



**SW Gibbs St. Pedestrian Bridge
 Joint Citizen Advisory Committee/Technical Advisory Committee Meeting**

Wednesday, September 24, 2008, 9am – 11:30am
 Portland Building, 1120 SW 5th Avenue,
 Fir Creek Room, 3rd floor

MEMBERS IN ATTENDANCE:

Citizen Advisory Committee	Citizen Advisory Committee
Glen Bridger (for Don Baack)	
Bill Danneman	Lee Moore
Bob Durgan	
Brian Newman	
Emily Gardner	
Jim Gardner	
Erin Kelley	
Don Livingstone	
Ken Love	
Tom Noguchi	
John Perry	
Frank Phillips	
David Snyder	

Technical Advisory Committee	Technical Advisory Committee
April Bertelsen	Troy Doss
Sandra Burtzos	Kara Fioravanti
Wendy Cawley	Roger Geller
Lisa Elbert	Liz Mahon
Lola Gailey	David O'Longaigh
Geraldene Moyle	
Jody Yates	
Cheri Warnke	

Consultant Staff in Attendance: Marcy Schwartz (CH2M HILL), Kevin Peterson, Erik Burkhouser (IDC Architects), Tyson Gillard (IDC Architects), Mia Birk (Alta), Carol (Mayer-Reed), Jeremy Shane (Mayer-Reed), Lwin Hwee (CH2M HILL), Mike Bartholomew (CH2M HILL), Rick Kuehn (CH2M HILL), Mariah VanZerr (CH2M HILL)

Project Management: Jody Yates, PDOT

Guests: Deanne Sandbrig, Trimet; Rick Saito, Zidell

Welcome and Introductions

Marcy Schwartz began the meeting with a brief round of self-introductions and a review of the meeting agenda and purpose. The purpose of the meeting is to review the revised design and cost estimates and make a CAC recommendation on the bridge concept to carry forward.

Public Comment

No public comments were recorded.

Parking lot items

Marcy drew committee members' attention to the following parking lot items for the meeting:

Part of the meeting agenda:

- Views of bridge from west side prior to next open house (in newspaper, etc). – in model
- Views from other locations than Gibbs Street (neighborhood houses e.g.) – in model
- Tall wishbone shape towers on Extradosed? (probably not tall enough tower for that)
- 5% gradient – is it necessary? Cost of reducing the grade and raising the height of the elevator?

Final Design Issue

- Icing as a safety factor on bridge?

Update as Parking Lot Item:

- Signal at Naito and Whitaker and Kelly and Gibbs – need to coordinate with City on speed reduction
- Channelization at Barbur and Naito needs coordination with ODOT/City
- Warrant analysis of Naito and Barbur
- Bus stop locations in relation to bike/ped crossings?
- SW Trails relationship to bike/ped corridor
- Cost of dropping Whitaker to grade? Impacts?

PDOT traffic engineer, Wendy Cawley, gave a brief update on the different ways to analyze crossings at Kelly and Gibbs, and on Barbur and Naito. She said that depending on the number of cyclists and pedestrians that use the bridge, a signal would likely be warranted at Kelly and Gibbs within the first couple of years. She said that Naito locations would probably not warrant a signal for at least 5-8 years, and that they may never warrant a full signal. Whether the intersection warrants a signal and which type of signal (full or hawk¹) will fall into an engineering judgment category and require conversations with ODOT. She said that a signal would not be warranted on Barbur even 30 years out (due to its width), but that islands and additional signing will be warranted.

The cost of dropping Whitaker to grade has not been considered because it is out of the scope of this project.

¹ A hawk signal is a signal that only turns red when bikes and pedestrians are crossing.

Marcy noted that the current pedestrian intersection improvements are summarized on the Pedestrian Intersection Improvements presentation board:

Pedestrian Intersection Improvements

Kelly:

- Signal
- Curb extensions, ramps, sidewalks
- Crosswalks
- Signing
- Re-directional barrier

Barbur:

- Islands
- Sidewalk, ramps
- Crosswalks
- Overhead signing

Naito:

- Curb extensions
- Islands
- Overhead signing
- Lane drops

Parking Lot Q & A

A CAC member asked for clarification on where the signal would be on Naito, and Wendy replied by saying it hasn't been determined yet. Jody added that the next step on the Naito crossing is to sit down with ODOT and City traffic engineers. Jody also noted that from a technical standpoint Whitaker lends itself to a safer crossing.

A CAC member asked if the signals would also apply to vehicle traffic. Wendy replied that full signals would be warranted, and would apply to all types of traffic. Jody noted that it would not be difficult to modify bus stop locations after the crossing locations are determined.

A CAC member confirmed that crossing locations would be displayed at the next open house.

A CAC member inquired about whether the design elements with the Naito crossing would be coordinated with the Macadam planning team. Jody replied affirmatively, saying that information was being sent back in forth between the teams.

A CAC member inquired about the definition of a lane drop. Lwin explained that lane drops are when two lanes go down to one.

Design Concepts

Introduction

Marcy noted that the Box-Girder and the Cable-Stayed bridge types received equal interest at the Open House. Lwin explained that the Cable-Stay alternative had to be dropped due to high costs, but that the design team brought back the Extradosed bridge type due to its lower cost and its combination of the cable-stayed and box girder elements favored by the public. Kevin noted that the design team has been working to match the correct bridge type to the site and that they have been flushing out the advantages & disadvantages of each specific bridge type in terms of the project purpose. Kevin explained that four bridge types were selected for further consideration and that three of them, the Concrete Box-Girder, the Steel Box-Girder, and the Extradosed would be presented at the meeting.

Aesthetics and technical factors of bridge types

Concrete Box-Girder

The Concrete Box-Girder bridge type would need to span 300 feet between the I-5/SW Hood Ave pier and the pier near the Tram Tower. The bridge deck would be 13.5 feet deep at both the east and west ends, and taper in towards the center. The architectural requirements for this bridge type call for a straight alignment. The straight alignment clears the tram tower, stays within the Gibbs street right of way, and dead ends into the future Zidell property. The view of Mt Hood from the bridge would not be captured by the straight alignment. Construction of the bridge would require many temporary wooden supports which would need to span 50 feet of roadway at all times to allow for traffic. The bridge would have a 3-3.5% slope.

In terms of the bridge user-experience, Kevin explained that a throw barrier would protect pedestrians from the dirt and noise from the highway. The bridge would be painted concrete, and they are not sure how the sunlight would play off the box-girder and the tram in the winter. Kevin explained that the concept of the Concrete Box-Girder bridge type is not to add more clutter to the landscape, but rather to build aesthetically on what's already there. He said the use of materials that are continuous and balanced with the tram aesthetic would help enhance the efficiency of the design.

Kevin noted that while the bridge type does not dictate where the connections must occur, the connections will inform the bridge selection process. Kevin explained that the goal for the west side connection is for the bridge to meld seamlessly with the mature residential community that exists there. He described quieter, vertical surface abutments that would counter graffiti, and comfort local residents walking by on a daily basis. For the elevator, Kevin mentioned that the design term was currently debating between an enclosed or open air structure made of glass or metal.

One drawback of this bridge type is that the depth required for a 300 foot span makes it seem more appropriate for vehicle traffic rather than pedestrians. Kevin also noted that the Committee should consider the potential for future ODOT engineers to put signs on the bridge, since the Concrete Box-Girder bridge type would be ideally suited for that purpose. The straight alignment and the triangular shape of the Concrete Box-Girder also make it slightly more expensive than the standard box-girder.

Steel Box-Girder

The Steel Box-Girder bridge type has a constant depth of approximately 8.5 feet and has a curved sweeping alignment. The sweeping alignment clears the Zidell property and offers the user a clear sight line to Mt. Hood. The 15-foot wide flat deck would slope at a 5 % grade and serve to enhance the view from the bridge deck. Throw barriers would flare outward to protect pedestrians from highway debris and provide them with a sense of openness. This bridge type offers much better constructability than the concrete box girder, since the five steel girder sections could be shipped to the site and placed with cranes. Only minimal temporary supports would be needed, and the user traffic problems would be resolved.

It was noted that, while the Concrete Box-Girder bridge type could be curved, and the Steel Box-Girder bridge type could be straight and tapered, these adjustments would increase the

costs. Marcy noted that in each design displayed the designers chose the configuration that would be most cost-effective.

A CAC member asked how the throw barrier design would impact sight lines in the curved alignment option. Kevin said the throw barriers would be as transparent as possible, to provide the pedestrian with a strong visual command of their path. The CAC member said they were concerned the curve would cause the sight lines to be shorter. Kevin said that on the inside of the curve, they may start to screen that view and filter it, whereas the view on the outside of the curve would be much more open visually.

Extradosed

The Extradosed bridge type would be approximately 2 – 2.5 feet deep and follow a curved alignment. The bridge would be supported from above, which allows for the thinner bridge deck. As designed, the bridge deck would be 21 feet wide (which allows the cables to attach to either side) and the towers would stand 30 feet above the deck (approximately 10% the height of the span). The support from above would also enable the bridge to be closer to the ground, which would lower the abutment slope and make crossings easier for pedestrians and cyclists. However, the lower deck would also put people closer to the freeway, which may make pedestrians uncomfortable. A translucent glass skirt could be installed between the handrail and bridge deck that would help shield pedestrians from highway debris as well as psychologically moving them away from passing vehicles. The wider bridge deck would also help mitigate this effect.

Kevin explained that the Extradosed bridge would have to follow a curved alignment due to the need for balance and proportionality between span lengths. In terms of user aesthetics, this means pedestrians and cyclists would have a perfectly framed view of Mt. Hood to the east. However, in terms of external aesthetics, it means that the easternmost bridge tower would be behind the tram tower when viewed from I-5 northbound. Mike explained that the bridge tower could be angled in alignment with the tram tower, but that this would increase costs. Mike also noted that the towers could be pre-cast and made into pieces of architecture themselves.

In terms of constructability, bridge segments could be precast at a concrete plant, shipped to the site, and lifted up by crane in 10 foot segments. The segments would be connected together by running a cable through them and stressing the cable with a hydraulic jack. This construction technique would essentially allow the bridge to be built from above. Traffic would only need to be moved when bridge pieces are being lifted over the highway, which can be done during non-peak travel times in less than an hour. This would provide less impact to traffic users and would be a bonus in the permitting process with ODOT.

Overall, the Extradosed bridge keeps within the pedestrian scale and offers a more efficient use of materials than the Concrete and Steel Box-Girder bridge types. The bridge is also the lowest cost option of the three bridge types presented. For all of these reasons, the design team recommended advancing the Extradosed bridge type for further design work.

Plaza Elements:

Tyson gave an overview of current design considerations for the plaza on the east side of the pedestrian bridge:

- The design allows for a passive area of tables and chairs that overlook the plaza and ground level retail and are close enough to the street for safety.
- The architectural language has been left vague so that it can match the bridge type selected.
- The elevator tower could be tilted at an angle or perpendicular to the bridge. Tilting the elevator tower would enhance visibility from both the elevator and the plaza, and would increase safety by allowing passengers to disembark further from the street. There is a desire to have the elevator tower be as transparent and open as possible.
- Plaza users are anticipated to include joggers, who may help elevate the number of plaza users (“eyes”) in the evening hours.
- The design will incorporate stormwater management for the plaza. Approximately 200,000 square feet of stormwater will be collected from the high point of the bridge and will be directed to the east side plaza where it will cascade and meander through bioretention ponds and rain gardens.
- There will be a full sidewalk to fit the current Moody alignment.
- The plaza will help to activate the back of the bridge in order to keep it from becoming a space for vagrants.
- The view up the stairs will go straight to the tram tower. The observation platform on the stairs will be about 15 feet from the bottom of the tram and will create a dynamic space. The cantilever on the Extradosed bridge type would provide some back support for the bridge to rest on.

Cost

Lwin handed out a cost estimates sheet and walked through the numbers and assumptions. He explained that the construction subtotal costs are shown in 2008 dollars.

	Concrete Box-Girder	Steel Box-Girder	Extradosed
Bridge	\$3,000,000	\$3,300,000	\$2,900,000
Elevator/Stairs	\$1,600,000	\$1,600,000	\$1,600,000
Ped Crossing Improvements	\$400,000	\$400,000	\$400,000
Plaza	\$150,000	\$150,000	\$150,000
Temporary Construction Costs*	\$500,000	\$500,000	\$500,000
Lighting	\$100,000	\$100,000	\$100,000
Construction Subtotal	\$5,750,000	\$6,050,000	\$5,650,000
Contingency (15%)	\$870,000	\$910,000	\$850,000

	Concrete Box-Girder	Steel Box-Girder	Extradosed
Escalation (19%)	\$1,100,000	\$1,150,000	\$1,100,000
Construction Total	\$7,720,000	\$8,110,000	\$7,600,000
Construction Budget	\$7,000,000	\$7,000,000	\$7,000,000

Note:

Construction total costs in \$2010. All other costs shown in \$2008.

*Temporary construction costs include traffic detours and mobilization.

Q & A

A CAC member wanted to know if the throw barrier on the Extradosed bridge would be on the inside or the outside of the cables. Kevin said it would be on the outside, and that there would be a rung rail for bicyclists and the potential for seats for people to sit on.

A CAC member asked whether the Extradosed bridge would have the same kind of load bearing capacity and earthquake protection as the box-girder bridge types. Mike replied that yes, the Extradosed bridge type has the same load bearing capacity and earthquake protection as the box-girder bridge types, yet only uses 40 percent of the concrete.

A CAC member wanted to know if the Extradosed bridge type left the future open for a bike ramp to the north like the box-girder bridge types. Kevin said that it did, however, it would require threading the bike ramp through the cables, and may compromise the integrity of the bridge aesthetics.

A CAC member asked why the Extradosed bridge type was considered more visually pleasing than the box-girder bridge types. He felt the Concrete Box-Girder is more visually pleasing due its complementary nature with the tram tower. Kevin explained that aesthetics are inherently subjective, but that the design team measured view impacts and obstructions, for bridge type compatibility with the surrounding environment. He also noted that there is something to be said about expressing the project criteria in a more efficient bridge structure that is appreciated and celebrated in its own right. He discussed how strict compliance with the project criteria can favor a more “vanilla” bridge. Tyson noted that the box-girder bridge types are a very literal expression of the tram tower, whereas the Extradosed bridge type attempts to speak the same archetypal language of the tram tower, without attempting to be a literal expression of something it is not.

A CAC member asked if the east-end Extradosed bridge tower could mimic the angle of the tram tower. Kevin responded affirmatively, with the caveat that, since the towers must be canted out, there will never be a perfect parallel relationship between the two. He noted that the challenge would be to make both towers harmonious, and that foliage in the summer may help. Rick noted that the vertical bridge tower and angled tram tower may not be unharmonious at all since the other nearby structures are vertical and would be complementary to the bridge tower.

A CAC member asked if the wider deck on the Extradosed bridge type meant the bridge user would have a wider path. Mike responded negatively, explaining that the user path

width would be the same for all bridge types, but the Extradosed bridge deck needed to be wider to accommodate the cables.

A CAC member asked if the lower bridge elevation for the Extradosed bridge would mean the throw barrier would always be covered in road spray and look nasty. Jody replied by mentioning that there would still be plenty of clearance (about 10-20 feet); the Extradosed bridge type is simply lower than the other two bridge alternatives.

A CAC member asked if fewer cables and a larger tower could be used for the Extradosed bridge type. Mike replied affirmatively, but noted that this would cause the deck thickness to increase. The current design includes seven 3.5 inch diameter cables on each side of the bridge.

A CAC member asked about whether the construction community has enough experience with the less common Extradosed bridge design, and if this potential inexperience was expressed in the contingency cost estimates. Lwin explained that this was captured in the 2.9 million bridge cost estimate. Mike added that there is a cable-stayed pedestrian bridge being built in Eugene right now, and that many of the cost estimates for the Extradosed bridge were pro-rated and rounded up based on Eugene's experience. Jody noted that Otak has been using a similar construction technique with three of their recent bridges, and that this bridge type may not be as unfamiliar to contractors as previously thought.

A CAC member expressed that he would feel more comfortable with the an extra 10 percent added to the cost estimates due to the experience the public had with the escalated cost of the aerial tram. Lwin explained that he used a 15 percent contingency estimate, which is adequate to cover the known unknowns. Lwin also explained that the escalation cost estimate includes a 15 percent increase in the cost of materials and labor as well as a 4 percent increase for market adjustment factors that reflect the appropriate level of uncertainty about this bridge type.

A CAC member asked if impacts from pier placements and temporary supports had been considered. Kevin responded affirmatively, saying that piers and temporary supports would not be located in the traffic right of way.

A CAC member asked how they could vote on a bridge type, when none of the bridge types presented meet the construction budget. Jody explained that increasing the project budget is not an option, which means they must consider reducing the scope of the project. Jody said she is also having an independent cost estimate done on the side. Lwin added that once a bridge type is selected, they will assess where the bridge design can be modified to reduce costs. He explained that one strategy might be to take some items out of the main project bid and include them as add-ons. He said if the project bids are reasonable then the add-on elements can be kept.

A CAC member asked if the Extradosed bridge type would have a shorter elevator tower due to the lower deck elevation. Tyson said that all plaza design cost estimates were based on a 2 percent slope and that they have not yet included the lower tower in the Extradosed cost estimate.

CAC Recommendation

Marcy asked all CAC members to give an indication of which bridge type they currently prefer. The Extradosed bridge type received nine votes; the Concrete Box-Girder received two votes; and two CAC members were undecided. The undecided members felt that more information was needed before a vote could be cast. The desired information includes: the types of modifications needed to meet budget requirements, the costs of maintaining each bridge type, and the specific location of each bridge type and signs. The CAC members who did cast a vote expressed the following thoughts on the benefits and concerns of each bridge type:

	Concrete Box-Girder (2 votes)	Steel Box-Girder (0 votes)	Extradosed (9 votes)
Benefits	<ul style="list-style-type: none"> -Consistent with Tram Tower -Doesn't require curve 	<ul style="list-style-type: none"> -Thinner deck width 	<ul style="list-style-type: none"> - Lower elevation on east & west side - Small abutment in neighborhood - Pedestrian scale - More affordable (with some reservations) - Visual interest for users - Aesthetically pleasing - Uniqueness of design
Concerns to be Addressed			<ul style="list-style-type: none"> - Closeness to traffic - Interrelationship with east side pier & tram tower - Where cables go into deck (safety) - View from neighborhood on west looking east (the view is less prominent than thought though due to slope) - Vibration issues (will there be more with Extradosed?) - How lighting will be integrated - Cost issues - Future bike path going through the cables

CAC members requested that staff prepare a summary of their recommendation and concerns and send it out to the Committee for review.

Upcoming Meetings

- **Design Commission Briefing - Oct 2.** Jim Gardner, David Snyder, and Bill Danneman said they were willing to come testify and relay the CAC recommendation to the Design Commission at the upcoming October 2nd meeting.
- **Open house: 5 - 8pm, October 7 at DEA.** Marcy noted that a lot has changed since the last public open house and urged CAC members to encourage their neighbors to come. She said Trimet and the TMA would be there to discuss the transportation strategy. A CAC member asked if open house participants could express their opinions on the bridge types and perhaps on the importance of various elements that might become "add ons". Marcy said this would be considered.
- **City Council briefing.** Bill Danneman and Tom Noguchi said they were willing to serve as CAC representatives at the next City Council meeting.
- **Next meeting: December or January (60% design)**

The meeting was adjourned at 12 noon.