

DEIS Errata and Clarifications

Last updated: May 21, 2008

The following corrects errors in the I-5 Columbia River Crossing (CRC) Draft Environmental Impact Statement (DEIS) that was released for public review and comment on May 2, 2008. The Draft EIS will be further updated as errors are discovered or to clarify points of confusion. Such updates or corrections will be made either with additional errata or in the Final EIS anticipated to be released in summer 2009.

CHAPTER	PAGE	CURRENT TEXT	CORRECTED TEXT/CLARIFICATION
Front Matter	v	"Lupke Center"	Lupke Center
Summary	10	"The exclusive bus lanes would extend 2.07-4.22 miles north from the Expo Center through Vancouver, and include five to seven transit stations and three to five structured or surface park and rides with up to 2,410 spaces, depending on the transit terminus."	"The exclusive bus lanes would extend 2.07-4.22 miles north from the Expo Center through Vancouver, and include five to seven transit stations and three to five structured or surface park and rides with up to 3,220 spaces, depending on the transit terminus."
Summary	14	"The exclusive bus lanes would extend 2.07-4.22 miles north from the Expo Center through Vancouver, and include five to seven transit stations and three to five structured or surface park and rides with up to 2,410 spaces, depending on the transit terminus."	"The exclusive bus lanes would extend 2.07-4.22 miles north from the Expo Center through Vancouver, and include five to seven transit stations and three to five structured or surface park and rides with up to 3,220 spaces, depending on the transit terminus."
Summary	15	Exhibit 14: Adjacent inset shows N Jantzen Beach Ctr extending over North Portland Harbor	This crossing over North Portland Harbor does not exist, nor is it a CRC project alternative
Summary	17	Exhibit 15: Adjacent inset shows N Jantzen Beach Ctr extending over North Portland Harbor	This crossing over North Portland Harbor does not exist, nor is it a CRC project alternative
Summary	20	Exhibit 17: Key for Detailed Area of River Crossing displays a "3" in the colored label boxes corresponding with northbound and southbound through and auxiliary lanes.	The "3" was chosen to make the key consistent and is not meant to imply that there would be three through and three auxiliary lanes in both directions. Please refer to the graphic to the left of key for the actual number of lanes over the river crossing. The type of lane (i.e., northbound or southbound, through or auxiliary) is denoted by the color of the label box.
Summary	21	Exhibit 18: Key for Detailed Area of River Crossing displays a "3" in the colored label boxes corresponding with northbound and southbound through and auxiliary lanes.	The "3" was chosen to make the key consistent and is not meant to imply that there would be three through and three auxiliary lanes in both directions. Please refer to the graphic to the left of key for the actual number of lanes over the river crossing. The type of lane (i.e., northbound or southbound, through or auxiliary) is denoted by the color of the label box.
Summary	23	Exhibit 21 states "two-way Broadway" in the legend for a downtown Vancouver transit alignment option	Two-way Washington
Summary	23	Exhibit 21 shows the two-way Broadway alignment option in northern Vancouver on Main Street	This alignment option should be shown on Broadway

CHAPTER	PAGE	CURRENT TEXT	CORRECTED TEXT/CLARIFICATION
Summary	23	Exhibit 21 shows Park and Rides near the I-5 SR 14 interchange and near Mill Plain Blvd for the Lincoln Terminus option	These Park and Rides should be deleted for this terminus option, as they only apply to the Mill Plain MOS
Summary	24	Exhibit 22 incorrectly characterizes the park and rides paired with the Clark College MOS and Mill Plain MOS	Clark College MOS: Clark College (surface lot) (structure) Mill Plain MOS: SR-14 (surface and structure) and Mill Plain (structure)
Summary	24	Exhibit 22 lists the following total park and ride stalls included for each terminus option: 2,410 (Kiggins Bowl), 1,250 (Lincoln), 2,410 (Clark College), 2,365 (Mill Plain)	Each terminus option could be associated with a variety of park and ride options. However, the approximate number of spaces assumed in the DEIS analysis are: 2,500 (Kiggins Bowl), 2,410 (Lincoln), 1,250 (Clark College), 3,220 (Mill Plain).
Summary	25	Exhibit 23 states "two-way Broadway" in the legend for a downtown Vancouver transit alignment option	Two-way Washington
Summary	30	Exhibit 26 incorrectly reports transit mode split	Error fixed in attached table, added explanatory footnotes and additional person throughput information for clarification
Summary	30	Exhibit 26: Capital Cost Estimate	The range of costs in exhibit 26 excludes costs to develop the DEIS and LPA. The preliminary cost estimate of \$3.1-\$4.2 billion includes work to date in addition to capital costs.
Summary	33	Exhibit 29 states "Transit mode split in p.m. peak period" as 17-21% (BRT) and 19-23% (LRT)	Should state: 15-18% (BRT) and 17-20% (LRT)
Summary	33	Exhibit 30 states "Transit mode split in p.m. peak period" as 22% (Kiggins Bowl terminus), 21% (Lincoln terminus), 19% (Clark College MOS), and 23% (Mill Plain MOS)	Should state: 19% (Kiggins Bowl terminus), 19% (Lincoln terminus), 17% (Clark College MOS), and 20% (Mill Plain MOS)
Summary	36	DraftEIScomments@columbiarivercrossing.com	DraftEIS feedback @columbiarivercrossing.com <i>[Note: emails sent to "DraftEIScomments@columbiarivercrossing.com" will still be received and recorded. Also, most documents distributed in hardcopy were fixed with a sticker over the incorrect address.]</i>
Summary	Inside back cover	Phone number for CRC office is listed as: (360) 737-2725	Correct phone number is: (360) 737-2726
Chapter 1	3	"Ultimately, the preceding transportation planning studies of the CRC project area provided the underlying scope of this project, while coordination with stakeholder groups, the public, and a variety of local, state, and federal agencies provided important input on how this project should define why it is being imitated and what problems it seeks to address"	"Ultimately, the preceding transportation planning studies of the CRC project area provided the underlying scope of this project, while coordination with stakeholder groups, the public, and a variety of local, state, and federal agencies provided important input on how this project should define why it is being initiated and what problems it seeks to address"

CHAPTER	PAGE	CURRENT TEXT	CORRECTED TEXT/CLARIFICATION
Chapter 2	8	"The exclusive bus lanes would extend 2.07-4.22 miles north from the Expo Center through Vancouver, and include five to seven transit stations and three to five structured or surface park and rides with up to 2,410 spaces, depending on the transit terminus."	"The exclusive bus lanes would extend 2.07-4.22 miles north from the Expo Center through Vancouver, and include five to seven transit stations and three to five structured or surface park and rides with up to 3,220 spaces, depending on the transit terminus."
Chapter 2	12	"The exclusive bus lanes would extend 2.07-4.22 miles north from the Expo Center through Vancouver, and include five to seven transit stations and three to five structured or surface park and rides with up to 2,410 spaces, depending on the transit terminus."	"The exclusive bus lanes would extend 2.07-4.22 miles north from the Expo Center through Vancouver, and include five to seven transit stations and three to five structured or surface park and rides with up to 3,220 spaces, depending on the transit terminus."
Chapter 2	19	A third bridge, parallel to these two bridges, would accommodate transit vehicles, bicyclists, and pedestrians. Two lanes or tracks would accommodate bus rapid transit or light rail, and a path at least 12 feet wide would be dedicated to bicyclists and pedestrians.	A third bridge, parallel to these two bridges, would accommodate transit vehicles, bicyclists, and pedestrians. Two lanes or tracks would accommodate bus rapid transit or light rail, and a path at least 16 feet wide would be dedicated to bicyclists and pedestrians.
Chapter 2	32	Exhibit 2.3-14 incorrectly characterizes the park and rides paired with the Clark College MOS and Mill Plain MOS	Clark College MOS: Clark College (surface lot) (structure) Mill Plain MOS: SR-14 (surface and structure) and Mill Plain (structure)
Chapter 2	33	Exhibit 2.3-15 states "two-way Broadway" in the legend for a downtown Vancouver transit alignment option	Two-way Washington
Chapter 2	33	Exhibit 2.3-15 shows the two-way Broadway alignment option in north Vancouver on Main Street	This alignment option should be shown on Broadway
Chapter 2	33	Exhibit 2.3-15 shows Park and Rides near the I-5 SR 14 interchange and near Mill Plain Blvd for the Lincoln Terminus option	These Park and Rides should be deleted for this terminus option, as they only apply to the Mill Plain MOS
Chapter 2	34	Exhibit 2.3-16 states "two-way Broadway" in the legend for a downtown Vancouver transit alignment option	Two-way Washington
Chapter 3	5	"In 2004, C-TRAN extended Route 4 to Hayden Island and the light rail station at Delta Park."	"In 2007 , C-TRAN extended Route 4 to Hayden Island and the light rail station at Delta Park."
Chapter 3	24	"With the No-Build Alternative, the transit mode split would be 1 percent of the afternoon/evening peak direction trips (up from 6 percent today) within the I-5 corridor."	"With the No-Build Alternative, the transit mode split would be 12 percent of the afternoon/evening peak direction trips (up from 6 percent today) within the I-5 corridor." [Note: see clarification above about how mode split is reported in the DEIS]
Chapter 3	Throughout section 3.1	Person throughput in cars and on transit (i.e., people over the I-5 Crossing during PM peak in transit) is reported incorrectly in the following places: <ul style="list-style-type: none"> Exhibit 3.1-21, page 3-26 in chapter 3 Page 3-29, second full paragraph 	Correct person throughput numbers are included in corrected exhibits (those listed to the left) as an attachment to this document. New explanatory footnotes are also included in the tables.

CHAPTER	PAGE	CURRENT TEXT	CORRECTED TEXT/CLARIFICATION
		<ul style="list-style-type: none"> Exhibit 3.1-24, page 3-32 Exhibit 3.1-25, page 3-34 Page 3-37, second full paragraph Exhibit 3.1-28, page 3-41 	
Chapter 3	Throughout section 3.1	<p>Transit mode split is reported incorrectly both in text and exhibits in the following places:</p> <ul style="list-style-type: none"> Exhibit 3.1-21, page 3-26 in chapter 3 Exhibit 3.1-24, page 3-32 Exhibit 3.1-25, page 3-34 Exhibit 3.1-28, page 3-41 Exhibit 3.1-33, page 3-53 Exhibit 3.1-39, page 3-60 Exhibit 3.1-46, page 3-72 Exhibit 3.1-50, page 3-75 	<p>Correct mode split numbers are included in corrected exhibits as an attachment to this document. Additional mode split numbers and explanatory footnotes are also included in the tables.</p>
Chapter 3	31	<p>Second full paragraph – Nineteen percent of travelers over the I-5 crossing during the afternoon/evening northbound peak would use transit.</p>	<p>Seventeen percent of travelers over the I-5 crossing during the afternoon/evening northbound peak would use transit. <u>(Mode split is based on demand and does not include freight trips or trips that start or end outside of the Portland/Vancouver metropolitan area.)</u></p>
Chapter 3	33	<p>Fourth full paragraph – Twenty-one percent of travelers over the I-5 crossing during the afternoon/evening northbound peak would use transit.</p>	<p>Nineteen percent of travelers over the I-5 crossing during the afternoon/evening northbound peak would use transit. <u>(Mode split is based on demand and does not include freight trips or trips that start or end outside of the Portland/Vancouver metropolitan area.)</u></p>
Chapter 3	39	<p>Sixth full paragraph – Thirty-three percent of travelers over the I-5 crossing during the afternoon/evening northbound peak would use transit.</p>	<p>Twenty-three percent of travelers over the I-5 crossing during the afternoon/evening northbound peak would use transit. <u>(Mode split is based on demand and does not include freight trips or trips that start or end outside of the Portland/Vancouver metropolitan area.)</u></p>
Chapter 3	42	<p>Third full paragraph – Thirty-seven percent of travelers over the I-5 crossing during the afternoon/evening northbound peak would use transit.</p>	<p>Twenty-six percent of travelers over the I-5 crossing during the afternoon/evening northbound peak would use transit. <u>(Mode split is based on demand and does not include freight trips or trips that start or end outside of the Portland/Vancouver metropolitan area.)</u></p>

CHAPTER	PAGE	CURRENT TEXT	CORRECTED TEXT/CLARIFICATION
Chapter 3	44	“For the supplemental crossing, northbound travel times would improve for motorists using the through lanes (i.e., the western northbound bridge) by about 15 minutes, or 34 percent, compared to No-Build conditions. However, due to the seven hours of congestion expected to occur on the eastern northbound bridge, northbound vehicles using the eastern bridge (those entering the highway at Marine Drive or Hayden Island, and those exiting the highway at SR 14, City Center, Mill Plain...)”	“For the supplemental crossing, northbound travel times would improve for motorists using the through lanes (i.e., the western northbound bridge) by about <u>17</u> minutes, or <u>39</u> percent, compared to No-Build conditions. However, due to the seven hours of congestion expected to occur on the eastern northbound bridge, northbound vehicles using the eastern bridge (those entering the highway at Marine Drive or Hayden Island, and those exiting the highway at SR 14, City Center, Mill Plain...)”
Chapter 3	48	“Because of northbound traffic back-ups under the supplemental crossing, about 50 percent of the traffic demand to northbound I-5 from Hayden Island and Marine Drive and Hayden Island would go unserved, resulting in congested ramp terminals and local streets in the vicinity of these interchanges.”	“Because of northbound traffic back-ups under the supplemental crossing, about 50 percent of the traffic demand to northbound I-5 from Hayden Island and Marine Drive <u>and Hayden Island</u> would go unserved, resulting in congested ramp terminals and local streets in the vicinity of these interchanges.”
Chapter 3	58	Exhibit 3.1-38 states “two-way Broadway” in the legend for a downtown Vancouver transit alignment option	Two-way <u>Washington</u>
Chapter 3	58	Exhibit 3.1-38 shows the two-way Broadway alignment option in north Vancouver on Main Street	This alignment option should be shown on Broadway
Chapter 3	58	Exhibit 3.1-38 shows Park and Rides near the I-5 SR 14 interchange and near Mill Plain Blvd for the Lincoln Terminus option	These Park and Rides should be deleted for this terminus option, as they only apply to the Mill Plain MOS
Chapter 3	59	“The Clark College Park and Ride surface lot would generate about 225 morning and 230 afternoon/evening peak hour vehicle trips.”	“The Clark College Park and Ride surface lot would generate about <u>255</u> morning and 230 afternoon/evening peak hour vehicle trips.”
Chapter 3	62	Exhibit 3.1-40 states “two-way Broadway” in the legend for a downtown Vancouver transit alignment option	Two-way <u>Washington</u>
Chapter 3	64	“The Clark College MOS terminus would have a peak period/peak direction transportation mode split comparable to the Kiggins Bowl terminus. Peak period/peak direction traffic over the Columbia River would be made up of 52 percent SOV, 29 percent HOV, and 19 percent transit. With the full length of the Kiggins Bowl terminus, the mode split would be 50 percent SOV, 29 percent HOV, and 21 percent transit.”	“The Clark College MOS terminus would have a peak period/peak direction transportation mode split comparable to the Kiggins Bowl terminus. Peak period/peak direction traffic over the Columbia River would be made up of 52 percent SOV, <u>31</u> percent HOV, and <u>17</u> percent transit. With the full length of the Kiggins Bowl terminus, the mode split would be <u>51</u> percent SOV, <u>30</u> percent HOV, and <u>19</u> percent transit.”
Chapter 3	66	“The Mill Plain MOS would likely have a peak period/peak direction mode split comparable to that for the Lincoln terminus. With the Mill Plain MOS the peak period/peak direction mode split would be 50 percent SOV, 27 percent HOV and 23 percent transit. With the Lincoln terminus, the mode split would be 50 percent SOV, 29 percent HOV, and 21 percent transit.”	“The Mill Plain MOS would likely have a peak period/peak direction mode split comparable to that for the Lincoln terminus. With the Mill Plain MOS the peak period/peak direction mode split would be <u>51</u> percent SOV, <u>29</u> percent HOV and <u>20</u> percent transit. With the Lincoln terminus, the mode split would be <u>51</u> percent SOV, <u>30</u> percent HOV, and <u>19</u> percent transit.”

CHAPTER	PAGE	CURRENT TEXT	CORRECTED TEXT/CLARIFICATION
Chapter 3	66	With the Mill Plain MOS, there would be 1,100 spaces at two joint-use parking structures in downtown Vancouver, plus two additional satellite lots, for a total of 2,758 spaces.	With the Mill Plain MOS, there would be 1,100 spaces at two joint-use parking structures in downtown Vancouver, plus two additional satellite lots, for a total of 3,220 spaces.
Chapter 3	74	BRIDGE TOLL: TRANSIT RIDERSHIP AND MODE SPLIT	BRIDGE TOLL: TRANSIT RIDERSHIP <u>AND MODE SPLIT</u>
Chapter 3	74	Increased transit ridership caused by tolling would produce a greater increase in transit mode split. In general, tolling would increase transit ridership over the river, decrease auto usage over the river, and thus increase transit mode split.	Increased transit ridership caused by tolling would produce a greater increase in transit mode split. In general, tolling would increase transit ridership over the river, decrease auto usage over the river, and thus increase transit mode split. <u>Transit ridership would increase due to tolling. This increase combined with the decreased auto usage of the crossing, would likely result in a higher transit mode split.</u>
Chapter 3	99	Exhibit 3.3-3 contains duplicate footnotes (footnotes "b" and "d" are the same)	Footnote "d" should be deleted.
Chapter 3	114	Exhibit 3.3-16 incorrectly displays the "16th St" label	<u>16th St McLoughlin Blvd</u>
Appendix D	1	Table footnote: "The Clark College MOS option would require the acquisitions shaded in gray in the tables for the "Northern Vancouver Connection;" The Mill Plain MOS would avoid most of these impacts in northern Vancouver except for"	Table footnote: The Clark College MOS option would require the acquisitions shaded in gray in the tables for the "Northern Vancouver Connection;" The Mill Plain MOS would avoid most of these impacts in northern Vancouver except for <u>those associated with the Lincoln and Kiggins Bowl Park and Rides.</u>

Exhibit 26

Summary of Transportation Effects and Cost for Each Alternative

	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Hours of congestion/day	15 hours	3.5-5.5 hours	3.5-5.5 hours	10.75 hours	10.75 hours
Persons served over the I-5 Crossing during PM peak^a	28,550 total	40,500 total	41,650 total	31,600 total	33,050 total
Via autos	26,500	34,400	34,400	25,700	25,700
Via transit (total)	2,050	6,100	7,250	5,900	7,350
Via high-capacity transit	<u>0</u>	<u>2,450</u>	<u>4,600</u>	<u>2,750</u>	<u>4,900</u>
Via bus on I-5	<u>2,050</u>	<u>3,650</u>	<u>2,650</u>	<u>3,150</u>	<u>2,450</u>
Transit mode split in PM peak for all I-5 crossing trips^b	<u>7%</u>	<u>15%</u>	<u>17%</u>	<u>19%</u>	<u>22%</u>
Transit travel time from Mill Plain station to Expo Center via HCT	<u>N/A</u>	<u>8 min</u>	<u>7 min</u>	<u>14 min</u>	<u>8 min</u>
Vehicle trips over the I-5 crossing/day	184,000	178,000 ^c	178,000 ^c	165,000 ^c	165,000 ^c
Pedestrian and bicycle connections	Potentially no improvement to connections.	Provide continuous grade-separate multi-use path between Marine Drive and downtown Vancouver.	Provide continuous grade-separate multi-use path between Marine Drive and downtown Vancouver.	Improvements over the river but has at-grade crossings on Hayden Island.	Improvements over the river but has at-grade crossings on Hayden Island.
Traffic safety	Potentially no improvement.	Reduced congestion and improved highway design would reduce collisions.	Reduced congestion and improved highway design would reduce collisions.	Improvement to highway design for safety, but some compromises on the existing I-5 bridges.	Improvement to highway design for safety, but some compromises on the existing I-5 bridges.
Transit safety	Potentially no changes	Additional buses could increase collisions but dedicated guideway may improve separation of modes. Potential security issues would need to be addressed at less visible stations.	New mode (light rail) could increase collisions but dedicated guideway would improve separation of modes. Potential security issues would need to be addressed at less visible stations.	High frequency of buses could increase collisions but dedicated guideway may improve separation of modes. Potential security issues would need to be addressed at less visible stations.	New mode (light rail) could increase collisions but dedicated guideway would improve separation of modes. Potential security issues would need to be addressed at less visible stations.
Effect on river navigation	Potentially no improvement	Eliminates S-curve maneuver and reduces number of piers.	Eliminates S-curve maneuver and reduces number of piers.	S-curve maneuver worsened with more piers and narrower channel.	S-curve maneuver worsened with more piers and narrower channel.
Capital cost ^d	\$0	\$3,260 - \$3,915	\$3,368 - \$4,091	\$3,125 - \$3,781	\$3,214 - \$3,950

Sources: CRC Traffic Technical Report, 2008; CRC Transit Technical Report, 2008; CRC Cost Risk Assessment, 2007.

a Total number of people in cars and on transit vehicles using the I-5 crossing traveling north during the four-hour afternoon/evening peak period (3 p.m. to 7 p.m.).

b [Transit mode split is based on service volumes. For demand based mode split, see Exhibits 29 and 30.](#)

c [This information is based on a representative combination of park and ride locations and sizes. The relationships between the alternatives' ridership and mode split would change based on changes to park and ride locations and lot sizes. These values assume a Lincoln terminus. See Exhibit 3.1-39 for information on how transit ridership and transit mode split would vary with each of the transit terminus options.](#)

d Capital costs are in millions of year-of-expenditure dollars. Cost ranges are due to the HCT terminus option in each of the build alternatives and to confidence (low being 60% confidence that cost would not be exceeded, and high being 90% confidence that cost would not be exceeded.)

Exhibit 3.1-21

Alternative 2: Replacement Crossing with Bus Rapid Transit

Alternative 2: Replacement Crossing with Bus Rapid Transit				
Metric	Kiggins Bowl Terminus (A)	Lincoln Terminus (B)	Clark College MOS (C) ^a	Mill Plain MOS (D) ^a
Persons served over the I-5 Crossing during PM peak ^a				
Via transit ^b	6,100 (NB)			
Transit mode split in p.m. peak period for all I-5 crossing trips	15%			
Transit travel time from Mill Plain station to Expo Center	8 min	8 min	8 min	8 min
Vehicles over the I-5 crossing each weekday	178,000	178,000	179,500	179,500
Hours of congestion per day	3.5-5.5 hours	3.5-5.5 hours	3.5-5.5 hours	3.5-5.5 hours
Pedestrian and bicycle connections	Provide continuous grade-separated multi-use path between Marine Drive and downtown Vancouver.	Provide continuous grade-separated multi-use path between Marine Drive and downtown Vancouver.	Provide continuous grade-separated multi-use path between Marine Drive and downtown Vancouver.	Provide continuous grade-separated multi-use path between Marine Drive and downtown Vancouver.
Annual transit operations and maintenance costs (\$ million) ^c	\$74.9	\$75.1	\$74.9	\$74.9
Traffic safety and security	Reduced congestion and improved safety design would reduce collisions.	Reduced congestion and improved safety design would reduce collisions.	Reduced congestion and improved safety design would reduce collisions.	Reduced congestion and improved safety design would reduce collisions.
Transit safety and security	Additional buses could increase collisions but dedicated guideway may improve separation of modes. Potential security issues would need to be addressed at less visible stations.	Additional buses could increase collisions but dedicated guideway may improve separation of modes. Potential security issues would need to be addressed at less visible stations.	Additional buses could increase collisions but dedicated guideway may improve separation of modes. Potential security issues would need to be addressed at less visible stations.	Additional buses could increase collisions but dedicated guideway may improve separation of modes. Potential security issues would need to be addressed at less visible stations.

^a Total number of people [crossing the river on I-5](#) traveling north (NB) during the afternoon/evening peak period. [This includes all freight trips and all other trips regardless of where they begin or end. Transit mode split is based on service volumes. For mode split based on demand volumes, see exhibits 3.1- 33, 34, and 39.](#)

^b [This information is based on a representative combination of park and ride locations and sizes. The relationships between the alternatives' ridership and mode split would change based on changes to park and ride locations and lot sizes. These values assume a Lincoln terminus. See Exhibit 3.1-39 for information on how transit ridership and transit mode split would vary with each of the transit terminus options.](#)

^c Total annual cost to run C-TRAN local and express routes, TriMet N Portland local buses, MAX LRT Yellow Line, and HCT service.

^d Taking into account exclusive guideway length, park-and-ride structure, operating characteristics, etc., these figures were extrapolated from data produced from modeling Alternative 3 using ratio differences between alignments.

Note: The Stacked Transit/Highway Bridge design would perform the same as the three-bridge replacement design.

Exhibit 3.1-24

Alternative 3: Replacement Crossing with Light Rail

Alternative 3: Replacement Crossing with Light Rail				
Metric	Kiggins Bowl Terminus (A)	Lincoln Terminus (B)	Clark College MOS (C)	Mill Plain MOS (D)
<u>Persons served over the I-5 Crossing during PM peak^a</u>	34,400 (NB) 7,250 (NB)			
<u>Via transit^b</u>				
<u>Transit mode split in p.m. peak period for all I-5 crossing trips</u>	17%			
Transit travel time from Mill Plain station to Expo Center	7 min	7 min	7 min	7 min
Vehicles over the I-5 crossing each weekday	178,000	178,000	179,500	179,500
Hours of congestion per day	3.5-5.5 hours	3.5-5.5 hours	3.5-5.5 hours	3.5-5.5 hours
Pedestrian and bicycle connections	Provide continuous grade-separated multi-use path between Marine Drive and downtown Vancouver.	Provide continuous grade-separated multi-use path between Marine Drive and downtown Vancouver.	Provide continuous grade-separated multi-use path between Marine Drive and downtown Vancouver.	Provide continuous grade-separated multi-use path between Marine Drive and downtown Vancouver.
Annual transit operations and maintenance costs (\$ million)^c	\$74.0	\$73.3	\$72.7	\$72.6
Traffic safety and security	Reduced congestion and improved safety design would reduce collisions.	Reduced congestion and improved safety design would reduce collisions.	Reduced congestion and improved safety design would reduce collisions.	Reduced congestion and improved safety design would reduce collisions.
Transit safety and security	New mode (light rail) could increase collisions but dedicated guideway would improve separation of modes. Potential security issues would need to be addressed at less visible stations.	New mode (light rail) could increase collisions but dedicated guideway would improve separation of modes. Potential security issues would need to be addressed at less visible stations.	New mode (light rail) could increase collisions but dedicated guideway would improve separation of modes. Potential security issues would need to be addressed at less visible stations.	New mode (light rail) could increase collisions but dedicated guideway would improve separation of modes. Potential security issues would need to be addressed at less visible stations.

^a Total number of people [crossing the river on I-5](#) traveling north (NB) during the afternoon/evening peak period. [This includes all freight trips and all other trips regardless of where they begin or end. Transit mode split is based on service volumes. For mode split based on demand volumes, see exhibits 3.1- 33, 34, and 39.](#)

^b [This information is based on a representative combination of park and ride locations and sizes. The relationships between the alternatives' ridership and mode split would change based on changes to park and ride locations and lot sizes. These values assume a Lincoln terminus. See transit terminus section below for information on how the transit terminus options affect vehicle trips. See Exhibit 3.1-39 for information on how transit ridership and transit mode split would vary with each of the transit terminus options.](#)

^c Total annual cost to run C-TRAN local and express routes, TriMet N Portland local buses, MAX LRT Yellow Line, and HCT service.

^d Taking into account exclusive guideway length, park-and-ride structure, operating characteristics, etc., these figures were extrapolated from data produced from modeling Alternative 3 using ratio differences between alignments.

Note: The Stacked Transit/Highway Bridge design would perform the same as the three-bridge replacement design.

Exhibit 3.1-25

Alternative 4: Supplemental Crossing with Bus Rapid Transit

Alternative 4: Supplemental Crossing with Bus Rapid Transit				
Metric	Kiggins Bowl Terminus (A)	Lincoln Terminus (B)	Clark College MOS (C) ^d	Mill Plain MOS (D) ^d
Persons served over the I-5 Crossing during PM peak^a	Via autos			
	25,700 (NB)			
	Via transit^b			
	5,900 (NB)			
Transit mode split in p.m. peak period for all I-5 crossing trips	19%			
Transit travel time from Mill Plain station to Expo Center	14 min	14 min	14 min	14 min
Vehicles over the I-5 crossing each weekday	165,000	165,000	166,500	166,500
Hours of congestion per day	10.75 hours	10.75 hours	10.75 hours	10.75 hours
Pedestrian and bicycle connections	Improvements over the river but has at-grade crossings on Hayden Island.	Improvements over the river but has at-grade crossings on Hayden Island.	Improvements over the river but has at-grade crossings on Hayden Island.	Improvements over the river but has at-grade crossings on Hayden Island.
Annual transit operations and maintenance costs (\$ million) ^c	\$114.1	\$114.4	\$114.2	\$114.1
Traffic safety and security	Improvement to highway design for safety, but some compromises on the existing I-5 bridges.	Improvement to highway design for safety, but some compromises on the existing I-5 bridges.	Improvement to highway design for safety, but some compromises on the existing I-5 bridges.	Improvement to highway design for safety, but some compromises on the existing I-5 bridges.
Transit safety and security	High frequency of buses could increase collisions but dedicated guideway may improve separation of modes. Potential security issues would need to be addressed at less visible stations.	High frequency of buses could increase collisions but dedicated guideway may improve separation of modes. Potential security issues would need to be addressed at less visible stations.	High frequency of buses could increase collisions but dedicated guideway may improve separation of modes. Potential security issues would need to be addressed at less visible stations.	High frequency of buses could increase collisions but dedicated guideway may improve separation of modes. Potential security issues would need to be addressed at less visible stations.

^a Total number of people [crossing the river on I-5](#) traveling north (NB) during the afternoon/evening peak period. [This includes all freight trips and all other trips regardless of where they begin or end. Transit mode split is based on service volumes. For mode split based on demand volumes, see exhibits 3.1- 33, 34, and 39.](#)

^b [This information is based on a representative combination of park and ride locations and sizes. The relationships between the alternatives' ridership and mode split would change based on changes to park and ride locations and lot sizes. These values assume a Lincoln terminus. See transit terminus section below for information on how the transit terminus options affect vehicle trips. See Exhibit 3.1-39 for information on how transit ridership and transit mode split would vary with each of the transit terminus options.](#)

^c Total annual cost to run C-TRAN local and express routes, TriMet N Portland local buses, MAX LRT Yellow Line, and HCT service.

^d Taking into account exclusive guideway length, park-and-ride structure, operating characteristics, etc., these figures were extrapolated from data produced from modeling Alternative 3 using ratio differences between alignments.

Exhibit 3.1-28

Alternative 5: Supplemental Crossing with Light Rail

Alternative 5: Supplemental Crossing with Light Rail				
Metric	Kiggins Bowl Terminus (A)	Lincoln Terminus (B)	Clark College MOS (C) ^d	Mill Plain MOS (D) ^d
Persons served over the I-5 Crossing during PM peak ^a				
	Via autos		25,700 (NB)	
Via transit ^b			7,350 (NB)	
Transit mode split in p.m. peak period for all I-5 crossing trips	22%			
Transit travel time from Mill Plain station to Expo Center	8 min	8 min	8 min	8 min
Vehicles over the I-5 crossing each weekday	165,000	165,000	166,500	166,500
Hours of congestion per day	10.75 hours	10.75 hours	10.75 hours	10.75 hours
Pedestrian and bicycle connections	Improvements but has at-grade crossings on Hayden Island.	Improvements but has at-grade crossings on Hayden Island.	Improvements but has at-grade crossings on Hayden Island.	Improvements but has at-grade crossings on Hayden Island.
Annual transit operations and maintenance costs (\$ million) ^c	\$106.5	\$105.5	\$104.7	\$104.5
Traffic safety and security	Improvement to highway design for safety, but some compromises on the existing I-5 bridges.	Improvement to highway design for safety, but some compromises on the existing I-5 bridges.	Improvement to highway design for safety, but some compromises on the existing I-5 bridges.	Improvement to highway design for safety, but some compromises on the existing I-5 bridges.
Transit safety and security	New mode (light rail) could increase collisions but dedicated guideway would improve separation of modes. Potential security issues would need to be addressed at less visible stations.	New mode (light rail) could increase collisions but dedicated guideway would improve separation of modes. Potential security issues would need to be addressed at less visible stations.	New mode (light rail) could increase collisions but dedicated guideway would improve separation of modes. Potential security issues would need to be addressed at less visible stations.	New mode (light rail) could increase collisions but dedicated guideway would improve separation of modes. Potential security issues would need to be addressed at less visible stations.

- ^a Total number of people [crossing the river on I-5](#) traveling north (NB) during the afternoon/evening peak period. [This includes all freight trips and all other trips regardless of where they begin or end. Transit mode split is based on service volumes. For mode split based on demand volumes, see exhibits 3.1- 33, 34, and 39.](#)
- ^b [This information is based on a representative combination of park and ride locations and sizes. The relationships between the alternatives' ridership and mode split would change based on changes to park and ride locations and lot sizes. These values assume a Lincoln terminus. See transit terminus section below for information on how the transit terminus options affect vehicle trips. See Exhibit 3.1-39 for information on how transit ridership and transit mode split would vary with each of the transit terminus options.](#)
- ^c Total annual cost to run C-TRAN local and express routes, TriMet N Portland local buses, MAX LRT Yellow Line, and HCT service.
- ^d Taking into account exclusive guideway length, park-and-ride structure, operating characteristics, etc., these figures were extrapolated from data produced from modeling Alternative 3 using ratio differences between alignments.

Exhibit 3.1-33

Comparison of Transit Mode Split over the I-5 Columbia River Crossing

	No-Build	BRT	LRT
P.M. peak direction SOV ^a	54%	53%	50%
P.M. peak direction HOV ^a	33%	31%	30%
P.M. peak direction transit	13%	17%	19%

Source: 2007 travel demand forecasting outputs.

^a SOV – Single-Occupancy Vehicle, HOV – High-Occupancy vehicle.

Exhibit 3.1-39

Transit Terminus Characteristics and Performance

Characteristic	Kiggins Bowl terminus	Lincoln terminus	Clark College MOS	Mill Plain MOS
Daily Passenger Trips on Transit over alignment	21,100	20,800	18,200	19,100
Annual Passenger Trips on Transit over alignment	6,780,000	6,670,000	5,820,000	6,110,000
PM Peak Direction Mode Split over I-5 river crossing	SOV	51 percent	52 percent	51 percent
	HOV	30 percent	31 percent	29 percent
	Transit	19 percent	17 percent	20 percent
Transit Accessibility	Clark County households within ½ mile of HCT station	5 percent	5 percent	4 percent
	Clark County employment within ½ mile of HCT station	11 percent	11 percent	10 percent
Estimated Capital Cost	\$1,068.8M	\$879.3M	\$674.9M	\$615.8M
Annual Operating Cost (Increment over the No-Build)	\$4,240,000	\$3,510,000	\$2,950,000	\$2,830,000
Annualized Cost per Transit Guideway River Crossing	\$13.67	\$11.55	\$10.38	\$8.91

Source: 2007 travel demand forecasting outputs.

Note: Data presented in this table is for light rail. The relationship between alignments and MOS options would be the same for BRT.

Exhibit 3.1-46

Ridership and Mode Split for Efficient and Increased Transit Operations

	Efficient Operations		Increased Operations	
	BRT	LRT	BRT	LRT
Transit riders over the I-5 crossing^a				
PM peak period	4,900	6,100	5,600	6,700
Daily	16,800	20,800	19,800	23,100
Transit mode split over the I-5 crossing^b				
PM peak period	<u>17%</u>	<u>19%</u>	<u>23%</u>	<u>26%</u>
Daily	13%	15%	15%	16%

^a Riders over the I-5 crossing are based on outline data.

^b Transit mode split data is based on Selectlink analysis based on district to district transit travel.

Source: 2007 Travel Demand Forecasting Outputs.

Exhibit 3.1-50

Transit Trips across the I-5 River Crossing^a

	No Toll	I-5 Standard Toll	I-5 Higher Toll	I-5 and I-205 Standard Toll
Daily transit trips across the I-5 river crossing	19,300	20,800	21,400	21,700

Source: 2007 Travel Demand Forecasting Outputs.

^a These data are for light rail, but the relationship would be the same for BRT.