



## **French Prairie Bridge Project Technical Advisory Committee Meeting #4**

**Meeting Summary**  
**Wednesday, October 3, 2018**  
**1:00– 3:00 PM**

Wilsonville City Hall  
29799 SW Town Center Loop E, Wilsonville,  
OR Willamette River Rooms I & II

### **Members Present**

Chris Neamtzu, City of Wilsonville Planning; Kerry Rappold, City of Wilsonville Natural Resources; Tod Blankenship, City of Wilsonville Parks and Recreation; Rick Gruen and Tom Riggs, Clackamas County Parks; Anthony Buczek, Metro; Tom Loynes, National Marine Fisheries Service; Tom McConnell, Oregon Department of Transportation; Russ Klassen (for Dan Cary) Oregon Department of State Lands; Natalie Edwards (replaces Carrie Bond), U.S. Army Corps of Engineers

### **Members Unable to Attend**

Nancy Bush, Clackamas County Disaster Management; Scott Hoelscher, Clackamas County Planning; Terry Learfield, Clackamas County Bridge Maintenance; Tom Murtaugh, Oregon Department of Fish and Wildlife; Dan Cary, Oregon Department of State Lands; Robert Tovar, Oregon Department of Transportation; Andrew Phelps, Oregon Office of Emergency Management

### **Project Management Team/ Staff**

Karen Buehrig, Clackamas County; Bob Goodrich, OBEC Consulting Engineers; Zach Weigel, City of Wilsonville; Anne Presentin, EnviroIssues; August Burns, EnviroIssues

*Conversation is summarized by agenda item below.*

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### **1. Welcome and Introductions**

**1:00 – 1:20pm**

City of Wilsonville French Prairie Bridge Project Manager Zach Weigel welcomed Technical Advisory Committee (TAC) members and thanked them for staying with this important project into the next phase of bridge type selection. Acknowledging that Kirstin Greene, former facilitator from EnviroIssues, had moved on to a public-sector position, Zach introduced Anne Presentin of EnviroIssues as the new project facilitator. Facilitator Anne Presentin asked members to introduce themselves and then went through the meeting agenda.

### **2. Project Updates**

**1:20 – 1:40pm**

Recognizing that it has been many months since the last TAC meeting, Zach gave a brief overview of key decisions that have been made since the last TAC meeting as well as a project schedule update. Key decisions include the unanimous decision of Wilsonville City Council and the Clackamas County Board of Commissioners passing a resolution in favor of alignment W1, which the TAC and Task Force recommended. The next step is to evaluate five potential bridge types.

Based on discussions with the Federal Highway Administration, the project team will complete a

planning summary document that comprehensively details the analysis and process to date. FHWA will review the document to determine what other environmental reviews/assessments are needed for the project to proceed.

The Task Force will meet in December to review the five bridge types and recommend two preferred bridge types for further evaluation based on TAC and public input. Those two bridge types will go to City Council and Clackamas County Board of Commissioners for approval to proceed with the additional analysis. Zach presented an update project schedule.

Additionally, there is a project online open house that will be live from October 11, 2018 – October 30, 2018, and an in-person open house slated for October 18<sup>th</sup>.

### **3. Bridge Type Selection Process**

**1:40– 1:55pm**

Bob Goodrich explained the selection process and logic behind settling on the five bridge types identified for evaluation. He noted a couple of structure types specifically not evaluated: a stress ribbon bridge would have difficulty meeting ADA requirements because of the steep grades near bridge supports; concrete girders cannot feasibly achieve the necessary span lengths to meet the navigational clearance without incurring additional costs and impacts. The five bridge types being evaluated are: steel girders, steel trusses, tied arch, cable-stayed, and suspension.

The project team developed the following selection criteria when evaluating the bridge types:

- Economics
  - Design and Construction Cost
  - Design and Construction Duration
  - Maintenance
- Constructability,
  - Substructure Access Requirements
  - Substructure Complexity
  - Superstructure Access Requirements
  - Superstructure Complexity
- Impacts
  - Temporary Resource Impacts
  - Temporary Built environment Impact
  - Permanent Resource Impacts
  - Permanent Built environment Impact
- Aesthetics

A TAC member asked whether temporary and permanent impacts were weighted the same. Bob Goodrich said when different weights were applied the outcome did not change significantly. The TAC noted the subjectivity of impacts as a challenge in considering weighting, but did not want to mask the permanent impact if there was a high weight on temporary impacts.

The TAC recommended removing aesthetics from the scoring criteria due to the inherent subjectivity.

Clarification was given that the smaller scoring numbers are meant to denote better bridge type outcomes for the individual criteria. Clarification was also given that this ranking system is relative to the other bridge types, and are meant to help the TAC, Task Force, and Public get a sense of the bridges compared to one another. It is a process developed to facilitate discussion and inform

decision-making, not to provide "the answer".

Questions arose around real numbers for bridge cost estimates, something that will dictate whether building a bridge is feasible. The project team pointed out that it is too early in the project to give hard numbers for bridge costs because there are too many factors that will arise in later stages to be able to give accurate estimates at this point. However, relative cost was a scoring criterion.

Bob Goodrich then walked the TAC through each of the five bridge types and how the scoring criteria was applied to each.

Some aspects of all bridge types that were taken into consideration included:

- Creating a navigational channel in line with up and downstream bridges
- Providing vertical clearance over the river no less than the up and downstream bridges
- Minimum span length similar to the navigational channel
- Adverse natural resource impacts that are potentially avoidable with other bridge types
- Ability to avoid permanent impacts is dictated by bridge type and span length

### **Steel Girder**

The TAC asked whether the bridge type would determine how far or close the structure could be built to the existing railroad bridge. The project team clarified that the alignment dictated the distance between the potential structure and current railroad bridge. The alignment placement took into consideration the railroad bridge's potential failure in the event of an earthquake. Each bridge type has the same horizontal alignment, but vertical alignment shifts depending on the total depth of the bridge structure spanning the river.

A concern was raised about the stormwater outfall from Boones Ferry road and how the environmental impacts of a cut bank from this bridge type might be problematic due to erodible soils. The project team recognizes that environmental impact of this bridge type, given the pier locations and the need to balance flooding potential with soil types. Steel girder bridges have the deepest structure from the bridge deck to the bottom of the girders. It was also noted by the project team that no bridge will be inexpensive or low impact.

There was discussion about the impacts to the marina's parking lot. This bridge has a potential to impact parking for up to two years of construction and the potential to remove a parking spot for the bridge's foundation. Consideration is needed long term for a new parking lot to serve the trailhead to alleviate stress on marina parking space, one member said. A new lot was not considered in this study since it does not affect bridge type selection.

While the cost is relatively low for this bridge, there are temporary and permanent impacts associated with it, including permanent piers in the river and one in the marina parking lot.

### **Steel Truss**

The profile of a steel truss can be closer to the water than a steel girder bridge and still meet the navigational requirements, which makes the bridge a little shorter overall and may save on some of the approach construction costs. Costs are similar to the steel girder. The TAC wondered if the shorter approach affected the dimension of the piers, but it does not affect it dramatically. Permanent impacts are also similar.

A TAC member said that Oregon has several steel truss bridges and that a common expenditure in

maintenance is painting, and that Wilsonville will need to consider that expense as they will be the ones fronting the bill. The project team explained that a way around that expense is to construct either the steel girder or steel truss bridge with weathered steel, which is inherently corrosion resistant. This would eliminate painting as a maintenance concern. The project team also said that should either a truss or girder bridge move forward, the agency responsible for long-term maintenance will need to weigh in.

### **Tied Arch**

The tied arch bridge type still requires a pier in the marina parking lot, but the river piers are removed from the main river and are located on the edge of the channel. The structure depth is shallow, and the profile is low. However, this is a much higher cost bridge type and requires specialty construction.

The TAC brought up a concern about excavating the edge of the river versus building a retaining wall, a consideration the project team went back and forth on in terms of showing on the bridge figure. Ultimately, the project team decided to show the bank cut back. It was noted that land could be better utilized with the construction of a retaining wall, but at a higher project cost.

The TAC asked about why the tied arch bridge was ranked lower in aesthetics than the steel girder and steel truss bridge types. The project team recognized the subjective nature of the ranking but felt it was justified given the height (tall) and width (narrow) of the bridge would be disproportionate to the two existing bridges in the project area.

There was also concern as to whether emergency vehicles would be able to fit through the narrow archway of this bridge type. The project team assured the TAC that emergency vehicle clearance would be accommodated in bridge design.

### **Cable Stayed**

This bridge type has no piers in the river, which will reduce or eliminate permanent impacts in the river. The bridge figure shows a pier in the parking lot, but the project team says it is possible to remove that pier during preliminary design. This bridge type has the potential for further modifications to reduce temporary and permanent impacts to the marina and river, however, it is a relatively high cost bridge type that requires specialty construction.

The TAC requested that the project team list out local examples of all the bridge types.

The TAC was also curious if the Aurora Airport had been coordinated with and was concerned with the height of the piers affecting flight path. The project team assured the TAC that the design would be coordinated appropriately and that the piers would not intrude in flight path.

### **Suspension bridge**

This bridge type has many similarities to cable stayed. The piers and pylons are shorter and it has a main suspender cable. Potential temporary impacts include the need to construct a large buried anchorage block in Boones Ferry Park. Most construction of the suspension bridge is at deck level and won't create temporary or permanent river impacts, making this one of the lowest impact bridges compared to the other options. This is a high cost bridge type requiring specialty construction.

Additional comments and questions:

- What is difference in the height between suspension and cable-stay?
- Better explain rationale for different ranks. If ranks are different, the text in the table should be different.
- Have you talked with the tribal nations?

#### 4. Ranking of Bridge Types

1:55 – 2:50pm

##### Cost

In terms of expense, steel girders are the least expensive with steel trusses not far behind, cable stayed and suspension bridges are close in cost, and the tied arch is the most expensive.

TAC asked why the suspension bridge was ranked as being less expensive to maintain than a cable stayed bridge and the project team felt that the greater number of individual cables compared to one main cable for the suspension bridge to maintain warranted a higher score.

TAC was concerned about the lack of mention regarding permitting process and difficulty for each bridge type. TAC suggested the project team consider adding a criterion about difficulty to permit and duration of the permitting process.

Based on TAC feedback, the project team will add a percentage range difference in cost between the bridge types to the scoring and change the cost scoring for cable stayed and suspension bridges to 4 (from 3) (A higher rank is less desirable).

##### Constructability

There was confusion about the scoring difference between steel truss and steel girder bridges. The project team explained that the gap was due to a hidden row in the excel spreadsheet used for the analysis that calculated scores under certain assumptions. These assumptions did not change to outcomes significantly.

Based on project team presentation, the TAC concluded that the tied arch is most difficult bridge type to construct, and cable stayed and truss are easiest.

##### Impacts

TAC members wondered if temporary impacts for construction, materials delivery and staging were captured in the scoring. The project team confirmed that it was to some degree, but a more detailed assessment will need to be done later in the project to account for economic impact to the surrounding businesses. Rick Gruen wanted his concern on record with construction-related impacts to local businesses. The project team noted that only a small amount of data in terms of inventory maps have been gathered to assess impacts to wetland streams. It was also mentioned that regardless of what spans the river, there will be impacts to wetlands.

One member said this project should acknowledge the majority of impacts will be to the south side of the river, with the north side accruing very little, if any, impacts. Much consideration needs to take place regarding the impacts to the marina and the time of year of construction. One member asked how much flexibility exists to move the piers within the selected alignment to avoid impacts to structures. The project team said there wasn't much flexibility given the railroad bridge and the need to land at Boones Ferry Road. TAC members said care should be taken in designing of the final bridge type to mitigate the potential for bridge users to launch projectiles off the bridge and damage property. The project team said fences or nets and cameras can be used to mitigate the

potential for property damage from items being thrown from the bridge deck.

TAC members were concerned about wildlife habitat and wanted to see greater differences between the tied arch bridge type and the steel girder and steel truss in terms of permanent impacts because the latter two bridge types have piers in the river while the former does not, and this will have permanent impact on fish habitat. The project team said the tied-arch would have piers below the high-water mark, but the cable-stayed and suspension do not, which is reflected in the scoring.

Additional comments included:

- Would in water work be conducted from barge or work bridge? Could affect navigation.
- What/where would access be for materials?
- ACOE will need to consider all the alignments and understand the rationale during the permitting process.
- Concern raised during the end of the discussion about impacts during construction and permanent impacts to marina and natural resources and whether the best alignment was selected to avoid impacts that are now better understood.

Anne Pressentin flip charted key points of the discussion to gain the group's consensus on the recommendations to move ahead:

- Reflect mitigation cost in the design and construction cost comparison
- Provide more detail to explain the differences and the rationale for the scoring in the ranking tables in the draft report
- Reflect in the rankings the longer permitting window for the bridge types with piers below the high-water mark
- Re-check the ranking methodology to be sure results accurately reflect the analysis
- Remove aesthetics from the ranking because it is subjective.
- The tied arch should not move ahead because the benefits clearly do not outweigh the impacts and cost.
- One each of steel bridge types and cable/suspension bridge types should move ahead. The impacts and costs of the two groups are similar and offer a range of options.

## **6. Next Steps**

**2:50 – 3:00pm**

The project team will take public comment through an in-person open house on October 18th and an online open house, which closes at the end of October. After public comments have been summarized, and the TAC and Task Force have recommended two bridge types, the project team will present to City Council and the Clackamas County Board of Commissioners.

Anne Pressentin thanked the TAC for participating and closed the meeting.