Aesthetics Guidance Memorandum – Draft

August 5, 2024

To: Columbia River Gorge Commission, Hood River-White Salmon Bridge Authority

From: The Bridge Aesthetics Committee

CC:

INTRODUCTION / PURPOSE

The purpose of this memorandum is to summarize a list of recommended aesthetic ideas and concepts for the Hood River-White Salmon Bridge Replacement Project (Project). The content of this memorandum is based on feedback that emerged from a series of Bridge Aesthetics Committee (BAC) meetings, public open houses, and a Spanish-language workshop. It is meant to serve as a guide for the progressive design-build (PDB) team to design the aesthetic elements of the bridge while making sure that the design reflects the local community's input, the unique regional character, and the natural beauty of the Columbia River Gorge. The PDB will consult this memorandum as they develop an Aesthetics Design Package to be submitted for approval by the Bridge Authority.

While visual treatment plays a large part in aesthetics, the approach of the BAC was to consider the overall user experience of the new bridge, which includes non-visual factors that can be influenced by design, such as wind and sound. The experience of the bridge was considered from the viewpoint of various users, including motorists, cyclists, pedestrians, people using wheelchairs and mobility devices, and those viewing the bridge from a distance and under the bridge. Rather than designing each of the bridge elements as separate entities, the BAC applied a holistic approach to emphasize the overall experience of using the bridge and how the bridge fits into its surroundings.

BACKGROUND

NEPA Commitment and Formation of the BAC

The Project is required to comply with the National Environmental Policy Act (NEPA) and Section 106 of the National Historic Preservation Act (NHPA) due to the federal funding it has received. The Federal Highway Administration (FHWA) is the lead agency for the NEPA process, with the Port of Hood River (The Port) and Oregon Department of Transportation (ODOT) serving as joint lead agencies. The BAC was formed based on a NEPA commitment to have a broadly representative committee to recommend a cohesive aesthetic theme for the non-structural components of the bridge.

Analysis of Project Alternatives

Seventeen alternatives were created to be evaluated in a Draft Environmental Impact Statement (DEIS). The EC-2 West Alignment was identified as the preliminary Preferred Alternative and the DEIS was published in 2003. After the Project was restarted in 2018, FHWA determined that a Supplemental DEIS was needed.

Three alternatives were analyzed in the Supplemental DEIS, including a No Action Alternative and two build alternatives: Alternative EC-2 and Alternative EC-3. Alternative EC-2 was reconfirmed as the Preferred Alternative in the Supplemental DEIS based on public input and re-evaluation of the build alternatives. Of the two build alternatives, both included a segmental concrete box girder bridge with 12-foot (ft) travel lanes, 8-ft shoulders, and a 12-ft wide multi-use path. The two alternatives differed in their alignment and location of the roundabout in the city of White Salmon at the intersection with SR 14. Preferred Alternative EC-2 was selected as it best met the Project's Goals and Objectives such as improving cross-river multi-modal transportation, maintaining the integrity of the interstate highway system, and minimizing impacts to the community, the natural environment, and archaeological resources.

RECOMMENDATIONS

The BAC held several meetings to discuss potential design concepts and applications, which ultimately led to a list of recommendations for the PDB team to potentially incorporate into design elements of the new bridge. Two concepts that resonated with the BAC and the public were the overall aesthetic theme and the functional themes. **Natural Elements** was identified early as a strong overall aesthetic theme for the project because it captured a lot of the terms and phrases that surfaced in the workshop and follow-up meetings. Ancillary themes also surfaced, which led to the functional themes of **One Community** and **A New Public Space**.

Natural Elements

The BAC developed this overall aesthetic theme by consolidating several words and phrases that connected with local and regional Natural Elements. The driving terms that led to this were **Wind**, **Water**, **Earth**, and **Mountain/Volcano**, which are defined as follows:

1. **Wind**: Pertains to cross winds, safety considerations, associated noise, the physical force it creates, and power.
2. **Water**: Pertains to the Columbia River, also known as N'chi-wana (The Big River); and includes large flows, white caps, aquatic wildlife, and water recreation; and connecting adjacent rivers, streams, and waterfalls.
3. **Earth**: Pertains to the local landforms, local materials (stone/rock, lumber, etc.), the Columbia Basin, columnar basalt, and natural vistas.
4. **Mountain/Volcano**: Pertains to the nearby, snow-capped volcanic peaks of Mount Hood in Oregon and Mount Adams in Washington as well as the Cascade Mountain Range.

These four terms provide more detail, which should be used to develop ideas for aesthetic applications to the bridge and its associated features. Any or all the elements can be represented by using subtle artistic or graphic elements throughout the bridge. One way to do that is to incorporate public art. Also, single or multiple graphic icons, logos, symbols, patterns, or textures could be developed to carry a theme through the project, which also could be

incorporated into any part of the bridge. Icons or symbols could represent all four of the associative terms and could potentially be incorporated into the following bridge features:

- Bridge gateways
- Overlooks
- Roundabout at State Route (SR) 14
- Lighting elements (base of light poles, pedestrian lighting)
- Traffic barriers
- Railings
- Multi-use path surfaces
- Bridge piers/columns, girders, wingwalls

Examples of how ideas could be developed from the four associative terms and applied is as follows:

- **Wind**:
  - Railings and traffic barriers could be designed to protect people and vehicles from the wind by using solid materials or by strategically deflecting/diffusing the intensity.
  - Railings and hardscape patterns could have patterns and/or icons to represent wind.
- **Water**:
  - Railings and traffic barriers could be designed to have open views of the Columbia River by using clear materials or thin metal elements.
  - Patterns representing water and associated wildlife (salmon, etc.) could be presented in hardscape surface and other areas (base of light poles, overlooks, gateways, etc.)
  - Small portions of the existing bridge road surface could be placed in the shared-use path (with a protective covering) so that people can see down to the Columbia River. This would also satisfy the requirement of incorporating portions of the old bridge for historical reference.
- **Earth**:
  - Local basalt and/or lumber could be applied to several items on the bridge: as a highlight on railings or light pole bases, within gateway elements, and within the overlook areas.
  - Color that matches the adjacent landforms could be applied throughout the bridge.
  - Vertical striations could be applied to several bridge elements to represent the nearby columnar basalt forms.
  - Overlooks and associated interpretive panels could display information about the local geology and how the Columbia River Gorge was formed.
  - Off of the bridge, rock walls could be incorporated where there are no scenic views.
- **Mountain/Volcano**:
  - Bridge design could incorporate the best possible views of Mount Hood.

    - Overlooks and associated interpretive panels could display information about the Cascade Mountains and how they were part of how the Gorge was formed.

Regardless of what design elements are chosen and incorporated, it is important that the final product has a well-integrated appearance and avoids having elements applied that seem like an afterthought. In addition, the visible elements that are chosen for incorporation should be close to its natural material.

Functional Themes

As the BAC worked through developing the Natural Elements theme, several other thematic ideas arose. Two functional themes surfaced as being relevant: **One Community** and **A New Public Space**. These themes were identified as having the potential to support the overall aesthetic theme when considering design options. Details of these themes are as follows:

- **One Community**: Pertains to designing a bridge that binds both sides of the river together as one community and that avoids a feeling of separation. This theme also refers to people being part of nature and creating a community that integrates nature with the built environment.
- **New Public Space**: Pertains to the areas on the bridge that allow for public non-vehicular access and gathering, which would offer an opportunity for creating a special public space that the current bridge does not provide and celebrates the local cultures and landscape. An effective design should avoid creating a space focused only on function.

Both functional themes point to creating a design that unifies the local communities, cultures, and environmental elements. Examples of how ideas could be developed from the functional themes and applied is as follows:

- Carrying consistent colors, patterns, textures, and materials throughout the entire project.
- Integrating art, symbols, and icons that carry through the entire project.
- Creating gateways or public art elements that display an expression of unification.
- Avoiding signage that points to separate communities and cultures.
    - Note: Providing signage welcoming people to each state at bridge heads is encouraged.

Other Considerations

The public open house on April 17, 2024, and its associated online open house provided considerable information on what the local community considers important. Most of this information supported the concepts and ideas that the BAC had already developed, but a substantial number of comments also demonstrated an interest in incorporating local tribal art and/or culture. This interest was identified as being something that could strengthen and/or enhance the bridge theme(s). The FHWA appointed an ODOT Tribal Liaison and project leadership will consult with the Tribes to determine the appropriate inclusion of any reference to tribal art and culture in the aesthetic design elements of the bridge.

FUNCTIONAL ELEMENTS

The BAC developed their ideas from aesthetic concepts or how the bridge will look and how people will experience the bridge. Many of the functional elements of the bridge design are connected to experiential elements and are defined as the tangible parts of the bridge that can be designed with a certain character or style using different materials in various forms, colors, and textures. An example would be a dark green painted steel railing with a historic appearance. This section provides a summary of the information gathered that relates to functional elements and provides recommendations that the PDB team can use in their design elements. The Bridge Elements Design Guidance Tracking (**Appendix 3A)** provides a matrix of the location and type of functional elements along with any design requirements and expressed preferences. Requirements are related to regulatory commitments and preferences stem from the BAC, public comments and surveys, our project staff and input from the Progressive Design-Build team.

Functional Elements Design Recommendations

The following recommendations are intended to inspire the new Hood River-White Salmon Bridge design. In addition to design elements required by regulation, recommendations are based on the BAC's conceptual themes, goals, and ideas and the community preferences related to aesthetics. Recommendations are organized into four sections:

- The **OVERALL BRIDGE**,
- The **MULTI-USE PATH**,
- The **ROADWAY,** and:
- Areas **OFF BRIDGE**

Overall Bridge

Aesthetic considerations of the overall bridge consider views to the bridge from the two sides of the river, the three communities, and the extents of the bridge viewshed. The focus of this section is how the bridge appears in its environment. The bridge color, form, style, and texture are some of the considerations.

Recommendation 1): Concrete Color

Avoid bright concrete by adding an integral grey color additive. Concrete should not be painted or stained to avoid the need for future repainting. Avoid brown or tan integral additives which may fade to pink.

Recommendation 2): Steel Color

Steel elements on the bridge including railings, sign backs, light poles, that are accessible for repainting, should be painted a dark natural green, with a flat or matte finish. National Scenic Area Green is a preferred green. Steel bridge girders should be weathering steel using drip pans or other methods to avoid rust staining on concrete piers.

Note: The overall bridge colors should help the bridge harmonize with the Gorge landscape. Structurally, the bridge will likely consist of some combination of steel and concrete. The substructure (piers and girders) will likely be concrete although some girders could be steel.

Haunched Weathering Steel Girders and Haunched Integral Color Concrete Girders

Dark green coniferous forest background and NSA Green color sign.

Recommendation 3): Bridge Form

Use broad arches to create haunched girders and expressive slender piers. Openings in the piers may be needed to achieve lightness. Maintain a slender appearance by considering the span length in relation to the superstructure depth. Likewise, consider the deck overhang in relation to the parapet depth to achieve slenderness. Timelessness, openness, and elegance are the goals.

Note: The Management Plan for the Columbia River Gorge National Scenic Area (CRGNSA) requires that arches and other traditional structural forms be used to create a thin and open structural design that allows views through it and for the bridge to be visually unobtrusive and harmonious with the Gorge landscape.

Examples of Broadly Arched Girders and Expressive Piers (MNDOT)

Recommendation 4): Style

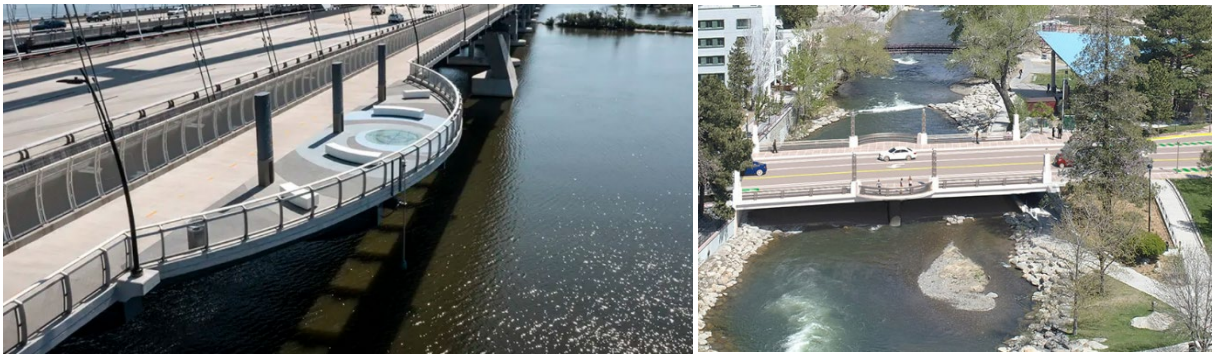
The bridge style should reinforce the broad arches mentioned above in design of the railings, lighting, furnishings, and the back of the traffic barrier.

Note: The Gorge Management Plan stresses that the new bridge reflects historic design features of CRGNSA bridges as integral design components from shore to shore. The goal is to have a consistent design character that recalls or reflects historic elements so that the bridge fits within a regional historical context. Modern, but timeless interpretations of historic elements that are integrated into the structure are preferred over copies of historic elements applied to the bridge.

Recommendation 5): Overlooks

Provide at least two spacious overlooks located at regular intervals of the bridge to provide adequate areas for respite for the multi-use path users and to take best advantage of river views. Overlooks may vary in size.

Note: Two overlooks are required; however, more than two overlooks and different size overlooks have been discussed as being desirable by the BAC. The BAC also discussed the idea that each overlook may have a different focus, including interpretive information, art, and/or interactive features. Overlook locations should be coordinated with structural designers.



Bridge Overlook examples

Recommendation 6): Texture

Create high-relief form-lined textures consisting of natural flowing organic forms potentially interpreting the periodic ice age floods or other geologic history. Avoid form liners that are literal representations of natural materials, such as those mimicking natural stone textures unless used as an abstract aggregation like the examples below.

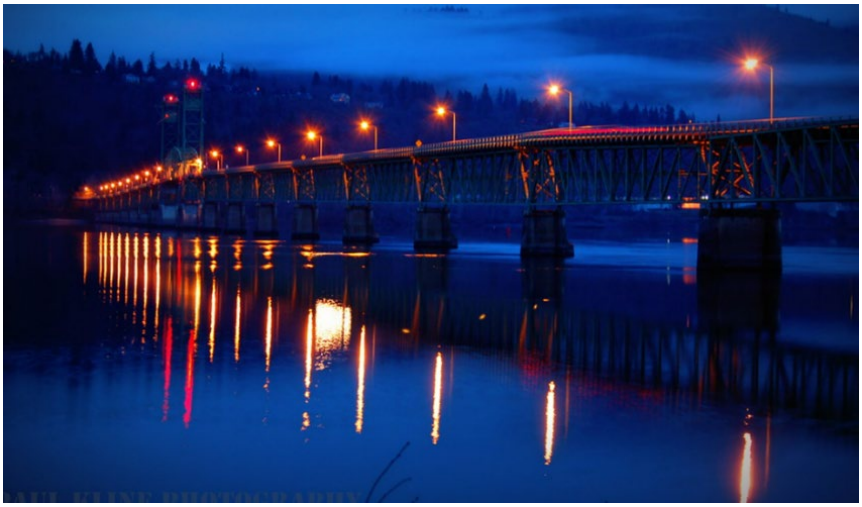
Note: Visible concrete portions of the abutments and piers could benefit from having a deep texture with relief to create light and shade patterns.

Examples of Concrete Form Liner-produced Textures with Abstract Patterns or used in Combination to create abstract patterns.

Recommendation 7): Lighting and Glare

Lighting should be the minimum needed for the roadway and multi-use path safety. Lighting should also be DarkSky compliant with no fugitive light reaching the water surface to avoid adverse impacts on aquatic habitat. Any accent lighting should be subtle without bright colors. Surface finishes should be matte or low sheen finishes to reduce potential glare.

Note: The Bridge Aesthetics Committee and the community have expressed that less lighting is desired. Performative lighting (ie. lighting programmable for events) was expressed as undesirable.



Existing Bridge Roadway Lighting – Not a Recommended Condition

Multi-Use Path

The multi-use path user experience will be a slower more detailed view of the bridge. Since the sense of scale differs for users, the level of detail and tactile quality of materials should be considered. This section recommends shared path connections, railing and barrier design, noise and wind mitigation, amenities, and art for the overlooks as well as paving considerations.

Recommendation 8): Shared Path Connections

Connect the bridge multi-use path to sidewalks on Button Bridge Road and SR 14.

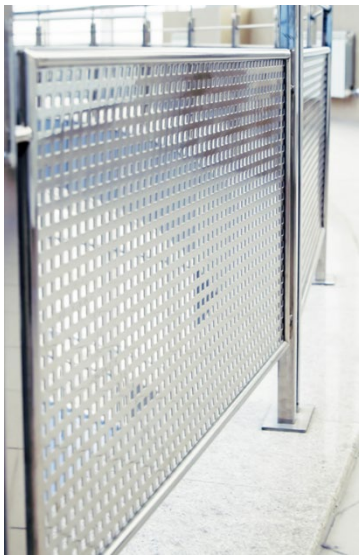
Note: Safe, efficient connections for bicyclists and pedestrians are needed on the Oregon and Washington ends of the bridge. These connections are critical to creating a new community public space(s).

Recommendation 9): Railings

The railing could have modern interpretations of regional historic precedents such as arches and be highly transparent. The railing should be dark green steel (painted or anodized) and climb resistant. The railing could have some panels that artistically interpret the Natural Elements theme. Also consider adding wind protection in places, particularly near the overlooks, with railing infill panels.

Note: The railing on the downstream side of the bridge along the multi-use path must meet various requirements defining minimum height, maximum opening size, and strength. The railing design, however, presents an excellent opportunity to interpret the Natural Elements themes with craft and artistic expression. Functionally, the preference is for a highly transparent yet sturdy railing that also resists climbing. The BAC has also considered adding some wind protection with perforated metal or laser cut panels in places.

Examples of traditional and industrial style, highly transparent and climb-resistant railings.



Examples of Perforated Metal Railings to mitigate wind effects.

Recommendation 10): Traffic Barrier (multi-use path side)

Traffic barrier should have a vertical back, be a minimum height with a bike railing mounted on top. Create a recessed section of the barrier for a textured panel. Match the style of opposite side full-height pedestrian railing.

Note: The back or vertical side of the traffic barrier along the multi-use path provides a close-up view from the path and is an opportunity to add detail to an otherwise monotonous surface by either including recessed basalt veneer in a rubble pattern (shown below) to match the Historic Oregon Highway walls or a custom project-specific concrete formliner texture or image that fits the Natural Elements theme.


Historic Columbia River Highway barrier / bicycle railing and example of uncoursed rubble basalt veneer that could be used on the back side of the barrier.

Recommendation 11): Wind Protection

Consider and evaluate the feasibility and potential benefits of transparent wind protection at the overlooks and at places along the multi-use path.

Note: The Gorge, particularly at the existing bridge, is known for strong winds. Community members have expressed a potential need for transparent wind protection specifically at the overlooks. Other community members have expressed concerns over maintenance, potential glare, and wind-blown sand etching of wind protection panels.


Laminated Glass Wind Protection (Tappan Zee Bridge Overlooks)

Recommendation 12): Noise Reduction

Consider transparent noise reduction or other noise-mitigating strategies at the overlooks either mounted on the traffic barrier or between the multi-use path and overlook.

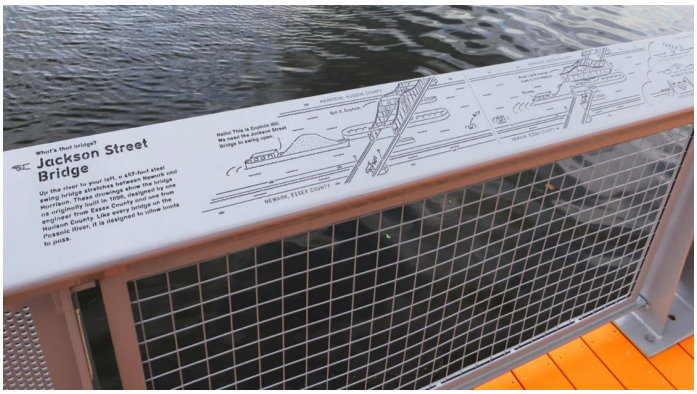
Note: Some community members have expressed a need to reduce ambient traffic noise at the overlook locations.

Acrlyic Transparent Noise Reduction Panels Mounted on a Traffic Barrier (Tappan Zee Bridge)

Recommendation 13): Overlook Amenities

The overlooks should be spacious and provide benches, short-term bicycle parking and interpretive panels while taking full advantage of the Gorge views. Benches could have historic references and interpretive panels should minimally obstruct views. Interpretive panels should extend from shore to shore but may be focused on the overlooks. It is desirable to display real-time data regarding current wind and river conditions at the overlooks and/or bridge approaches. See recommendations on approaches for specific types of data. The ODOT Tribal Liaison and project leadership will consult with the Tribes on any tribal interpretation. Backless benches obstruct the view less.

Historic-influenced and Regionally-specific Backed and Backless Bench Examples



Three Examples of Low Profile Interpretive panels

Recommendation 14): Shared Pathway Paving

Construct the multi-use path with either different types of paving or different textures of cast-in-place concrete paving. A paint stripe should separate bicyclists from pedestrians.

Note: Community members would like to see an obvious difference in the paving for bicycle or other wheeled use and the pedestrian portion of the multi-use path. Bike users want a smooth path. The pedestrian portion should offer adequate slip resistance.

Bike / Pedestrian Separation on the Tilikum Crossing Bridge

Recommendation 15): View Screening of the Tribal Fishing Area

Screen views on the west side of the bridge to the Tribal Fishing Access Site (TFAS).

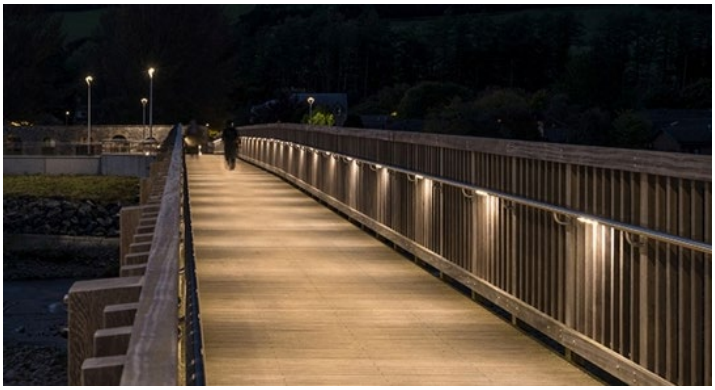
Note: If screening is incorporated on the bridge, it should provide privacy for the northern end of the bridge along the multi-use path. The screen height should be limited to allow views downriver/to the west but not views of the TFAS. The ODOT Tribal Liaison and project leadership will consult with the Tribes to idenify preferred screening type and location prior to establishing a design.

Potential Concept of Screening the TFAS from the multi-use path (not a design)

Recommendation 16): Lighting

Employ lighting that provides a safe and enjoyable experience for bicyclists and pedestrians while not casting light into the sky or onto the water. The roadway lighting should not be used as the primary lighting for the multi-use path.

Note: If adequate light levels can be accomplished without pole-mounted fixtures, then recessed lighting in the barrier or railing should be used.



Shielded and recessed downlighting of a pedestrian pathway

Recommendation 17): Art

Incorporate art as an inherent part of the bridge using art to reflect the Natural Elements theme, as well as the One Community and New Public Space functional themes.

Note: Wherever possible, art should be incorporated into the bridge rather than placed or attached. Art could also be aural in nature such as a wind pipe organ, functional such as windsocks or poetry / storytelling.

Examples of Well-integrated Art (South Park Bridge, Seattle) and a wind organ. (Netherlands)

Roadway

The quality of the bridge traveler's aesthetic experience relates to how much of the Gorge scenery is visible over or through traffic barriers and railings. This section includes recommendations for traffic barriers, roadway lighting, the bridge approaches and SR 14 roundabout, and signs. In general, the roadway should not have elements that distract drivers.

Recommendation 18): Traffic Barrier

Use a concrete barrier with vertical back and bike rail on the west side of the bridge. Consider using an all-steel, more transparent barrier for the northbound lane.

Note: The concrete portion of the traffic barriers should be the minimal allowable height. The barrier separating the SB travel lane from the bike portion of the multi-use path should include a bike railing that matches the pedestrian railing in style.

Example of a steel traffic barrier (CALTRANS) and the Historic Columbia River Hwy. barrier

Recommendation 19): Roadway Lighting

Lighting for the roadway should be the minimum needed for the roadway safety. Lighting should also be DarkSky compliant with no fugitive light reaching the water surface. Any accent lighting should be subtle without bright colors. Surface finishes should be matte or low sheen finishes to reduce potential glare.

Note: The Bridge Aesthetics Committee and the community have emphasized that lighting levels should be the minimum needed for safety. Fixtures should be mounted at the lowest appropriate height and no pole-mounted light fixtures if possible. Accent lighting should not shine onto the river.

Roadway lighting on the existing bridge

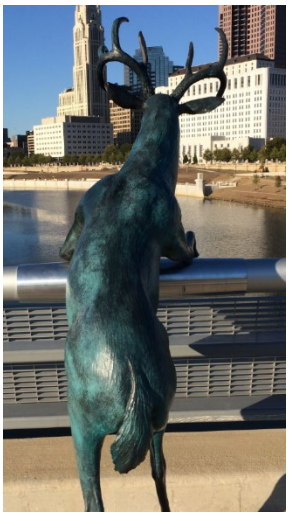
Uplighting to accent architectural features

Recommendation 20): Approaches

Include monuments at abutment location in four places on the bridge. Monuments could include context sensitive sculptures or architectural elements. Also, at each end of the bridge, provide digital representation of wind speed measured at the center span of the bridge, wind direction, water CFS, salmon passage numbers, and/or other real-time data related to the current wind

and river conditions. It is preferred to provide this information through an artistic manner, rather than a simple digital screen. Provide parking at both ends of the bridge.

Note: Although a variety of possible gateway elements have been discussed, the BAC and community agree that any artwork or architectural elements on the bridge should express a regional or community scale context. Providing the wind speed / direction information as travelers start on the bridge is a popular idea.



Bridge Gateway Feature, Bridge Art in Columbus and Butte Co. California Bridge

Recommendation 21): Roundabout

The roundabout should be mounded at the center and feature a mix of basalt and native conifers. Consider including art, welcome signs, and a sculpture using the existing bridge parts.

Note: WSDOT policy is to have landscaping in roundabouts to restrict views through the roundabout to calm traffic speeds after accommodating required sight triangles.

Local Basalt and Vegetation in the Washougal roundabout on SR 14

Recommendation 22): Signs and Interpretive Panels

Identify the Washington / Oregon state line in a subtle way. Welcome signs in various languages at both ends of the bridge should be considered. Non-regulatory signs should follow the USFS Graphic Signing System for the National Scenic Area.

Note: The consensus is that welcome signs are okay if they don't detract from scenic views or add to visual clutter. Similarly, any interpretive signs should not obstruct scenic views. Historic interpretation of the existing bridge and other subjects is a Section 106 requirement.

Off Bridge

This section includes recommendations related to the Draft Environmental Impact Statement (DEIS) Section 106 requirements for clearing, lighting under the bridge, and Button Bridge Road (road between bridge and I-84) restoration.

Recommendation 23): Clearing and Grading

Mature trees and vegetation should be preserved where practical to screen construction activities. Minimize vegetation removal on the WA side. Grading should follow contours to appear natural.

Recommendation 24): Lighting

Appropriate lighting along the segment of the Waterfront Trail covered by the replacement bridge would be incorporated as part of the project to mitigate lighting and visibility concerns caused by the wider bridge.

Recommendation 25): Button Bridge Road Restoration

Landscaping and any site furnishings removed during reconstruction of Button Bridge Road would be replaced and restored to their original condition.

Note: This is a Section 106 condition in the DEIS.

Button Bridge Road, Hood River Existing Condition

Recommendation 26): Pier Design

The ODOT Tribal Liaison and project leadership will consult with the Tribes on pier design of the replacement bridge and the continuation of tribal fishers tying up boats and gill nets to these piers.

Note: This is language from the Supplemental DEIS.

Regulatory Commitments / Requirements

The design-build team will need to research which regulations, codes, design standards, and other criteria will need to be applied and how aesthetic components would be applied without compromising these requirements. Below is a list of some of these sources.

- Items in the DEIS and SDEIS relating to Section 106 commitments.
- Columbia River Gorge National Scenic Area General Management Plan, Page 311 – 312 **(See Appendix 4A).**
- The items listed under the Aesthetics Committee Task List **(See Appendix 4B).**
- Design Guidelines for Interstate 84 (reference only – not a regulatory requirement).
- Design/technical manuals, design guidelines, and other regulatory requirements from ODOT, WSDOT, and AASHTO.
- Applicable code information from the City of Hood River, City of White Salmon, Hood River County, and Klickitat County.
- Applicable information from required environmental documentation for the bridge project.

Potential Restrictions

The recommendations within this memo should provide some direction on ideas that can be incorporated into the bridge design, but the design-build team will need to consider some practical elements that could conflict with design ideas. Potential topics that could restrict design include the following:

- Public Safety
- Vandalism

- Short- and long-term maintenance needs
- Feasibility of costs, available resources, and schedule