

FIRST ADDENDUM TO INTERGOVERNMENTAL AGREEMENT FOR
INTERSTATE 25 AND BELLEVIEW AVENUE NEPA STUDY

THIS FIRST ADDENDUM TO INTERGOVERNMENTAL AGREEMENT FOR INTERSTATE 25 AND BELLEVIEW AVENUE NEPA STUDY is made and entered into this ____ day of _____, by and between ARAPAHOE COUNTY BOARD OF COUNTY COMMISSIONERS, the CITY AND COUNTY OF DENVER, a Colorado home rule municipal corporation, and the CITY OF GREENWOOD VILLAGE, COLORADO, a Colorado home rule municipal corporation (the "Village"), which entities are jointly referred to as "the Parties" or "project partners."

RECITALS

WHEREAS, the Arapahoe County Board of County Commissioners, the City and County of Denver, and the City of Greenwood Village are parties to an Intergovernmental Agreement for Interstate 25 and Belleview Avenue NEPA Study ("IGA") dated February 8, 2018 with the City of Greenwood Village wherein the parties agreed to participate in the selection of a consultant ("Consultant") to perform the NEPA study with said consultant being under contract with the City of Greenwood Village acting as Project Manager; and

WHEREAS, pursuant to Paragraph 7 of said IGA, if one of the Parties requires specific additional work for their individual benefit which is not included in the scope of work with the Consultant, such Party, prior to the commencement of any additional work, will appropriate the cost of such work and will pay the actual cost for the work being requested to the City of Greenwood Village to cover said request; and

WHEREAS, Paragraph 7 of the IGA further requires the requesting party and the Village to agree upon the scope of the additional services being requested and the associated fee in writing prior to the Village authorizing the additional services via addendum to the Consultant agreement with the Village.

WHEREAS, the City and County of Denver has requested additional work for its individual benefit pertaining to further study of the "Diamond Plus" alternative which has not been included in the scope of work with the Consultant and agrees to procure \$200,000 to pay for said work (Exhibit A); and

WHEREAS, the project partners wish to enter into this first addendum to the IGA for the additional work to be assigned to the Consultant and paid for by the City and County of Denver.

NOW, THEREFORE, in consideration of the mutual covenants and promises contained herein and for the purpose of setting forth the Parties' mutual understanding:

1. The City and County of Denver agrees to appropriate additional funds in the amount of two hundred thousand dollars (\$200,000) to pay for specific additional work from the Consultant for its individual benefit.

2. Upon payment for the work, Greenwood Village, as Project Manager, will direct the Consultant to perform the additional work and require its completion by July 1, 2022 for an amount not to exceed \$200,000.

3. As the additional work is performed, should it be determined by the City and County of Denver that the Diamond Plus alternative is flawed to the point that it is not worth further evaluation, further work on the Diamond Plus alternative will cease, ending Denver's financial obligation for further analysis. Greenwood Village will return any unspent funds to the City and County of Denver after paying any final invoices from the Consultant for the additional work.

4. All provisions of the Intergovernmental Agreement for Interstate 25 and Belleview Avenue NEPA Study ("IGA") dated February 8, 2018 remain in full force and effect.

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

CITY OF GREENWOOD VILLAGE,
COLORADO

John A. Jackson, City Manager

ATTEST:

Susan M. Ortiz, MMC
City Clerk

CITY AND COUNTY OF DENVER,
COLORADO

Adam Phipps, Interim Executive Director

Department of Transportation and
Infrastructure

ARAPAHOE COUNTY BOARD OF
COUNTY COMMISSIONERS

Bryan D. Weimer, P.W.L.F., Director PW&D
Authority Granted by Commissioner Reso 21-062

ATTEST:

Exhibit A

I-25 and Belleview Avenue Interchange Improvements Study

Scope of Work for Additional Alternatives Analysis

September 7, 2021

Background and Overview

Wilson & Company is providing this scope of work (SOW) and associated fee estimate as requested by the I-25 and Belleview Avenue Interchange Improvements Study funding partners (Arapahoe County, City and County of Denver, City of Greenwood Village, and Denver South TMA) for additional alternatives analysis. The funding partners have decided that the next step in the project is to conduct additional, higher-level analysis on a specific interchange alternative combination (Diamond Plus) previously screened out in Level 2 screening for this project and the 2016 Belleview Avenue Corridor Study. Wilson & Company will reconvene the Technical Advisory Committee (TAC) and execute the additional alternatives analysis with the following approach:

- First, Wilson & Company will conduct an initial “design feasibility analysis” for the Diamond Plus alternative, developing a level of design sufficient to determine the feasibility of advancing the alternative through more detailed traffic analysis.
- Second, Wilson & Company will complete a full Level 3 analysis for the Diamond Plus alternative.
- At the conclusion of this additional analysis, the TAC will make a technical recommendation to the Executive Committee (EC) comparing the Diamond Plus alternative to the SPUI alternative.
- We anticipate that this additional technical analysis will begin in October 2021 and is expected to take 6-8 months to complete depending on the results of the design feasibility analysis.

Task 1 – Project Administration and Management

Wilson & Company’s PM Scott Waterman and Deputy PM Jon Chesser will maintain continuity with the overall project and all engaged parties as we execute this additional analysis. This task includes monthly invoicing activities, internal coordination with Wilson & Company staff and subconsultants, scheduling and execution of weekly PMT meetings with the funding partners, and other activities required for the administration and management of this additional alternatives analysis.

Task 2 – TAC and EC Project Meetings

Wilson & Company will engage the project’s TAC and EC throughout this additional alternative analysis. The TAC will review all analysis and determine if the Diamond Plus alternative should advance to Level 3 analysis. We anticipate that the TAC will meet four (4) times and the EC will meet three (3) times during this additional analysis. The TAC will meet almost monthly (as they did in the previous alternatives analysis) and the EC will meet at major milestones, such as the decision to advance the Diamond Plus alternative to Level 3 analysis and when the results of the technical analysis are ready.

Task 3 – Design Feasibility Analysis

Wilson & Company will conduct an initial design feasibility analysis for the Diamond Plus alternative proposed by the City and County of Denver (CCD), developing a level of design sufficient to determine the feasibility of advancing the alternative through more detailed Level 3 analysis. The Diamond Plus alternative combination being evaluated in this task was previously screened out in Level 2 screening for this project and the 2016 Belleview Avenue Corridor Study. Wilson & Company will advance the design of this alternative to help determine the geometric feasibility and constructability of the concept. The TAC will then review this information and determine if the alternative warrants advancement to the more detailed Level 3 analysis. This scope assumes that the Diamond Plus alternative will advance to Level 3 analysis.

Task 4 – Level 3 Analysis Documentation

Wilson & Company will document the results of this additional Level 3 analysis in two reports:

- Addendum to the project's existing *Traffic Technical Report & Safety Analysis* (August 2020). The addendum will follow the same format as the existing report, presenting information in the same way for an accurate comparison of data.
- Inclusion in the project's *Alternatives Analysis Report*, to be completed when the alternatives analysis is completed and the project partners reach a conclusion on how to advance the project.

Task 5 – Level 3 Alternatives Design

Conceptual design of the Diamond Plus alternative to support Level 3 analysis is assumed. Following the design feasibility analysis (Task 3), the Diamond Plus alternative will be advanced to apply compliance with design standards, conceptual design profiles to confirm vertical clearances, conceptual layouts and locations for bridges, retaining walls, sidewalks, travel lanes, and shoulders. The alternative design will include coordination with the multimodal analysis to develop the typical section along Union Avenue (Union Avenue is proposed to be improved as part of this alternative) and intersection design as it relates to multimodal travel within the corridor that will impact traffic analysis. The Level 3 design will include coordination with the traffic analysis that will inform the need for geometric changes in the lane geometry to optimize the performance of the design, a process consistent with that executed for the current shortlisted alternatives. The Level 3 design will develop a conceptual cost estimate in the same manner as was developed for the current shortlisted alternatives. This task will include development of exhibits similar to those produced for the current shortlisted alternatives.

The funding partners have requested additional graphics to be developed for the Diamond Plus alternative. This effort has been included in the cost estimate and is outlined through the subtasks below:

- *Conceptual Design Graphics*
Develop one (1) roll plot illustrative plan views and supporting graphics (precedent examples) that intuitively communicate the intent of the conceptual designs for the Diamond Plus alternative for stakeholder and TAC meetings. Illustrative plan view graphics will be prepared for East Union Avenue and East Belleview Avenue.

- *Corridor Cross-section Development*

Develop up to five (5) illustrative corridor cross sections for mid-block and intersection locations along East Union Avenue and East Bellevue Avenue to illustrate the design approach for the Diamond Plus alternative. We will work with the project team to develop the cross sections to ensure they meet desired outcome of the project.

Task 6 – Level 3 Multimodal Analysis

A multimodal analysis will be performed for the Diamond Plus alternative, assuming it advances to Level 3 analysis. The following outlines the analysis to be performed for each mode of travel, similar to the work previously performed:

- *Pedestrian Mobility*

- Travel times will be estimated for pedestrians across I-25 on both Bellevue Avenue and Union Avenue. Travel time will be calculated using distance of travel with HCM's recommended average pedestrian speed for crosswalk crossings and the delays at the signalized intersections from the VISSIM models. Travel paths used will match the analysis previously performed for the SPUI and Split Diamond alternatives.
- Delay associated with signalized intersections will be pulled from the VISSIM models.
- Level of Traffic Stress for pedestrians will be developed for block segments and intersection experiences.
- Safety of pedestrians on Union Avenue and Bellevue Avenue will be measured by determining the number of conflict points.

- *Bicycle Mobility*

- Travel times will be estimated for bicyclists across I-25 on Union Avenue. Travel time will be calculated using distance of travel with HCM's recommended average bicycle speed and the delays at the signalized intersections from the VISSIM models. Travel paths used will match the analysis previously performed for the SPUI and Split Diamond alternatives.
- Delay associated with signalized intersections will be pulled from the VISSIM models.
- Level of Traffic Stress for bicyclists will be developed for block segments and intersection experiences.
- Safety of bicyclists on Union Avenue will be measured by determining the number of conflict points.

- *Transit (Bus) Mobility*

- Travel times will be estimated for transit across I-25 on Union Avenue. Travel time will be determined using the general vehicular traffic travel times from VISSIM, with assumptions developed for the reduction in travel times compared to general traffic as a result of the bus only lane on Union Avenue.
- Delay associated with signalized intersections on Union Avenue will be developed based on a combination of Synchro and VISSIM, depending on the specifics of the Diamond Plus alternative moving into Level 3 analysis.

- Safety for transit on Union Avenue will be measured by determining the number of conflict points.

The funding partners have requested additional graphics to be developed for the Diamond Plus alternative. This effort has been included in the cost estimate and is outlined through the subtask below:

- *Conflict Diagram Development*

To supplement the safety analysis, develop conflict diagrams for each existing intersection and intersection alternative to understand the level of exposure associated with the various intersection design alternatives for people traveling by bicycle and people walking along East Union Avenue and East Bellevue Avenue. Up to nine (9) diagrams.

Task 7 – Level 3 Travel Demand Volume Analysis

Following the design feasibility analysis (Task 3), travel demand forecasts for the Diamond Plus alternative will be developed under the same process that was executed for the current shortlisted alternatives. The forecasts will be developed assuming the intersection relocation alternative that produced the most performance improvement for the current shortlisted alternatives: the frontage road that relocates all left turns at Quebec Street and Bellevue Avenue. Demand volumes for design year 2040 will be distributed to the one additional alternative as inputs to the VISSIM model developed in Task 8. Additionally, and similar to requests for this data for the current shortlisted alternatives, origin/destination analysis will be performed to compare how the Diamond Plus alternative delivers traffic to/from I-25 and the surrounding roadway network.

Task 8 – Level 3 Traffic Modeling (VISSIM) Analysis

Baseline 2040 Models will be developed in VISSIM starting with the current AM and PM 2040 No Build Models and incorporating the Bellevue/Quebec and Bellevue/Syracuse improvements identified in the previous Level 3 Analysis. This includes the south frontage road on the west side of the interchange to allow for rerouting of the left turns at the Bellevue/Quebec intersection and the median U-turn on the east side of the interchange to improve operations at Bellevue/Syracuse.

The Baseline 2040 Models will be updated to incorporate the Diamond Plus alternative. The measures of effectiveness (MOEs) used in previous Level 3 analysis will be extracted from the models; these will include intersection delay (LOS), travel times, vehicle miles traveled (VMT), vehicle hours traveled (VHT), average speed per vehicle, and unserved demand.

September 7, 2021

**I-25 and Belleview Interchange Improvement Study
Additional Alternatives Analysis
Cost and Schedule Estimates**

Cost Estimate Overview

	Wilson & Company	Apex	TOTAL
One Alternative through Level 3 Analysis	\$115,331	\$83,903	\$199,234

Schedule Estimate Overview

We estimate **6-8 months** to complete the proposed effort. As a comparison, it took our team approximately 8-9 months to complete this effort in 2019.

**Wilson & Company
Fee Estimate**

Task Description	Project Manager Scott Waterman \$305.40	Deputy PM Jon Chesser \$214.32	Design Lead Danny Zamarripa \$157.68	Traffic Lead Maureen Paz de Araujo \$240.00	Graphics Todd Riddle \$151.68	GIS/CAD Tiffany Haugh \$132.96	Administration Marlo Grabstzul \$131.76	Multiplier 3.00	Total Hours	Cost
Task 1: Project Administration and Management										
1.1 - Project Administration and Management	4	60					8		72	\$15,134.88
TASK 1 TOTALS	4	60	0	0	0	0	8		72	\$15,134.88
Task 2: Project Meetings										
2.1 - Internal Project Team Meetings	4	6	6	6					22	\$4,893.60
2.2 - Stakeholder Meetings (TAC, EC, Agency)	8	34	34	34					110	\$23,251.20
TASK 2 TOTALS	12	40	40	40	0	0	0		132	\$28,144.80
Task 3: Feasibility Analysis										
3.1 - Documentation of Previous Screening Efforts	2	16	8	16					42	\$9,141.36
3.2 - Geometric Design Analysis	2	4	60	8		4			78	\$13,380.72
TASK 3 TOTALS	4	20	68	24	0	4	0		120	\$22,522.08
Task 4: Level 3 Analysis Documentation										
4.1 - Documentation of Level 3 Analysis Results	2	40	14	16		8			80	\$16,294.80
TASK 4 TOTALS	2	40	14	16	0	8	0		80	\$16,294.80
Task 5: Level 3 Alternatives Design										
5.1 - Alternative 1 Design	2		86	4					92	\$15,131.28
5.2 - Conceptual Design Graphics Support					40				40	\$6,067.20
5.3 - Corridor Cross-Section Development and Support					8				8	\$1,213.44
TASK 5 TOTALS	2	0	86	4	48	0	0	0	140	\$22,411.92
Task 6: Level 3 Multimodal Analysis										
6.1 - Alternative 1 Multimodal Analysis		4	4	4					12	\$2,448.00
6.2 - Conflict Diagram Development					8				8	\$1,213.44
TASK 6 TOTALS	0	4	4	4	8	0	0	0	20	\$3,661.44
Task 7: Level 3 Travel Demand Volume Analysis										
7.1 - Alternative 1 Travel Demand Volume Analysis	2			24					26	\$6,370.80
TASK 7 TOTALS	2	0	0	24	0	0	0		26	\$6,370.80
Task 8: Level 3 Traffic Modeling (VISSIM) Analysis										
8.1 - Base VISSIM Model with Quebec and Syracuse Improvements									0	\$0.00
8.2 - Alternative 1 VISSIM Analysis									0	\$0.00
8.3 - Documentation of Level 3 Analysis									0	\$0.00
TASK 8 TOTALS	0	0	0	0	0	0	0	0	0	0
Labor Total	26	164	212	112	56	12	8	0	590	\$114,540.72
Expenses										
Mileage (\$0.58 rate/mile per current GSA rates)										\$290.00
Printing - roll plots, color graphics, etc.										\$500.00
Expenses Total										\$790.00
Wilson & Company Total Fee										\$115,330.72

**I-25 & Belleview Additional Analysis
Apex Design
Fee Estimate**

Task Description	Senior Traffic Engineer II \$206.00	Transportation Engineer II \$142.00	EIT III \$112.00	Transportation Planner \$112.00	Senior Transportation Planner II \$170.00	Senior Civil Engineer \$170.00	Senior Administrator \$92.00	Total Hours	Cost
Task 1: Project Administration and Management									
1.1 - Project Administration and Management	16						8	24	\$4,032.00
TASK 1 TOTALS	16	0	0	0	0	0	8	24	\$4,032.00
Task 2: Project Meetings									
2.1 - Stakeholder Meetings	12	9		9	9			39	\$6,288.00
TASK 2 TOTALS	12	9	0	9	9	0	0	39	\$6,288.00
Task 3: Design Feasibility Analysis									
3.1 - Feasibility Review	16	20	20					56	\$8,376.00
TASK 3 TOTALS	16	20	20	0	0	0	0	56	\$8,376.00
Task 4: Level 3 Analysis Documentation									
4.1 - Documentation of Previous Screening Efforts	8	24	16					48	\$6,848.00
TASK 4 TOTALS	8	24	16	0	0	0	0	48	\$6,848.00
Task 5: Level 3 Alternative Design									
5.1 - Alternative Design Traffic Support	8	8	16		24			56	\$8,656.00
5.2 - Conceptual Design Graphics Support	2			8	12			22	\$3,348.00
5.3 - Corridor Cross-Section Development and Support				24	4			28	\$3,368.00
TASK 5 TOTALS	10	8	16	32	40	0	0	106	\$15,372.00
Task 6: Level 3 Multimodal Analysis									
6.1 - Alternative 1 (Half Diamond) Multimodal Analysis	8		16	24	8			56	\$7,488.00
6.2 - Conflict Diagram Development				24	8			32	\$4,048.00
TASK 6 TOTALS	8	0	16	48	16	0	0	88	\$11,536.00
Task 7: Level 3 Travel Demand Volume Analysis									
7.1 - Travel Demand Volume Coordination	4	4						8	\$1,392.00
TASK 7 TOTALS	4	4	0	0	0	0	0	8	\$1,392.00
Task 8: Level 3 Traffic Modeling (VISSIM) Analysis									
8.1 - Base VISSIM Model with Quebec and Syracuse Improvements	8	24	16					48	\$6,848.00
8.2 - Alternative 1 VISSIM Analysis	16	60	40					116	\$16,296.00
8.3 - Documentation of Level 3 Analysis	8	24	16					48	\$6,848.00
TASK 8 TOTALS	32	108	72	0	0	0	0	212	\$29,992.00
Labor Total	106	173	140	89	65	0	8	581	\$83,836.00
Expenses									
Mileage (a total of 120 miles at a \$0.56 rate/mile per current GSA rates)									\$67.20
Expenses Total									\$67.20
Apex Design Total Fee									\$83,903.20

Refer to the 2021 Standard Rates by Category for a full list of rates that may be used for this contract, not to exceed \$83,903.20