EARTHQUAKE READY BURNSIDE BRIDGE

Multnomah County is creating an earthquake-ready downtown river crossing.

BETTER – SAFER – CONNECTED December 16, 2020

Urban Design and Aesthetics Working Group (UDAWG) – Meeting #7 Notes

Project:	Earthquake Ready Burnside Bridge (EQRB)
Subject:	Urban Design and Aesthetics Working Group
Date:	Wednesday, December 16, 2020
Time:	12:00 PM – 4:00 PM
Location:	WebEx (see email for link)

WORKING GROUP MEMBERS

Randy Gragg, Executive Director, Portland Parks Foundation
Bill Will, Public Works Artist
Paddy Tillett, ZGF
Chris Herring, Artistic Director, Portland Winter Lights Festival
~~Megan Crosby, Urban Development + Partners~~
~~Ian Williams, Deadstock Coffee~~
Priscilla Macy, Oregon Outdoor Coalition
Izzy Armenta, Oregon Walks
Dave Todd, Portland Rose Festival
Brian Kimura, Japanese American Museum of Oregon

AGENCY GROUP MEMBERS

Patrick Sweeney, PBOT
Teresa Boyle, PBOT
Lora Lillard, BPS
Rachel Hoy, BPS
Hillary Adam, BDS
Tate White, PPR
~~Justin Douglas, Prosper Portland~~
Bob Hastings, TriMet
Magnus Bernhardt, ODOT

PROJECT TEAM MEMBERS

Megan Neill, Multnomah County
Mike Pullen, Multnomah County
JD Deschamps, Multnomah County
John Henrichsen, Multnomah County
Suzanne Carey, DEA
Heather Catron, HDR
Steve Drahota, HDR
Cassie Davis, HDR
Michael Fitzpatrick, HDR
Katy Segura, HDR
Allison Brown, JLA
Carol Mayer-Reed, Mayer/Reed
Jeramie Shane, Mayer/Reed
Josh Carlson, Mayer/Reed
Anne Monnier, KPFF
Dylan Murphy, HDR
Jimmy Vincent, HDR

COMMUNITY TASK FORCE OBSERVERS

Stella Funk Butler, Susan Lindsay, Ed Wortman, Bill Burgel, Peter Finley Fry, Marie Dodds

Purpose:

The purpose of the UDAWG is to serve as a technical resource body to the CTF for urban design and aesthetics by:

- *Providing informed insights and opinions on the visual features for each type selection option*
- *Recommending measures to enhance aesthetic opportunities or mitigate potential visual impacts*
- *Representing urban design and aesthetic interests*
- *Reflecting the character of Portland by suggesting place-making opportunities*

Outcomes:

The outcomes for the UDAWG group are to:

- *Inform a set of feasible bridge type options for the CTF's consideration*
- *Inform a project-specific Visual Performance Standard for use during the Type Selection and Final Design phases*
- *Recommend visual and aesthetic evaluation criteria for consideration by the CTF*

Notes:

WELCOME, INTROS, PRE-MEETING INFO, AND GENERAL COMMENTS

- Introductions
- Pre-meeting information
- Purpose and Outcomes
- Meeting Objectives
- Project Update
  - Community Task Force (CTF) Meetings
    - Future: Dec 21st (Recommendations on: (1) the Range of Bridge Types and (2) Type Selection Evaluation Topics and Criteria)
  - Working / Focus Groups
    - Bridge and Seismic Working Group Mtg #2 (Friday, Dec 18)
    - West-side connection options (ongoing)
    - Eastbank Esplanade connection options (ongoing)

GENERAL COMMENTS

- None

UDAWG TYPE SELECTION EVALUATION CRITERIA / RECOMMENDATION

- Approach Overview

- Carol Mayer-Reed and Steve Drahota took the recommended changes from this group and updated the criteria. A tracked changes version and clean version was distributed prior to today's meeting.
- Steve Drahota and Carol Mayer-Reed presented the tracked changes version of the Type Selection Evaluation Criteria.
- Carol Mayer-Reed noted that there was input that matched other opinions of the group, but not all requested changes were in concurrence with others opinions in the group.
- Carol Mayer-Reed reviewed the edits made to the criteria since the last UDAWG meeting.

- Topic 1: Urban Context and Experience
- Topic 2: Visual and Aesthetics
- UDAWG Recommendation

DISCUSSION

Group 1. Urban / Site Context and Experience

1.A. On-Bridge Experience

- No comments made.

1.B. Below-bridge Experience

"How well does the bridge option complement or dynamically contrast with the public spaces, transportation, and land uses within parks and natural environments under or adjacent to the bridge?"

- Patrick Sweeney: I am concerned with "dynamically contrast" because part of the bridge has to land in an important historic district. I can see the Historic Landmark Commission having issue with that. It can be interpreted about 1,000 different ways, and I don't think it applies to a bridge type. There's probably an easier way of saying it that isn't so inflammatory.
    - Tate White (via chat): Why not "respond to" as opposed to "dynamically contrast" like Lora previously recommended?
    - Carol Mayer-Reed: Is it over the top in terms of putting it front and center? Tate noted "respond to" might be better.
    - Patrick Sweeney: It should be complementary in terms of its function and its aesthetic nod to the historic district. It's a hard one. I'm not trying to put a cap on creativity, but I want to keep us out of trouble. I'm concerned with this going in front of the Historic Landmark Commission and they might look for anything that will set them off.
    - Hillary Adam: I can see where Patrick's concern lies. I know we're talking about this in the context of the bridges relationship with the west side, but what would it look like to contrast on the east side, which is modern. I think "respond to" is broader and can be more compatible. I

agree with Patrick that whatever we pick will have to complement, in some way. These are subjective criteria, but I can see that phrase being triggering for landmark commissioners.

- Dave Todd (via chat): The "or" gives wide latitude for either "complement" or "contrast" to be applied to a specific location. This topic is focusing on user experience below the bridge.
- Randy Gragg: I appreciate that we don't want to pick a fight with the commission, but the bridge should be the bridge, and I would hate for it to be built with the necessity to "bend a knee" to the historic district. New bridges are placed in historic districts all the time, like Patrick mentioned. The attitude toward "extreme deferential". I think that would hinder any innovation to the bridge.
  - Chris Herring (via chat): I agree with Randy.
  - Bill Will (via chat): I also agree with Randy.
- Carol Mayer-Reed: What if we took out the word "dynamically"?
  - Paddy Tillett (via chat): We directly address the contingent issues throughout, so let's begin there. "Respond" is accurate.
- Carol Mayer-Reed: Is that how we should take it from here?
  - Randy Gragg: I find "respond" to be deferential language.
  - Dave Todd (via chat): Might be a bit leading, as was some other language that was removed.
  - Dave Todd: "Dynamically" might be leading language, forcing us in a particular way. I don't think it would harm anything to remove "dynamically". Either the complement or the contrast. This isn't structural, this is the under bridge experience.
  - Patrick Sweeney (via chat): Remove "dynamically". "Contrast" leaves a lot of room for interpretation.
  - Paddy Tillett: I don't think that "respecting the historic qualities" is "giving in". I think what we're saying is: what are these things that we need to respond to? We don't need to solve everything with this one phrase or be surgically precise. All we're trying to say is: the context is important and should be responded to.
- Magnus Bernhardt: Perhaps say: "How does the bridge respond to the public spaces?"
- Carol Mayer-Reed: That cleans it up; I'm not sure if everyone would agree with that or not.
  - Hillary Adam (via chat): The discussion is more applicable to criterion C.
  - Paddy Tillett (via chat): Magnus' solution works for me.
  - Patrick Sweeney (via chat): Works for me too.
  - Hillary Adam (via chat): Agree.
  - Brian Kimura (via chat): I agree with Magnus.
  - Lora Lillard (via chat): I agree with that.
  - Randy Gragg (via chat): Seems vague.
  - David Todd (via chat): I agree with Magnus.
- **Decision: Change the term "… complement or dynamically contrast with the …" to "… respond to …".**

- Bob Hastings (via chat): Carol Mayer-Reed, Steve - I have a concern that the secondary/tertiary elements also need to support and contribute to the *On-the-bridge experience*. e.g., traffic signals, electrical cabinets, future streetcar catenary systems, etc.

"Maximize the open space and vertical clearance to create an "urban roof" that enhances the under-bridge experience"

- No comments made.

"Preserve the integrity of park features such as the Japanese American Historical Plaza, Ankeny Plaza, Bill Naito Legacy Fountain, Better Naito Forever, Vera Katz Eastbank Esplanade, Burnside Skatepark, and Tom McCall Waterfront Park and its existing trees."

- Randy Gragg (via chat): Excellent.
- Magnus Bernhardt (via chat): Why couldn't it be both "preserve" and "integrate"?
  - Carol Mayer-Reed: I think that because the bridge flies over the top of them, it makes it hard to "integrate" them. They not only need to be physically preserved, but the integrity of the design needs to be honored. There may be transportation changes to these areas, but that's not necessarily a differentiating quality.
- Hillary Adam: For the current connection on the east side to the Eastbank Esplanade – is there a bridge type that would make that more difficult than others?
  - Steve Drahota: We haven't found that in our study. There isn't one bridge type over another that would make it more difficult.
  - Carol Mayer-Reed: Right now, the connector doesn't even place any weight on the Burnside Bridge. It doesn't rely on the bridge to hold it up, so from a structural standpoint, I don't think they would have the same relationship.
- David Todd (via chat): Have to be careful about including two concepts in a criterion - a particular solution might trigger very divergent responses - can't measure two things with one response
  - Magnus Bernhardt (via chat): Thanks David.
  - Dave Todd: I'm getting into measurement theory here, but there has been good work of getting two different measurements in one criteria. Weight & flavor in one response is really hard to do. "Integrate & Preserve" begs for two separate criteria. I've made comments on that, early on, and most of those have been sorted out, so that needs to be kept in mind for this one.
- Bob Hastings (via chat): Thanks for the specific criteria of the MAX station under the bridge!
- Hillary Adam (via chat): Just wanted to posit ability for "activation" at Max Station, but don't want to hold us up.

"Ability to enhance the under-bridge space at Skidmore Fountain Max Station, including lighting, materials, and detailing"

- No comments made.

"Visually open connectivity with the river in the space beneath the bridge"

- No comments made.

1.C. Urban Context with Surroundings

"How well does the bridge option's scale and form complement or dynamically contrast with the scale and character of surrounding neighborhoods, buildings, parks, and historic districts while being distinctive?"

- Carol Mayer-Reed: The words "authentically fit" was taken out and replaced with "complement and dynamically contrast". There's that phrase "dynamically contrast" again. What is everyone's thoughts on these changes?
  - Patrick Sweeney (via chat): "Respond to" works for me.
  - Paddy Tillett (via chat): Dump "Dynamically contrast" as it adds nothing.
  - David Todd (via chat): "Respond to" works, and fits with being distinctive.
  - Magnus Bernhardt (via chat): Agree.
  - Carol Mayer-Reed: So either "complement" or "respond to"?
  - Randy Gragg: I don't see how they're different.
  - Magnus Bernhardt: I think "respond to" leaves some flexibility.
  - Paddy Tillett (via chat): "Complement".
  - Lora Lillard (via chat): I prefer "respond to" rather than "complement".
  - Brian Kimura (via chat): Good with "respond to".
  - Hillary Adam (via chat): "Respond to" works.
  - **Decision: Replace the term "… complement or dynamically contrast with …" to "… respond to …".**

1.D. Pedestrian and Cyclist Connectivity

"How well does the bridge ensure that safe and accessible pedestrian and bike connections will be made down to grade?"

- Carol Mayer-Reed: This was added in response to the comment that the other bridges should be considered. There was a lot of comments back on this criteria. One of the bullet points was the ADA and Universal Design Concepts which we thought was good. We considered: what does Universal Design do than ADA doesn't? It's not down to the criteria of gradients and widths, but it's much broader: welcoming, accessible, coherent – it goes beyond meeting the letter of the law.
  - Paddy Tillett (via chat): ... but don't make access inconvenient for those who are fit.

Group 2: Visual and Aesthetics

2.A. Bridge Visual Coherence

"How well does the bridge option's composition create visual balance, unity, and flow from key viewpoints above, along, under, and away from the bridge?"

- Carol Mayer-Reed: "Symmetry" was removed from this section and "above, along, under, and away from the bridge?" was added.
- Steve Drahota: I just want to note that we rearranged the sections to be represented in concentric circles.
- Bob Hastings (via chat): Steve Drahota, I greatly appreciate the clarity of hierarchy between the sections

2.B. Bridge Form and Style

"How well does the bridge option acknowledge the historic surroundings while presenting a seismically-resilient, contemporary design aesthetic that sets the tone for future urban development and growth throughout its 100-year design life?"

- No comments made on main section.

"Balance the qualities of openness and transparency (i.e., minimizing the massing) while conveying a sense of seismic stability and reliability"

- No comments.

"Ensure overall design compatibility of fixed and movable bridge spans; reflecting proportions and scale that feel balanced amongst the various structural elements"

- Lora Lillard (via chat): Prefer "coherence" over "compatibility".
  - Tate White (via chat): I agree with Lora.
  - Hillary Adam (via chat): Agree with Lora.
  - Randy Gragg (via chat): Agree with Lora.
  - Magnus Bernhardt (via chat): Continuity?
  - Bob Hastings (via chat): Coherent.
  - David Todd (via chat): I like coherence.
  - Paddy Tillett (via chat): Coherence is accurate.
  - Chris Herring agreed (nodded).
  - **Decision: Replace the term "… compatibility…" with "… coherence …".**

- Bob Hastings: Thank you for this. In regards to combining vertical with bascule movements: one has to be very mindful that the fixed elements of the bridge are not interchangeable. They have to be considered in and of themselves as a coordinated resolution.

"Reflect the distinctive setting of each side of the river, considering buildings, parks and infrastructure."

- Paddy Tillett (via chat): A good addition.
- Bob Hastings: I think this is putting tremendous pressure on the bridge form and style. The east and west sides have very different spans, styles, movements, speeds. Thinking about these issues and how to reflect and be distinctive of them.
- Randy Gragg: This to me, seems in conflict with the idea of the integral coherence of the bridge. It begs different solutions to the bridge at different sides of the river. That's how I read it.
  - Patrick Sweeney (via chat): Agree with Randy.
  - Bob Hastings: I think it's a matter of the tail wagging the dog; this is a design issue, not a type selection issue.
  - Carol Mayer-Reed: So, Randy, you feel that you'd have two different fixed bridge spans, one that matches the west side, and one that matches the east side.
  - Randy Gragg: I appreciate what Bob is saying, it seems like a design problem as opposed to a type selection problem.
  - Magnus Bernhardt agrees.
  - Lora Lillard: I agree this could set up a conflict with overall bridge composition. I might have suggested something along these lines for this bullet point, but I didn't meant to reflect the east and west side differently. It's not going to be symmetrical and I'm wondering if we could outline the different sides; for instance, the bend in the river lends itself to a great view. I meant this more about the bridge's relationship to the river than the east and west sides. Are there features that can uplift the idea that you are in a very different place. That is what I was trying to convey and it's not quite reading the way I thought of it in my head.
  - David Todd (via chat): They emphasize the totality of the challenge.
  - Paddy Tillett (via chat): The context on each side of the river IS very different. An important statement.
  - Patrick Sweeney (via chat): Agree with Randy again - this can be a design solution. The night lighting over I-5 could be different from the night lighting adjacent to old town.
- Carol Mayer-Reed: So are we saying this is more of a design level point than a differentiating bridge type point? We wouldn't want historicist pylons and then something contemporary on the east side of the bridge – we still want an overall coherency and I'm wondering if this one trips us up a bit.
  - David Todd (via chat): The topic IS the form and style of the bridge - the first three bullets work together to define the totality of the challenge.
  - Magnus Bernhardt: I think this is a design detail issue more than a bridge form and style issue.
- Paddy Tillett: I think we're getting confused here. We're not trying to design the bridge here, we're setting up criteria. All this says is that we need to reflect those distinctions, that they are very

different. Trying to guess how this will influence design is inappropriate. It's a very important piece as it stands and I don't think it needs to change at all.
    - David Todd (via chat): Agree with Paddy.
  - Chris Herring (via chat): I agree with Paddy's last comment.
- Lora Lillard (via chat): I think we can delete this bullet. I still think there should be room to add taking advantage of the specific and unique position within the river's bend.
- Carol Mayer-Reed: Would that be more in the bridge context of it, than the bridge form and style?
  - Lora Lillard: Yes, I think that's right.
- Carol Mayer-Reed: Ok, maybe we can capture that in the context of it.
- Peter Finley Fry (via chat): Observation - Paddy's is absolutely correct. The ironic thing is that the high rises are on the eastside while the downtown core in this specific area is actually limited to low rise. A juxtaposition - yin yang.
- Patrick Sweeney (via chat): Concerned that CTF will not know how to interpret this criterion - this is urban design nuance.
- Randy Gragg (via chat): I want to underline Lora's point about the distinct location ON the river.
- **Decision: No change, as there wasn't concurrence within the group. Will come back to this in the future, as needed.**

2.C. Bridge Aspirations and Design Flexibility

"How well does the bridge option allow flexibility for engineering and architectural features in the Final Design phase, as well as adaptability of the bridge for future user needs?"

- Patrick Sweeney: I was hoping somewhere in the criteria there would be an acknowledgement - a way to evaluate - the impact of the pier size to the river. Thinking about scale and massing. Right now, if you go down and look at the existing piers, it feels like they "fit". I know that's because it's what we're used to seeing, but my reaction to the delta pier design feels like we're putting a building in the middle of the river. The size of the footing as it relates to the scale and the width of the river channel are really important. The piers are likely going towards the land, on the outside of the existing piers, making the pier/shore relationships shorter than it is now. Those are big changes on how they affect the river channel. The size of the pier and how it fits within the river is an important consideration.
  - Paddy Tillett (via chat): Agree with Patrick on relative scale of piers to river width.
- Carol Mayer-Reed: I think that last modified bullet point helps to do that. There's an impact from an environmental and permit standpoint. I don't think we have time to work a sentence around this right now, unless you have a suggestion ready to go Patrick, but I think we are interested in wanting to put something in there about that.
- Steve Drahota: I'm wondering if there is an element of that term that we can add to section "B" that captures this and I think we should embody something along this intent. We can make a note that that terminology is to be added.

- Patrick Sweeney: It's important to make sure the pier has a light touch on the river. There is a sensitivity to the impacts. Our impacts to the land are well known, but when we touch the water there are a lot of sensitivity to endangered species and water rise and trying to lighten that touch is important.
  - David Todd (via chat): Agree with Patrick on this.
- **Decision: Add the sub-bullet to Section 2.B.: "Ensure the bridge pier's massing and scale is proportional to the river; minimizing its overall "touch" and impact in light of its location in the bend of the river"**
- Carol Mayer-Reed: While we go into the next section of our meeting, but at the end we might be able to put a bow on this and come up with something as we discuss. Thank you for bringing that up.

- Allison Brown: UDAWG members and Agency partners – based on the conversation that we've had today – are you feeling good about this set of criteria topics moving forward to the CTF with the caveat that there are a few places where we will do additional "workshopping" on. Can everyone please feelings about this by using thumbs up, thumbs down, or in the middle?
  - **Thumbs up from all attending UDAWG members.**
  - Tate White (via chat): I would just add that Lora made a great point about acknowledging the location and bend in the river, and I'm not sure that has been addressed yet. Maybe a third item to still address with the criteria.
    - Lora Lillard (via chat): Yes, thanks Tate. That was the last point I wanted to make sure was captured: Can we make sure to add language about the distinct location and bend on the river?
  - **Decision: Added the phrase "…in light of its location in the bend of the river" to the new sub-bullet to Section 2.B.**
  - Carol Mayer-Reed: We will be issuing one more final draft with these changes. It's important to note that in some places in this document, we've used words that are very common to our design industry, but that are not familiar to a more lay audience.
  - Steve Drahota: From a design community, we generally understand what words like "coherence" means, but as we've been testing this with Public Involvement and the CTF, they've noted that there are some words they don't understand. There may be more word-smithing to make it more public friendly. That's the next step of this.
  - Bob Hastings (via chat): A 'primer' might be a good strategy for this.

[15 MIN BREAK]

BRIDGE OPTIONS BASIC FORM COMPOSITION AND INPUT TO CTF

- Bridge Composition Overview
  - Project Context
  - Existing Willamette River Bridges
  - Long-span Alternative
- Range of Bridge Types: Compositions and Select Views
  - Long Span
    - Tied Arch, Truss, Cable Stayed / Extradosed, Girder (applicable to west approach only)
    - West Approach Support Locations Nomenclature
      - "Unbalanced" Cable Stayed Option or "Longer" Tied Arch (Support located next to Naito Parkway)
      - "Balanced" Cable Stayed Option or "Shorter" Tied Arch (Support located in middle of Waterfront Park)
  - Movable Span
    - Lift; Bascule
    - Movable Bridge Pier Locations Nomenclature
      - "Longer" Movable Span Foundations (Delta Pier Bascule or Lift)
      - "Shorter" Movable Span Foundations (Conventional Lift or Bascule)
- UDAWG Input to CTF

DISCUSSION

- Randy Gragg (via chat): Why are the piers shaped differently in the shorter span?
- Steve Drahota: One reason is because the space inside the piers is needed for the functioning of the lift. Another reason is because we need some more time to refine the design of it as the concept is new. We'll have more details on that for our January meeting.
- Paddy Tillett (via chat): Any reason why the westside tied arch cannot span to the east side of Naito? This avoids the pier obstructing Waterfront Park space.
  - Steve Drahota: Possibly, but It's a matter of how the bridge width fits into the west bridgehead space (specifically the opening between buildings). The ends of the street network is 110 feet and we'd want 106 feet to allow for a 2' gap between buildings and the bridge. The bridge, with the tied arch, is 115' wide, and would need to transition quickly to fit into the available street network. We will explore this further prior to the January UDAWG meeting.
  - Paddy Tillett (via chat): How can we avoid blocking the park?

- Paddy Tillett: I want to go back to the tied arch concept. If you have massive support in the middle of the park, that is a fatal flaw. Is there any reason the cable from the tied arch could be on the east end of Naito parkway so you can achieve the taper you want, but you don't have a massive structure in the middle of Waterfront Park?
  - Steve Drahota: The additional width of the bridge is driven by the thickness of the arch ribs. We can only transition as soon as we end the tied arch itself. But to your point, we will explore placing the support on the east side of Naito Parkway?
  - Paddy Tillett: Thank you.
  - Tate White: With internal conversations I've had with Portland Parks & Rec staff, having the support placed in the park creates a wall and we're worried about peds being blocked behind the columns. I'm actually interested in having the tied arch pushed towards the west, for the same reason.

Steve Drahota presented the truss bridge options and configurations.

- Carol Mayer-Reed: This is the configuration that we have on the Steel Bridge except the truss is above deck instead of below deck, correct?
  - Steve Drahota: Yes, and much like the existing Burnside Bridge.
  - Bill Will (via chat): And it looks like a railroad bridge.
- Steve Drahota: How much does this group want to talk about the truss? I can pause and go over these, or skip them, based on what this group wants.
  - Randy Gragg (via chat): Truss=bad
  - Bob Hastings (via chat): Truss doesn't appeal to me, compared to the tied arch.
  - Chris Herring (via chat): Truss looks like a bridge from the past.
  - Bill Will (via chat): Chunky and clunky.
  - Hillary Adam (via chat): Truss misses the mark on a lot of our identified goals; certainly not a beacon.
  - Magnus Bernhardt (via chat): Skip truss.
  - Brian Kimura (via chat): No truss.
  - David Todd (via chat): Skip truss.
  - Izzy Armenta (via chat): Yeah also not diggin' the truss.
  - Tate White (via chat): Girder worst - truss also bad.
- Allison Brown: Does anyone *like* the truss?
  - [no response]
- **UDAWG Input to the CTF: Dismiss the truss option from further type selection consideration.**
  - Patrick Sweeney (via chat): I "truss-t" we made the right choice :)
  - Editor's note: "Ugh."

- Lora Lillard (via chat): What's the difference in the height of piers on the longer movable span vs. shorter for the lift bridge? What's the difference in the height in piers in the cable stayed options? Ok if it's an estimate. It was a little difficult to tell.

- Michael Fitzpatrick (via chat): The vertical lift towers are the same height, just closer together, because they are designed to convey the vessel clearance envelope.
- Steve Drahota: Yes, the vertical lift towers are always the same because it's driven by the need to elevate the lift structure over ships crossing below. There's a slight reduction as you move the towers together because the lift girder depth can be slightly shallower, but consider them essentially the same height (within a few feet of each other). The longer movable span has a tower height in the 140-150 foot range.

- Randy Gragg (via chat): Can the east cable stayed shape be "unbalanced" as well?
  - Michael Fitzpatrick (via chat): Cable stayed, yes.

- Paddy Tillett (via chat): Lift span towers are too massive for the width of Willamette. Probably acceptable on Columbia, but out of scale here.
  - Michael Fitzpatrick: Right now we're showing the vertical towers as a solid concrete box where that isn't exactly what they need to be. They're supporting the weight of the counterweight. They can have a transparent outside shell to help mitigate this and make it more translucent with lighting. We haven't gone into typology studies yet, but the towers don't need to be "four concrete sticks". The sizes shown, however, are generally the size they would need to be.

- Carol Mayer-Reed: The lift span is probably the tightest width in the river. Is that correct? You're getting the height above deck, but a trim integration into the water.
  - Steve Drahota: Yes, for the lift bridge there is more mass above deck and less deck below deck. The bascule is the opposite. There's a fundamental trade-off between the options on where to place the mass.
  - Bill Will (via chat): Cable stayed + lift = 6 or 8 vertical towers. This makes the vertical dominant.

- Randy Gragg (via chat): Is there an unbalanced plus bascule option visualized?
  - Steve Drahota: Yes, the unbalanced + bascule is included in the slide-deck.

- Bob Hastings (via chat): Part of my concern with the towers in this section of the river is the verticality in the middle of the emerging cityscape ... especially with the cable stayed towers.

- Dave Todd: The vertical lift poses a question that we haven't talked about much. The ultimate choice of the lift is one of those things that is an unchangeable choice and will impose a solid limitation for the whole lifespan of the bridge. We have that issue in other areas that are limited by choices made on the height of the lifts. Avoiding places where we might get it wrong is an important thing to keep in mind. When you think about, if a seismic event happens when the bridge is moving up or is at the top, the stress on the towers will be maximized. When you have something heavy up high, it puts more stress on the structure than when it's down low. In terms of the impression of solidity, it will feel much less reassuring to have something that heavy be that high up the towers.

- Dave Todd: Yes. Everyone has to remember Galloping Gerdy. If we can predict it, we should try to avoid it.
- Steve Drahota: Along those lines, we are developing a seismic design criteria that requires the design to assume the bridge could be in any position … fully open, in the midst of opening, or closed (whether bascule or lift). All of these scenarios are being taken into consideration.

- Randy Gragg: Regarding the multiple towers in the cable stayed and lift span, is it possible to think about those as similar transparency or coherence to have them made of the same "kit"? Or are the structure issues such that they would necessitate different solution.
  - Steve Drahota: Yes, as the design progresses, commonalities between the various towers can be designed.
  - Michael Fitzpatrick: Yes. For example, because of the compressive forces needed for the lift towers, the vertical lift could have a shell front side and a transparent back side. There can be families of that type of function with the strength being there, but used differently. Then your experience going east to west is different than your experience going west to east. We're starting to think of those kinds of commonalities.

- Randy Gragg: Generally speaking, I'd probably favor the cable stayed / bascule combination, but if the lift proves to be the better performer for whatever reason, trying to find an elegance to the parts would be really important.

- Carol Mayer-Reed: That reminds me of the idea of rhythm or cadence. You'd be going through a series of gateways – whether 2 or 4 or however many gateways – it's all questionable if these can be in a family that creates that. Even though the pairs are doing different jobs, is there a value to having something that has cadence or rhythm to it from an experiential standpoint.
  - Randy Gragg: That makes a lot of sense and part of how that works is what are the similarities and contrasts.
  - Carol Mayer-Reed: Right, they're not doing the same job. These are not exactly mix and match type of elements in my mind.
  - Steve Drahota: Correct. These are different work horses; they have different functions. They can relate, but they are doing different things.

- Patrick Sweeney (via chat): I like the wider lift span and smaller footprint in the river. Is there a version of delta pier with a smaller footprint?
  - Steve Drahota: Not at the moment. The design team can explore that further.

- Magnus Bernhardt: Is it possible to tie the lifts to the cable structure?
  - Steve Drahota: Use the lift tower as the cable stayed tower itself?

- Magnus Bernhardt: Yes, then it brings the focal point of the bridge to the river.

- Steve Drahota: I've asked our engineering team this question. It puts an enormous load on the in-water foundation and the towers. The tower would need to carry the entire weight while also serving to raise/lower the bridge within tight tolerances. It would certainly increase the load that is susceptible to an earthquake. From an engineering standpoint, the piers and towers are performing different functions, but if combined, the size of the towers would be much larger.

- Randy Gragg: With the bascule, it seems like a 1940s coffee table plopped into the river – do you think there are possibilities with the tied arch or others to change those bases in such a way that there could be a harmony between them?
  - Michael Fitzpatrick: Yes, perhaps if somehow the counterweight could be visible. The traditional/shorter bascule came to life this week so we haven't had a chance to refine this further. I think there's some really good sculpting that can happen with the bascule piers.
  - Randy Gragg: Great.

- Magnus Bernhardt (via chat): I like the short tied arch with short movable; it, takes up less space and provides a nice pause between the buildings; tied arch is both contemporary in design and historic in it reference to bridges of the past; the bow is a universally appealing shape and its form and scale flow well.

- Bob Hastings (via chat): It feels like a combination of tied arch, cable stayed, and tower is a poor combination. My sense is either tied arch or cable stayed...maybe some girder.

- Lora Lillard (via chat): From these illustrations, I find the east/west tied arches to be more coherent to each other in the composition than the cable stayed, which have differences in heights and geometries that seem more pronounced. The variability and potential miss is higher. The tied arches could also extend the arch to touch the river in a bascule lift situation.

- Magnus Bernhardt (via chat): With the west side cable stayed, there seems there could be a fine line between it being a bridge that could be an amazing transformative element, an elegant/iconic landmark and gateway that is also in harmony and balance with the current park and historic neighborhood, to one of a landmark bridge that does not balance well and could overwhelm the space; come across as an overly dominate form that is out of scale with its surroundings. BUT, since we are fortunate to have the long span on the east side and therefore the larger cable stayed on that side, the scale issue may not be as much of a concern as the larger "sister" cable stayed will serve as a good counterpoint to the west side's smaller sibling. The larger eastside bridge will have a sphere of influence greater than its' physical form (think US Bancorp aka Big Pink) which will help balance the scale and form of the west cable stayed bridge making it feel even smaller than it is, unlike if it was a standalone bridge.

- Magnus Bernhardt (via chat): Lift towers do not provide a sense of coherence and obstruct the flow of the tied arch and cable stayed.

- Izzy Armenta (via chat): Does the base for the lift spans need to be solid? Can it have cut outs like the bascule to make it feel/view more open?
  - Michael Fitzpatrick (via chat): The base has a lot of mechanical equipment and openings might be limited.

- Paddy Tillett (via chat): What is headroom over Waterfront Park with long tied arch?
  - Steve Drahota: 25 feet.

- Michael Fitzpatrick: With these graphics, we've added some lighting, reflectivity, and other elements. The scale of the water is important in terms of the compositions. Trying to bring some of the conditions into this so that the images are easier to read. You'll notice some boats and cars in the graphics for scale. The boat shown is a 65-foot sail boat.
  - Bob Hastings (via chat): As we refine our choices, lighting for the various combinations will be important to review.
  - Paddy Tillett (via chat): Graphics very helpful - thank you.
  - Priscilla Macy (via chat): Agreed, Bob.

- Steve Drahota: So there are tons of graphics. The reason we didn't stop at 150 and continued to go on is that, to us, with the different perspectives, different things stood out as themes across them. So we want to hear from you: What are the thoughts / themes that you see that should go forward to the CTF?

- William Burgel (via chat): For the long tied arch option with the delta piers, how high are the two arches?
  - Steve Drahota: The tied arches are about 80 feet on the west approach and 120' on the east approach.
  - Magnus Bernhardt (via chat): For comparison in terms of scale, I believe the Tilikum pylons are about 100 feet tall off the deck (is this correct? Editor's note: they are approximately 120' from the deck surface), so it could be very similar in height and scale as some of the proposed cable stayed bridge types proposed so far for the west side.

- Priscilla Macy (via chat): The arch designs call out to me, and seem aesthetically pleasing, non-intrusive to rest of the visual environment/cityscape.

- Magnus Bernhardt (via chat): I think the cable stayed is also a beautiful bridge and has the symphonic quality of a well composed piece of music; it would definitely transform the urban landscape. It is the exact opposite bridge of what is there today, with the right design details it

would likely become the proud focal point of our urban core, redefining the equatorial landmark and showcasing the bridge's beauty and engineering prowess that Randy has mentioned.

- David Todd (via chat): Girders don't fit criteria much at all either.

- Patrick Sweeney: Thank you for all of the graphics. The ones most helpful for me were those from the river banks. Two things struck me: (1) the footprint of the lift towers in the river is much less than the delta piers. The delta piers from the ground level look even more massive at the river front, the size of building. (2) The bridge towers were more transparent once you could see between them. It looked like some of the delta piers at the bascule piers were still trapezoids? Could it be that those images weren't updated?
  - Michael Fitzpatrick: Those were updated. The longer bascule has four trunnions where the shorter bascule would have possibly two trunnions. There is stuff that goes into the pier differently and the stuff we need in them is different, depending on the size. That's what's changed in the bascule pier.

- Chris Herring (via chat): I love the arch on the east side. Keeping the west side open is much nicer.
  - Carol Mayer-Reed (via chat): Chris, are you saying you like girder on the west side to keep it open?
  - Chris Herring (via chat): No, I hate the girder.

- Brian Kimura: I agree with Patrick and understand that the lift option offers the slender touchdown on the water. One of the things I remember is if the shorter span pulls the foundations away from the river's edge, the pedestrian experience will get more water. It expands that room out onto the waterfront and feels more engaged with the waterfront; but I do think that when you're walking passed these foundation moments, it's nice to have a slender touchdown. But if it effects the overall iconography of the bridge, how important is that? I want more space at the water where the columns are pushed farther away from the waterfront, but there's so many moments of passing by this bridge and other moments to experience from the bridge. If we're going to make this bridge, we should make it an icon and does the form of these towers effect the overall icon.
  - Bob Hastings (via chat): Good points about the big difference looking up at the bridge over the westside, and at the in-water foundations...vs the perception looking down at the bridge.
  - Bill Will: I think I agree with what Brian's saying. I took pages of notes, but there's not time for me to go through them all. I'm most interested in a bridge that has fluidity and that is created by the tied arch or the cable stayed bridge. It's like a wave. You can image it going down into the water and then back up. The lift towers are more staccato and it interrupts it in a very in a very inelegant way. I think the negative aspects of the footprint of the water is less important than the negative qualities of the vertical lift. I have come to prefer that there are, over the bridge structures, not having it becomes like a freeway up to the east side. I like to see that imperfect symmetry of having one kind of superstructure on each end of the bridge.

- Magnus Bernhardt (via chat): There is no gap between the buildings with the stayed bridge as there is with the truss and tied arch. The transition space allowed in the truss/tie arch families give the urban space a pause between buildings and bridge(s). Transition space provides an opportunity to take a breath, pause before the next experience…It's like an intersection between city blocks, an important pause that sets up the architecture on both sides. I think of the City blocks as sentences and the street intersections as periods or commas, especially for pedestrians…could the stayed bridge be a well-placed exclamation mark, without the transition/pause space?

- Carol Mayer-Reed: I like the words you used: "imperfect symmetry". I found that I liked the longer tied arch span on the east side. In the time remaining, I'd like to chunk things off to discuss what we like and what we'd like to toss. Is anyone ready to recommend dismissing the girder option on the east side to the CTF?
  - [All shown hands raised in favor of dismissing the girder option from further consideration.]
  - Bob Hastings: The girder on the west side; the depth and mass of it, the imposition that it makes on the ped scale, driver scale is so strong. Especially when you contrast the cable stayed to the tied arch. Not wanting to have a Frankenstein combo.
  - Lora Lillard (via chat): The advantage gained from the openness of the west side is totally a miss in terms of the experience under the bridge. Not worth it. The same openness can be felt in the other bridge designs, especially from a pedestrian point of view.
  - Izzy Armenta (via chat): I agree with Lora's points.
  - Carol Mayer-Reed: Are we correct in saying we can let go of the VERY asymmetric bridge of one structure on one and a freeway style the other.
  - **UDAWG Input to the CTF: Dismiss the girder option from further type selection consideration**

- Carol Mayer-Reed: What about the short span bascule "box"? With that in mind, what else in terms of a long span structure goes with that? What is the combo of the two that will be a real winner here?
  - Dave Todd: We've got bascule piers that are not nearly as massive, they are the short span; but my feeling is the delta piers are a large scale thing that fit in the Columbia, but not the Willamette. That doesn't mean I don't like the bascule bridge, it has unlimited vertical aperture, but the delta pier is not right scale-wise in the river. I think that opens it up when you're down on the river front. I vote against the delta piers but I still don't like the vertical limitation of the bascule
  - Steve Drahota: If the delta pier was smaller, or the short movable span bascule pier was smaller, then I'm hearing that is more like what you would be hoping for. I'm hearing the size of it is the challenge. If the same size that is out there today was proposed, if through engineering that could be achieved, how would you respond to that?

- Dave Todd: Yes, that is what I would like. The cut waters along the existing piers give a feeling of something that is organic in the water and something that size is something that I'd feel good about.
- Steve Drahota: Thanks Dave. That's something I can present to the engineering team.

- Randy Gragg: You have to put the "stuff" somewhere - either in the water or in the air; I think I prefer putting less in the air. I found in seeing all those views that I feel very strongly against the towers. Maybe there is a way to make them lighter and cooler, but it still seems like they will have a huge impact on the city and the river and the crossing.
  - Magnus Bernhardt (via chat): Agreed.
  - Paddy Tillett (via chat): Agree with Randy.
  - Bill Will (via chat): Strongly agree with Randy. But I've already said that.

- Lora Lillard: If it's a lift, the piers touching doesn't work very well with the tied arch, I think they work better with the cable stayed because those go together. Some of those designs work better together than others.

- Paddy Tillett: I think the long span tied arch begins to do a lot of the right things. I agree with David on the massiveness of the delta piers, and if they can be reduced in scale and farther from the bank they'd be less of a distraction. I think the main problem with the cable stayed is just too much going on in the river. It distracts the harmony we are trying to achieve in the bridge. The longer span tied arch is the one I'm liking. I'm very happy with two of the same family, which a matter of difference of scale.

- Carol Mayer-Reed: Does this group prefer the lift or bascule for the movable span?
  - Paddy Tillett: With a bascule.

- Carol Mayer-Reed: With delta piers if it can be reduced?
  - Paddy Tillett: Yes, they're altogether too massive for the scale of the river.
  - Bob Hastings (via chat): The lift towers impose a presence which isn't appropriate to their function. Meaning they're always present, waiting for their function to be required. Also, I feel there's a hierarchy between East/West vs North/South, i.e. the ground movement vs the river movement. The lift towers stick up into the ground movement.
  - Magnus Bernhardt (via chat): Agree with Paddy.
  - Randy Gragg (via chat): I have to disagree with Paddy: I STRONGLY favor the unbalanced cable stayed. They create a composition. Two tied arches seem like "Me" and "Mini Me."
  - Lora Lillard (via chat): I think the towers can be done well with the cable-stayed; they are also more beacon-like. I also favor the unbalanced cable stayed if we are doing a cable stayed, but it must be on both sides; like it's pulling the two sides together. I also think the tied arches could be beautiful if paired well with a bascule.

- Carol Mayer-Reed: Would anyone like to speak in favor of the towers? I think they are starting to lose ground and I think there were some people that would still be interested in that.
  - Patrick Sweeney: As everyone knows, I've long been a fan of the towers, but what I've noticed in these past two meetings is that I really like the base of the towers. I could be really fine with a bascule with a tower-like base. Those views became dominated by the delta piers. To Steve's point, if the footprint could be similar to what it is now, it becomes more about the river and less about the mass in the river. Also, for the cable stayed option in the long span, I'm interested in a cable stayed for the west side, the space and continuity of space on the bridge in the west side, I'm thinking of a cable stayed all the way to the MAX station. This is going to be around for 100 years, and the cable stayed presents the most light and space into the city. Imagine being at the MAX station and you could see all the way to Waterfront Park or even the riverscape.

- Lora Lillard (via chat): But the beacon-like structure would be more difficult to achieve with the tied arches, interested in seeing how that can be done without the lift.

- Paddy Tillett (via chat): To be clear, I think we have the flexibility to use cable stayed or tied arch on east side. Randy, I like the contrast too, just not on the west side. No cable stayed on west side.

- Tate White: I have to say that over the past month or so, I thought the tied arch would be really nice. The movement of it like waves, as Bill mentioned. But I have to say, I like the cable stayed more than I thought I would. I agree that the cable stayed and the tied arch seem to work the best. I agree with Lora that the bascule works well with the cable stayed. But I'm intrigued by the towers with the cable stayed option. With some design refinements, those could be really interesting. With the cable stayed towers being far away enough and having them interact in an interesting way.

- Hillary Adam: I'm not too impressed with the tied arch, it's a simple bridge and offers some value on the west side; but I'm thinking the cable stayed has the opportunity to be more. I think it speaks to context much better than the other bridge types do. I agree with Tate that I'm intrigued by center towers, but I also think it limits what can happen in that space and I think it's a bit riskier than a bascule. If it turned into a cable stayed – bascule – cable stayed, where it feels like a more open space.

- Izzy Armenta: Tied arch is kind of fun and the cable stayed is fun too and creates some balance. I'm leaning more bascule than tower.

- Chris Herring: I've like the tied arch from the beginning, the cable stayed is my second favorite. The towers in the water take up a lot of space, are very heavy, but it also creates a space to create a beacon. The delta piers do seem very heavy in the water. They seem massive. If they could be brought back in scale, it would feel a bit more organic, like Portland. I do like the tied arch. I walk

over that bridge a lot and I love the openness of it. I know the bulk needs to go somewhere. Thanks for all of the great conversation.
  - Magnus Bernhardt (via chat): Agree with Chris.

- Bill Will (via chat): I would like to hear from Bob on cable stayed vs. tied arch.
  - Bob Hastings: The tied arch and the cable stayed do very different things. I think in most of the diagrams, there's a tremendous capacity to do something very interesting sculpturally. The landscape east to west is also very interesting. Now lighting starts to come into the equation. Lighting for tied arch vs. cable stayed is also VERY different. With the new models: wow, what a difference seeing the delta pier from the different vantages points. I didn't think it'd make that much of a difference to me, but the closer it came to the bank, the more I wanted it to back up and away.

- Steve Drahota: I'd like to ask this group: Do you like the **short movable span or the longer movable span?**
- Allison Brown: Firstly, how are we feeling on the shorter moveable span?
  - Result: Roughly half thumbs up.
- Allison Brown: Now, how are you feeling on the longer moveable span?
  - Result: One thumbs up
- Allison Brown: How many of you can't make a decision right now?
  - Result: 4 thumbs up
  - Randy Gragg (via chat): I would need further design development. I don't have strong opinion at this point.
  - Tate White (via chat): I need more time with the visuals and a better understanding of impacts to answer.
  - Priscilla Macy (via chat): No strong opinion yet. Need more info I think.
  - Lora Lillard (via chat): I don't have a strong opinion here without studying the visuals.

- Hillary Adam (via chat): Shorter span = taller structure, right?
  - Bob Hastings: The shorter span result in higher towers.
  - Steve Drahota: Yes, a shorter moveable span means everything gets taller.

- Bill Will (via chat): Shorter span ties the three segments together and seem like one bridge.
  - David Todd (via chat): Agree with Bill....gains coherence

- Carol Mayer-Reed: Would it be noticeable?
  - Steve Drahota: Yes, I tried to show early on what it would look like. What I'm hearing regarding the short span vs long span is that there's interest in knowing more about it, but not a unanimous decision.

- **Allison Brown: In summary, we're hearing no love for truss or girder, mixed feelings on cable stayed vs tied arch, and others that want more info first.**

- Carol Mayer-Reed: I was scrolling back through the chat and noticed one from Paddy that said no cable stayed on the west side.
  - Paddy Tillett: The reason for that is that any way you cut it, you get a massive support structure in Waterfront Park and I think that's a fatal flaw. A tied arch on the west side and either on the east side because there is more freedom in scale there.

- Hillary Adam (via chat): Thank you. Awesome graphics. Got to go!
- Bob Hastings (via chat): Loved all the input and discussion...debates!

NEXT STEPS

- UDAWG Mtg #8: Late January 2021 (Details to come)
- Open Dialogue / Questions / Celebration

ADJOURN

INFORMATION RECEIVED FOLLOWING THE MEETING:

From Bill Will (via email 12/17/20):

Steve and UDAWG members,

Thank you Steve for sending the images you presented yesterday. I've looked at them all again - carefully - focusing mostly on the views at eye level from the East Bank Esplanade and Waterfront Park.

In the short amount of time after the presentation it was difficult for me to track everyone's opinions. For what it's worth here are my preferences having looked again at the images. I hope others will share their opinions.

My preferences:

Tied arch

- The bridge structure is more centered on the river whereas the Cable Stayed option puts the tower (mass and high points) in from the banks.
- The bridge is more compressed so that we can see all of it at once. This will make for a better iconic structure that connects both sides of the river because it emphasizes the middle not the 2 ends.
- Spacing of the 3 elements (2 approaches and moveable span): the tied arch option divides the spaces more evenly.

- The curves are fluid and elegant (like the water below). This could be enhanced by a pier design that is more sculptural as suggested by Michael.

Long arch (west side)

- The long arch is a better balance with the arch on the east side.
- Leaves more space and headroom in Water Front Park.

Bascule

- Simpler and less cluttered
- Movement is fluid and is complementary to the arches when opening.
- Movement is surprising and logic defying ("How can that even work?").

Short moveable span

- Moves the piers away from the banks and pedestrians.
- Creates better through the bridge views (I think).
- Makes the bridge taller which I like for a tied arch bridge in this location and especially for west side.

Small pier

- Small like the existing bridge
- A shape the is not a block

As difficult as it is to do this kind of thing online, I really enjoy listening to and working with everyone on this committee! Your expertise is inspiring.

From Paddy Tillett (via email 12/17/20):

Bill:

You sum up my conclusions too. The only departure I would make is that a cable stay solution for the eastside long span may also be acceptable and should not yet be ruled out yet. It deserves further examination.

From Dave Todd (via email 12/17/20):

Bill's summary matches my conclusion very precisely. Point for point, I could not agree more.

(I was surprised at how well I liked some of the perspectives of the cable-stayed, especially the unbalanced west side option, but in the end, I still feel the tied arch provides the best overall composition with the short bascule.)

It has been very enjoyable participating in all the discussion and sharing of ideas and viewpoints.

As a matter of information, the Portland Rose Festival has invited the project team to make a presentation on these efforts to our Executive Committee in January. Our CEO, COO and I considered the request and concurred that this will be of great interest to the Rose Festival Foundation. I think there will a great deal of interest to present based on the work UDAWG has accomplished this fall.

From Randy Gragg (via email 12/17/20):

> I personally disagree with the chain of conclusions. The tied arches remind me of my childhood train set and mixing tied arch and cable stay, to my mind, could easily result in a Frankenstein monster.