

Willamette River Bridge Advisory Committee Meeting

February 5, 2009

Meeting Notes

WRBAC Members Present:

Vera Katz (Chair)
David Knowles (Facilitator)
Bob Durgan, Andersen Construction
Thomas Hacker, Thomas Hacker Architects Inc.
Sue Keil, Portland Department of Transportation
Pat LaCrosse, Oregon Museum of Science and Industry
Guenevere Millius, SRM Architecture and Marketing, Inc.
Karl Rohde, Bicycle Transportation Alliance
David Soderstrom, Portland Opera Board
Chuck Steinwandel, Ross Island Sand and Gravel
Mark Williams, Oregon Health & Science University

WRBAC Members absent:

Art Johnson, KPFF Consulting Engineers
Rick Williams, BPM Development
Mike Zilis, Walker Macy

Alternates:

Bridget Wieghart, Metro

TriMet:

Neil McFarlane

Mayor Katz welcomes the committee and begins the meeting.

David Knowles provides a reminder of where we have been and where we are going. David comments that at the beginning of process we were charged with selecting a bridge type that was functional and affordable; the right bridge for the site and city. The process brought 15 bridges down to two. David reminds the committee that a major part of the decision was horizontal navigational clearance. At the last meeting, two bridge types (Wave Frame and Cable-Stayed) were determined. TriMet talked about cost and design of both bridges. At the conclusion of the last meeting, the committee asked for more information about cost and for a presentation on a Cable-Stayed concept that embodies the best of the two and four-pier options. Today you will get a presentation on these two requests.

David continues to say that at this point in the process, the committee's charge is to make a recommendation to the PMLR Steering Committee for a bridge type. They are the decision making body on this process. The WRBAC's recommendation will be tentatively presented on March 5, 2009. The final recommendation from the steering committee will come in April 2009.

Mayor Katz: The purpose of today's meeting is to make a recommendation to the steering committee for a bridge type, Cable-Stayed or Wave Frame. Each committee member will be asked to share their decision today and we may ask you to qualify that decision.

Sean Batty makes presentation on the Cable-Stayed bridge design principles. (Slides 1-21)

Sean discusses the aesthetic opportunities of the Cable-Stayed bridge type. He states that he heard concerns from the committee regarding the Cable-Stayed bridge about context, scale, and the pedestrian experience.

Sean: The three principals and commitments we've made to address these concerns on this project are customization, detail (integrated design), and transparency and intimacy.

The bridge should respond to all contexts, i.e. fit into the site and reflect the community's vision of what the bridge should be. It won't be a bridge that could have been built anywhere. The design should create an intimate experience on the bridge that relates to the physical body whether one is crossing the bridge on foot, bike, car or train.

Sean reiterates that the examples he is showing of the Cable-Stayed bridge type are not meant to be proposals per se, but are a response to the committee's request to merge the best qualities of the two and four-pier bridge types. These pictures will show you a range of options.

Sean works through the slides and makes comments. He mentions that there is some opportunity to reduce the tower height. Using new technologies to reduce the span of the bridge may allow height reduction of 40-50 feet. The new design of the towers is simplified. Two independent tower members allow reduction of the tower mass. We worked to reduce the mass of the towers and create interest at human scale. We also worked to simplify the arrangement around the tower and deck connection, which may allow us to move the bike/pedestrian path around the towers.

Sean then discusses the next steps and preliminary engineering.

- Pier/Span arrangement final: affect on height and shallow water footprint of pier.
- Section final: path width and configuration and overlooks.
- Tower configuration final: refine concepts and generate other concepts

- Connection detailing.
- Furnishings and finishes.
- Implement design guidelines: customizations that respond to contexts, integrated design that address all scales, and transparency and intimacy to enliven the pedestrian experience.

Sean ends by talking about the scale of the bridge and does a height comparison with buildings that already exist in the area as well as the Steel Bridge.

Comments from the Committee:

Gwen Millius: How tall are the piers in the new design?

Sean Batty: Hybrid piers are 180' tall, which is about 74' less than the four-pier Cable Stayed (CS4).

Thomas Hacker: The key difference is that catenary system doesn't resolve itself into the bridge the same way.

David Soderstrom: Can Miguel talk about the bridge design?

Miguel Rosales: To me it was a big challenge to find a bridge to fit in that site. I preferred the Wave Frame design in the beginning. I felt it was important to make a site-specific bridge. In the new Cable-Stayed bridge, the design is simplified, classic and elegant. The cantenary reflects the Ross Island Bridge. The Markham Bridge is also reflected in the new design. For this new Cable-Stayed design we married the Wave Frame and Cable-Stayed bridge type.

David Soderstrom expressed his concern for the increased size of the cable and said that there would be a lot of issues to resolve in this new design. He also commented that the new Cable-Stayed design was more pedestrian friendly.

Sue Keil: Does bridge engineer think this newly designed Cable-Stayed bridge is constructible?

Semyon Treygor: Yes. There are six or seven other self-anchor bridges like this one. It may have some difficulties. One issue is what do you do at end on suspension cable. Most of these bridges have massive anchors underground. The Golden Gate Bridge is an example of a suspension bridge with enormous anchors. We'll have to do additional research on the anchoring system to understand what will work.

Rob Barnard presents a report on cost differences between bridge types: (Slides 23-44)

Rob begins by listing the recent work done by the team:

- Met with Oregon Iron Works
- Met with Hepp Steel Resources

- Met with Oregon Steel Mills
- Reviewed costs with other outside sources
- Assessed that about 60% of the cost of the Wave Frame related to steel
- Assessed that about 25% of the cost of the Cable-Stayed related to steel
- Team worked to verify estimates
- Team worked to verify material availability
- Reviewed historical steel price trends
- Reviewed schedule implications of steel fabrication

Rob continues by saying the team also verified estimates and material availability. Estimates reconciled quantities and unit prices. Steel prices used reflect current market prices. Rob notes that steel installed prices include: price quote from the mill, freight costs, fabrication, and contractor installation cost.

Availability of steel was also verified. Four-inch high-performance steel (HPS) is available from only one source (Mittal Steel). Thinner (HPS) available from SSAB Products, but it was determined that it is not a viable option.

Construction duration analysis concluded that it could take an additional 12 months for steel fabrication.

Rob then walked through the cost estimate (slides 31-43) and concluded with the cost estimates for the three bridge types. They are:

Wave Frame: \$176 Million
 Cable-Stayed Four-Pier: \$102 Million
 Cable-Stayed Two-Pier: \$113 Million

Committee Discussion:

Karl Rohde: Is it too early to know prices on the new design we saw today?

Rob Barnard: We presented a general estimate today. The new Cable-Stayed bridge is a little more expensive than the former Cable-Stayed bridge designs.

Bob Durgan: Since the river is hot with PCBs is any one of the Cable-Stayed designs better for the river than the other?

Rob Barnard: When piers are placed at high end of bank the cost is more for clean up. For the purposes of cost estimates, we assumed that all foundations were identical.

Sue Keil: Was the engineering difficulty taken into account for the new Cable-Stayed design?

Rob Barnard: We looked at a Cable-Stayed bridge like this one that was already built and based the pricing on that.

Mayor Katz asked each committee member to make a recommendation for the bridge design.

Neil McFarlane commented that TriMet has often hired the best architects we can find to push us in the right direction, which makes our engineers sweat bullets. Miguel did exactly what we wanted by pushing us. My recommendation to the committee is that we pursue advancing the Cable-Stayed designs. The main reasons for this recommendation is that federal funding is risk averse. The burden to sell a risky bridge is great and we face a lot of competition. Some reasons that we cannot pursue the Wave Frame design are the cost, we have aspirations to make improvements all along the alignment, and we need to get this project to Park Avenue as well. Wave Frame is a great design, but we should advance the Cable-Stayed design to PE. TriMet would be unwilling now to pursue the Wave Frame bridge.

Karl Rohde: What were some other reactions to the Wave Frame design?

Rob Barnard: There is a letter in your packet of materials from the PMLR CAC. They voted unanimously that the Wave Frame should be eliminated.

Gwen Millius: The group who attended the “Bright Lights” lecture that Miguel gave favored the Wave Frame design.

Mayor Katz: How are we going to approach the public response to our bridge choice?

Ann Becklund: We have three open houses scheduled. We will be talking to our stakeholders and publishing information on our website that includes information about the process written in layman’s language. If you know of any stakeholders that would like to be added to our list, please let me know.

Thomas Hacker: I am encouraged by the great design of the new Cable-Stayed bridge. I spoke to Mike Zilis and he supported the Cable-Stayed design as well.

Gwen Millius agreed that the Cable-Stayed design is the choice considering the budget. Gwen also said she was excited about the potential of the new design.

Sue Keil: As you know I am less concerned about the design than the budget. We need to get train to Clackamas County and cost is important. Sue commented that all the variations on the Cable-Stayed look equally good to her.

Patrick LaCrosse spoke to the president of OMSI. The President said that she could live with any of these designs. The issue for OMSI is cost. We still have concern about the elevation and landing of the bridge.

Mark Williams has nothing to add and is in agreement with Neil McFarlane.

Chuck Steinwandel states that the Cable-Stayed design has better horizontal clearance, which is better for him. Also it's got more concrete. He really loved the Wave Frame, but agrees with the other committee members that we should go with the Cable-Stayed. One concern he has is that the committee is signing off on design aspects that they have not seen and he would like to stay connected to the design process to remain up-to-date on the project.

David Soderstrom: TriMet has reputation for bringing projects in on budget. We need to remain responsible about the cost of the bridge. Because there is not enough room for another bridge in this river, scale will be critical.

Bridget Wieghart: We met with council and they were concerned with getting this project to Park Avenue. Council was concerned with higher cost of the Wave Frame for this reason.

Public Comment:

Dan Yates (Portland Spirit): Will making the bridge taller increase the cost of the bridge?

Rob Barnard: The bulk of the cost of the bridge is landside. For example: longer approaches, ramps, stairs, etc.

Mayor Katz: I would like to ask on behalf of the committee for Neil to call us back when you feel it's time to go through the details of the bridge design that we are interested in. Perhaps twice before you make the final design decision.

Neil McFarlane: I look forward to doing that.

Mayor Katz: Thanks committee and ends the meeting.