

## **Willamette River Bridge Advisory Committee Meeting**

May 28, 2009

Meeting Notes

### **WRBAC Members Present:**

David Knowles (Facilitator)

Bob Durgan, Andersen Construction

Thomas Hacker, Thomas Hacker Architects Inc.

Art Johnson, KPFF Consulting Engineers

Sue Keil, Portland Bureau of Transportation

Pat LaCrosse, Oregon Museum of Science and Industry

Neil McFarlane, TriMet

Guenevere Millius, SRM Architecture and Marketing, Inc.

Brian Newman for Mark Williams, OHSU

Michelle Poyourow, Bicycle Transportation Alliance

David Soderstrom, Portland Opera Board

Chuck Steinwandel, Ross Island Sand and Gravel

David Edwards, PMLR CAC for Rick Williams, BPM Development

Mike Zilis, Walker & Macy

### **WRBAC Members absent:**

Mayor Vera Katz (Chair)

### **Steering Committee Members:**

Robert Liberty, Metro Counselor

---

**David Knowles** began the meeting by announcing that Mayor Katz would not be in attendance and that he will lead the meeting today.

At the last WRBAC meeting in February, the committee concluded that they wanted refinements made on two cable-stayed bridge design options; one hybrid and one cable-stayed. Additional engineering, cost estimates, and design refinements were made on the bridge designs. (See handout of *Hybrid-Refined* and *Cable Stayed-Refined* bridge designs – available at [www.trimet.org/pm](http://www.trimet.org/pm)) David stated that the goal for this meeting is to make a recommendation on a bridge type. The WRBAC's recommendation will go to the PMLR Steering Committee. On June 22, 2009 the Steering Committee will make its decision on the bridge type.

**Neil McFarlane** commented on the project's progress since February. On March 30 the FTA approved preliminary engineering (PE) for the project. From March 30 forward, all funds are eligible for match from the government. The project received a medium-high rating from the FTA, which is very good. (No new rail projects in the U.S. have received such a high rating.) The project will continue to work towards getting 60% matching funds from the government. The overall budget for the whole project is still tight and we have a lot of complex problems to solve.

**David Knowles** announced that Donald MacDonald of MacDonald Architects had been selected as the bridge architect for the next phase of the project.

**Neil McFarlane** explained the process of choosing a bridge architect. TriMet released a request for proposals (RFP). A selection committee was appointed and the proposals were reviewed by them. Miguel Rosales and his firm are not continuing in the same role as they did for first eight months of the project. Neil and TriMet are grateful to Miguel and his firm for their great work. The selection committee was charged with finding somebody who had experience with signature bridges, working in a design-build environment, some expertise in cable-stayed design, hybrids and suspension cables and experience with pedestrian/bike related facilities. In choosing Donald MacDonald, the committee chose a very qualified firm and individual.

**David Knowles** asked Mike Zilis and Sue Keil, who were members of the selection committee, to talk about how they reached the decision to hire Donald MacDonald.

**Mike Zilis:** The committee received very good submittals for this project. A short list of four firms was made after all the submittals were reviewed by the committee. Interviews were held with four firms. MacDonald had a high level of experience on design-build projects.

**Sue Keil:** I would like to add that the selection was a very thorough process. MacDonald's firm stood out with their depth of experience in the kind of bridges that we are talking about building. We wanted to preserve the creative tension between our engineers and architect. We also wanted a clear understanding of the role of the owner of the project. It was a unanimous decision for MacDonald Architects.

---

**Donald MacDonald**, MacDonald Architects, presented his work to the committee.

**Donald MacDonald:** I have an extensive background with long-span cable bridges and am one of the few architects in U.S. that has this particular experience. My professional life began with work on the Golden Gate Bridge in San Francisco. I won a competition to create toll plazas for the bridge and have worked on the bridge intermittently ever since. Most recently my firm worked on a rail for the bike and pedestrian path on the bridge.

Donald presented a slide show of his bridge work for the committee (presentation available at [www.trimet.org/pm](http://www.trimet.org/pm)). A few examples of MacDonald's work that are relevant to this project include:

San Francisco – Oakland Bay Bridge East Span: An example of a self-anchoring suspension bridge. Designed tower and cable for impact of earthquake. Worked with bike coalitions of the Bay Area to create a successful bike path.

I-80 Bicycle/Pedestrian Overpass (Berkeley, CA): An example of a pedestrian-bike bridge.

Cooper River Bridge (Charleston, South Carolina): An example of a design-build bridge. Special environmentally friendly lighting was designed for migrating turtles living in the river.

Sixth Street Viaduct Bridge (Los Angeles, CA): Design challenge similar to Portland because this area has a number of bridges close together that were built in the 1920s. The new bridge design reflects the Beaux Arts style of the other bridges.

---

**Rob Barnard** presented the Bridge type selection options.

Rob noted that the WRBAC gave two assignments to the project team at the last meeting in February. 1) Validate the viability of the hybrid bridge and 2) and to blend the best elements of the former cable stayed designs into one bridge design.

Rob discussed the positive attributes of the hybrid bridge including shorter tower height, relationship to adjacent bridges and transparency. The team worked to improve the viability of the hybrid by adjusting size of catenary suspension cable to make it less expensive, optimized span to move pier away from active river bank, and reduced length and weight of center span to eliminate costly gravity-anchorage and use a deck-anchorage system.

Rob discussed the cable-stayed bridge type. The best features of the two-pier and four-pier cable stayed bridge designs were combined and refined. This created a shorter bridge span; piers in deeper water; cables between ped/bike path and transit way, which add safety and transparency; and lower tower height.

Rob continued that the v-shape of the cable stayed tower design is just a concept at this time. The v-shape of the towers does have a utilitarian function as it keeps the cables away from the overhead catenary system.

Both bridge designs have same vertical clearance for navigation. One area where there is a slight difference is environmental impact. The piers in deeper water on the refined cable-stayed are farther away from hazardous material and the Portland Spirit. With regard to risk, HNTB worked hard to minimize risk of the hybrid. Because it is a new (blended-type) design, it is a bit riskier than cable-stayed.

#### Questions/Comments:

A short discussion took place about the placement of the piers on the land, the vertical clearance at the greenway trails (13 ft on the west and 10 ft on the east), the width of the new bridge designs (68 ft) and the catenary cable diameter (12"). The committee asked a number of questions regarding the v-shaped tower design and other design elements of the hybrid and cable-stayed design for clarification.

**Semyon Treyger** explained the cable technology of the catenary and cable-stayed systems for each bridge type.

**David Knowles** reiterated that the renderings of the bridge being presented today are not final drawings of the bridge tower design, just an example of one design option.

---

**Rob Barnard** presented the cost estimates for the new refined cable-stayed and hybrid design. (handout available at [www.trimet.org/pm](http://www.trimet.org/pm))

Rob presented an “apples to apples” budget comparison for the initial 4-pier cable-stayed, the refined 4-pier cable-stayed, and the refined hybrid.

Rob noted that the possible escalation of steel pricing is not included in the budget.

Our charge was to establish the hybrid as a competitor in the budget race. To achieve this we needed to further refine the hybrid design.

The grand totals (YOE August 2013) are:

Initial Cable-Stayed (4-pier): .....	\$101,920,000
Refined Cable-Stayed (4-pier): .....	\$110,120,000
Refined Hybrid: .....	\$138,955,000

Comments and Questions:

**Rob Barnard** answers a number of questions with regard to the budget estimates. He noted that the budget estimates reflect what a firm actually bidding on this project would include.

**Neil McFarlane** comments that preliminary engineering is for solving budget issues/problems. The price comparison reflects the cost of the bridge type.

**Robert Liberty** expresses his concern about the additional costs of the project and also wants to know when we will know what the federal match number is (50% or 60%).

**Neil McFarlane** states we should know the match percentage by later this year or early in 2010.

**Thomas Hacker** said he would like to talk about the bridge design. He likes the smaller scale of the towers on the cable-stayed bridge.

**David Knowles** stated that a recommendation can be made two ways: reach consensus recommendation with a set of instructions to pursue, or a majority recommendation with a minority report.

David Knowles asked the committee to go around the table and indicate which bridge design is preferable to each committee member.

Roundtable:

**Brian Newman** (for Mark Williams): I do not have strong feelings about one bridge design. I would like to see some time spent on the v-shape design of the towers on cable stayed bridge.

**Mike Zilis:** I prefer the hybrid design. It is very elegant. The budget is pointing towards the cable-stayed refined. Challenge will be to make the columns elegant on the cable-stayed. Both bridges have an extreme challenge when it comes to the greenway.

**Sue Keil:** I like the v-shape on the cable-stayed. Difference in design does not make up for money difference in cost. I would choose the cable-stayed with emphasis on the design of the towers.

**Thomas Hacker:** I like spatial action of the v-shape of the cable stayed towers. I also like the smaller foot print in the river on the cable-stayed bridge. It touches the river more delicately. Attracted to the catenary cable of the refined hybrid, but the cable in this refined bridge is not as significant as it is in the original and this concerns him.

**Bob Durgan:** Can't see a lot of difference between the two bridges, but prefers the cable-stayed. I like the v-shape of the towers.

**Robert Liberty:** All the bridge designs we've looked at as a committee are better than what exists on the river now. Both are handsome bridges. Upright towers are more appealing, but I will make a decision based on the whole project's objectives of getting to Park, so the cable-stayed is my choice.

**Michelle Poyourow:** I prefer the catenary cable on the hybrid bridge, but lower cost is important. I'm not fond of the v-shape of the towers on cable-

stayed, but would vote for the cable-stayed option because of the lower cost.

**David Soderstrom:** There are a number of issues that are important when considering design: lower scale of towers, deck depth/width, narrow profile of the bridge design, stopping places at center of bridge, height above the river, width of center span, lighting and other details. Catenary cable is important and it is losing significance in the new design. The small curve the catenary cable creates is an important detail. We need to keep piers out of the water, if we can. Towers are going to be critical to design.

**Neil McFarlane:** It's very hard to spend a full budget at this stage of design. Details make a great bridge design. It would be great to have budget for these details at the end. If we spend a lot of money now, we won't have money to do any of these details at the end of this project. The cable-stayed design will provide us with room in the budget for great details.

**Pat LaCrosse:** OMSI has over a million visitors per year that will see the bridge. OMSI's concerns are landside issues. We can live with either bridge design. There is a significant cost difference, which would factor into the choice of bridge design.

**Art Johnson:** I do not see much difference in the two bridge designs. Either one.

**Chuck Steinwandel:** I prefer the cable-stayed design because I have a hard time buying into the elegance of the catenary cable. The catenary cable looks like an afterthought. I like the purity and simplicity of cable-stayed design. I vote for the cable-stayed for aesthetics and low cost.

**David Edwards** (for Rick Williams): CAC did not say they preferred one bridge design over the other. Our goal is to get to Park Avenue. The cost savings of the cable-stayed design is important enough for our support.

**Gwen Millius:** Glad to see that tower height is down. The v-shape of the cable stayed bridge is very much like the design of the Gibbs pedestrian bridge. I think the Willamette bridge should be a leader and not a follower of the pedestrian bridge. Prefers the refined hybrid bridge design.

**David Knowles:** My summary is that there consensus for cable-stayed bridge design with notable exceptions. I heard the committee say that the differences between the bridge designs do not warrant spending the extra money. One way to go as a committee is to recommend a refined cable-stayed with a list of issues you identified that are of concern. Some issues I heard were the greenway, the detailing and shape towers, bike/ped path and facilities, railing details, and attachments. You can recommend that the cable-stayed bridge be advanced in the design process with instructions to look at these issues. In addition, it seems that there is enough concern about these details that another meeting is warranted before the fall. We could meet in a few months after some more design work has been done. The other option is that if there is strong support for the hybrid among committee members a majority/minority recommendation can be made.

David proposed that he put together a statement from the committee that endorses the cable-stayed bridge with a number of instructions for design refinement. In addition, the committee would get together again to talk about these details. The statement will reflect the majority and minority opinions of the committee.

Committee agrees to David Knowles' proposal.

David comments that there are two more items on the agenda regarding bridge height and the bike/ped path.

David reports on the bike/ped path. He continues that there is 14ft width on both sides of bridge. The City and BTA find this design acceptable.

**Michelle Poyourow:** The BTA finds the 14 ft path width acceptable. Our understanding is that the design details and path programming are to come. Separation is key for pedestrians and cyclists. I am really happy that TriMet looked into this issue further and pushed the envelope.

**Sue Keil:** The extra path width provides more safety, so the extra money is worth it.

**David Knowles** reports on bridge height: Vertical clearance for both of the options presented today are the same. 77.36 ft. is the current draft working assumption as research continues on the issue. David asks Dan Yates,

Portland Spirit, to speak about his concerns with regard to the bridge height. David reminds the committee that bridge height is an ongoing discussion.

**Dan Yates**, Portland Spirit: TriMet has received a letter from the Lower Columbia Region Harbor Safety Committee saying that 77.36 ft. is an inadequate height. The Oregon Maritime Museum would like 85 ft. clearance (no letter has been received from this organization). Portland Spirit has also asked for 85 ft. The Oregon State climate change study states that there will be a 50" change in river level. TriMet is required to address this study. There are also requirements for larger vessels in the future. This would mean a 200 ft long replacement vessel for the Portland Spirit. TriMet is also required to address future operations. Please raise this bridge.

**David Knowles**: Comments that the height issue will be at the top of the agenda for the next meeting.

Public Comment:

**Brian Libby**: Makes a plea to the committee to make a bridge that is tailored to Portland. The v-shape tower is being built around the world. I think it is important to look at the details of the bridge. Libby wants the committee to think about building a great bridge.

**Kathryn Notsen**: Wants to be sure that the committee has thought about the earthquake standard. She has a report that she will forward to the project team for their reference.

**David Knowles** thanked the committee for their participation today and closed the meeting.

Next WRBAC meeting is August 11, 2009 from 3-5 p.m. in the Willamette Room at David Evans & Associates.