Washington State Department of Transportation

Task Order

Agreement No. Y-9245 *(To be filled in by Agreement Manager)*

Task No. AB Amendment No. 2 Work Order No(s). XL 2268

All terms and conditions of this agreement are in full force and effect for this Task Order document.

Project Information

Project Title: Columbia River Crossing Project (CRCP)	
State Route No(s.): I-5	Fed. Aid Project No(s.): DEMO-0051(260)
Org. Code of Work Order No(s.): 441101	Fed. Aid Participating Percentage(s): 100%

Task Manager Information

Task Manager: Doug Ficco	Phone: 360-737-2726	Mailstop: CRC
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Consultant

Consultant: David Evans and Associates, Inc.	Contact: Jay Lyman
Address: 700 Washington Street, Suite 222 Vancouver, WA 98660-3177	Phone: 360-737-2726
	Federal I.D. No.: 93 0061195

Scope of Task Order

Provide brief description of work and reference attachments for prime consultant and all subconsultants (to include detailed description of work schedule and estimate).

Report Due Date:

Additional work and additional money in accordance with the attached scope and budget.

Task Schedule and Cost

		New Task		Task Amendment	
Pretask Start Date		Pre-Task Amt.		Previous Authorized Amt.	$3,434,371.33
*No payment for pre-task work done **PRIOR** to this date*					
Task Start Date	September 28, 2005	Task Amt.		Task Amendment Amt.	$143,903.00
*No payment for work done **PRIOR** to this date*					
Task End Date	December 31, 2005	Total Task Amt.		Total Amended Task Amt.	$3,578,274.33
*No payment for work done **AFTER** this date*					

Approval Signatures

*****Note: Two original signed Documents are required.*****

Consultant

Washington State Department of Transportation

Agreement Manager *(Signature required for execution of document ONLY for Creative Media Services Agreements)*

Distribution: Originals: ☒ Consultant ☒ Accountant Copies: ☒ File ☒ Task Manager ☒ Consultant Services ☐ Other

DOT Form 130-010 EF
Revised 11/99

Columbia River

CROSSING

Task AB Scope of Work

Amendment No. 2

Agreement Number Y-9245

September 27, 2005

PURPOSE OF AMENDMENT

This amendment is intended to address new work and expenses that were not included in Task AB. In particular, this amendment covers:

- Expenses for the Task Force meetings that were not included in the original Task AB scope.
- Existing conditions traffic data that needs to be collected within the next two months.
- Development and facilitation of the Freight Working Group that was not included in the original Task AB scope.

Work included in this amendment must be initiated and/or completed prior to December 31, 2005.

WORK ELEMENT 4.0: COMMUNICATIONS

4.1 Communications General Services

This task is amended to include the following direct expenses:

- Task Force Meeting expenses (September 12 and October 12, 2005)

WORK ELEMENT 5.0: TRANSPORTATION PLANNING

5.1 Travel Demand Modeling

Work under this amendment includes collection of the following data:

- Ramp-to-Ramp Traffic Counts (24-hour)
- Ramp Terminal Traffic Counts (24-hour)
- Directional, 24-hour, Classification Counts (24-Hour)
- Lane Utilization/Speed Data (24-hour)
- Directional Travel Time Runs (4-hour AM and PM Periods)
- Origin-Destination Counts

Origin-destination counts will be conducted for 2 hours for the peak direction and 1 hour for the off-peak direction during both the AM and PM peak periods as well as for 1 hour for both directions during the mid-day peak hour.

Assumptions:

- CONSULTANT will prepare a data collection plan and manage the collection of data from two data collection firms. Data collection costs will be managed as an expense. DEA will manage the collection of the above data. Please refer to Attachment A: Transportation Data Collection Plan for a detailed work plan.

Deliverables:

- All data will be assembled and documented, placed on a CD, and made available to Metro and others who need the data.

5.3 Development and Facilitation of CRC Freight Working Group *(New Task)*

Under Task AB, a Freight Working Group will be established and facilitated by the CONSULTANT. The charge of this Freight Working Group will be to advice the project development team on specific freight issues that they would like to see addressed as part of the project, and to review and comment on project alternatives relative to how well they address the identified freight issues. Initially, the CONSULTANT will conduct interest group discussions to identify issues and questions to be addressed during later phases of the study. If necessary, the CONSULTANT will develop a supplemental work plan, funded in a future task order, to address remaining issues identified by the Freight Working Group.

The work program below identifies the efforts involved in recruiting participants for the CRC Freight Working Group, establishing meeting schedules and locations, preparing meeting agendas, preparing materials for discussion at meetings, facilitating discussion at meetings, following up on issues requested by the Freight Working Group, and reporting information from Freight Working Group comments and issues, etc.

Moreover, while the CONSULTANT and STATE project team envisions a process for the Freight Working Group through 2005 and 2006, the work program for this task concludes with the first meeting of the Freight Working Group anticipated to be scheduled for October 2005.

5.3.1 Project Management and Quality Control

The CONSULTANT shall:

- Manage all individual work elements related to development and facilitation of the CRC Freight Working Group;
- Participate and collaborate with other analysts and team leaders on related work items;
- Follow guidance in Quality Control Plan where relevant; and
- Prepare monthly invoices and progress reports.

Assumptions:

- Quality Control Plan is provided to Freight Analysis team members.
- The Freight task order manager will report to the appropriate CONSULTANT task manager during development of Freight Working Group.

Deliverables:

- Preparation of meeting materials and meeting summaries
- Preparation of brief memoranda and email messages to appropriate CONSULTANT task manager
- Preparation of monthly invoices with accompanying progress reports
- Where applicable, brief documentation indicating that analyses and deliverables have been reviewed using Quality Control Plan requirements

5.3.2 Determine Preliminary Meeting Locations, Meeting Needs and Schedule

The CONSULTANT will propose logistical matters to assist in providing practical information to those considering joining the Freight Working Group, prior to recruiting candidates for the Freight Working Group. In consultation with the CRC Communications team members, CONSULTANT will:

- Identify preliminary list of locations where Freight Working Group meetings could be held.
- Identify media equipment, note-taking methods, and other practical needs that will need to be provided for at Freight Working Group meetings.
- Prepare a preliminary bi-monthly schedule for meetings of the Freight Working Group (with some relationship to milestone events in the CRC technical analyses)

Assumptions:

- The CRC Communications team can provide requested assistance.

Deliverables:

- Preliminary list of meeting locations and schedule for bi-monthly meetings

5.3.4 Develop List of Potential Candidates Membership of Freight Grouping Group

The intent of this task is to identify a list of candidate Freight Working Group members who are stakeholders in the CRC study area with respect to freight mobility. The target number of individuals is 12 to 15 members, with equal representation from Washington and Oregon. At this time, the freight analysis is limited to truck mobility (i.e., rail and barge are not being considered at this time).

While the subject of highway freight mobility can be related to land use, travel demand management, environmental resources, and other disciplines to be discussed in other CRC efforts, the intent of these Freight Working Group meetings is to focus discussion on truck mobility associated with the CRC study area roadways.

It will be important to include all of the relevant parties involved in truck mobility including short- and long-haul shippers, motor carriers, third party shippers, logistics experts, and others.

Advice will be sought from several individuals on the STATE and local agencies about potential candidates for the Freight Working Group:

- Consult with the Ports of Vancouver and Portland, the cities of Vancouver and Portland, and other interest groups, about suggested candidates for the Freight Working Group.
- Develop list of between 12 and 20 candidates for review by the STATE[1].
- With the CRC team's approval, initial telephone contact will be made with each of the candidates—based on a priority order developed by the CRC team—to gauge their interest in joining the Freight Working Group.

[1] At some future date, a decision-maker will need to be named to support the CONSULTANT Freight task manager in facilitating development of the Freight Working Group.

- If less than 10 individuals agree to join the Freight Working Group, further outreach will be conducted with freight system stakeholders—including individuals who have agreed to join the Group—in order to begin the Group with at least 12 members.

Assumptions:

- Notice to Proceed issued shortly so that there is adequate time to recruit candidates.
- There will be effective participation from the Task Force members mentioned above.

Deliverables:

- Preliminary and final lists of Freight Working Group members

5.3.5 Schedule and Prepare for First Meeting of Freight Working Group

In consultation with CRC Communication team members, the first meeting of the Freight Working Group will be scheduled on a date that does not conflict with other related and important CRC activities; but before the end of October 2005. The intent is to develop a schedule that falls on a regular day; such as the first Friday of the month. The 6 Task Force members described in Task 5.3.4 will be consulted about their most optimal meeting dates.

At the first meeting, a variety of subjects will be on the agenda about the CRC project: Freight Analysis scope, CRC schedule, related Freight Analysis activities, meeting protocols, and the mission for the Freight Working Group.

- Arrange for meeting location.
- Schedule first meeting on date and at location that meets most Freight Working Group member's schedules and does not conflict with other related CRC activities.
- Prepare agenda for first meeting.
- Provide Freight Analysis scope of work, CRC schedule, and other related technical materials to first meeting.
- Send out notice of first meeting to all Freight Working Group members by email.

Assumptions:

- Meeting location will be available for most dates that are workable for the CRC Communications team and the 6 Task Force members noted in Task 5.3.4.

Deliverables:

- Notice of first meeting to Freight Working Group members
- Agenda

5.3.6 Prepare Work Program for Continuation of Freight Working Group through December 2006

Based on scheduled CRC Freight Analysis milestone events (proposed in Task AC, Task 5.9: Freight Analysis), Freight Working Group meetings are currently conceived to occur on a bi-monthly basis between October 2005 and December 2006 (i.e., to coincide with the CRC DEIS schedule). After the first meeting, but before the end of October 2005, a work program for

continued CRC team participation and facilitation of the Freight Working Group will be prepared and submitted to the CRC team leader.

Assumptions:

- Continuation of an ongoing Freight Working Group meeting is agreed upon at the first meeting.
- First Freight Working Group meeting occurs on or before October 31, 2005.

Deliverables:

- Work Program (task write-ups, assumptions, deliverables, schedule, and budget) for continuation of Freight Working Group through December 2006

Columbia River
CROSSING

Task AB Scope of Work
Amendment No. 2

Agreement Number Y-9245

Attachment A:
Transportation Data Collection Plan

September 21, 2005

Data Collection Plan

Purpose

The data collection plan as outlined below shall be performed under Task AB. The data collection plan was developed to obtain existing transportation data including I-5 mainline and ramp terminal traffic counts, I-5 lane utilization/speed data, travel time information, signal timing plans, physical geometry, and I-5 ramp meter rates to support the I-5 Columbia River Crossing project transportation analysis. The extent of the data collection plan study area shall be from the Marquam Bridge in Portland, Oregon to the Pioneer Street Interchange in Ridgefield, Washington.

Scope of Work

1. ***Review existing data collected by local agencies including ODOT, Metro, City of Portland, WSDOT, RTC, and City of Vancouver.***

ODOT

ODOT collects the following types of data:

Automatic Traffic Recorder Stations (ATR's)

ODOT currently has approximately 150 ATR's located across the state with 16 of them located within the Portland Metro region. The ATR's collect directional volume data 24 hours per day, seven days per week. ODOT added eleven new ATR stations in 2005. The ATR's are located on low-volume highways, high-volume highways, summer recreational routes, winter recreational routes, year-round recreational routes (highways to the coast), and commuter routes.

Within the study, area there are three ATR's along I-5 and one located along I-205 at the Glenn Jackson Bridge (ATR 26-024). The three ATR's along I-5 are the Marquam Bridge ATR (26-026), Minnesota ATR located between Skidmore Street and Alberta Street (ATR 26-019), and Interstate Bridge ATR (26-004).

Vehicle Classification Counts

Vehicle classification counts consist of separating vehicles into FHWA's 13-class system over a 24-hour period. ODOT counts each ATR location once every three years. Additional classification counts have been conducted along I-5 within the study area over the last few years as well as the next few years. In late September 2004, 24-hour directional classification counts were conducted at the following locations within and near the study area:

- I-5 at MP 307 (Between OR 99W and Hayden Island)
- I-5 at MP 303.3 (Between Killingsworth Street and Skidmore Street)
- I-5 at MP 301.1 (Between Yamhill Avenue and Morrison Street)
- I-205 at MP 23.5 (Between I-84 and Columbia Blvd.)

ODOT has planned to conduct the following 24-hour directional classification counts in September/October 2005:

- I-5 at MP 306.8 (Between Victory/Denver Blvd. and OR 99W)
- I-5 at MP 303.5 (Between I-405 junction and Skidmore Street)
- I-5 at MP 302.3 (Between I-84 and Broadway)
- I-5 at MP 300.37 (Marquam ATR)
- I-205 at MP 24.9 (Near Airport Interchange)
- I-84 at MP 0.52 (West Banfield ATR)
- I-84 at MP 12.13 (NE 162nd Overcrossing)

On-Ramp Loop Data

ODOT collects on-ramp loop data at ramp meter locations within ODOT Region 1. The loop data counts vehicles on the on-ramps as well as along the mainline prior to the on-ramp merge point. The mainline loops consist of individual loops for each individual lane.

On- and Off-Ramp Counts

ODOT also counts on- and off-ramp counts at different times. ODOT counted all of the on- and off-ramps along I-205 between the I-205/I-5 Interchange and the Airport Way Interchange in May - July 2005. The 24-hour counts were conducted using loop data and tube counters.

METRO

Metro typically obtains traffic count data from local jurisdictions versus collecting data themselves.

Regional Freight Data Collection– Phase II

This project is designed to complete freight data collection for the Portland metropolitan region. The Freight Data Collection–Phase II shall be based on findings from its Phase I predecessor. That project prioritized freight data needs in the Portland metropolitan region and developed a menu of methods to collect these data. The primary objectives of the Freight Data Collection–Phase II are as follows:

A. Collect vehicle classification counts to better calibrate Metro's truck model;
B. Conduct intercept surveys at key locations and/or use other data collection methods to obtain origin-destination, route and other freight movement information;
C. Combine the results from Steps A and B with additional freight data from existing sources to identify truck and commodity movement (volumes, origin/destinations, route choice, and freight facility flow) in the Portland metropolitan region; and
D. Develop a long-term regional truck count program.

Knowing specifics about commodity movements, such as their origin/destination, specific load factors, and patterns of transshipping/reloading will add geographic specificity to the regional and state travel forecasting models. With this addition, the models can be used to help identify existing bottlenecks and predict key corridors for future investments to increase business productivity.

CITY OF PORTLAND

The City of Portland Office of Transportation collects 24-hour counts for vehicles and vehicle speeds on a variety of Portland streets. From this data they can analyze traffic trends as well as speed data. The City typically uses automatic traffic counters to collect 24-hour volume, speed, and classification counts.

WSDOT

WSDOT collects the following types of data:

Automatic Data Collection Stations (ADC's)

Similar to ODOT's ATR's, WSDOT's ADC's collect directional volume data 24 hours a day, seven days a week. Some of the ADC's also collect vehicle classification data. The two ADC's located within the study area, which count both volumes and classification data, are located along I-5 south of SR-500/39th Street (ADC P5) and along I-205 north of Mill Plain Boulevard Interchange (ADC R051).

In addition to the ATR's, WSDOT has 8 to 12 RTMS (remote traffic microwave sensor) stations located on I-5 and I-205. Retrieving data has sometimes been problematic. These RTMS stations collect volume and occupancy data.

Short Counts

Short counts consist of counts conducted over short periods of time such as 1- to 3-day counts. These short counts when combined with ADC's develop overall balanced corridor volumes. Short counts consist of actual volume counts and 2-axle equivalent counts. WSDOT counted all of the I-5 on- and off-ramps between the Oregon Stateline and a Ridgefield, WA (i.e., SR-501) I-5 mainline count in November 2003. All of these same ramps were counted as 2-axle equivalent counts in October 2004. The major problem with the 2-axle equivalent counts is hourly axle conversion factors have not been developed for a daily period, therefore this type of data is typically used for ADT comparison. Similar to I-5, all of the ramps along I-205 between I-5 and the Oregon Stateline were counted as 2-axle equivalent counts in October 2004.

Vancouver HOV Lane Pilot Project

WSDOT has collected traffic data for the last few evaluation reports for the Vancouver HOV Lane Pilot Project. The data collection program consists of mainline counts along I-5 and I-205, auto occupancy counts along I-5 near 33rd Street, arterial volume counts, and travel time runs conducted during the HOV evaluation periods and by WSDOT's incident response vehicles on other days. Transit patronage in the corridor was also collected. WSDOT's incident response vehicles drive and monitor the I-5 corridor during peak periods to respond to incidents or motorist's maintenance needs on the corridor. WSDOT has collected travel time runs from the incident response vehicle between 99th Street Interchange and the Interstate Bridge during which the WSDOT vehicle did not stop to assist a motorist. WSDOT is planning to collect data for the next evaluation sometime in October 2005.

WSDOT Regional Freight Data Collection Study

WSDOT is in the process of collecting regional freight data throughout the Vancouver metropolitan region. The counts consist of manual and automated truck traffic volume counts along I-5 and I-205.

REGIONAL TRANSPORTATION COUNCIL (RTC)

Southwest Washington Regional Transportation Council (RTC) maintains a Regional Traffic Count Program database for Clark County, Washington. This database contains over 400 intersections and their traffic count and turn movement volumes. They also have supplemental pages of data including a list of the highest volume intersections, historical volumes on the Columbia River Bridge crossings, and congestion management information.

Traffic count data along arterials has been maintained for the period from 1980 to present. Raw count data is collected by local jurisdictions including WSDOT, Clark County, City of Vancouver, and the City of Camas. RTC takes these raw counts and factors the data to represent average day and average month data. Raw count information is also available in pdf format linked to the database. Some intersections are analyzed frequently and have year's worth of traffic count data while other intersections have only been counted a few times since 1980. Traffic count data is summarized for selected intersection by intersection leg. Directional Average Weekday (24-hour average), AM Peak Hour (7:00-8:00 a.m.), PM Peak Hour (peak hour between 4:00-6:00 p.m.), and PM Peak Turn Movement (right, left, and through), are included in the summary.

RTC publishes an annual Congestion Management Monitoring report that focuses on improving transportation system performance information to decision-makers who must identify the most cost-effective strategies for addressing transportation congestion and improving mobility.

The Congestion Monitoring Report provides a comprehensive set of data for monitoring the performance of the transportation system. It contains information on traffic volumes, auto occupancy, transit ridership, travel time, and rideshare rates and more for different periods of the day. The full Congestion Monitoring Report provides profiles on the travel characteristics of 30 regional transportation corridors and detailed transportation data on individual facilities. This project also cross-references the areas of concern with transportation solutions identified in current plans.

CITY OF VANCOUVER AND CLARK COUNTY

The City of Vancouver and Clark County periodically collect traffic count data required for site impact analysis and corridor studies. This information is forwarded to RTC for inclusion in the Regional Traffic Count Database. They both typically obtain other traffic count data from the RTC database of traffic counts.

2. ***To support the I-5 CRC transportation analysis, the transportation data collection program includes ramp-to-ramp connection counts (i.e., ramps not controlled by intersection control), ramp terminal turning movement counts, I-5 mainline directional vehicle classification counts, lane utilization and speed counts, signal timing plans, physical geometry data, and ramp meter data. The details of the transportation data collection program are summarized below. Tasks A, B, C, and E shall be conducted concurrently if possible.***

A. COLLECTION OF RAMP-TO-RAMP TRAFFIC COUNTS

The on-ramp and off-ramp locations identified in **Table 1** list ramp-to-ramp traffic count locations. These locations lead directly to/from I-5 and represent ramp-to-ramp connections, which are not tied to traffic-controlled (signal or stop sign) interchange ramp terminals. Refer to Table 2 for traffic-controlled ramp terminals. Ramp-to-ramp terminal counts will be collected for the 16-hour period from 5:00 a.m. to 9:00 p.m. during typical weekday operations, summarized by 15-minute increments, and include typical vehicle classifications (vehicles, light trucks, medium trucks, and heavy trucks). Ramp-to-ramp volumes will be collected concurrently throughout the corridor when the ramp terminal counts are collected.

TABLE 1
RAMP-TO-RAMP CONNECTIONS REQUIRING TRAFFIC COUNTS

#	Location	Direction	Roadway Facility	Comments
1	I-5 at I-84/Water Avenue	Northbound	Off-ramp	See note
2	I-5 at Morrison Street	Northbound	On-ramp	See note
3	I-5 at I-84	Northbound	On-ramp	
4	I-5 at I-405	Northbound	Off-ramp	
5	I-5 at Greeley Avenue	Northbound	Off-ramp	
6	I-5 at I-405	Northbound	On-ramp	
7	I-5 at SR-14	Northbound	Off-ramp	
8	I-5 at SR-14	Northbound	On-ramp	
9	I-5 at SR-500/39th Street	Northbound	Off-ramp	See note
10	I-5 at I-205	Northbound	On-ramp	See note
11	I-5 at I-205	Southbound	Off-ramp	
12	I-5 at SR 500/39th Street	Southbound	On-ramp	See note
13	I-5 at SR-14	Southbound	Off-ramp	
14	I-5 at SR-14/City Center	Southbound	On-ramp	See note
15	I-5 at I-405	Southbound	Off-ramp	
16	I-5 at Greeley Avenue	Southbound	On-ramp	
17	I-5 at I-405	Southbound	On-ramp	
18	I-5 at I-84	Southbound	Off-ramp	
19	I-5 at Morrison Street	Southbound	Off-ramp	See note
20	I-5 at I-84	Southbound	On-ramp	See note

Note: Where multiple ramps merge prior to entering I-5 or diverge after leaving I-5, counts will be conducted so as to obtain both volume components.

B. COLLECTION OF RAMP TERMINAL TURNING MOVEMENT COUNTS

To support the I-5 Columbia River Crossing traffic operations analysis 16-hour ramp terminal turning movement counts (5:00 a.m. to 9:00 p.m.) are required at each ramp terminal listed in **Table 2**. Ramp terminal counts will be collected concurrently with the ramp-to-ramp counts.

TABLE 2
RAMP TERMINAL INTERSECTIONS REQUIRING TURNING MOVEMENT COUNTS

#	Location	Direction	Roadway Facility	Comments
1	I-5 at Weidler	Northbound	Off-ramp	
2	I-5 at Broadway/Williams	Northbound	On-ramp	
3	I-5 at Going/Alberta Avenue	Northbound	Off-ramp	See note
4	I-5 at Alberta Avenue	Northbound	On-ramp	
5	I-5 at Portland Boulevard	Northbound	Off-ramp & On-ramp	
6	I-5 at Lombard Street	Northbound	EB & WB Off-ramp	
7	I-5 at Columbia Boulevard	Northbound/Southbound	Off-ramp/On-ramp	
8	I-5 at Victory Boulevard	Northbound	Off-ramp/On-ramp	
9	I-5 at Marine Drive	Northbound	Off-ramp	See note
10	I-5 at Denver/Interstate Ave.	Northbound/Southbound	On-ramp/Off-ramp	See note
11	I-5 at Marine Drive	Northbound	On-ramp	
12	I-5 at Hayden Island	Northbound	Off-ramp	
13	I-5 at Hayden Island	Northbound	On-ramp	
14	I-5 at City Center	Northbound	Off-ramp	
15	I-5 at Mill Plain Blvd.	Northbound	Off-ramp/On-ramp	See note
16	I-5 at 4th Plain Blvd.	Northbound	Off-ramp/On-ramp	See note
17	I-5 at 39th Street	Northbound	On-ramp	
18	I-5 at Main Street	Northbound	Off-ramp	
19	I-5 at Main Street	Northbound	On-ramp	
20	I-5 at 78th Street	Northbound	Off-ramp/On-ramp	
21	I-5 at 99th Street	Northbound	Off-ramp/On-ramp	
22	I-5 at 134th Street	Northbound	Off-ramp	
23	I-5 at 179th Street	Northbound	Off-ramp	
24	I-5 at 179th Street	Northbound	On-ramp	
25	I-5 at Pioneer Street	Northbound	Off-ramp/On-ramp	
26	I-5 at Pioneer Street	Southbound	Off-ramp/On-ramp	
27	I-5 at 179th Street	Southbound	Off-ramp/On-ramp	
28	I-5 at 134th Street	Southbound	On-ramp	

#	Location	Direction	Roadway Facility	Comments
29	I-5 at 99th Street	Southbound	Off-ramp/On-ramp	
30	I-5 at 78th Street	Southbound	Off-ramp/On-ramp	
31	I-5 at Main Street	Southbound	Off-ramp	
32	I-5 at Main Street	Southbound	On-ramp	
33	I-5 at 39th Street	Southbound	Off-ramp/On-ramp	
34	I-5 at 4th Plain Blvd.	Southbound	Off-ramp/On-ramp	
35	I-5 at Mill Plain Blvd.	Southbound	Off-ramp/On-ramp	
36	I-5 at Hayden Island	Southbound	Off-ramp/On-ramp	
37	I-5 at Marine Drive	Southbound	Off-ramp/On-ramp	See note
38	I-5 at Victory Blvd.	Southbound	On-ramp	
39	I-5 at Lombard Street	Southbound	WB & EB On-ramp	
40	I-5 at Portland Blvd.	Southbound	Off-ramp/On-ramp	
41	I-5 at Alberta/Going Street	Southbound	Off-ramp	See note
42	I-5 at Alberta Street	Southbound	On-ramp	
43	I-5 at Going Street	Southbound	On-ramp	
44	I-5 at Broadway Avenue	Southbound	Off-ramp	
45	I-5 at Weidler/Winning Way	Southbound	On-ramp	

Note: Where multiple ramps merge prior to entering I-5 or diverge after leaving I-5, counts will be conducted so as to obtain both volume components.

C. COLLECTION OF DIRECTIONAL, 24-HOUR, VEHICLE CLASSIFICATION COUNTS

Directional, 24-hour, vehicle classification counts are needed at the following ten locations. ODOT and WSDOT currently count five of the ten locations as part of their respective ATR and ADC count program. The remaining five locations need to be counted concurrently with the ramp-to-ramp and ramp terminal counts during typical weekday operations.

1. I-5 Mainline (NB & SB) on the Marquam Bridge (Marquam Bridge ATR 26-026 – ODOT)
2. I-5 Mainline (NB & SB) between Broadway & I-405 Ramps
3. I-5 Mainline (NB & SB) between Skidmore & Alberta St. (Minnesota ATR 26-019 – ODOT)
4. I-5 Mainline (NB & SB) between Columbia Blvd. & Victory Boulevard
5. I-5 Mainline (NB & SB) on Interstate Bridge (Interstate Bridge ATR 26-004 –ODOT)
6. I-5 Mainline (NB & SB) between 4th Plain Blvd. & SR 500/39th (ADC Station P5 – WSDOT)
7. I-5 Mainline (NB & SB) between 78th Street & 99th Street
8. I-5 Mainline (NB & SB) north of I-205 Connection
9. I-5 Mainline (NB & SB) north of Pioneer Street Interchange
10. I-205 Mainline (NB & SB) on Glenn Jackson Br. (Glenn Jackson Br. ATR 26-024 – ODOT)

D. COLLECTION OF LANE UTILIZATION / SPEED DATA

Directional lane utilization/speed trends along the I-5 mainline will be observed and documented for passenger vehicles and trucks. Lane utilization data will be classified into a size range (small, medium, and large vehicles) at all locations. Northbound and southbound observations/counts will be

conducted over a 24-hour period during typical weekday operations. The lane utilization/speed data does not need to be conducted concurrently with the other counts. The specific locations requiring observations and counts are the following:

1. I-5 mainline midway between Morrison St. Bridge and I-84 Ramps (Portland)
2. I-5 mainline midway between Broadway/Weidler and I-405 Ramps (Portland)
3. I-5 mainline midway between I-405 and Skidmore/Alberta Streets (Portland)
4. I-5 mainline midway between Alberta Street and Portland Boulevard (Portland)
5. I-5 mainline midway between Victory Boulevard and Marine Drive (Portland)
6. I-5 Columbia River Bridge (midspan)
7. I-5 mainline midway between SR-14 and Mill Plain Blvd. (Vancouver)
8. I-5 mainline midway between Mill Plain Blvd. and 4th Plain Blvd. Interchanges (Vancouver)
9. I-5 mainline midway between 4th Plain Blvd. and SR-500 (Vancouver)
10. I-5 mainline midway between Main Street and 78th Street (Vancouver)

E. COLLECTION OF DIRECTIONAL TRAVEL TIME RUNS

Travel time runs along I-5 and I-205 will be completed during AM and PM peak hour turning movement counts using GPS units (both directions during peak periods). Travel time runs will be completed concurrently with all traffic counts (Tasks A, B, and C) to ensure proper model calibration.

F. COLLECTION OF AUTO OCCUPANCY

Directional auto occupancy counts along the I-5 mainline will be observed and documented for all vehicles. Northbound and southbound observations/counts will be conducted over a 4-hour AM and PM peak period during typical weekday operations. The auto occupancy counts shall be conducted concurrently with the other counts (Tasks A, B, C, and E). The specific locations requiring observation/count is at the Interstate Bridge.

G. COLLECTION OF ORIGIN-DESTINATION DATA

The origin-destination data collection plan is broken down into three parts. Part One is the collection of the raw data; Part Two is the reduction of that raw data into a workable format; Part Three is the post processing of the data which produces a final report tailored to particular needs.

Data Collection

Origin-destination data is collected with special high speed video cameras on each lane of roadway. The cameras run constantly and have a time stamp on the screen so that each plate will be captured with the corresponding time that it appeared. All of the cameras will have their times synced to within 30 seconds. Both the setup and the monitoring of the cameras is labor intensive. The cameras must be constantly monitored to determine that the proper shutter setting is being used based on the direction and intensity of the light.

Data Reduction

Once the cameras have collected the raw data, the next step is to get that data into a useable format. Each plate needs to be checked visually and hand entered into the database with its corresponding time stamp. This is an extremely time consuming and labor intensive process.

Post Processing

Once the data is into the proper format, it is run through a custom program developed to link origin-destination patterns. This data will include a route and a time for every vehicle in the study, and that information will be broken down into a summary of the OD's for the study period.

Origin-Destination Plan

Due to origin-destination costs, the origin-destination data will be collected for both directions during the peak periods. It will be collected for a 2-hour period for the peak direction and for a 1-hour period for the off-peak direction. The origin-destination data collection plan will also include collecting the mid-day 1-hour period for both directions. The northern location would be located just north of SR-500 and the southern location would be located just south of Columbia Blvd. This task does not need to be collected concurrently with the other tasks.

The data collection of the northern and southern external locations along I-5 within the BIA will assist in determining the overall through trips as well as trips which entered or exited I-5 within the BIA. Questions outstanding include individual on- and off-ramp trip origin-destination patterns as well as the number of trips that entered and exited within the BIA.

With the exception of the small percentage of temporary tags, missing plates, unreadable plates (due to dirt or obstruction), or vehicles changing lanes in the camera view, the origin-destination study will identify all of the vehicles that enter and exit the study area.

H. COLLECTION OF SIGNAL TIMING PLANS

Signal timing plans for all signalized intersections within the study area will be collected.

I. COLLECTION OF PHYSICAL INVENTORY

The following physical inventory information is needed:

- Pedestrian/Bicycle Facilities (existence and widths)
- Transit Facilities
- Freight Facilities
- Marine/Aviation Facilities
- Roadway Facilities (number of lanes, speeds, lane and shoulder widths, etc.)

J. COLLECTION OF I-5 RAMP METER RATES

Ramp meter rates along I-5 will be collected within the study area.

3. Prepare transportation data collection plan for traffic counting firm and manage data collection.

Consultant shall prepare transportation data collection plan for traffic counting firms. Data collection plan will include guidelines and deliverables. Consultant will coordinate and manage data collection process.

4. Prepare interactive transportation data summary memorandum

Consultant shall prepare interactive transportation data summary memorandum. Memorandum will include graphics including figures and tables summarizing existing transportation data.

Assumptions:

- Agencies (i.e., ODOT, City of Portland, Metro, WSDOT, RTC, and City of Vancouver) will provide requested traffic data.
- Data collection will be limited to specific not-to-exceed dollar value.

Deliverables:

- Develop transportation data collection plan for traffic counting firms
- Prepare Interactive Transportation Data Summary Memorandum
- All electronic data collection data will be placed on Data Collection CD

Columbia River Crossing

Washington State Department of Transportation / Oregon Department of Transportation

Task No. AB - Amendment No. 2

David Evans and Associates, Inc.

September 20, 2005

Assigned Staff/ Billing Rate / Task Description	Task Cost Summary						
	David Evans and Associates	Jeanne Lawson Associates	Luna Jimenez Seminars	David Parisi	Sorin Garber Consulting Group	JD White Company	Total
Work Element 1.0: Project Management							
1.1 Project Management and Quality Control							
1.2 Support for Establishing Project Office							
Work Element 2.0: Project Controls							
Work Element 3.0: Financial Structures							
Work Element 4.0: Communications		$ -	$ -			$ 4,500	$ 4,500
4.1 Communications General Services		$ -	$ -			$ 4,500	$ 4,500
							$ -
ork Element 5.0: Transportation Planning	$ 122,930			$ 7,560	$ 8,912		$ 139,403
5.1 Travel Demand Modeling	$ 120,800			$ 4,200			$ 125,000
5.2 Transportation Planning Coordination	$ -						$ -
5.3 Development and Facilitation of CRC Freight Working Group	$ 2,130			$ 3,360	$ 8,912		$ 14,403
Work Element 6.0: Environmental							
6.1 Purpose and Need							
6.2 NEPA Scoping Phase							
6.3 Alternatives Development							
6.4 Technical Studies							
Work Element 7.0: Transit Planning/Engineering							
Work Element 8.0: Design Engineering							
Total Hours	170			54	102		
Budget per Staff	$ 122,930	$ -	$ -	$ 7,560	$ 8,912	$ 4,500	$ 143,903
Percent of Total	85%			5%	6%	3%	100%

Columbia River Crossing

Washington State Department of Transportation / Oregon Department of Transportation

Task No. AB -- Amendment No. 2

David Evans and Associates, Inc.

September 16, 2005

David Evans and Associates, Inc.

Assigned Staff/ Billing Rate / Task Description	Jay Lyman, Senior Project Manager	Ryan LaProwse, Engineer	(Transportation) EIT	Labor Summary			
	$213.01	$91.29	$76.07	Hours	Cost	Expenses	Total cost
Work Element 1.0: Project Management				-	$ -	$ -	$ -
1.1 Project Management and Quality Control				-	$ -		$ -
1.2 Support for Establishing Project Office				-	$ -		$ -
Work Element 2.0: Project Controls				-	$ -		$ -
Work Element 3.0: Financial Structures				-	$ -	$ -	$ -
Work Element 4.0: Communications				-	$ -	$ -	$ -
4.1 Communications General Services (Task Force Meetings on 9/12/05 and 10/12/05)				-	$ -		$ -
Work Element 5.0: Transportation Planning	10	100	60	170	$ 15,823	$ 107,107	$ 122,930
5.1 Travel Demand Modeling		100	60	160	$ 13,693	$ 107,107	$ 120,800
5.2 Transportation Planning Coordination				-	$ -		$ -
5.3 Development and Facilitation of CRC Freight Working Group	10			10	$ 2,130		$ 2,130
Work Element 6.0: Environmental				-	$ -	$ -	$ -
6.1 Purpose and Need				-	$ -	$ -	$ -
6.2 NEPA Scoping Phase				-	$ -	$ -	$ -
6.3 Alternatives Development				-	$ -	$ -	$ -
6.4 Technical Studies				-	$ -		$ -
Work Element 7.0: Transit Planning/Engineering				-	$ -	$ -	$ -
7.1 Existing Information Evaluation				-	$ -		
7.2 Initial Alternatives Development				-	$ -	$ -	
Work Element 8.0: Design Engineering				-	$ -	$ -	$ -
8.1 Existing Information Evaluation				-	$ -		$ -
8.2 Initial Alternatives Development				-	$ -		$ -
Total Hours	10	100	60	170			
Budget per Staff	$2,130	$9,129	$4,564		$ 15,823	$ 107,107	$ 122,930

Columbia River Crossing

Washington State Department of Transportation / Oregon Department of Transportation

Task No. AB -- Amendment No. 2

David Evans and Associates, Inc.

September 16, 2005

	Parisi Associates				
Assigned Staff/ Billing Rate / **Task Description**	David Parisi	Labor Summary		Expenses	Total Cost
	$140.00	Hours	Cost		
Work Element 1.0: Project Management			$ -	$ -	$ -
1.1 Project Management and Quality Control			$ -	$ -	$ -
1.2 Support for Establishing Project Office			$ -	$ -	$ -
Work Element 2.0: Project Controls			$ -	$ -	$ -
			$ -	$ -	$ -
Work Element 3.0: Financial Structures			$ -	$ -	$ -
Work Element 4.0: Communications			$ -	$ -	$ -
4.1 Communications General Services			$ -	$ -	$ -
Work Element 5.0: Transportation Planning	54	54	$ 7,560	$ -	$ 7,560
5.1 Travel Demand Modeling	30	30	$ 4,200		$ 4,200
5.2 Transportation Planning Coordination			$ -		$ -
5.3 Development and Facilitation of CRC Freight Working Group	24	24	$ 3,360		$ 3,360
Work Element 6.0: Environmental			$ -	$ -	$ -
6.1 Purpose and Need			$ -	$ -	$ -
6.2 NEPA Scoping Phase			$ -	$ -	$ -
6.3 Alternatives Development			$ -	$ -	$ -
6.4 Technical Studies			$ -	$ -	$ -
Work Element 7.0: Transit Planning/Engineering			$ -	$ -	$ -
Work Element 8.0: Design Engineering			$ -	$ -	$ -
Total Hours	54	54			
Budget per Staff	$7,560		$ 7,560	$ -	$ 7,560

Columbia River Crossing

Washington State Department of Transportation / Oregon Department of Transportation

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David Evans and Associates, Inc.

September 16, 2005

Assigned Staff/ Billing Rate / Task Description	Sorin Garber				
	Project Manager	Labor Summary			
	$165.33	Hours	Cost	Expenses	Total Cost
Work Element 5.0: Transportation Planning	53	53	$ 8,762	$ 150	$ 8,912
5.1 Travel Demand Modeling					
5.2 Transportation Planning Coordination					
5.3 Development and Facilitation of CRC Freight Working Group					$ 8,912
5.3.1 Project Management	2	2	$ 331		$ 331
5.3.2 Quality Control	2	2	$ 331		$ 331
5.3.3 Review Freight Working Group Goals/Protocols with CRC Leaders	8	8	$ 1,323		$ 1,323
5.3.4 Develop List of Potential Candidate Members	24	24	$ 3,968		$ 3,968
5.3.5 Schedule and Prepare for First Meeting	13	13	$ 2,149	$ 150	$ 2,299
5.3.6 Work Program for Continuation of Freight Working Group	4	4	$ 661		$ 661
Total Hours	53	102			
Budget Per Staff	$8,762		$ 8,762	$ 150	$ 8,912

Columbia River Crossing

Washington State Department of Transportation / Oregon Department of Transportation

Task No. AB -- Amendment No. 2

David Evans and Associates, Inc.

September 16, 2005

The JD White Company

Assigned Staff/ Billing Rate / Task Description	Katy Brooks, Senior Project Manager	Madeline Dulemba, Technical Writer	Labor Summary		Expenses	Total Cost
	$134.84	$76.37	Hours	Cost		
Work Element 1.0: Project Management				$ -	$ -	$ -
1.1 Project Management and Quality Control				$ -	$ -	$ -
1.2 Support for Establishing Project Office				$ -	$ -	$ -
Work Element 2.0: Project Controls				$ -	$ -	$ -
Work Element 3.0: Financial Structures				$ -	$ -	$ -
Work Element 4.0: Communications				$ -	$ 4,500	$ 4,500
4.1 Communications General Services (Task Force Meetings 9/12/05 and 10/12/05)				$ -	$ 4,500	$ 4,500
Work Element 5.0: Transportation Planning				$ -	$ -	$ -
5.1 Travel Demand Modeling				$ -	$ -	$ -
5.2 Transportation Planning Coordination				$ -	$ -	$ -
Work Element 6.0: Environmental				$ -	$ -	$ -
6.1 Purpose and Need				$ -	$ -	$ -
6.2 NEPA Scoping Phase				$ -	$ -	$ -
6.3 Alternatives Development				$ -	$ -	$ -
6.4 Technical Studies				$ -	$ -	$ -
Work Element 7.0: Transit Planning/Engineering				$ -	$ -	$ -
Work Element 8.0: Design Engineering				$ -	$ -	$ -
Total Hours						
Budget per Staff				$ -	$ 4,500	$ 4,500