Portland-Milwaukie Light Rail Project
Willamette River Bridge Advisory Committee Meeting
Tuesday, Nov. 10, 2009
David Evans & Associates, 2100 River Parkway, Willamette Room

Meeting Notes

WRBAC Members Present:
Mayor Vera Katz (Chair)
Len Bergstein for Rick Saito, Insite
William Dann, Thomas Hacker Architects
Art Johnson, KPFF Consulting Engineers
Sue Keil, Portland Bureau of Transportation
David Knowles (Facilitator), CH2M Hill
Pat LaCrosse, Oregon Museum of Science and Industry
Neil McFarlane, TriMet
Guenevere Millius, SRM Architecture and Marketing, Inc.
Michelle Poyyourow, Bicycle Transportation Alliance
Ross Roberts, Metro
David Soderstrom, Portland Opera Board
Chuck Steinwandel, Ross Island Sand and Gravel
Rick Williams, BPM Development
Mike Zilis, Walker & Macy

WRBAC Members Absent:
Thomas Hacker, Thomas Hacker Architects Inc.

Mayor Katz welcomed attendees, asked all committee members and attendees to introduce themselves, and convened the meeting. The mayor made introductory remarks, emphasizing that the committee is now at the level of dealing with seemingly small things that will make a big difference. Much good work has been done. And because this is Portland, and she is the chair, design is very, very important. When all is said and done, she said, the committee and the community will be very proud of the bridge.

Project Status presented by David Knowles (WRBAC Facilitator)

David began his remarks with background on the committee's work to date. He reminded the committee that, previously, they'd indicated their preference for a tower design and a bicycle/pedestrian pathway tightly connected to the towers.
Those preferences will be visible in the conceptual renderings the architects will show today, he said. He reminded the group that, since their latest meeting, the bridge working group had met four times, and art concepts had begun to be integrated into the design. Today, he said, the group will hear presentations and discuss details on bridge and landside elements such as railings, bike/pedestrian paths, aesthetic lighting and abutments. Today’s goal, he said, is to provide to the architects, artists and staff advice about those details, and some indication as to whether they are matching the committee’s expectations. Finally, at the end of the meeting, he said he would review next steps for the group.

Bridge District Artist Team Introduction presented by David Knowles

David introduced the bridge art consultants, Anna Valentina-Murch and Douglas Hollis, and provided some background on the selection process that led to their being chosen. The two San Francisco artists, who are working closely with the bridge architect, Donald MacDonald, also of San Francisco, were selected in a public process by the PMLR art advisory group, he said. Both artists have prior experience with Portland projects, most recently the Gibbs St. Pedestrian Bridge and Caruthers Park in the South Waterfront.

The art consultants showed slides of their work portfolio. Doug Hollis said that, in a nutshell, he’s interested in working with natural phenomena and making places that amplify those phenomena that people can interact with. The consultants discussed their concepts for employing aesthetic lighting, sustainable energy and stormwater drainage. The lighting concept is dynamic, linking the movement of the water in the river to the play of light on the bridge cables; analogous, Anna said, to a living organism, or the idea that the bridge “becomes an instrument that plays the river.” The consultants discussed how artistic thinking can be integrated into the design of elements such as the pier cap, the bike-pedestrian lane (via a “sonic bike lane” that makes musical notes using the friction of bicycle tires wheeling over variably spaced micro-ridges in the pathway), the landside bridge abutments (using light, sound and water) and gabions on the east bank slope (creating a valley effect to bring in more light under the bridge).

The consultants finished their presentation, and some discussion ensued. David Knowles commented that this work is a great opportunity for integrating art into the design of the bridge.

QUESTIONS:

Vera Katz asked the artists if the work shown were the concepts the artists were working on currently, and the artists concurred.
**Mike Zilis** asked whether the artwork would be carried through and beyond the 30 percent design, and **Bob Hastings**, TriMet Agency Architect, answered that it would.

**Gwen Millius** raised the question of whether the art-consultants’ work is being integrated with environmental and regulatory considerations, such as those that would be required by the National Marine Fisheries Service. **Neil McFarlane** addressed the issue by saying the artists’ work would be subject to all environmental requirements. **Rob Barnard**, TriMet, added that the work of the artists is being coordinated with technical considerations to create a common vision.

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**Bridge Design Update and Committee Discussion led by Bob Hastings, TriMet Agency Architect**

Bob directed the committee’s attention to the handout accompanying the meeting agenda. He introduced his presentation by asking the group to consider the presentation as a story in four acts with a prologue and epilogue.

- The prologue of the story, he said, is the WRBAC’s mandate, given to staff this past summer, to achieve a simple, elegant, graceful bridge design. He noted how the bridge actively participates in an overarching district identity. We’re working to gather all the aspirations in the district and help forge a commonly held vision, he said.

This vision will be realized, Bob said, by integrating transportation modes, on and off the bridge; by looking to the river as a source of inspiration in the engineering, architecture and art; and specifically through the art program, by “making the intangible things tangible.” The intent is both to have a bridge that fits within the district, the environment and the city of Portland, and to use the bridge to coordinate all the other activities being developed on the east and west sides.

- Artist concepts. Bob next introduced Donald MacDonald, consulting bridge architect. Donald provided an overview of what has led to the current bridge design, i.e., the “Act I” of the story. As background, Donald reminded the group that, in its most recent meeting, the group selected the chevron tower shape and worked on the pathway, trackway, abutments and piers. Donald showed illustrations of various bridge sections and explained how the architects use the chevron form in the tower leg as the “vocabulary” to influence other design elements such as deck shapes. He showed a number of other views of the bridge and site plan and discussed the thinking behind design decisions. Elements discussed included the bicycle-pedestrian lane, the belvedere at the tower, the tower itself (pointing out its slender look), and draft notions for integrating the beneath-bridge conduits.
• Landside Elements. “Act 2” in the presentation focused on landside elements to create a sense of place using bridge, art and district goals. Donald showed and discussed concepts for east and west landside elements such as the bridge abutments, pedestrian/bicycle traffic circulation patterns, and integration with the master plans for OHSU, Zidell, OMSI and the Opera building. Again referencing the seminal nature of the chevron tower design, he pointed out how the piers below the abutments pick up that motif. We're developing a vocabulary for the bridge that is truly unique for Portland, Donald said.

• Bridge Elements. “Act 3” in the presentation turned to design details on the bridge. Donald pointed out progress made on details such as the handrails and pathway delineation for bicyclists and pedestrians. He noted the angled, not flat, shapes of the tower tops, subtly mirroring the shapes of trees and mountains. Donald spent some time comparing two general design approaches for the railings, one vertical and one horizontal, and he made a case for his preference for the horizontal (they are more transparent, modern, and represent speed and movement). He ended this portion of the presentation by expanding on the concept of a “sonic bike lane”. Donald explained that the scored lanes would occur for a length of about 150 feet at each end of the bridge, not along its entire span. The micro-ridges that create a sound frequency are tiny — approximately ¼ inch in height by 1/8 inch in width. Donald called the application of the idea “subtle” and said it’s “truly interesting to have in Portland.”

• Lighting Elements. For “Act 4” in the presentation, Donald said there were two broad aesthetic-lighting approaches, one static and one dynamic. His presentation dealt with the static, functional, or safety lighting, while Doug Hollis would later talk about the dynamic, aesthetic lighting.

Functional Lighting. Donald noted that the bridge in many ways will be the center of the city on the river. That’s why the viewing platforms will be so important. The way the bridge works with the city is going to be incredibly delightful, he said. In an architectural sense, the bridge conveys the feeling the city is moving into the 21st Century. All this makes the lighting of the bridge important as well.

Donald turned to technical details of the functional lighting to serve the safety needs yet respect the surroundings. He talked about the form and technology of the lights on the catenary poles. He talked about what is illuminated, how and to what degree. The lighting enhances safety and allows people walking on the bridge to see each other, the technical term being “facial recognition.”

Aesthetic Lighting. Doug and Anna discussed their concepts for dynamic, aesthetic lighting in greater detail, and showed a video animation to illustrate their ideas. The whole idea of the lighting concept, Anna said, is of the bridge breathing in response to the river, gradually changing, back and forth, its speed keyed to the river flow. In addition to the speed of change of the play of the light
on the cables, the colors of light could change as well. She described it as a kind of ripple effect back and forth, like two lungs expanding and contracting.

For lighting the passages at the bridge abutments, the artists also discussed their concept for lighting the parabolic “sound dishes,” to create a mix of light intensities, from brightest on the pathway, to overall ambient lighting elsewhere in the abutment space.

- The “epilogue” to the presentation returned to Bob Hastings. He talked about what staff and consultants have been doing and where they’re going. He noted that some of the work is still being refined and coordinated with stakeholders, such as station design, landside elements, the bridge pathway (e.g., width, bike-pedestrian delineation), utilities and infrastructure requirements, crash barrier, and art ideas for such areas as lighting and the pile caps.

QUESTIONS:

Q. Patrick LaCrosse: While removing a beam at the abutment allows more light and is more attractive, how safe is that?
A. Semyon Treygor, bridge engineer: We can’t say for sure until analysis is done. We can’t guarantee that it would work at this point. I would say it’s a 50-50 chance of its being able to be accomplished.

Q. Vera Katz: The issue is to deal with the aesthetics and the beam. Since we’re not here, you have to push that.
A. Donald MacDonald: Absolutely, I am pushing that.

Q. Mike Zilis: Mike asked about design of the pile cap.
A. Semyon Treygor: The pile cap is a critical element of this bridge. He noted the round shape of the cap and the drill shaft, calling these “about as efficient as possible,” and added that the pile cap “won’t becoming any smaller.” He said the design is further along than normal because construction must take place in a narrow window of time due to environmental sensitivities. In response to Mike’s further question about the height of the pile cap, he said he would put it wherever TriMet and the engineers want it, but that his preference would be for it to be as high and visible as possible. The higher it is, the easier and cheaper to build. Whether it’s half-visible, or three-quarters, and so on, that is an architectural issue, as well as a boating safety issue.

Donald MacDonald added some discussion about different ways to slope the pile cap. There was some discussion also about the light value (tone) of the pile caps and lighting issues.

Q. Gwen Millius: Gwen asked a question about the height of the crash barrier and railings.
A. Bob Hastings: We have been vetting the railing design and heights with the TriMet safety experts. The proposed height is 4’6” and we don’t anticipate it going higher.

Q. David Soderstrom: He raised concerns about the railing design. This is the tactile part of the bridge, the one part that is going to be touched by the public. I am concerned that safety, security and budget concerns have trumped the artistic design sense. It’s pretty darn basic, and it needs attention. It needs to be more artful, more interesting. We need to take another look at it. It’s a critical element that everyone is going to touch, feel and see.

Q: David Knowles: Are you OK with the basic design concepts, the horizontal design?

David Soderstrom: I question how close the vertical supports have to be. It’s designed to keep a car from going off the bridge. Let’s try to make it more interesting.

A: Donald MacDonald: Donald explained why a horizontal railing concept is superior on this bridge. The horizontal lines guide the eye, allowing an easier visual scan of the bridge, while the lines of a vertical railing stop the eye from moving over the bridge. He also noted that decoration could be added to the railings, but then it’s not a modern bridge.

David Soderstrom: Stated he was not suggesting putting flowers on the bridge railings. He reiterated his displeasure with the current railing design and encouraged the architects to take another look at it.

A: David Knowles: We’ll note that.

Q. Will Dann: Said that he agrees with David Soderstrom about the railings being a “tactile” element and that perhaps a variation could be designed. But he also commented that he likes the horizontal aspect of it. Is there is a way to integrate the pathway lighting into the overall lighting of the bridge?

A: Bob Hastings: That was one of first concepts Donald MacDonald developed. However, we found the functional lighting was being provided by the catenary center lighting elements. So, if we added lighting on the railing, it was performing more of an aesthetic role, which was jeopardizing thinking about the bridge overall from an aesthetic lighting standpoint. (In answer to the need for lighting on the catenary structures) We need illumination in the trackway in terms of the hierarchy of information. Otherwise, we’d be adding other poles and elements for functional lighting.

Q. Len Bergstein: I would like to hear more about the values where the illumination, sounds and other elements become noisy. Where do you see the continuum, and how will you know when you’re presenting too much stuff to us?

A. Anna Valentina-Murch: Remember there’s quite a distance between one thing and another. The only sonic elements on the bridge occur at the ends. In the area under abutments, it’s trying to localize the element of sound. Under the abutment, we thought there should be as much light as possible. We’re talking
about the big picture of having light, sound, water and then localizing it in some places.

Q. Gwen Millis: She raised the issue of the railings in terms of their long-term lifespan and maintenance. She said the Gibbs St. Pedestrian Bridge will use a cheaper rail design with a shorter lifespan that will probably begin to wear and look bad.

A. Donald MacDonald: Donald detailed the composition and dimensions of the cable railing on the Willamette River bridge. He said they are specified to be painted, and that stainless steel was considered but exceeded budget limits.

Q. Ross Roberts: I wanted to bring us back to how significant it is that we're getting to this level of detail of some very cool aesthetic features at such a low level of design. At 20 percent design, this is a very unusual exercise and absolutely great in terms of trying to get these elements in the bridge early on. I was skeptical at first about doing too much lighting on the bridge. But when I saw the lighting that moved and is dynamic, you're probably going to have a crowd that leaves the OSMI laser show and watches the bridge for a while. The bridge could attract people to look at it, activating the east side esplanade and Waterfront Park. These are exciting ideas, really terrific.

Q. Mike Zilis: I agree the changing light is great. I am not as sold on the form of the lights above the trackway. I see the bridge more angular, and the lighting seemed out of character. I would like to see how more angular forms would work.

A. Donald MacDonald: Donald explained a catenary shape is the natural curve created by a wire suspended between two poles. I felt we needed something to reinforce the catenary shape. But that is open for discussion.

Mike Zilis: It seemed like everything else was working under a different vocabulary. I'm also happy to hear you are concerned about the lighting under the abutments. Anything you can do to get light under there is good.

Donald MacDonald: That is why trying to cut back the slope between the pathway and the river and get a valley to bring in more light but there are environmental challenges to work on for this item.

Q. David Soderstrom: My only other concern about the lighting is to make sure the bridge doesn’t overwhelm the city.

A. Doug Hollis: From the beginning, we’ve said we’re creating a bridge that reflects Portland, not Las Vegas. We understand that sensibility. What we’ve tried to do is to approach it with subtlety, elegance and rhythm.

Q. David Knowles: Have you worked out how it integrates with security lighting?

A. Bob Hastings: What Donald is trying to do is to find the light sources and fixtures to illuminate the spaces that people need to understand and have information about rather than using aesthetic lighting for functional lighting. The goal is to make the functional lighting subdued so the aesthetic lighting has the greatest opportunity to make a significant contribution.
Donald MacDonald: Our job is to balance lighting between practical and aesthetic.

Q. Sue Keil: The underneath part of it is where we’re going to have vandalism, etc. I want to make sure we don’t lose sight of safety and security needs.

A. Donald MacDonald: We are aiming for 24-hour lighting under the bridge to keep the lighting like daytime lighting.

Bob Hastings: Bob pointed to an example of the Skidmore fountain light rail station which was remodeled to provide lighting that was appropriate to daytime and nighttime viewing.

Neil McFarlane: He cautioned the group that we are still in the early phase of design. It’s not a perfect mix yet but you see the direction we’re heading. Typically, we would be doing much less than this but we’re trying to push it.

Q. David Knowles: Have you tried the sonic bike treatment anywhere else before?

A. Doug Hollis: Not that I know of.

Q. David Knowles: Before she left the meeting Michelle Poyourow brought up her concern about bicyclists traveling under the abutments, going from light to dark. How attractive will these spaces be to people who are there for reasons other than for biking? I think it would be helpful for the team to get some feedback about this.

Mike Zilis: The area under the bridge will be successful if it is built as one space. I like the idea of the upper trail coming down and activating the bikeway. I am concerned about slopes. We need to establish clear objectives. First is safety: the visual connection. It should be open. I know we’re constrained by height. But if you can see daylight on the other side, that helps a lot. Make the zone under the bridge as open and light as possible. I love the idea of having art under there. I would focus on bring other visual elements so it really feels like a pleasant place. This issue of people under the bridge is going to be huge.

Len Bergstein: Speaking for ZRZ, we have a vested interest in making sure the connections where the bike paths come off the bridge are done well. We’re investing $20 million in our remediation project, and we want to make sure the design fits in with that, make sure it’s done right Obviously we’re interested also in making sure the circles on the maps are equal on our side.

Mike Zilis: I would suggest there are two ways to think about the future ramps that come down. If buildings engage, or they don’t. The other big thing to consider is the plant material. A major emphasis is restoring the riverbank. When we come under the bridge, the planting should be designed so it doesn’t obscure site lines.
**Q. Ross Roberts:** A couple of people earlier mentioned airfoils or wind foils on the bridge. What effect do those have on the pedestrian environment? Would these features help, hurt or do we not know?

**A. Bob Hastings:** Donald said it was a key consideration in the tower design. That is one reason the bike lanes were moved away from the tower, to help mitigate that concern.

**Donald MacDonald:** When the wind whips around, it creates a vacuum. We can release that vacuum by pulling the tower back and letting that air in. (Donald mentioned the case of the Tacoma Narrows bridge collapse, which fell due to a design flaw in how it failed to work with wind physics.)

**Q. Vera Katz:** I want us to think about how and where we put signage on the bridge. We have signs and pictures for everything in city. I’m beginning to think Transportation has no understanding of our intelligence. Think about that, how we’re going to design that for the bridge. Because if you don’t do it, they’re going to do it.

**A. Donald MacDonald:** We’ve got signage in the budget. Not having automobiles also cuts down on signage.

**Vera Katz:** Wonderful.

**Q. Rob Barnard:** On the railing design, did we hear a preference? Horizontal?

**A.** There appeared to be general consensus in favor of the horizontal railing design.

**Q. Rob Barnard:** On the aesthetic lighting, did we hear a preference for static or or dynamic lighting?

**A. Vera Katz:** The group doesn’t really know yet.

**David Knowles:** No one said moving lighting was a bad idea.

**Q. Sue Keil:** Is any of this lighting solar?

**A. Rob Barnard:** It’s still too early in the process.

**Neal McFarlane:** We will be looking for opportunities for solar.

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**Public Comment**

**Vera Katz:** Are there any questions from the public?

**Dustin Posner**, local architect. I am interested in the bridge lighting concept but I have a couple of concerns. One is, changing lighting and color is a very beginning-of-the-21st-century idea. This bridge is going to be here 100 years or longer. Whatever we do must be elegant 25, 50 and 75 years into the future. When I see art projects that use lighting, the tendency is, they don’t get maintained over the long haul. Though it looks great now, in 50 years, does it work, how elegant is it? Does it represent this moment in time but not really serve the elegance of the bridge for the long haul? So, subtlety might be the key to it. I’m most intrigued when you talked about the flow of the river. Maybe that change
is a seasonal change that you don't notice day to day or hour to hour but maybe three months later. That serves the bridge. I urge caution, if you're going to make the lighting dynamic. The emphasis on subtlety is important. Plus, how are you going to maintain it? Will the technology and budget be there in 50 years so the concept holds up and we're proud of that lighting when the bridge celebrates its hundredth birthday?

**Dan Yates, Portland Spirit:** If the city bills itself as a green city, the bridge must have renewable energy as a major feature. This should be incorporated into design from beginning. There is the element of its carbon footprint. The electricity has to come from somewhere; it would be nice if some of it was produced locally. I liked the dynamic lighting. I agree that government has a terrible track record of maintaining lighting.

He mentions letter he sent to TriMet in July listing multiple concerns about the vertical clearance under bridge. I didn’t want anyone to think that, because we were not able to attend the August meeting, that the Portland Spirit agrees with the 77-foot clearance. We did receive a response back from TriMet in late August addressing some of our concerns. I want to re-emphasize that is not an issue that is dead. We will continue to voice our concerns.

**Katherine Austin**, member of public. I live on the east side of the river. One of the bad underpasses we have is at Southeast Powell at 17th Street. It is dark, filled with graffiti, scary. Please look at that for an example of what we don't want.

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**Next Steps**

**David Knowles** explained that the PMLR Steering Committee will meet Dec. 1 and that the WRBAC traditionally has communicated with the steering committee. He said he would draft a letter to the committee highlighting the design directions from today’s and August’s meetings. He said he would draft the letter and circulate it among the group before sending it out. The letter will also address vertical clearance.

David then discussed the bridge project schedule and where the design process is heading. He said it's moving toward the 25 percent design milestone. The design has progressed from the big to finer-grain elements. TriMet is now beginning the process of soliciting the design-build team. The goal of this group will begin to change. We'll be meeting less because the design issues are being resolved. We will get back together sometime in the January to March timeframe. The function of this group becomes an opportunity for TriMet to check in with you, make sure its decisions are consistent with the direction you've provided. So less decision-making, more check-in.
Neil McFarlane addressed the schedule. Mike Zilis asked about the handoff between this team and the design-build team. Neil McFarlane said the engineer-architect team will stay and shepherd the design-build team. David Soderstrom indicated he also was concerned about the handoff. Neil McFarlane asked Rob Barnard to explain how the project team’s accumulated wisdom is handed off. Rob Barnard explained a two-step process. Step one is the release of a Request for Qualifications to select a qualified team, in early January. In April, a short list from that RFQ is invited to respond to a Request for Proposals. Then we will submit technical drawings and specifications that try to capture everything to date. We will be putting that into the RFP and issued in April. From April to October, the design-build teams are generating prices from what they’ve seen and heard. We will also provide links to all these meetings, notes, slide presentations—the body of knowledge.

David Soderstrom: So my question remains: What if they come back with a different bridge?

Rob Barnard: The design-build contract delivery method was selected to enable the project to stay on schedule and begin bridge construction in the river by July 2011, as opposed to a design-bid-build process, which could take longer. However, our RFP will be more prescriptive than a normal design-build because of all work we’ve been doing over the last months.

There was a question about the Record of Decision, and Neil McFarlane said he expected to publish the Record of Decision in July 2010.

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Vera Katz adjourned the meeting.