Columbia River CROSSING

Meeting Agenda

MEETING TITLE: Pedestrian and Bicycle Advisory Committee

DATE: July 22, 9:00 AM to 12:00 PM

INVITEES: Pedestrian and Bicycle Advisory Committee Members

LOCATION: Columbia River Crossing Project Office, Vancouver, WA

TIME	AGENDA ITEM
9:00	Introductions
9:05	Review of previous meeting summary and review of Action Items
9:15	Update on Marine Drive area refinements
9:30	Evaluation of pathway on east side of I-5 between Hayden Island and Marine Drive
10:00	Update of PBAC evaluation of bridge pathway options
10:45	Update of PBAC maintenance and security recommendations
11:15	Scheduling outreach to PBAC constituencies
11:30	Update on public involvement activities
11:40	Other topics
11:55	Next meeting topics
12:00	Adjourn

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Columbia River CROSSING

Draft Meeting Summary

MEETING: **Pedestrian and Bicycle Advisory Committee (PBAC)**
DATE: June 24, 2009, 9:00 am – 12:00 pm
LOCATION: Columbia River Crossing (CRC), 700 Washington St., Suite 300, Vancouver WA
FROM: David Parisi

PBAC ATTENDEES:

Bertelsen, April	Portland Bureau of Transportation
Brown, Kyle	Steps to a Healthy Clark County
Burgstahler, Ken	Washington State Dept. of Transportation
Christopher, Basil	ODOT
Goorjian, Lisa	Vancouver-Clark Parks and Recreation
Greulich, Joe	Clark County Bicycle Advisory Committee
Merrick, Rod	Portland Pedestrian Advisory Committee
Mennesson, Margaux	Bicycle Transportation Alliance

CRC STAFF ATTENDEES:

Freeman, Natalie	Design engineering
Green, Frank	Bridge engineering
Liles, Casey	Design engineering
Parisi, David	Transportation planning
Turton, Rob	Bridge engineering

GUESTS:

Buehler, Ted	Citizen, Vancouver resident
Howton, Brad	Columbia Crossings, Hayden Island resident
Ochs, Klaus	Citizen
White, Calvin	Citizen

Review of previous meeting summary and action items

David Parisi, PBAC facilitator, reviewed the May 27 meeting summary. Rod Merrick referred to the middle of page 3 and said the portion summarizing comments he and Phil Wuest made are hard to understand and seem out of context. Pursuant to further discussion, Parisi said staff will clean up that text and then post the final version on the Web site.

Discussion of two-bridge ideas proposed at last PBAC meeting

Parisi said the CRC Urban Design Advisory Group (UDAG) has made a unanimous recommendation for a two-bridge concept and the CRC Project Sponsors Council endorsed the two-bridge option.

Ron Anderson, consultant project manager, described the role of the CRC Performance Measures Advisory Group (PMAG), which is to develop reasonable and measurable transportation performance measures to ensure optimal long-term performance and management of the Columbia River crossing. Their recommendations will be forwarded to the Columbia Crossing Mobility Council.

Anderson gave a slide presentation titled “Integration of bridge types and pedestrian and bicycle facilities.” He discussed the project’s site requirements for roadway design, transit design, Americans with Disabilities Act (ADA) requirements, river navigation, Pearson Field airspace, and clearances over the existing Burlington Northern railroad line in Vancouver.

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Anderson discussed the bridge type selection process and said the project's goal is for the thinnest bridge possible, due to the vertical height constraints of river navigation and airspace. Other important criteria for bridge type are structure type and depth, aesthetics and cost. He said the CRC Project Sponsors Council and UDAG voted in support of a two-bridge option for a number of reasons, including cost effectiveness and a smaller environmental and visual footprint.

Joe Greulich asked whether it's true that the pedestrian and bicycle path in the two-bridge option will cost more. Greulich said there is a misperception among some in the public that the path will add significant cost to the project. Staff explained that there indeed are a lot of costs for the portions of the path that connect to the bridge, such as the ramps and elevated path on Hayden Island.

Rod Merrick said he has done some research and got the impression that license plate recognition technology works well at speeds around 35 mph but is less accurate at higher speeds. Anderson said by the time the project opens in 2018 the technology will be even better. Parisi said California's transportation department, CalTrans, is experimenting with "open road tolling," as it's called, at highway speeds.

Discussion of bridge design variations

In response to requests from Portland Mayor Sam Adams, the project has begun examining the feasibility of other two-bridge types that would "flip" the proposed bridge design by placing vehicles below and the pedestrian and bicycle path on top. Anderson showed draft concepts of other bridge types, such as a steel truss, that could in theory achieve this goal. He discussed reasons why these options are not practical, including longer approach ramps for the pedestrian and bike path. Some of the concepts would also eliminate vehicle connections to downtown Vancouver and Hayden Island, would require a bridge lift for pedestrians and bicyclists, and pose other problems. Anderson said a copy of the report to Mayor Adams, summarizing these points, is available.

Anderson discussed a number of the designs considered.

Double helix design: The goals of this option were to keep the path low while also avoiding the need for a bridge lift. The project will provide a written response to the City of Portland about why the double helix design isn't feasible.

Existing bridge for path: The U.S. Coast Guard may not permit construction of the new bridge if one of the existing bridges is retained.

Discussion of putting path on east side: Several members said an east side path, south of the Columbia River bridge, could possibly make more sense on the east side of Hayden Island. Parisi asked Freeman if there are obstacles to this notion. She said the Safeway grocery store is a physical constraint and discussions about access and the Hayden Island interchange area management plan are just getting underway. April Bertelsen suggested that by taking out the path on the west side, it could allow the highway alignment to be shifted slightly west to create space for the path on the east side.

Use of "empty" bridge cell: Joe Greulich asked about the use of the "empty" bridge cell in the two-bridge option and whether it could be used for emergency access or other uses to provide more "eyes on the path." Anderson said the path itself has to accommodate emergency vehicles and maintenance vehicles.

Anderson said the UDAG is interested in seeing the path and scenic overlook become a destination rather than just a place to pass through.

Rod Merrick said the idea of screening off the "empty" cell is not a good idea because it is important to maintain views and light to the west. He also wants the project to use that space for transportation rather than for utilities. Anderson said it's probably impossible because the grades and connections don't work for that area as a transportation use.

Neighborhood electric vehicles: Merrick asked about the feasibility of using the "empty" cell for neighborhood electric vehicles (NEVs). Anderson said FHWA could make an exception for NEVs to be granted shoulder use of the highway. He said he thinks that the state could ask for a deviation allowing NEVs.

Don Wagner, southwest region administrator for the Washington State Department of Transportation, said this discussion is a policy matter between the two states and that there will be time for such a conversation. Wagner posed the question of how to incorporate a vehicle that is not common today but may become more common five or 10 years from now. This debate, he said, would occur in the two state legislatures, since it would apply to other interstate highways around the two states. Wagner encouraged the policy conversation to begin now. Merrick agreed that the policy discussion is important, but that the physical access and design is key and that the "empty" cell provides an opportunity to address it.

Review of PBAC input to bridge pathway evaluation of options

Parisi said PBAC is being asked to make a recommendation. CRC staff met with Mayor Adams on June 22 and he wants to see PBAC make a recommendation to the Project Sponsors Council. Parisi thinks the PSC would want a recommendation in September. PBAC members said they would need time to go back to their constituencies before then and that it could be difficult in the summer. Parisi said he will think about scheduling for going back to these groups for consultation.

The committee reviewed a draft handout titled *Pedestrian and Bicycle Design Guidelines*, focusing on criteria that needed more discussion and consensus, as well as new categories proposed. After reviewing highlighted areas of the draft matrix, PBAC developed consensus on the rankings of criteria related to design, connections, quality of experience, and also proposed new criteria categories. The revised version of the matrix, reflecting PBAC input, will be available at the next meeting.

Discussion of draft PBAC maintenance and security recommendations

David Parisi said this agenda item will be deferred to the next meeting, but he briefly discussed a handout titled *PBAC's Recommendation for a Maintenance and Security Program*. The group will discuss this list at the next meeting. In the meantime, PBAC members will e-mail suggested changes to David Parisi by July 8.

Public involvement update

Peter Ovington discussed the two project open houses taking place June 23-24, as well as two public meetings – "listening sessions" – on the topic of tolling, to be held June 30 and July 1. He distributed fliers advertising the events and asked PBAC members to share this information with their constituencies. He announced a new, forthcoming CRC Web site devoted to tolling, found at http://tolling.columbiarivercrossing.org

Ovington recapped recent outreach activities using the monthly communications summary for May. He mentioned the Portland Sunday Parkways event on June 21 where the project hosted an information booth for bicyclists and pedestrians. He discussed the work of the CRC Project Sponsors Council, which last met on June 5. Ovington handed out a new CRC fact sheet focused on pedestrian and bicycle issues.

David Parisi discussed the need to schedule return presentations to key pedestrian and bicycle groups in the coming months (see action items, below).

Other items

City of Vancouver's position: Jennifer Campos said the City would like to focus its efforts on the two-bridge stacked option.

Interim wayfinding signage improvements: Basil Christopher announced that the City of Vancouver has a grant for creating improved directional signage on the Interstate Bridge to guide users northbound on the east side of the bridge and southbound on the west side. The Oregon Department of Transportation (ODOT) has a draft wayfinding signage plan for the area around the bridge.

Definition of "world class": Ted Buehler asked the project, for the benefit of the public, to keep a current document online defining what a "world class" facility means.

Action items

1. City of Portland response: Give a written response to City of Portland regarding options for why certain path ideas don't work. David Parisi and April Bertelsen agreed we should continue to educate folks along the way about why some options don't work.

2. Community meetings: David Parisi will look at the project's overall schedule and will get back to PBAC about dates for scheduling further meetings with community groups such as the Bicycle Transportation Alliance, the Portland Bicycle Advisory Committee, and the Portland Pedestrian Advisory Committee.

3. Maintenance and security outline handout: PBAC members are asked to send comments on this outline by July 8.

4. Use of "empty" bridge cell: Conduct some study of the feasibility of using the empty bridge cell and why it can or cannot be accessible.

5. Discussion of putting path on east side: Parisi clarified that the PBAC would like to see the pros and cons of putting the path on the east side using the current open web proposal. Natalie will look into it conceptually.

6. Neighborhood electric vehicles: More information on costs, design, and feasibility of using the empty bridge cell for neighborhood electric vehicles to inform a potential future policy discussion on NEVs.

7. Pedestrian and Bicycle Design Guidelines matrix: Staff will update this piece based on PBAC input and refine the layout.

8. Ted Buehler presentation: Ted Buehler, a citizen and Vancouver resident, at some point would like to make a 15 minute presentation to PBAC about bike issues in the corridor that need to be addressed in the more near-term future. His interest is in bike routing north/south in the corridor, such as Columbia, Expo Center, etc.

Next meeting

Wednesday, July 22, 2009

9:00 a.m. – 12:00 p.m.
Columbia River Crossing project office
700 Washington St., Suite 300, Vancouver WA

Comparison of Pathway Options for I-5 Columbia River Bridge between Hayden Island and downtown Vancouver

Pedestrian and Bicycle Advisory Committee—July 2009

SAFETY AND PERSONAL SECURITY	Option A: Three Bridge	Option B: Two Bridge Pathway under deck	Option C: Two Bridge Pathway on top deck	
"Eyes on the street"	◑	○	●	Option A would have some visibility from light rail. Option C would have regular visibility from the highway.
Minimize exposure of pedestrians and bicyclists to vehicles and/or transit	◑	●	○	Option A exposes pathway users to light rail. Option B would not expose pathway users to motorized traffic and transit. Option C exposes pathway users to highway traffic.
Separate pedestrians and bicyclists	◑	●	◑	Option B, the widest, would provide the most potential for separation between modes.
Separate "commuter" and "recreational" bicyclists	◑	●	○	Option B, the widest, would provide the most potential for separation between different types of bicyclists.
Reduce/eliminate at-grade crossings with vehicles and transit	S	S	S	All options would provide a grade separated pathway.
Provide railings between users and vehicles/transit and water	S	S	S	All options would provide barriers and railings that meet current height standards.
Provide sufficient pathway lighting	S	S	S	Compared to Option B, Options A and C would provide better lighting during daylight, but worse at night.
Potential to provide security cameras and phones	S	S	S	All options have the potential to provide security cameras and phones.
Potential to post ordinances, applicable laws and agency contact information	S	S	S	All options could post applicable laws, ordinances and agency contact information.

DESIGN				
Exceed ODOT/WSDOT multi-use path 'desirable' width standards (16 feet)	◑	●	○	Option A: one 16' path, Option B: one 24' path, Option C: two 12' paths. Standard ODOT/WSDOT multi-use path widths are 14'.
Comply with ADA standards for grade (≤ 5%) and cross-slope (≤ 2%)	S	S	S	All options would meet ADA standards for grade and cross-slope.
Maximizes design principles of Crime Prevention Through Environmental Design (CPTED)	◑	○	●	CPTED principles performance increases as multi-use pathway user visibility is maximized.
Minimizes elevation of path over river and changes in grade. Ability to maximize proximity to river.	○	◑	○	Option B would have the lowest multi-use pathway height that meets Coast Guard navigation standards.
Minimize travel on long grades	◑	●	○	Travel time on long grades increase as height of pathway increases.
Maintain required sight distances for applicable design speeds	S	S	S	All options would have the required sight distance for the applicable design speed.
Minimize turns and provide for comfortable turning on access/egress ramps	◑	●	◑	Option B would have fewer turning areas on ramps than Options A or C.
Meet overhead clearance standards (10 feet)	S	S	S	All options would meet the clearance standard.
Potential to be constructed with non-skid surfaces for traction	S	S	S	All options could use non-skid surfaces.
Planned for future capacity, flexibility and versatility	◑	●	○	All options could accommodate forecasted demand. Option B provides the most flexibility for accommodation.
Ability to provide emergency response/maintenance vehicle access to the pathway	◑	◑	●	Option C would provide the easiest access as it is adjacent to the highway. All options would be accessible to emergency response and maintenance vehicles.
Potential maintenance and operations costs	●	○	◑	Option B would likely have slightly higher operating costs because it would require more maintenance and security upkeep.
Overall cost	◑	●	○	Option B is the lowest cost to build because it requires less structure cost than Option A or C. Option A would be at least $50M more, and Option C would be at least $75M more.

S All Similar | ○ ◑ ● → Better

Columbia River CROSSING

07/22/2009

Comparison of Pathway Options for I-5 Columbia River Bridge between Hayden Island and downtown Vancouver

Pedestrian and Bicycle Advisory Committee—July 2009

	Option A: Three Bridge	Option B: Two Bridge Pathway under deck	Option C: Two Bridge Pathway on top deck	
CONNECTIONS				
Distance from beginning of descent from path over Hayden Island to Hayden Island Drive, west of I-5	◑	●	◑	Option A: 1050', Option B: 575', Option C: 1000'.
Distance from beginning of descent from path over Hayden Island to intersection of Hayden Island Drive/Jantzen Drive, east of I-5	◑	●	◑	Option A: 2535', Option B: 2060', Option C: 2485'.
Distance from beginning of descent from path over Vancouver to Esther Short Park in downtown Vancouver	●	◑	●	Option A: 2300', Option B: 2500', Option C: 2200'.
Distance from beginning of descent from path over Vancouver to Vancouver waterfront	◑	●	○	Option A: 1400', Option B: 1200', Option C: 1700'.
Minimize river crossing time	●	●	◑	Option A: 9.30 minutes (1.55 miles), Option B: 9.12 minutes (1.52 miles), Option C: 12.12 minutes (2.02 miles). Travel times are based on an average bicycling speed of 10 mph.
Potential to provide way-finding and directional signage	S	S	S	All options would include way-finding and directional signage.
QUALITY OF EXPERIENCE				
Potential to provide amenities such as restrooms, benches, trash cans, info kiosks, public art, end of trip and park & ride facilities, etc.	◑	●	◑	All options would have the potential to provide amenities. Option B would have more potential as amenities could be designed into the infrastructure.
Minimize noise	◑	●	○	Noise measurements have shown that an under deck pathway similar to Option B would have at least a 5-10 dbA noise reduction compared to Option A, which would be similarly reduced from Option C.
Minimize exposure to vehicle exhaust	◑	●	○	Vehicle separation in Option B would minimize multi-use pathway users exposure to exhaust.
Protection from debris/"kick-up"/splatter	◑	●	○	Vehicle separation in Option B would minimize multi-use pathway users exposure to debris/kick-up/splatter.
Protection from bird droppings	S	S	S	All options would have a similar amount of protection from bird droppings.
Wind protection	○	◑	○	Option B provides the most wind protection because the under deck location and the top deck overhang reduce exposure to wind.
Rain protection	○	●	○	Option B provides the most rain protection because of the under deck location and overhang reduce exposure to rain.
Headlight glare protection	◑	●	○	Option B provides the most headlight glare protection because it is separated from vehicle and transit traffic.
Potential for natural light, open sky crossing and sense of openness	●	◑	●	Options A and C would be open to the sides and above. Option B would be open to the sides but not above.
Ability to "program the space" and provide activity areas	◑	●	○	Better opportunities to 'program the space' and involve people would exist with Option B because the design affords protection from the elements.
Provides scenic views from the bridge of: Mt. Hood, Columbia River, Hayden Island, and Downtown Vancouver	◑	○	●	All options would provide opportunities for scenic vistas, but Option C would have the most unrestricted views.
Potential for architectural detailing	○	●	○	Designs details would more likely be incorporated into Option B due to overall lower construction costs and integration of CPTED principles.
Potential to use quality materials in construction	S	S	S	All options could be built with high quality materials.
Potential to provide landscaping	S	S	S	All options could provide landscaping at appropriate locations.

S All Similar | ○ ◑ ● → Better

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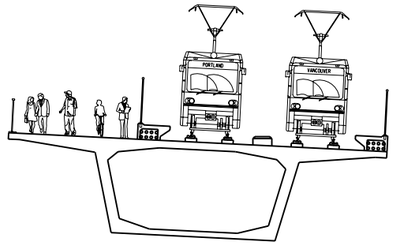
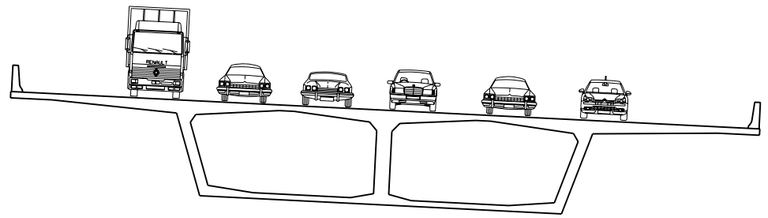
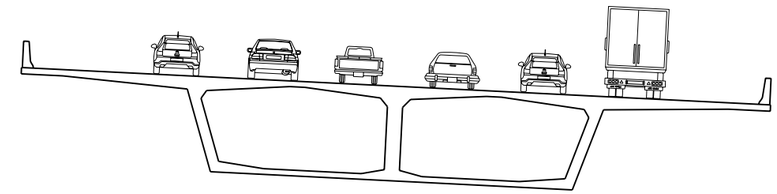
07/22/2009

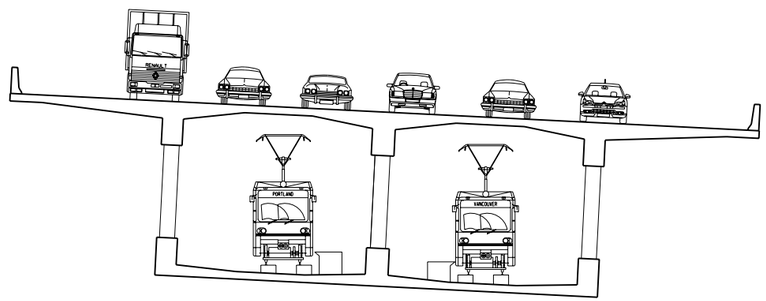
TYPICAL SECTIONS

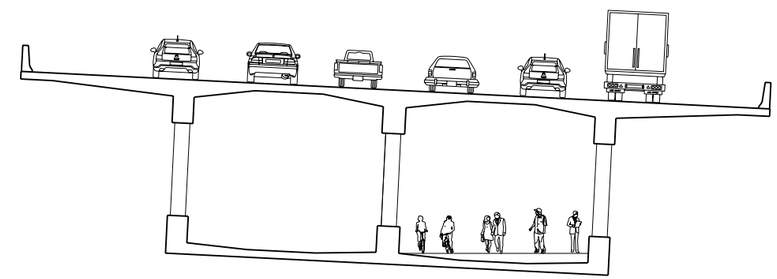




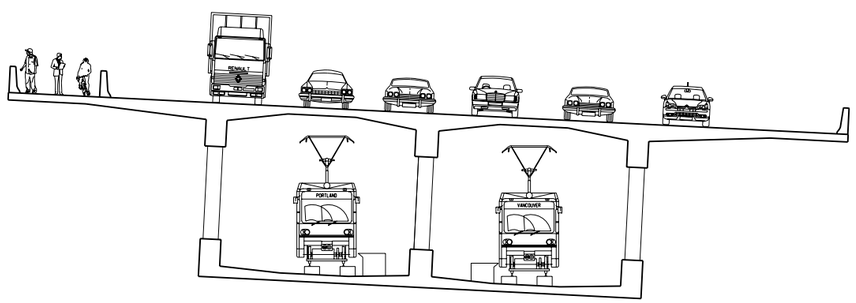


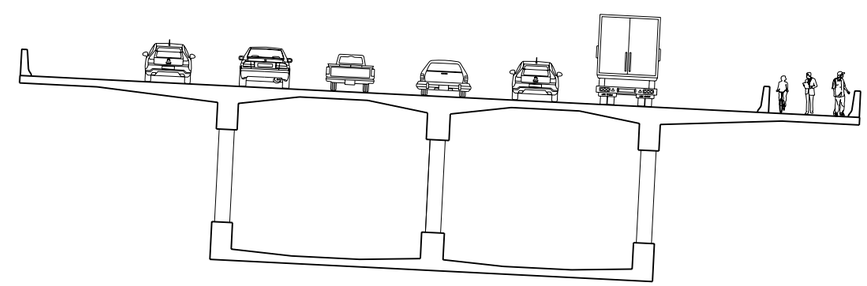
3-BRIDGE





2-BRIDGE (STACKED/UNDERDECK)





2-BRIDGE (STACKED/DECK)

DRAFT

4/22/09

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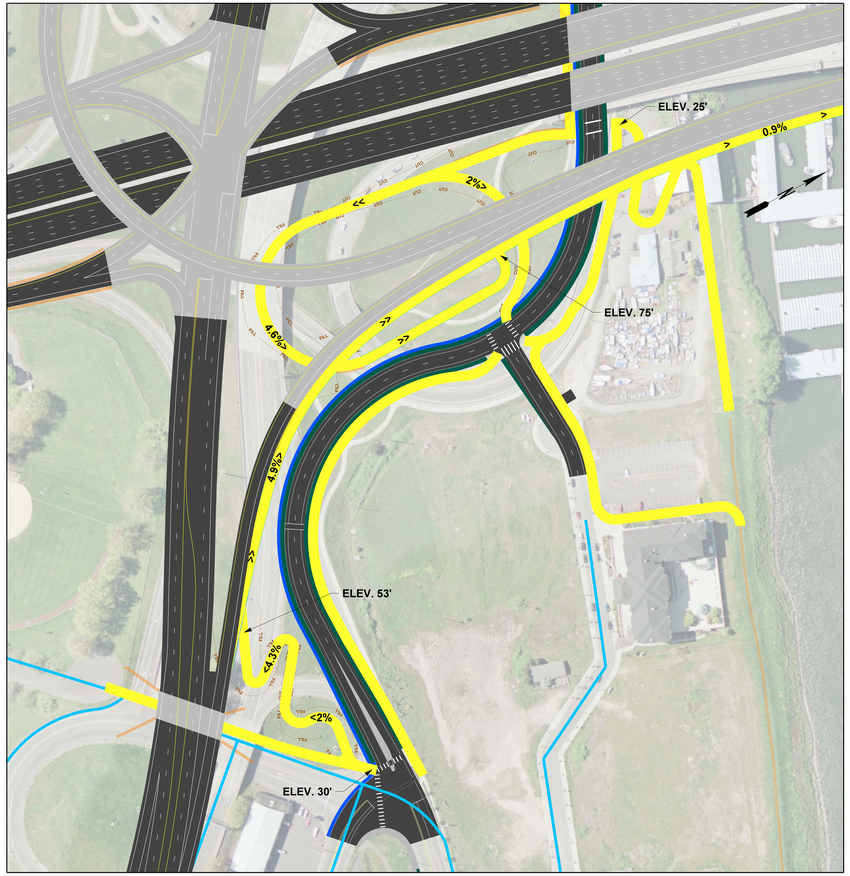

DETAIL

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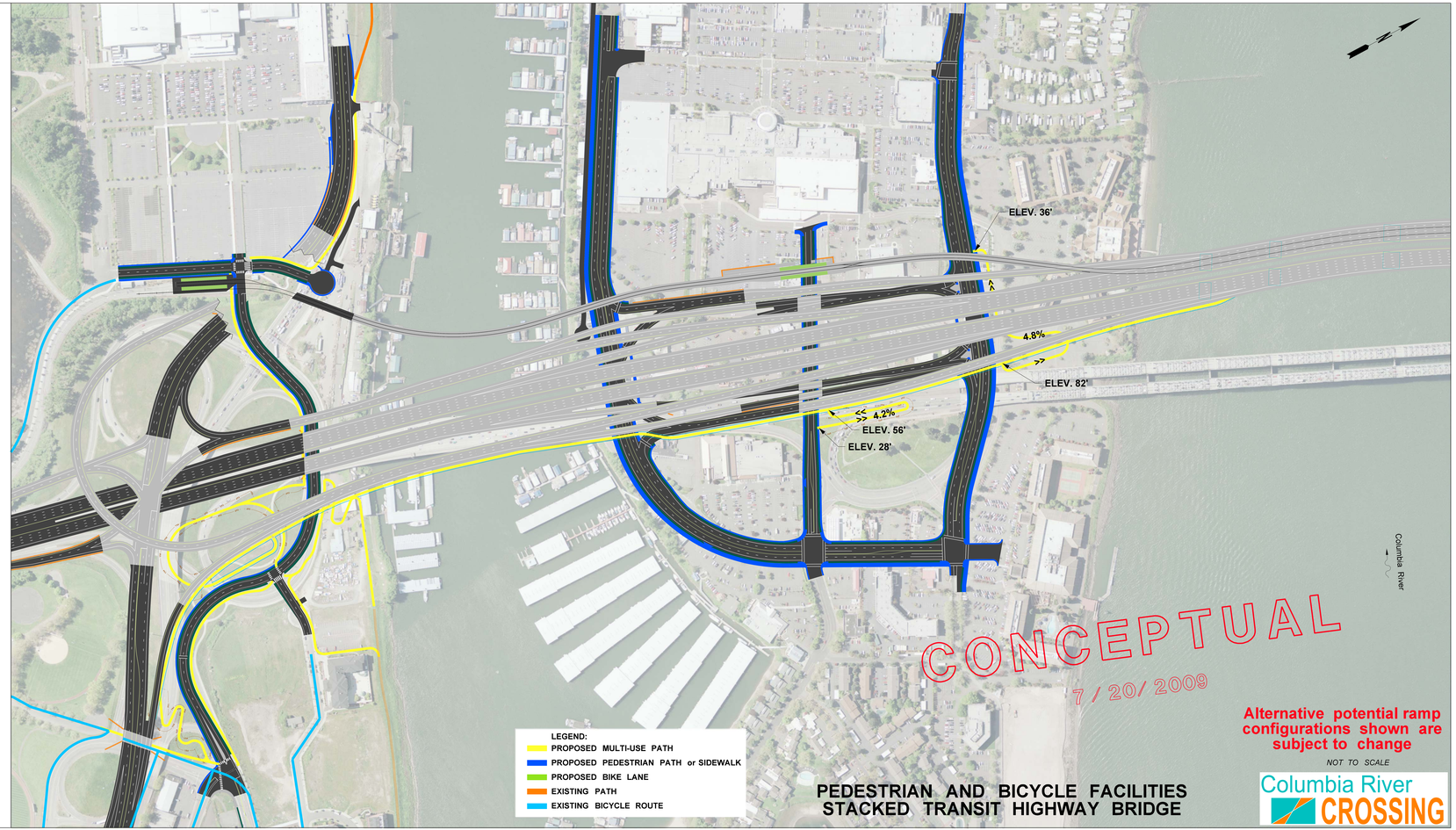
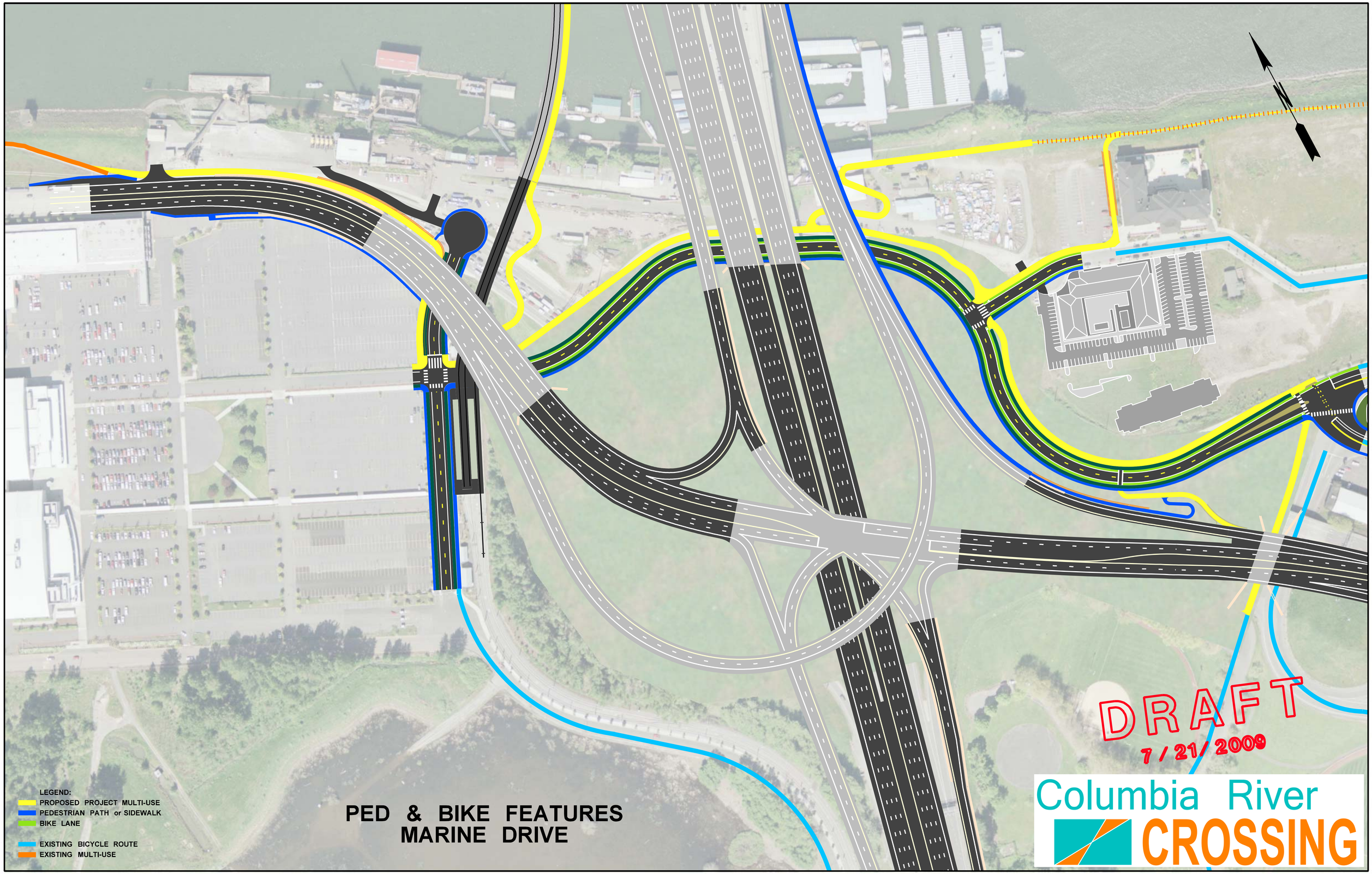


Alternative potential ramp configurations shown are subject to change

NOT TO SCALE

PEDESTRIAN AND BICYCLE FACILITIES
STACKED TRANSIT HIGHWAY BRIDGE

Columbia River CROSSING


LEGEND:
PROPOSED PROJECT MULTI-USE
PEDESTRIAN PATH or SIDEWALK
BIKE LANE
EXISTING BICYCLE ROUTE
EXISTING MULTI-USE
PED & BIKE FEATURES
MARINE DRIVE
DRAFT
7 / 21 / 2009
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PBAC's Recommendation for a Maintenance and Security Program

The Columbia River Crossing project's Pedestrian and Bicycle Advisory Committee (PBAC) recommends a sufficient and sustainable maintenance and security program for the project's pedestrian and bicycle facilities.

The best and most effective method of enhancing maintenance and security is to design a functional facility that is inviting to and well used by the general public. Design principals that provide natural surveillance, territorial reinforcement, and natural access control will minimize on-going maintenance and security requirements. A reliable and funded program will be required. The program must recognize that a poorly maintained facility could undermine the value of good design.

The maintenance and security program shall include, but not be limited to, the following:

- Identification of reliable funding sources and responsible parties for maintenance and security
- Commitment of reliable funding sources and responsible parties for maintenance and security
- Demand responsive and prompt facility management and maintenance
- Opportunities to "program the space" and support activity (e.g., kiosks, overlooks, vendor opportunities) to provide "eyes on the pathway"
- Ensure 24 hours a day, seven days a week pedestrian and bicycle access to and across the bridge and its connecting pathways
- Visible and regular on-site monitoring by law enforcement officers or security staff
- Security cameras monitored by law enforcement officers or security staff
- Call boxes to enable bridge users to report immediate maintenance needs and security concerns
- Efficient, sufficient, vandal-proof, no glare and dark skies compliant clear, crisp, white LED lighting
- Clearly posted laws and ordinances
- Advance notification and posting of maintenance closures and detours
- Citizen and volunteer participation shall be encouraged for future maintenance, operations and programming

The PBAC recommends that the above outline of elements form the basis for a detailed maintenance and security program that is regularly reviewed, performance-based and contains measurable metrics.

Columbia River CROSSING

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360-737-2726 | 503-256-2726

July 7, 2009

April Bertelsen, Pedestrian Coordinator
City of Portland Bureau of Transportation
1120 S.W. 5th Avenue, Suite 800
Portland, Oregon 97204-1914

Subject: Consideration of Additional Two-Bridge Options for Pedestrians and Bicyclists

Dear April:

This letter and its attachments are in response to your letter to CRC dated June 12, 2009. It provides a brief summary of the in-depth discussion held June 24, 2009 at the CRC Pedestrian and Bicycle Advisory Committee (PBAC) meeting at the CRC office. The discussion included the three options outlined in your letter, as well as concepts offered by Mayor Sam Adams in his letter to CRC dated April 21, 2009 (also attached).

We understand the City's desire to assess options that do not rely on a Columbia River crossing for pedestrians and bicyclists that is located within the proposed open-web box girder bridge. We are also acutely aware of the need to provide connections and grades that are direct and user-friendly.

Two major design issues have an impact on placement of the pedestrian and bicycle facilities across the Columbia River. One is related to meeting the clearance and operation issues needed to maintain river navigation. The other is gradient impacts to transit, pedestrian and bicycle facilities when they are placed above or beside the Interstate traffic lanes.

The attached June 24 PBAC PowerPoint presentation provides cross-sections, alignments, and other detailed information for the options the City asked CRC to evaluate. Also included are brief design considerations for the options.

After evaluation of the options, CRC has recommended to PBAC that placing the pedestrian and bicycle facilities inside the open-web box girder across the Columbia River is a better option than placing them on top or below the river crossing structure. Reasons for this conclusion include:

- Options that place transit, pedestrian and bicycle facilities at a lower level (a third stacked level) for the purpose of improving shore side connections would result in closing two of the three existing marine navigation channels with a lift span required for the main channel. The U.S. Coast Guard has indicated any bridge replacement option that doesn't improve marine navigation would be in jeopardy of receiving their approval.

  CRC engineers investigated options for a pedestrian/bicycle facility placed high enough to allow barge traffic to continue unimpeded, but the slight difference in bridge clearances (65 feet for barge traffic versus the proposed 80 feet for the replacement bridge) would not accomplish enough grade benefits compared to the costs.

CRC also investigated another "third stacked" lower level option for the pedestrian/bicycle facility that would rise in grade sufficiently to eliminate the need for a lift section. We were unable to produce a design that could meet minimum ADA grade requirements.

- CRC was also asked to investigate an option that would keep and refurbish one of the existing Interstate bridges for pedestrian and bicycle use, as well as possibly by neighborhood electric vehicles. This option was evaluated previously by the project and primarily rejected due to impacts to river navigation. The current bridges each have nine piers and the proposed replacement bridges would have just five piers. Retaining an existing bridge along with the new replacement bridges would result in a misalignment within the existing marine navigation channels. In the short-term during construction, the loss of one of the navigation channels can be accommodated. However, the U.S. Coast Guard has indicated they would most likely eliminate the peak period bridge lift exception currently in place for any option that retains one or both of the existing bridges and adds a new bridge. Other issues related to keeping the existing bridges are higher maintenance and operation costs, ownership, poor seismic sufficiency of the existing structures, and added cost when there are more functional and less costly options available. The CRC Task Force concurred this option should be eliminated from further consideration.

- For the options that place transit, pedestrian and bicycles above the Interstate vehicle lanes, a substantially deeper steel truss system would be required, resulting in the top deck being increased as much as 65 feet above the currently proposed facilities in the open-web concrete box. Resulting grades to make connections on either side of the river would result in closure of an important east-west street in Vancouver and add about 1,300 feet of distance at five percent grades to meet ADA requirements for the ramps connecting the bridge with both sides of the river.

We sincerely appreciate your participation and involvement in the open and detailed discussion with PBAC members in reviewing the City's creative design options, and are looking forward to their recommendations.

Sincerely,

David Parisi, P.E.
CRC Consultant Traffic Manager
Facilitator, Pedestrian/Bicycle Advisory Group

Attachments
cc: Document Control
Catherine Ciarlo, Office of Mayor Sam Adams
John Gillam, City of Portland Bureau of Transportation

Roger Geller, City of Portland Bureau of Transportation
Peter Hurley, City of Portland Bureau of Transportation

CITY OF PORTLAND
OFFICE OF TRANSPORTATION

Sam Adams
Commissioner

Susan D. Keil
Director

June 12, 2009

David Parisi
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700 Washington Street, Suite 300
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tel: 360.816.2165
fax: 360.737.0294
ParisiD@columbiarivercrossing.com
http://www.ColumbiaRiverCrossing.org

Dear David Parisi,

I want to thank you for giving consideration to the additional bicycle and pedestrian facility options suggested at our May meeting by City staff and other members of the Pedestrian and Bicycle Advisory committee (PBAC) for the Columbia River Crossing Bridge Project. I have summarized them in the bulleted list below. I look forward to seeing the design renderings and review of the pros, cons or fatal flaws for the additional suggested options at our June 24th PBAC meeting.

- Two-Bridges with three stacked levels on one of the bridges. The third level would hold a lower pedestrian-bicycle path that may or may not include a lift span over the main channel for the path only.
- Two-Bridge with lower pedestrian-bicycle path weaved below. This is a variation on the option described above, except that the path creates a slight double helix design by weaving under and then cantilevers out to the east beyond the upper deck in the middle of the span and back again. The design is intended to be supported by the same piers as the main structure or otherwise cantilevered under the structure.
- Two Bridges plus keep one of the existing bridges refurbished for pedestrians, cyclists and possibly Neighborhood Electric Vehicles.

I recognize that on June 5th the CRC Project Sponsors Council voted for Two-Bridges. In Mayor Adams support for a Two-Bridge option, it is my understanding that he also called for consideration of a final assessment from the PBAC and design options where bicycles and pedestrians are not underneath. While I and other members of the PBAC previously preferred the Three-Bridge option with the pedestrian and bicycle path on the third bridge to the west of light rail, I acknowledge the environmental and cost benefits of a two-bridge project. I anticipate further exploration of Two-Bridge design options.

However, I continue to have concerns about the quality of experience, sense of personal security and operational and maintenance challenges associated with design options we have seen thus far that locate pedestrians and cyclists underneath the roadway on the "open web" under deck. Given the two-bridge option is relatively new, there is still need to evolve the design with

consideration to pedestrian and cyclist needs. In the interest of identifying a two-bridge design option that also meets the CRC project objective of providing a "World Class" Pedestrian and Bicycle facility, I recommend that we continue to explore design options that optimally provide the following:

- High quality pedestrian and bicycle experience for all users
- Minimizes changes in grade and elevation over the Columbia River
- A greater sense of openness and access to natural light
- Crime Prevent through Environmental Design (CPTED) and minimizes future on-going security, maintenance and other operation needs.
- Convenient, direct and easy to find connections to key destinations and the pedestrian and bicycle network

In addition, to maintain a successful pedestrian and bicycle facility that is well used by the public into the future, it will be necessary to provide adequate security and maintenance operations. This applies to all design options. However, past experience with covered pedestrian and bicycle facilities that are separated from the roadway indicates that they often require additional security and maintenance attention. Therefore, provisions for security and maintenance operations would be especially critical if the project proceeds with a covered pedestrian and bicycle path.

I recommend that the CRC Project Sponsors and Mobility Council agree to a security and maintenance program that is allocated an on-going budget, funded by bridge toll revenue. It could be a component of the Transportation Demand Management Plan.

In conclusion, I look forward to continuing to work with you, other CRC project staff and the PBAC on exploring optimal design for a "World Class" pedestrian and bicycle facility and an appropriate security and maintenance program. I have attached my edits to the draft document we began last month on maintenance and security. Again, thank you for your work with the PBAC and consideration of my letter.

Sincerely,

April Bertelsen
Pedestrian Coordinator
City of Portland Bureau of Transportation

CC:

Catherine Ciarlo, Office of Mayor Sam Adams
John Gillam, City of Portland Bureau of Transportation
Roger Geller, City of Portland Bureau of Transportation
Peter Hurley, City of Portland Bureau of Transportation

OFFICE OF MAYOR SAM ADAMS
CITY OF PORTLAND

RECEIVED
APR 21 2009
Columbia River Crossing

April 21, 2009

Ron Anderson
Consultant Project Manager
Columbia River Crossing
700 Washington Street, Suite 300
Vancouver, WA 98660

Dear Mr. Anderson:

As you know, I have been a participant in the planning process for a new Columbia River Crossing for more than four years. As a member of the original 39-member task force, a member of the Project Sponsors Council, and a co-chair of the Urban Design Advisory Group, I understand the complexity of the project. As the Mayor of a city that will be profoundly affected by the new crossing, I am intensely motivated to create a bridge that the world looks to as a functional success and an aesthetic icon.

Last July, I offered--and the Portland City Council unanimously supported--a resolution approving the Locally Preferred Alternative for the project. That resolution was clear about the CRC's design: It stated that the new bridge must have a signature, iconic design, and it must include "world class" bicycle and pedestrian facilities. I take those commitments seriously.

The bridge design that is currently on the table does not, in my view, achieve these goals. While it may serve as an appropriate starting point, the "stacked" bridge design with a bicycle and pedestrian path located on the lower deck has generated concerns from the community about safety and security. These concerns need to be aired and considered. Additional options must be considered. We cannot achieve world class bicycling and walking facilities without actually considering all available alternatives. I will not accept an under-deck design simply because it is the easiest alternative.

Similarly, the current design does not do justice to the City of Portland's call for an iconic bridge. As you know, I have been respectful of the City of Vancouver's desire to protect Pearson Airfield with height constraints. I have supported the "cap" and park that marks the bridge's entry into Washington state. However, to date, there has been no response to my repeated requests for a "signature" design element over the North Portland Harbor. Again, we can not achieve a world-class design without considering alternatives.

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(503) 823-4120 ♦ mayorsamadams.com

It is my belief that what is most important about this bridge should be what is most visible. Accordingly, I would like to see the CRC staff develop several additional design options:

1. A stacked design where the light rail and bicycle/pedestrian path are located on the top level, with the highway located underneath. The extra space on top could be designed with plantings to achieve state-of-the-art stormwater management and could function as an active park connecting the cities of Portland and Vancouver. (The City of New York is in the process of transforming the unused High Line railway structure into an elevated park and trail; www.thehighline.org). Using Florence's famed Ponte Vecchio as inspiration (www.agriturismobelvedere.it/firenze%20inglese/Monumenti/ponte_vecchio.htm, we could even locate a light rail station with active uses in the middle of the bridge.

2. A design that has the northbound highway lanes on one level and the southbound lanes on the other level. Please include two configurations: one with the light rail next to the lower level lanes and the bicycle and pedestrian path on the top level with substantial separation from the highway lanes, and one with both the bike/ped and light rail on the top level, with the light rail line providing separation from the highway lanes.

3. A North Portland Harbor bridge element with height and visual interest. As outlined in our April 17 memo to the UDAG, this would not necessarily need to be on the main freeway leading up to the bridge: it could be located on the light rail bridge and/or the flyover ramp leading onto the main span. A beautifully-designed bicycle and pedestrian bridge leading up to the main span bridge (see http://en.wikipedia.org/wiki/Humber_Bay_Arch_Bridge) could serve as a strong tourist draw, independent of and complementary to the bicycle facilities on the main bridge.

I will look forward to considering each of these concepts at an upcoming UDAG meeting. The Columbia River Crossing presents our region with an unprecedented opportunity to do something truly unique and innovative. We must not squander that opportunity.

Sincerely,

Sam Adams
Mayor, City of Portland

cc: CRC UDAG
CRC Sponsors Council

1221 SW Fourth Avenue, Suite 340 ♦ Portland, Oregon 97204
(503) 823-4120 ♦ mayorsamadams.com

Columbia River CROSSING

Integration of Bridge Types and Pedestrian and Bicycle Facilities

PBAC, June 24,2009

Columbia River Crossing Site Requirements

- Roadway design elements must be acceptable to FHWA and State DOT's (design standards)
- Transit design elements must be acceptable to FTA (basic design criteria)
- Pedestrian/Bicycle facilities must meet ADA requirements
- The Columbia River is a major shipping route and in-water structures (maintaining navigation channels and bridge clearances) are controlled by the U.S. Coast Guard
- Pearson Field has established airspace requirements controlled by the Federal Aviation Administration
- The structure must meet minimum clearances over the existing BNSF railroad in Vancouver

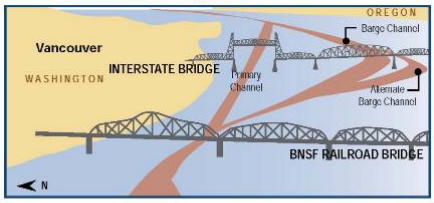
Columbia River CROSSING

2

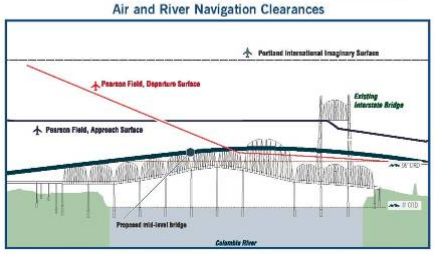
Air and River Navigation

- Replacement bridge – No need for lifts and sharp turns
- Must maintain navigation channels and heights
- Replacement bridge should improve airspace restrictions

River Navigation Constraints



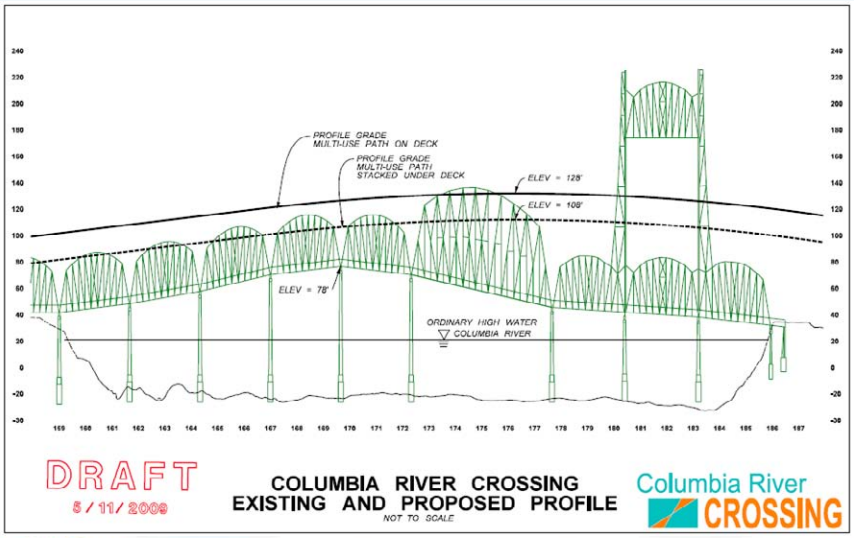
Air and River Navigation Clearances



Columbia River CROSSING

3

I-5 Bridge Profile



Columbia River CROSSING

4

Bridge Type Selection Process

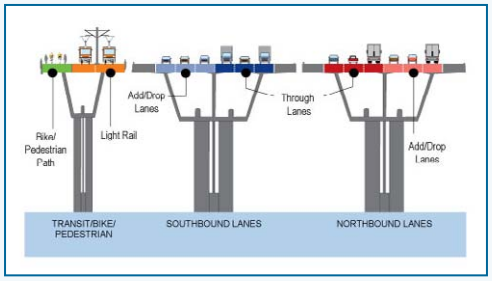
- Desire is to have the thinnest bridge possible to accommodate navigation and airspace, and fewest piers in water to maintain navigation channels and minimize environmental footprint
- The relationship between structure type and depth - and the location of the transit and pedestrian/bicycle facilities within or on the structure is critical to meet connectivity requirements
- Both sides of the river care about bridge aesthetics and how the bridge fits within their cities
- Cost will be an important consideration as the financial plan is refined

Columbia River CROSSING

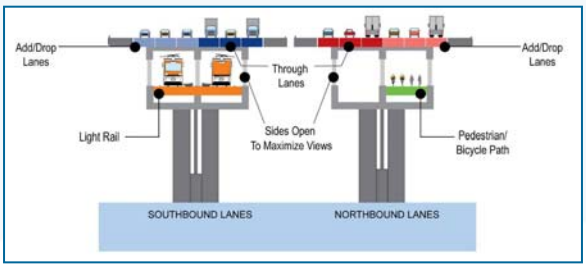
5

Bridge Alternatives included in the DEIS

Three Bridge Concept



Two Bridge Concept



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6

Project Sponsors Council voted to support a two-bridge option

- Smaller environmental footprint
- Unique engineering features
- Cost effectiveness
- Navigation improvements
- Shoreline access and redevelopment
- Visual impact
- Operational reliability

Columbia River CROSSING

7

Bridge Type and Aesthetics - Ongoing

- Urban Design Advisory Group recommended the two-bridge option
- UDAG continues their work on design concepts

Columbia River CROSSING

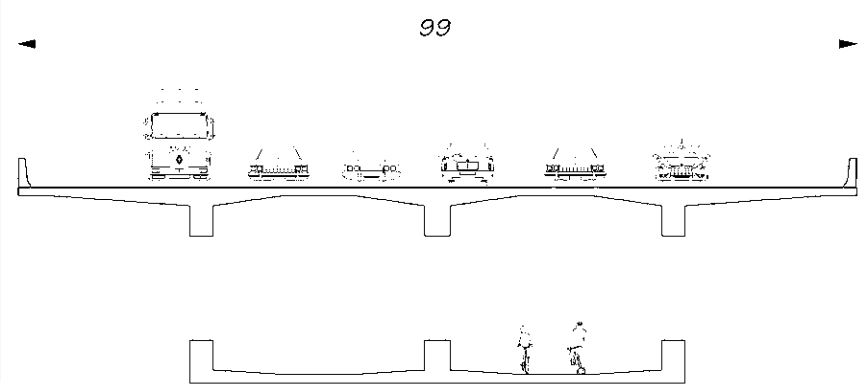
8

Pedestrian / Bicycle Facilities on Bridge

- Pedestrian/Bicycle Advisory Committee evaluating bridge options and will provide recommendations for maintenance and security

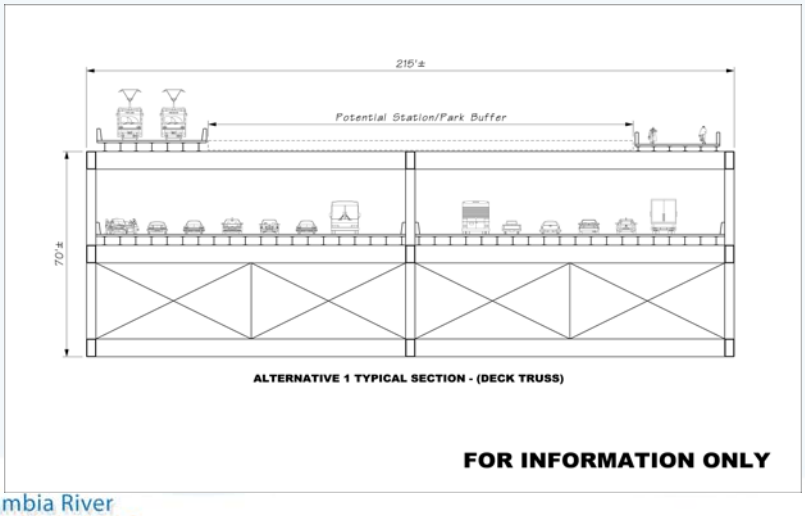
Columbia River CROSSING

Can the Open-Web Box Girder bridge be flipped to put the transit and pedestrian / bicycle facilities on top?



Columbia River CROSSING

Are there other ways to place transit and pedestrian / bicycle facilities on top?



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I-5 Marquam Bridge, example of steel truss

Columbia River CROSSING

Transit and pedestrian/bicycle on top design considerations

- This concept requires an additional 40 feet of truss depth to support the top deck, and places transit and pedestrian/bicycle facilities approximately 65 feet higher than the Open-Web Box Girder design.
- The higher elevation for transit requires a longer grade to touch down in Vancouver – resulting in closure of 6th Street
- Similarly, pedestrian/bicycle connections will add as much as 1300 feet of ramp to meet the ADA minimum grade of 5%
- The option for adding a park results in significantly higher bridge costs related to foundations, seismic requirements, and long term maintenance.

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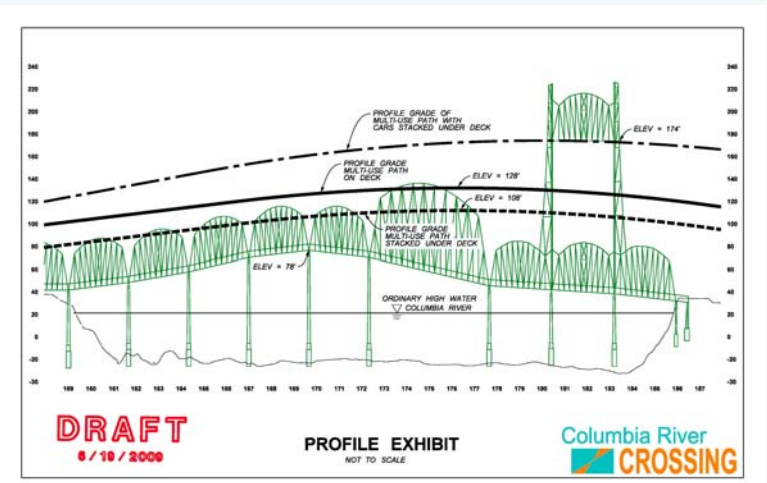
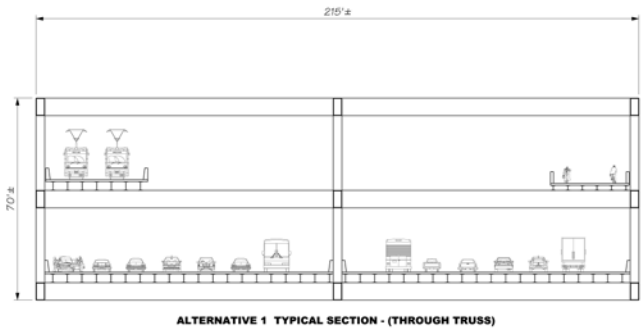
Profile of Stacked roadway with transit and pedestrian/bicycle on top



Columbia River CROSSING

14

Variation of stacked roadway with transit and pedestrian / bicycle on top



ALTERNATIVE 1 TYPICAL SECTION - (THROUGH TRUSS)

FOR INFORMATION ONLY

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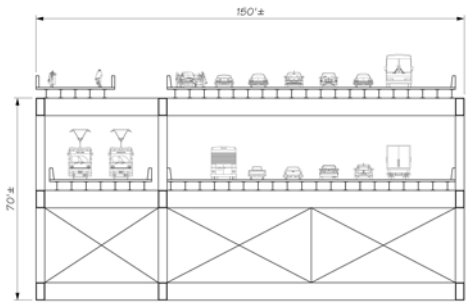
Stacked roadway and stacked pedestrian / bicycle and transit



ALTERNATIVE 2 TYPICAL SECTION - (DECK TRUSS)
(THROUGH TRUSS SIMILAR - SEE ALTERNATIVE 1)

FOR INFORMATION ONLY

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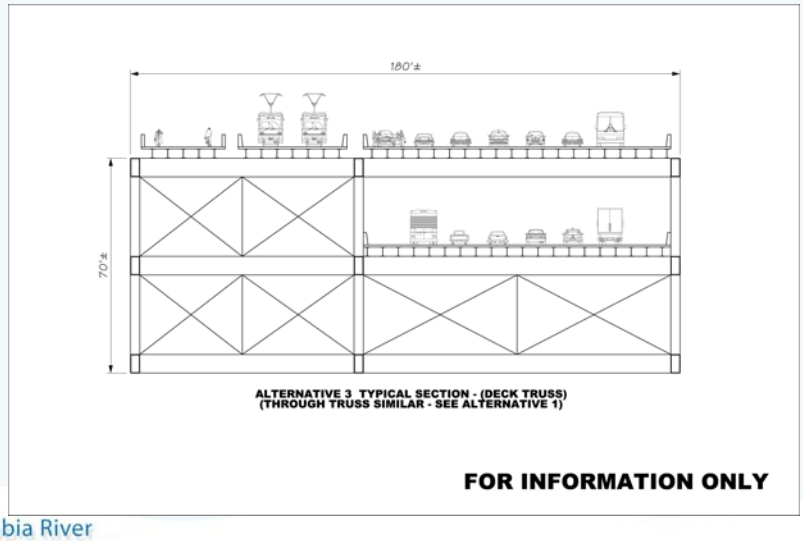
Stacked roadway with transit and pedestrian / bicycle on top



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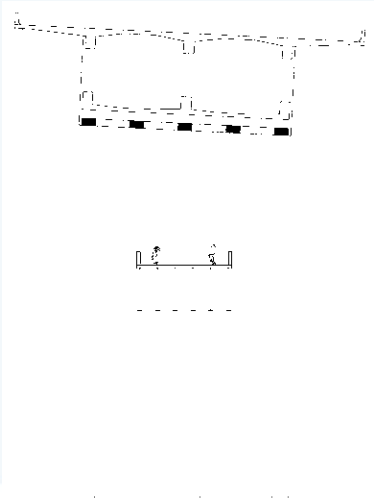
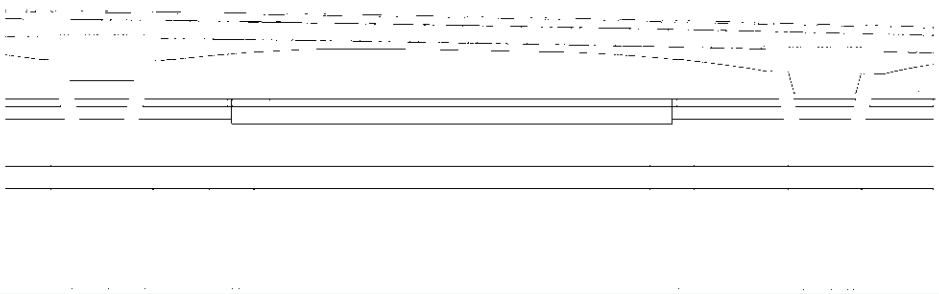
Can a new pedestrian / bicycle facility be constructed on a third "stacked" lower level?



Columbia River CROSSING

Can a new pedestrian/bicycle facility be constructed on a third "stacked" lower level?



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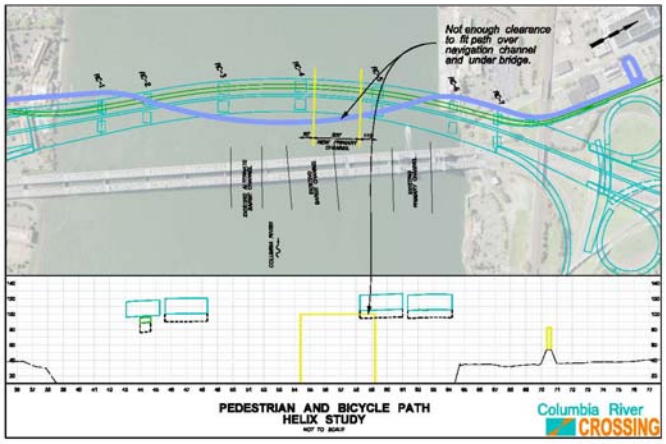
Pedestrian/bicycle facility on a third "stacked" lower level considerations

- Currently there are three navigation channels that boats/barges can choose to pass through. A lower level pedestrian facility would most likely restrict large boats to one channel.
- The Coast Guard may not recommend bridge replacement if the proposed structure increases difficulty to navigation.
- A lift span would be required for the lower level pedestrian/bicycle path to allow passage of larger boats, reducing reliability.
- Placement of a lift span would most likely require raising the Interstate and transit profile.
- The lower path would be an added cost when compared to placing the pedestrian/bicycle facilities within the Open-Web Box Girder.

Columbia River CROSSING

20

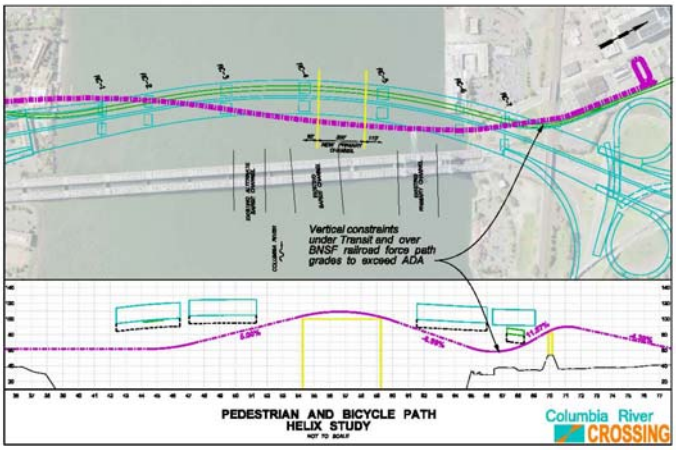
Can a new pedestrian / bicycle facility be constructed on a third "stacked" level that weaves in a double helix design?



Columbia River CROSSING

21

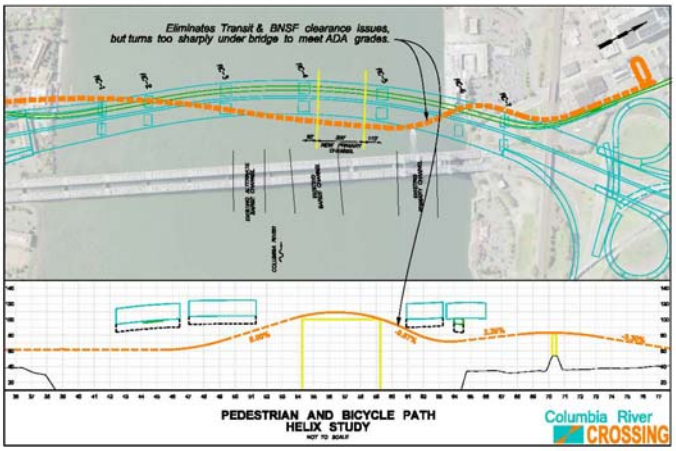
Can a new pedestrian / bicycle facility be constructed on a third "stacked" level that weaves in a double helix design?



Columbia River CROSSING

22

Can a new pedestrian/bicycle facility be constructed on a third "stacked" level that weaves in a double helix design?



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23

Pedestrian/bicycle facility on a third "stacked" level that weaves in a double helix design – considerations.

- This concept has the same impacts on river navigation as the previously discussed lower-level option.
- Weaving the pedestrian/bicycle lanes adds complexity and cost.
- If the intent is to raise the path from the lower profile to a higher level to avoid the need for a lift structure, the resulting profile will be steeper than proposed for the Open-Web Box Girder option.
- Cantilevering the path to the east of the bridge would produce tremendous moments, potentially requiring larger bridge footings.

Columbia River CROSSING

24

Can you keep one of the existing bridges for pedestrians, cyclists, and possibly neighborhood electrical vehicles?

- Keeping an existing bridge would create a mismatch of pier alignment that would not be acceptable for marine navigation. The existing bridges have nine piers in the water, the new bridges have five piers.
- The U.S. Coast Guard may not permit construction of new bridge if one of the existing bridges is retained.
- Keeping the existing bridges would create added costs for seismic retrofit (required if seismic event could topple lift structure into new bridge), and long term maintenance and operation costs.

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Questions?