plans (Not included in this scope)
- Lighting Plans (Not included in this scope)
- ITS Plans (Not included in this scope)
- Overhead Sign Structures Plans (Not included in this scope)

- Signing and Striping Plans (Not included in this scope)
- Traffic Signal Plans (Not included in this scope)
- Landscaping and Irrigation Plans (Not included in this scope)
- Construction Phasing Plans
    - 100 Scale schematic overview of areas color-coded by construction phase
- Cross Sections
    - Cross sections plotted at 50-foot station intervals, including existing and proposed grade lines and slopes

7. Interchange Development Plan Work Tasks

The Consultant will prepare an Interchange Development Plan which documents the alternatives analysis process. 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 Interchange Development Plan will include the following:

- Executive Summary
- Transportation Needs
- Existing Conditions
- Alternatives Analysis Summary
- Recommended Alternative
- Concept Design Plans
- Phasing and Implementation Plan, including Cost Estimates
- Tolling Operations and Infrastructure Considerations
- Next Steps and Considerations for NEPA

8. Tolling and Technology Infrastructure Work Tasks

The Consultant will coordinate with HPTE and CDOT ITS to include the tolling and technology infrastructure necessary to support regional ITS architecture, traffic operations, and tolling operations for each of the alternatives identified.

9. Conceptual Cost Estimates

The Consultant will prepare conceptual cost estimates for each interchange direct connection, using calculated major quantities from the Concept Design, such as bridge cost per square foot, square

yardage of pavement, earthwork etc. and percentages will be developed for minor items, force accounts, additional contingency and CDOT budget planning line items, such as design, ROW, utilities, tolling infrastructure and integration, CE/Indirects, etc.

The Consultant will engage an Independent Cost Estimates Consultant to assist with the development of and review cost estimates, based on construction industry experience in hard bidding.