



MULTNOMAH COUNTY

LAND USE AND TRANSPORTATION PROGRAM

1600 SE 190TH Avenue Portland, OR 97233

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<http://www.co.multnomah.or.us/landuse>

NOTICE OF DECISION

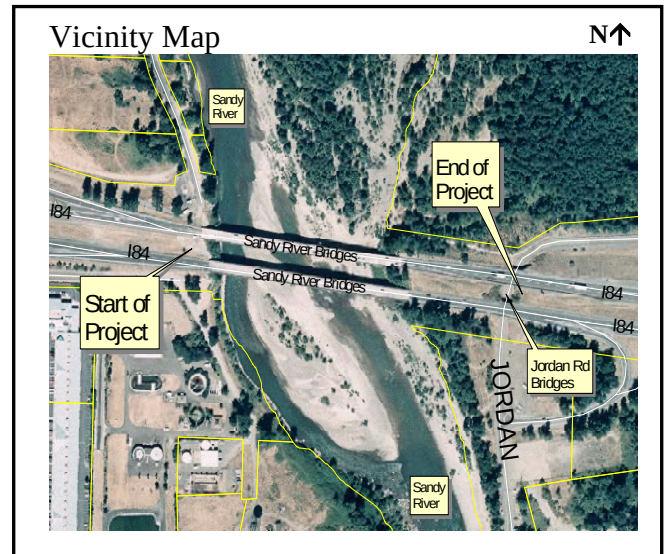
This notice concerns a Planning Director Decision on the land use case(s) cited and described below.

Case File: T2-08-066

Permit: National Scenic Area Site Review and Hillside Development Permits

Location: Interstate-84 bridges across Sandy River and Jordan Road.

Applicant/Owner: Oregon Department of Transportation
Geoff Crook



Summary: Application for a National Scenic Area Site Review and Hillside Development Permit to replace the Interstate-84 east and west bound bridges over the Sandy River, construct a bike/pedestrian path on the new east bound span over the river, and widen the east and west bound Interstate bridges over Jordan Road.

Decision: Approved with conditions

Unless appealed, this decision is effective November 23, 2009, at 4:30 PM.

Issued by:

By: _____
Joanna Valencia, Planner

For: Karen Schilling- Planning Director

Date: Monday, November 9, 2009

Opportunity to Review the Record: A copy of the Planning Director Decision, and all evidence submitted associated with this application, is available for inspection, at no cost, at the Land Use Planning office during normal business hours. Copies of all documents may be purchased at the rate of 30-cents per page. The Planning Director Decision contains the findings and conclusions upon which the decision is based, along with any conditions of approval. For further information on this case, contact Joanna Valencia, Staff Planner at 503-988-3043, ext. 29637.

Opportunity to Appeal: This decision may be appealed within 14 days of the date it was rendered, pursuant to the provisions of MCC 37.0640. An appeal requires a \$250.00 fee and must state the specific legal grounds on which it is based. To obtain appeal forms or information on the procedure, contact the Land Use Planning offices at 1600 SE 190th Avenue (Phone: 503-988-3043). This decision cannot be appealed to the Land Use Board of Appeals until all local appeals are exhausted.

This decision is final at the close of the appeal period, unless appealed. The deadline for filing an appeal is November 23, 2009 at 4:30 pm.

Applicable Approval Criteria: Multnomah County Code (MCC): Chapter 38 Part 1 (General Provisions; Chapter 38 Part 2 (Planning Authority); Chapter 38 Part 3 (Administration and Procedures); MCC 38.2600 et. al (Gorge Special Open Space Zone (GSO)); MCC 38.2800 et. al (Gorge Recreation District (GSPR)); MCC 38.5500 et. al (Hillside Development); and Chapter 38 Part 6 (Approval Criteria (SMA criteria)).

Copies of the referenced Multnomah County Code sections can be obtained by contacting our office at 503-988-3043 or by visiting our website at <http://www.co.multnomah.or.us/landuse>.

Scope of Approval

1. Approval of this land use permit is based on the submitted written narrative(s) and plan(s). No work shall occur under this permit other than that which is specified within these documents. It shall be the responsibility of the property owner(s) to comply with these documents and the limitations of approval described herein.
2. **Pursuant to MCC 38.0690, this land use permit expires two years from the date the decision is final if; (a) development action has not been initiated; (b) building permits have not been issued; or (c) final survey, plat, or other documents have not been recorded, as required. The property owner may request to extend the timeframe within which this permit is valid, as provided under MCC 38.0690 and 38.0700. Such a request must be made prior to the expiration date of the permit.**

Conditions of Approval

The conditions listed are necessary to ensure that approval criteria for this land use permit are satisfied. Where a condition relates to a specific approval criterion, the code citation for that criterion follows in parenthesis.

1. Should Bridge Nos. 06875 and/or 06945, located within the Columbia River Gorge National Scenic Area, need to be replaced, ODOT shall coordinate with the United States Forest Service, National Scenic Area, and appropriate local jurisdictions, regarding appropriate mitigation measures to offset loss of the historic resources; this may include, but not be necessarily limited to interpretive signage, and consideration of bridge replacement design measures that would complement affected historic considerations. If needed, as determined by affected government agencies, a separate Agreement between the effected parties will be prepared to accommodate this measure (2005:4). [MCC 38.7050(G) and Memorandum of Agreement entered into by the Federal Highway Administration, Oregon State Historic Preservation Office and Oregon Department of Transportation (Misc. Contracts & Agreements document No. 22496 and dated 2005).]

2. The cost for coordination, interpretive signage and consideration of each bridge replacement design measures for Bridge Nos. 06875 and/or 06945 shall not exceed \$15,000 per bridge, which is estimated to cost in total up to \$30,000 (2 bridges at \$15,000 each) as part of the anticipated operating funds of the OTIA III Program. This stipulation, if needed, shall be completed by June 2010 (2005:4). [MCC 38.7050(G) and Memorandum of Agreement entered into by the Federal Highway Administration, Oregon State Historic Preservation Office and Oregon Department of Transportation (Misc. Contracts & Agreements document No. 22496 and dated 2005).]
3. Within 1 year of the completion of the project, 80 percent of the project area with surface disturbance shall be established with effective native ground cover species or other soil-stabilizing methods to prevent soil erosion until the area has 80 percent vegetative cover. [MCC 38.7075(P)(4)]
4. A final monitoring report shall be submitted to Multnomah County Land Use Planning for review upon completion of the restoration, enhancement, or replacement activity. This monitoring report shall document successes, problems encountered, resource recovery, status of any sensitive wildlife/plant species, and shall demonstrate the success of restoration and/or enhancement actions. Multnomah County shall submit copies of the monitoring report to the U.S. Forest Service; who shall offer technical assistance to the local government in helping to evaluate the completion of the mitigation plan. In instances where restoration and enhancement efforts have failed, the monitoring process shall be extended until ODOT's restoration and mitigation plans satisfy the restoration and enhancement guidelines. [MCC 38.7075(Y)]
5. In the event of the discovery of cultural resources, work in the immediate area of discovery shall be suspended until a cultural resource professional can evaluate the potential significance of the discovery pursuant to MCC 38.7050 (H).
 - a. If the discovered material is suspected to be human bone or a burial, the following procedure shall be used:
 - i. Stop all work in the vicinity of the discovery.
 - ii. The applicant shall immediately notify the U.S. Forest Service, the applicant's cultural resource professional, the State Medical Examiner, and appropriate law enforcement agencies.
 - iii. The U.S. Forest Service shall notify the tribal governments if the discovery is determined to be an Indian burial or a cultural resource.
 - iv. A cultural resource professional shall evaluate the potential significance of the discovery pursuant to MCC 38.7050 (G) (3) and report the results to the U.S. Forest Service which shall have 30 days to comment on the report.
 - v. If the U.S. Forest Service determines that the cultural resource is not significant or does not respond within the 30 day response period, the cultural resource review process shall be complete and work may continue.
 - vi. If the U.S. Forest Service determines that the cultural resource is significant, the cultural resource professional shall recommend measures to protect and/or recover the resource pursuant to MCC 38.7050 (G) (4) and (5)
6. Prior to any excavation or grading on the site, the property owner shall submit to County Land Use Planning office an affidavit, as shown in Exhibit B.2, signed by the grading and excavation contractor stating contractor has read and understands the conditions of approval imposed on that project and understand that those conditions of approval govern the manner in which grading and excavation work shall be performed on the property. The affidavit states the contractor agrees to perform grading and excavation work in accordance with the conditions of approval. It also assures that person understands the requirement to immediately stop work if any archeological artifacts and/or human remains are found on-site during the

project. That affidavit shall also include a statement that the contractor understands the requirement to notify the County Planning Director, the Gorge Commission and tribes when required within 24 hours of any such discovery. All ground disturbing activity on-site shall be carried out in a cautious and conscience manner so as not to disturb or damage any archeological sites and human remains that may be on site. [MCC 38.7045 (L)]

7. Stripping of vegetation, grading, or other soil disturbance shall be done in a manner which will minimize soil erosion, stabilizing the soil as quickly as practicable, and exposes the smallest practical area at any one time during construction. Whenever feasible, natural vegetation shall be retained, protected, and supplemented. [MCC 38.5520(2)(a) and (d)]
8. Whenever sedimentation is caused by stripping vegetation, grading or other development, it shall be the responsibility of the person, corporation or other entity causing such sedimentation to remove it from all adjoining surfaces and drainage systems prior to issuance of occupancy or final approvals for the project. [MCC 38.5520(B)(1)]
9. No in-water work or ground disturbance is authorized outside of the in water work window (IWWW) as authorized by the Oregon Guidelines for Timing of In-Water work to Protect Fish and Wildlife Resources (Oregon Department of Fish and Wildlife 2000) [MCC 38.7075(K)(6)].
10. The applicant shall implement the recommendations included in the geotechnical report (Exhibit A.12). Observation of the grading, excavation, and fill shall be conducted by a Certified Engineering Geologist at the applicant's expense. [MCC38.5515(F)]
11. Such non-erosion pollution associated with construction such as pesticides, fertilizers, petrochemicals, solid wastes, construction chemicals, or wastewaters shall be prevented from leaving the construction site through proper handling, disposal, continuous site monitoring, and clean-up activities. [MCC 38.5520(2)(m)]

Note: Once this decision is final, application for any applicable building permits may be made with the City of Gresham. When ready to have building permits signed off, the applicant shall call the Staff Planner, Joanna Valencia, at (503) 988-3043 ext. 29637, for an appointment for review and approval of the conditions and to sign the building permit plans. Please note, Multnomah County must review and sign off the building permits before the applicant submits building plans to the City of Gresham (if applicable for this project). Three (3) sets each of the site plan and building plans are needed for building permit sign off. At the time of building permit review, a fee of \$53.00 will be collected. In addition, an erosion control inspection fee of \$77.00 may be required.

Notice to Mortgagee, Lien Holder, Vendor, or Seller:

ORS Chapter 215 requires that if you receive this notice it must be promptly forwarded to the purchaser.

Findings of Fact

FINDINGS: Written findings are contained herein. The Multnomah County Code criteria are in **bold** font. Staff comments and analysis are identified as ‘**Staff:**’ and address the applicable criteria. Staff comments may include a conclusionary statement in *italic*.

1.00 PROJECT DESCRIPTION

Staff:

PROPOSAL SUMMARY AND REQUEST

Four bridges carry I-84 over the Sandy River and Jordan Road. The proposal is to replace two bridges (I-84 eastbound [EB] Sandy River 06875 and I-84 westbound [WB] Sandy River 06875A) and widen two bridges (I-84 EB Jordan Road 06945 and I-84 WB Jordan Road 06945A). A previous design was submitted as part of a 2008 application to the county. The applicant requested to toll review of this submittal. A redesign of the bridges has since been submitted and is subject of this decision. This project is located in the I-84 (Highway 2) Columbia River Gorge Corridor between mileposts 17.68 and 17.82 in Multnomah County.

The Sandy River bridges will contain two 12-foot through lanes, a 12-foot acceleration/deceleration lane, 12-foot interior shoulders, and 12-foot exterior shoulders. The eastbound bridge will also accommodate a 16-foot multi-use path on the south side. The Jordan Road bridges will be widened and strengthened to increase the load rating. The Jordan Road bridges will be widened to provide two 12-foot through lanes, a 12-foot acceleration/deceleration lane, 12-foot interior shoulders, and 12-foot exterior shoulders. The sight distance on Jordan Road beneath the WB bridge is substandard, a deficiency that will not be corrected with this project. The acceleration lane length for the Graham Road eastbound entrance ramp will be extended across the bridge to meet current design standards.

To replace the existing Sandy River Bridge with a new bridge and widen and strengthen the Jordan Road Bridges to increase the load rating, Oregon Department of Transportation (ODOT) requests approvals of a National Scenic Area permit, a Hillside Development Permit. Permit requests for a Flood Development Permit, and Sign permit have been submitted under a different case (Case No. T1-08-062).

NATIONAL SCENIC AREA MANAGEMENT AREAS, LAND USE DESIGNATIONS, AND LANDSCAPE SETTINGS

The land to the west of the Ordinary High Water (OHW) level of the Sandy River is in Troutdale and therefore outside the National Scenic Area. To the east of the Sandy River, the I-84 right-of-way is in the Special Management Area, with the designations of Gorge Special Open Space (GS-OS) zone generally covering the Sandy River and its banks and the Gorge Special Public Recreation (GS-PR) zone covering the lands to the east. The Sandy River and Jordan Road bridges are in the River Bottomlands landscape setting. This NSA Site Review is occurring for the project located with the NSA jurisdiction of Multnomah County. Separate permits within the jurisdiction of the City of Troutdale are being reviewed by the City.

Key viewing areas (KVA) affecting the project are from I-84 and the Sandy River. Exhibit A.16, shows that the other KVAs do not have visual access to the project area. Photos in Exhibit A.17 also show views from I-84 and the Sandy River.

BACKGROUND

The Sandy River bridge replacement and Jordan Road widening project requires a National Scenic Area review. The bridge project was discussed and reviewed at several I-84 Corridor Strategy Team meetings (Level 1 Team) in 2007 and 2008. The minutes from those meetings are included as Exhibit A.15 of the

application. The 2008 project design was presented to the Corridor Strategy Team on October 22, 2008, for review and consistency with the I-84 Corridor Strategy guidelines. During that meeting, the Corridor Strategy Team concurred that the project met the intent of the I-84 Corridor Strategy: *A Vision and Design Guidelines for Interstate 84 in the Columbia River Gorge National Scenic Area* (November 2005).

Following the redesign in early 2009, the design was presented to the Level 1 Team in May 2009. A copy of the meeting notes is provided under Exhibit A.15.

The I-84 Corridor Strategy provides the framework to help ODOT manage and improve the Interstate 84 facilities within the CRGNSA in a manner that meets public safety and transportation needs while also meeting the National Scenic Area provisions. This framework for managing and approving design in the corridor is intended to expedite the implementation of needed improvements or modifications to Interstate 84 facilities in an efficient way, while establishing continuity of design for corridor features throughout the CRGNSA.

EXISTING ROADWAY AND BRIDGE CHARACTERISTICS

I-84 is a full access-controlled, four-lane divided highway, two lanes in each direction. Each direction has 12-foot travel lanes and 10-foot outside shoulders. Eastbound and westbound centerlines are separated by 100 feet. Shoulders on the existing bridges are only 3 feet wide on each side. Posted speed is 60 miles per hour (mph). ODOT designates the highway as a Freight Route.

The horizontal alignment of the highway in the vicinity of the project consists of a 30-minute curve right without spirals and the vertical alignment is mostly flat with a slight incline to the east on the west side of the bridge. Inside the project limits, the highway is constructed on embankment fill with side slopes ranging from about 1(vertical [V]):1½(horizontal [H]) to 1(V):2(H).

Entrance and exit ramp lanes consisting of 12-foot lanes and 6-foot shoulders serve the adjacent interchange and I-84 access immediately to the west of the bridges. Entrance and exit lanes consisting of 12-foot lanes and 6-foot shoulders serve the adjacent Jordan Road interchange immediately to the east of the bridges. In the vicinity of the project, there are currently no auxiliary lanes serving the Graham Road and Jordan Road interchanges.

DETAILED PROJECT DESCRIPTION

The slopes under the Sandy River bridges on both banks will be benched to allow for future pedestrian paths. The eastbound bridge will also carry a 16-foot multi-use path on the south side. The Jordan Road bridges will be widened and strengthened to increase the load rating. Two 12-foot through lanes, a 12-foot acceleration/deceleration lane, 12-foot interior shoulders, and 12-foot exterior shoulders. The acceleration lane length for the Graham Road eastbound entrance ramp will be extended across the bridge to meet current design standards.

Table: Comparison of Features of Existing and Proposed Sandy River Bridges

	Sandy River, I-84 EB		Sandy River, I-84 WB	
	Existing	Proposed	Existing	Proposed
Year of Construction	1949	2010-2013	1959	2010-2013
Length	770 feet	840 feet	770 feet	840 feet
No. of spans	10	4	10	4

Lengths of spans	50/122/160/122/48/63/4 8/48/63/48 feet	200/220/220/200 feet	Similar to EB	200/220/220/200 feet
Number of Bent/ Columns	9/18	3/6	9/18	3/6
Distance between bridge centerlines	100 feet	100 feet	100 feet	100 feet
Material	Steel deck girder and concrete	Steel box girders	Steel deck girder and concrete	steel box girders
Pavement width Sidewalk width Total (out-out) width	30 feet 2, 3.5 feet 39 feet, 3 inches	60 feet 16 feet 80 feet, 6 inches	30 feet 2, 1.5 feet 35 feet	60 feet None 63 feet, 4 inches
No. of lanes	2 EB lanes	2 EB lanes, 1 auxiliary	2 WB lanes	2 WB lanes, 1 auxiliary
Shoulder widths	3-foot left shoulder 3-foot right shoulder	12-foot left shoulder 12-foot right shoulder	3-foot left shoulder 3-foot right shoulder	12-foot left shoulder 12-foot right shoulder
Traffic rails	"F" type	BR-214 (Per I-84 Corridor Strategy guidelines); Pedestrian rail on outside of multi-use path	"F" Type	BR-214 (Per I-84 Corridor Strategy guidelines)
Traffic Rail Height	2 feet, 8 inches	3 feet, 2 inches	2 feet, 8 inches	3 feet, 2 inches
Pedestrian Barrier Height	None	6 to 8 feet	None	None
Structure Clearance above OHWE	12 feet, 6 inches	18 feet	12 feet, 6 inches	18 feet

Table: Comparison of Features of Existing and Proposed Jordan Road Bridges

	Jordan Road, I-84 EB		Jordan Road, I-84 WB	
	Existing	Proposed	Existing	Proposed
Year of Construction	Design plans 1945	2009-2012	1959	2009-2012
Length	~29 feet	~29 feet	~29 feet	~29 feet
No. of spans	1	1	1	1
Lengths of spans	29 feet	29 feet	29 feet	29 feet
Material	Concrete Frame	Concrete Frame	Concrete Frame	Concrete Frame
Pavement width Sidewalk width Total (out-out) width	44 feet 1 foot, 6 inches 49 feet	60 feet None 63 feet, 4 inches	48 feet 1 foot, 6 inches 53 feet	60 feet None 63 feet, 4 inches

No. of lanes	2 EB lanes 1 tapering exit lane	2, 12-foot lanes 1, 12-foot auxiliary lane	3 WB lanes	2, 12-foot lanes 1, 12-foot auxiliary lane
Vertical Clearance	15 feet	15 feet	15 feet 11 inches	15 feet 11 inches
Traffic rails	Thrie Beam metal rail	BR-214 (Per I-84 Corridor Strategy guidelines)	Thrie Beam metal rail	BR-214 (Per I-84 Corridor Strategy guidelines)
Traffic rail height	2 feet, 4 inches	3 feet, 2 inches	2 feet, 4 inches	3 feet, 2 inches

AESTHETICS

AESTHETIC DEVELOPMENT PROCESS

The Sandy River bridges serve as the “Gateway to the Gorge.” Many stakeholders are interested in the aesthetics of these bridges and have been involved in the design process (see Figure 1 in Exhibit A.15). The *I-84 Corridor Strategy* document was developed by a partnership of the Oregon Department of Transportation, Columbia River Gorge Commission, U.S. Forest Service, Federal Highway Administration, and the three counties in the CRGNSA to establish a consistent design theme and direction for I-84 projects within the CRGNSA. The *I-84 Corridor Strategy* discusses two bridge styles, “Cascadian” and “Contemporary.” The main difference in the two styles is that the Cascadian incorporates textured bridge girder treatments and the Contemporary incorporates a smooth bridge girder (the horizontal, outward-facing) surface. The *I-84 Corridor Strategy* describes the settings for which of these two bridge styles should be incorporated; however, the Sandy River project could fit into either category by the descriptions. The *I-84 Corridor Strategy* directs specific features to be incorporated into bridge design for other OTIA III bridges being replaced in the National Scenic Area. However, it does not give this specificity for the Sandy River bridges.

The Level 1 Team was established to oversee implementation of the *I-84 Corridor Strategy*. Renderings were initially presented to the Level 1 Team during the Design Approval Process (DAP) in January 2007 for the alternatives being considered at that time. The Level 1 Team stated that they preferred the looks of the 3-span dual concrete box girder bridge alternative with a “Cascadian” style. This design was displayed, along with other alternatives, at a Public Open House February 12, 2007.

Because the estimated cost of the proposed bridge type was significantly greater than the budgeted amount, ODOT convened a Value Engineering (VE) study to consider other design concepts. Based on this study and additional design analysis, a 4-span concrete box girder bridge alternative was chosen. In developing the aesthetic features of the revised bridge design, ODOT sought feedback from the Level 1 Team, various stakeholders in the National Scenic Area, and members of the general public through a public open house.

Renderings of a modified Cascadian design were presented to the Level 1 Team at a meeting on June 18, 2008. Several members of the team indicated that the piers did not seem to match the intent of the guidelines. It was stated that both the curvature of the outside of the piers and the Gothic arch instead of an elliptical arch did not look appropriate.

A variety of new options were prepared in response to the June 18 comments and new renderings were presented to the Level 1 Team on August 13, 2008. Two alternative designs were developed for the bridge piers, each pier consisting of a 2-column bent. The first option had a straight vertical outside face with a parabolic arch between the columns. The second option had a slightly tapered outside face and either a parabolic arch or an inverse taper between the columns. Renderings evaluated Cascadian, Contemporary and mixed Cascadian/Contemporary styles for each of the pier alternatives including different color options. The group noted that the Cascadian and Contemporary designs did not seem to fit with the guidelines in the *I-84 Corridor Strategy* and in general there was a mixing of the design elements. Various changes were suggested to bring the designs in closer alignment with the guidelines.

The use of color was also discussed and it was noted that the darker earth tones should be the predominant color. Various designs for the fence and railing along each side of the path were also considered. The fence between the roadway and the path is primarily for safety and Federal Highway Administration (FHWA) requires a minimum height of 6 feet. Various pylon designs were discussed in relation to the “gateway” concept. Some felt that the pylons need to be larger in scale to be apparent to motorists while others felt that the pylons need to be more in accordance with the guidelines in the *I-84 Corridor Strategy*.

Based on the comments at the August 13 Level 1 Team meeting, the renderings were modified and presented at a Stakeholders work session held August 26, 2008 (see Exhibit A.15 for list of participants). Taking the input received at this meeting, the number of design alternatives was reduced to three, which included a Cascadian alternative, a Contemporary alternative with rock treatment on the piers (Type ‘A’), and a Contemporary alternative without rock treatment on the piers (Type ‘B’). For each alternative, the piers were revised to move the columns outward so that the face of the column is aligned with the edge of the bridges. The column faces were also sloped to increase the column size closer to the ground. This results in an appearance that more closely resembles what is depicted in the *I-84 Corridor Strategy*. A picket-style metal railing type with a curved element to convey the arch theme was selected for the exterior of the path. The safety fence between the roadway and the path will match the railing design, with the picket panel placed on top of the concrete barrier that supports the traffic rail. The safety fence between the roadway and path will also include a wire mesh with a 2-inch opening to contain smaller debris.

These alternative designs were presented at a public open house September 11, 2008. There was no consensus on which style was preferred, although there did seem to be a preference for the Cascadian style and the Contemporary style with rock treatment on the piers. All three alternatives were discussed at the Level 1 Team meeting on September 17, 2008. The meeting participants felt that all three alternatives were generally in conformance with the guidelines in the *I-84 Corridor Strategy*, with some minor changes. The changes included not extending the pier wall above the deck, adjusting trim dimensions and tapering, and adding alternating concrete posts to the exterior railing as a tribute to the historic bridge railing. It was also recommended that these concrete posts should be located so as not to align with the center of the piers in order to avoid the appearance of a visual extension of pier and that colors be adjusted to more closely match the guidelines. The group also indicated that the pylons should be similar in style to what is presented in the guidelines, although there was some disagreement as to what height will be most appropriate.

2008 Selected Design Alternative

The Contemporary Type ‘A’ design selected in 2008 was the basis of the request for Scenic Area Review in 2008. The design uses a modern, concrete box girder superstructure. The bridge girders are haunched in a parabolic shape to create an arch-like form. The interior piers consist of two-column bents with textured rock surfaces created using formliner on two faces. The columns are connected by a cap beam with a haunched bottom surface to compliment the haunched girder shape. The column shapes are tapered to match the shape of the pylons at the ends of the bridge (Exhibit A.3). The pylons and the bridge abutment surfaces both will have textured rock surfaces created using a formliner. The bridge railing is an open design to avoid restricting the view of motorists and to provide continuity with other bridges in the gorge. The pedestrian railing is also an open design, with vertical pickets and a curved element to continue the arch theme. All of the colors have been selected to be consistent with the *I-84 Corridor Strategy Guidelines*.

DIFFERENCES BETWEEN 2008 DESIGN AND 2009 REDESIGN

Exhibit A.16 contains renderings of the new design from the 2008 design and submittal. The recommended 2009 redesign has steel box girders. Temporary construction impacts are anticipated to be lower than they would have been with the concrete box girder design. The differences in the design are summarized as follows:

- 2009 redesign is approximately 40 feet longer than previous bridge design, which will create new bridges approximately 70 feet longer to the east than existing bridges. Total length of the new structures is 840 feet, compared to 800 feet previously.
- Bridge girder type changed from concrete box girder to steel box girder – instead of two very wide boxes per bridge, there will be 4 narrower boxes for the eastbound bridge and 3 boxes for the westbound bridge.
- Bridge girders will have parabolic haunches up to quarter point on each span. The middle portion of each span will not be haunched but the difference is not readily apparent to the casual observer. Entire spans in the previous design were haunched.
- New bridge columns are approximately 9 feet wide, reduced from 14 feet with previous design.
- Clearance under the bridges has risen to 18 feet from 17 feet.
- East bank scour protection changed from a concrete secant wall to buried riprap with a buried steel sheetpile cutoff wall. Two feet of topsoil will be placed on riprap and area planted.

GUARDRAIL

At locations where the roadside slopes are not recoverable and the slopes are 1V:3H or steeper and where appropriate deflection space is available, guardrail will be installed in accordance with ODOT Highway Design Manual and the AASHTO Roadside Design Guide. Guardrail transitions and end terminals will be installed in accordance with ODOT standard drawings and the guidelines in the *I-84 Corridor Strategy*.

IMPACT ATTENUATORS

Where the approach ends of temporary concrete barrier cannot be connected to existing guardrail or median barrier, impact attenuators will be used to protect the ends of the temporary concrete barrier.

CONSTRUCTION

In-water Work Window and Construction Timing

The permitted in-water work window (IWWW) for the Sandy River within the project reach is July 15 to August 31. The in-water work area, also called the regulated work area, includes all work within the OHW elevation of 23.3 feet. The six week IWWW requires a very aggressive construction schedule to complete all the construction activities below OHW elevation within four years.

Construction activities proposed below OHW include installation and removal of a detour bridge and two work bridges; demolition of the two existing Sandy River Bridges; and construction of two new bridges. The detour bridge will be located in the median between the existing EB and WB bridges and will include the construction of minor temporary detour embankments to support the detour roadway. The temporary work bridges would be located south of the existing EB bridge and north of the existing WB bridge. These construction activities are discussed in further detail below.

Due to the low clearance it would be extremely difficult to completely extract the piles below the new I-84 bridges requiring approximately 162 piles to be cut off three feet below existing ground elevation. All other temporary structures would be removed at the completion of the work in accordance with the environmental performance standards. A 5-foot below-grade cut was cited in the original permits.

Outside the permitted IWWW, work will continue above the OHW waterline on the work bridges. It may also be possible to perform work outside the permitted IWWW within approved isolation structures that separate the river water from the work area if an extension to the IWWW is requested from, and granted by the permitting agencies. Such an extension would need to be obtained by the construction contractor and would be dependent on the contractor fulfilling any conditions that may be imposed by the permitting agencies.

DETOUR BRIDGE AND WORK BRIDGES

A temporary detour bridge will be required to maintain traffic while allowing for phased replacement of the existing bridges. The work bridges will be used to remove the existing bridges as well as construct the new structures. With the 2009 redesign, no temporary falsework in the Sandy River channel will be needed to support the new bridges during construction (whereas falsework was needed with the concrete girders in the 2008 design). The temporary detour bridge and work bridges will be supported on piles located below OHW. Temporary construction access roads will be built at each end of the temporary work bridges above OHW.

The detour bridge is approximately 900 feet long, with a total of 20 bents of which 13 bents are located below OHW. The impact calculations were based on 5 piles per bent for a total of 100 piles, with 65 piles below OHW. The EB work bridge has 93 piles (16 bents) and the associated finger piers have a total of 90 piles below OHW. The WB work bridge has approximately 84 piles (14 bents) and associated finger piers have approximately 72 piles below OHW. The total number of piles located below OHW is approximately 404 piles. As many as 332 piles could be located in the river at one time when the detour bridge, both work bridges and the EB work bridge finger piers are in place.

The contractor may want to access the gravel bar, as shown in the project plans (Exhibit A.3), located below ordinary high water (OHW) to construct the work bridges and detour bridge, construct the new bridges and demolish the existing bridges. Access to the gravel bar would likely be from the southeast corner of the bridges but would depend on water levels and channel location. Depending on water levels, the contractor may need to construct small access bridges to allow equipment to cross shallow water areas to reach the gravel bar. At this time we assume the contractor could construct two access bridges, each approximately 25 feet wide and 400 feet long, to prevent equipment from driving through the wetted channel. Containment measures and pollution control measures outlined in the Environmental Performance Standards (Exhibit A.4) will be implemented and no hazardous materials will be stored on the gravel bar or below OHW.

The critical activity for this project is construction of the detour bridge and EB work bridge within the first IWWW. To install all of the piles within this limited six week window, it may be necessary to use two pile driving rigs to set the piles working simultaneously for both the detour bridge and work bridge. The piles will be installed using vibratory hammers then tested by pile drivers to determine if they are properly set. There are two different methods that could be used to construct the work bridge and detour bridge substructure (piles). If the water levels are higher than anticipated, the contractor would need to build out these temporary bridges from the river bank span by span. This process would be relatively slow and it is unlikely the contractor would be able to complete the entire work bridge within the first IWWW. However, if typical low water levels occur the contractor could install most of the piles in the dry from the gravel bar for the work bridge and detour bridge. After the piling is in place, the bent cap beams, girders and deck can be constructed outside of the IWWW by working out from the river banks above OHW. It is expected that such construction activities will damage existing vegetation in the work area. At the completion of the work, all areas of damaged vegetation will be restored using native plants, as discussed in the response to Section 38.5520.

Construction of the remaining work bridge components would depend upon the contractor but would likely follow a similar schedule. During the second IWWW, the EB work bridge finger piers, and WB work bridge would be constructed. The EB work bridge would be removed and the WB work bridge finger piers for the WB bridge would be constructed during the third IWWW. The detour bridge and remaining work bridge would be removed during the fourth IWWW. Due to the low clearance of the bridges it would be extremely difficult to completely extract the work bridge piles below the new I-84 bridges, requiring approximately 162 piles to be cut off approximately 3 feet below existing ground elevation. All other temporary structures would be removed at the completion of the work in accordance with the environmental performance standards.

DEMOLITION OF EXISTING BRIDGES

The existing bridges would be removed in their entirety, with each bent substructure removed to a specified elevation. The maximum removal depth is approximately 8 feet, with an average removal depth of approximately 5 feet below existing ground elevation. Demolition plans are on Sheets 81321 and 81368 (Exhibit A.3). Demolition of the existing superstructure would likely occur outside of the IWWW by working from the work bridges or from the remaining portions of bridge deck. Many methods of demolition can be used by the contractor as long as the structure remains stable throughout the demolition process. A containment system and pollution control plan designed to meet the environmental performance standards will be implemented to prevent debris and hazardous materials from entering the regulated work area during demolition. This demolition containment system may be suspended from the existing girders or supported from the existing piers.

Demolition of the existing bridge substructure would occur during the IWWW with the existing EB bridge substructure being removed during the second IWWW and the existing WB substructure being removed during the third IWWW. If typical water levels occur, the contractor would likely access as many of the existing bents from the gravel bar as possible. The contractor may need to construct temporary access across shallow water channels to allow equipment access to the gravel bar. These temporary structures will be removed at the end of each IWWW. If water levels are higher than anticipated, the contractor may lower equipment onto the gravel bar or into the isolation measures to demolish the bents. Containment measures, following the environmental performance standards, would be installed to isolate the bents from the active flowing channel. Containment measures may vary in size but would provide an approximate 10-foot buffer around the entire bent. Containment measures could include sandbags, eco-blocks or other approved methods. If the bent is located in the dry, the contractor may elect to demolish the bent on the gravel bar. In this case, appropriate containment measures would be installed to prevent debris and hazardous material from entering the regulated work area. Based on bridge inspection reports, there is riprap around eight of the existing bridge interior bents that will be removed during demolition. This information was used to estimate the volume and area of the existing riprap. Approximately 1,190 cubic yards of riprap over an area of 0.4 acres is proposed for removal below OHW. Excavated voids will be backfilled with clean native substrates that match surrounding streambed materials.

CONSTRUCTION OF NEW BRIDGES

The proposed Sandy River bridges are approximately 840 feet long and will consist of two 12-foot through lanes, a 12-foot acceleration/deceleration lane, 12-foot interior shoulders and 12-foot exterior shoulders (see Table 1). Because the new structure extends about 70 feet further east than the existing bridge, 1,535 cubic yards of roadway fill in front of the new eastern end bents will be removed (see Roadway Embankment below). The EB bridge will accommodate a 16-foot multi-use path on the south side. Off the bridge, the path will be constructed along the top of the bank to the south to Jordan Road. This combined bike and pedestrian path has been classified as a high use and ODOT design standards call for a 16-foot wide path.

The foundations for the new bridge will consist of large diameter concrete shafts extending deep into the ground. The shafts will be constructed within cofferdams. The shafts will be constructed by inserting a steel casing into the ground and drilling out the soil within the casing. A steel reinforcing cage is then inserted into the drilled shaft and the shaft is filled with concrete. The shaft will end near the ground surface and a reinforced concrete column will be constructed on top of the shaft. After the shaft is complete, work on the columns above the shaft will proceed within the cofferdam. A pair of shaft/columns located side-by-side will form each bent. The bents support the superstructure above.

The abutments are located above OHW and can be constructed outside the IWWW. The remaining substructure is located below OHW and will be constructed during the IWWW. The interior bents will consist of two 8-foot drilled shafts per bent with an architectural treatment creating 9- by 9-foot tapered

	square columns. The tapered square columns will be constructed in cofferdams to provide isolation from the active channel for the concrete formwork. A concrete seal may be needed to provide a dry working environment. The seal would be poured after fish salvage occurs. Due to the short IWWW, the cofferdams may remain in place until the next window for the contractor to complete construction within the cofferdam. The cofferdams will be constructed to an elevation that prevents overtopping during high flows. The new bridge superstructure will consist of haunched steel box sections that will be continuous and composite with the concrete deck. The steel box girders will be erected in segments that will be limited in size by crane capacity. There will be approximately three girder segments per span. The steel box girders will be lifted in place from the work bridge, possibly using multiple cranes for each lift. Because of the lifting weight, each crane will have a limited boom radius. The work bridge finger piers will allow the cranes to reach out far enough to place the girders in their final locations. Once the steel girders are erected, the concrete deck will be formed and poured and the superstructure completed. TEMPORARY LIGHTING Existing roadway lighting will be maintained throughout construction. Additional temporary lighting may be used during construction to facilitate night work. Night work will be required when lane closures are required, such as for material deliveries to the median area. Additional night work may occur when necessary to maintain the project schedule. UTILITIES Two 2-inch conduits will be placed in the bridge rails for future highway communication use. No other utilities are currently planned that will need to be carried by the bridges over the Sandy River. GEOTECHNICAL INVESTIGATIONS Geotechnical investigations and a memorandum (Exhibit A.12) confirm that replacement of existing slopes at the same ratios will be stable and sufficient to support the new and widened structures under normal conditions.								
2.00	ZONING DISTRICTS								
2.10	38.2600 – Open Space –Gorge Special Open Space (GSO) Zoning Districts								
2.11	§ 38.2625 REVIEW USES *** (D) The following uses may be allowed on lands designated GSO, pursuant to MCC 38.0530 (B), when consistent with an open space plan approved by the U.S. Forest Service and upon findings that the NSA Site Review standards of MCC 38.7000 through 38.7085 have been satisfied: (1) Changes in existing uses including reconstruction, replacement, and expansion of existing structures and transportation facilities, except for commercial forest practices. Staff: This proposal is for the replacement of existing I-84 bridges over the Sandy River and repair of the bridges that carry I-84 over Jordan Road. These structures are existing transportation facilities. The open space plan and NSA site review standards of MCC 38.7000-38.7085 are addressed in the findings below. <i>This criterion is met.</i>								
2.12	38.2660 DIMENSIONAL REQUIREMENTS *** (C) Minimum Yard Dimensions – Feet <table><tr><td>Front</td><td>Side</td><td>Street Side</td><td>Rear</td></tr><tr><td>30</td><td>10</td><td>30</td><td>30</td></tr></table> Maximum Structure Height – 35 feet	Front	Side	Street Side	Rear	30	10	30	30
Front	Side	Street Side	Rear						
30	10	30	30						

	Minimum Front Lot Line Length – 50 feet. (E) Structures such as barns, silos, windmills, antennae, chimneys, or similar structures may exceed the height requirement if located at least 30 feet from any property line. Staff: The yards above are intended to apply to buildings. The proposed replacement bridge does not qualify as a <i>Building</i> as defined in MCC 38.0015. A <i>Building</i> is defined as “A structure used or intended to support or shelter any use or occupancy. Buildings have a roof supported by columns or walls. They include, but are not limited to, dwellings, garages, barns, sheds and shop buildings.” While Chapter 38, does not define a <i>Yard</i>, the above dimensional requirements are consistent with the County’s other zoning chapters. Other chapters define a <i>Yard</i> as “An open space, on a lot with a building and bounded on one or more sides by such building, such space being unoccupied and unobstructed from 30 inches above the ground upward, except as otherwise specified in the district. ...” The project site of the Sandy River bridges is located within a public right-of-way. Yards aren’t typically applicable to transportation facilities located within the right-of-way due to the nature of the project, however, the distance from the structures supporting I-84 over Jordan Road are generally at least 50 feet from the edge of the ODOT right-of-way. Therefore, if the right-of-way is considered to be the property line, the project will be outside of all setbacks. However as defined above, since a bridge does not qualify as a building, the above yard requirements are not applicable. As indicated by the applicant, the height of the Sandy River bridges above the Sandy River is approximately 45 feet, which exceeds the maximum height allowed. This height is similar to the existing condition and is also consistent with the surrounding landscape adjacent to the river. As discussed above, the bridge is considered a structure and may exceed the maximum structure height of 35 provided it is a minimum of 30 ft from any property line. The proposed bridge is exempt from the maximum height requirement. <i>These criteria have been met.</i>								
2.20	38.2800 – Gorge Recreational Districts GG-PR, GG-CR and GS-PR								
2.21	38.2825 REVIEW USES *** (C) The following uses are allowed on all lands designated GS– PR pursuant to MCC 38.0530 (B) and upon findings that the NSA Site Review standards of MCC 38.7000 through 38.7085 have been satisfied: (5) Road and railroad construction and reconstruction. *** Staff: The portion of the proposed project within the GS-PR district involves reconstructing the existing bridges carrying I-84 over Jordan Road (Exhibit B.3). <i>This criterion is met.</i>								
2.22	38.2860 DIMENSIONAL REQUIREMENTS *** (C) Minimum Yard Dimensions - Feet <table><tr><td>Front</td><td>Side</td><td>Street Side</td><td>Rear</td></tr><tr><td>30</td><td>10</td><td>30</td><td>30</td></tr></table> Maximum Structure Height – 35 feet Minimum Front Lot Line Length – 50 feet. Staff: The yards above are intended to apply to buildings. The project site of the Jordan Road Bridges in the GS-PR district is a public right-of-way. There are no buildings proposed as part of this project. However, the distance from the structures supporting I-84 over Jordan Road is a minimum of 50 feet from the edge of the ODOT right-of-way. Therefore, if the right-of-way is considered the property line, the project will be outside of all setbacks. The height of the Jordan Road Bridges is approximately 30	Front	Side	Street Side	Rear	30	10	30	30
Front	Side	Street Side	Rear						
30	10	30	30						

feet, within the maximum height allowed. *This criterion is met.*

2.30 § 38.7040 SMA SCENIC REVIEW CRITERIA

The following scenic review standards shall apply to all Review and Conditional Uses in the Special Management Area of the Columbia River Gorge National Scenic Area with the exception of rehabilitation or modification of historic structures eligible or on the National Register of Historic Places when such modification is in compliance with the national register of historic places guidelines:

(A) All Review Uses and Conditional Uses visible from KVAs. This section shall apply to proposed development on sites topographically visible from KVAs:

(1) New developments and land uses shall be evaluated to ensure that the scenic standard is met and that scenic resources are not adversely affected, including cumulative effects, based on the degree of visibility from Key Viewing Areas.

(2) The required SMA scenic standards for all development and uses are summarized in the following table.

REQUIRED SMA SCENIC STANDARDS		
LANDSCAPE SETTING	LAND USE DESIGNATION	SCENIC STANDARD
Coniferous Woodland, Oak-Pine Woodland	Forest (National Forest Lands), Open Space	NOT VISUALLY EVIDENT
River Bottomlands	Open Space	NOT VISUALLY EVIDENT
Gorge Walls, Canyonlands, Wildlands	Forest, Agriculture, Public Recreation, Open Space	NOT VISUALLY EVIDENT
Coniferous Woodland, Oak-Pine Woodland	Forest, Agriculture, Residential, Public Recreation	VISUALLY SUBORDINATE
Residential	Residential	VISUALLY SUBORDINATE
Pastoral	Forest, Agriculture, Public Recreation, Open Space	VISUALLY SUBORDINATE
River Bottomlands	Forest, Agriculture, Public Recreation	VISUALLY SUBORDINATE

Staff: The landscape setting for the project area is River Bottomlands. The table in MCC 38.7040 (A)(2) designates the scenic standard for open space as *Not Visually Evident* and for forest, agriculture, public and recreation land use designations to be *Visually Subordinate*.

‘Not visually evident’ (Special Management Area) is defined as a visual quality standard that provides for development or uses that are not visually noticeable to the casual visitor. Developments or uses shall only repeat form, line, color, and texture that are frequently found in the natural landscape, while changes in their qualities of size, amount, intensity, direction, pattern, etc., shall not be noticeable (MCC 38.0005).

‘Visually subordinate’ is defined as the relative visibility of a structure or use where that structure or use does not noticeably contrast with the surrounding landscape, as viewed from a specified vantage point (generally a Key Viewing Area). Structures which are visually subordinate may be partially visible, but are not visually dominant in relation to their surroundings. Visually subordinate forest practices in the Special Management Area shall repeat form, line, color, or texture common to the natural landscape, while changes in their qualities of size, amount, intensity, direction, pattern, etc., shall not dominate the natural landscape setting.

To achieve the standard of *Not Visually Evident* and *Visually Subordinate*, the proposed bridge repeats

form, line, color, and texture that are found in the natural landscape (Exhibits A.3, A.14 and A.16). The replacement bridge will continue to maintain independent east and west bound lanes. The bridge is designed in the Contemporary style to integrate the arch shape into its design. The design uses a modern, concrete box girder superstructure. The bridge girders are haunched in a parabolic shape to create an arch-like form. The interior piers consist of two-column bents with textured rock surfaces created using formliner on two faces. The columns are connected by a cap beam with a haunched bottom surface to compliment the haunched girder shape. The column shapes are tapered to match the shape of the pylons at the ends of the bridge (Exhibit A.3). The pylons and the bridge abutment surfaces both will have textured rock surfaces created using a formliner. The bridge railing is an open design to avoid restricting the view of motorists and to provide continuity with other bridges in the gorge. The pedestrian railing is also an open design, with vertical pickets and a curved element to continue the arch theme. All of the colors have been selected to be consistent with the *I-84 Corridor Strategy Guidelines* (Exhibit B.1).

The KVAs from which the Sandy River Bridges is visible, or potentially visible, are I-84 and the Sandy River. Because the bridges cross the Sandy River, this is the KVA from which the bridges are most visible. The majority of the work will be done at or below grade of the surrounding riverbank terrain.

The visibility of the Sandy River Bridge site from I-84 extends approximately one mile from the bridge in either direction, with a significant decline in visibility beyond 0.5 miles. The northbound and southbound approaches to the bridge on I-84 are relatively straight. Because much of the work will be done at or below grade, the changes to the bridge will be minimally visible to travelers on I-84. Travelers on I-84 will be able to see the bridge deck, guardrails, and railings (Exhibits A.2 and A.16). The supporting structure is not visible from either approach to the bridges. The 2009 redesign lengthens the Sandy bridges by 40 feet. The increased length is unlikely to be noticeably different from the previous design to viewers from I-84. From the Sandy River KVA, the increased length of the bridge should be offset by the many fewer bridge bents underneath, as well as the improved aesthetic appearance.

The 2009 redesign with steel girder substructure will appear slightly lighter in terms of its overall mass in the landscape than the 2008 design. The reason is because the underside of the bridges will be more articulated by having 3 and 4 narrow box girders instead of one or two massive concrete ones. The girders will be less deep, providing an additional foot of clearance on the underside. The columns will be narrower than originally planned, at 9 feet per side. Also, the excavation of the roadway embankment on the east side will widen and open up the area under the eastbound bridge.

From the Sandy River KVA south of the Sandy River bridges, the view to the bridges is mostly unobstructed, though some trees screen part of the bridge from some positions (see Photos 5 and 9 of Exhibit A.17). The Union Pacific Railroad Bridge, approximately 0.25 miles south of the Sandy River bridges, partially screens the view of the bridges from further upstream. In addition, the Sandy River bends easterly upstream such that the Sandy River bridges move out of view at approximately 0.5 miles. The bridge is not visible at the point where the Crown Point Highway bridge crosses the Sandy River, approximately 0.75 miles upstream from the Sandy River bridges.

North of the Sandy River Bridge on the Sandy River KVA, the views are partially screened by vegetation on the eastern half of the bridge. The visibility of the Sandy River bridges diminishes farther downstream from the bridge, as the Sandy River bends westerly and increased amount of vegetation blocks the view, although the site remains topographically visible to approximately one mile.

The bridge repair work for the Jordan Road Bridges will be in conformance with the *I-84 Corridor Strategy* guidelines for *Mainline Interstate 84 Bridges, Roadside and ROW Features, and Applying Color to Interstate 84*. Based on the use of these guidelines, it is anticipated that any modifications to the bridge will meet the scenic standard of “Not Visually Evident.”

The Key Viewing Areas from which the Jordan Road bridges are visible or potentially visible are I-84 and the Sandy River. There is very limited visibility of the Jordan Road Bridges from the Sandy River

due to riparian vegetation along the waterway (see Photo 24 of Exhibit A.17). Because the bridges are on I-84, this is the Key Viewing Area from which the bridges are most visible although the majority of the work will be done at or below grade. The visibility of the Jordan Road Bridges from I-84 extends approximately one mile from the bridge in either direction, with a significant decline in visibility beyond 0.5 miles. The northbound and southbound approaches to the bridge on I-84 are relatively straight. Because much of the work will be done at or below grade, the changes to the bridge will be minimally visible to travelers on I-84. Travelers on I-84 will be able to see the widened bridge deck, new guardrails, and new railings. The supporting structure is not visible from either approach to the bridges. *This criterion has been met.*

(3) In all landscape settings, scenic standards shall be met by blending new development with the adjacent natural landscape elements rather than with existing development.

Staff: The scenic standards for the bridge projects are established by the *I-84 Corridor Strategy* guidelines (Exhibit B.1), which include measures to blend the new bridges with adjacent landscape elements to meet the standard of the applicable landscape settings. The I-84 Guidelines Compliance Table (Exhibit A.6) demonstrates how the proposed project complies with the guidelines. Dark brown earth tones will be used on the bridge to blend with the surrounding landscaping. All restoration plantings will use native species. The bridge project will mimic natural and existing landscape elements in the area.

The colors to be used on the various project elements are as follows:

Table 1. Proposed Bridge Colors

Color Number	Color	Used On
1	Sherwin Williams Otter #6041	Steel portion of bridge guard rail and roadway guardrail, protective fence and pedestrian rail
2	Sherwin Williams Black Fox #7020	Concrete stone pattern on bridge and retaining walls; sides and underside of bridge steel girders
3	Not used	
4	Not used	
5	Miller Paint Dapper #0192	Bridge rail base and bent trim

Sandy River Bridges

The *I-84 Corridor Strategy* guidelines have standards for blending bridges with the natural landscape elements of the Gorge, including *Bridge Features for Mainline I-84 Bridges, Roadway and ROW Features*, and *Applying Color to Interstate 84*.

The bridge design uses an alternative Contemporary bridge style, with some features of the Cascadian style. The Contemporary bridge style is recommended for settings that are less visible or for built environments with a more contemporary character. After public and agency input, the hybrid style was chosen because the Cascadian and Contemporary designs did not seem to fit exactly with the guidelines in the *I-84 Corridor Strategy* and in general there was a preference for mixing the design elements. The introductory section of this application that discusses bridge aesthetics provides a detailed description of the process and rationale for choosing the hybrid Contemporary style.

The bridge architecture still fits in context with the local setting, which is recent, modern, and urban development in Troutdale on the west side of the Sandy River transitioning to a developed, natural area on the east side. In addition, these bridges serve as a gateway to the Gorge Scenic Area from the Portland Metro area. The Contemporary style tends toward a modern highway bridge appearance with detailing that includes features taken from historic bridges in the area, including a slightly haunched bottom girder at the piers and a detailed abutment design with patterned concrete to give the appearance

of natural rock color and texture.

Aesthetic elements included in the I-84 Sandy River bridges include the following features of the Contemporary bridge style:

- Use of modern materials (concrete) and construction methods (with a formliner)
- Textured exterior fascia wall at the edge of the bridge with treatments using natural rock appearance formliner
- Bridge girder haunched at the piers with an arch-like form for all spans. The haunched shape is echoed on the piers between columns.
- Textured pier and abutment treatments using a formliner.
- Smooth bridge girder surface
- Monuments at bridge abutment face
- Open bridge railing consisting of a steel tube rail above a concrete parapet per "I-84 Gorge Rail"

The chosen Contemporary alternative has rock treatment on the piers and abutments (Exhibit A.3). The piers were revised to move the columns outward so that the face of the column is aligned with the edge of the bridges. The column faces were also sloped to increase the column size closer to the ground. This results in an appearance that more closely resembles what is depicted in the I-84 Corridor Strategy.

Alternating concrete posts to the exterior railing were added as a tribute to the historic bridge railing. The concrete posts will be located so as not to align with the center of the piers to avoid the appearance of a visual extension of the pier. A picket-style metal railing type with a curved element to convey the arch theme was selected for the exterior of the path. The safety fence between the roadway and the path will match the railing design, with the picket panel placed on top of the concrete wall that supports the traffic rail. The safety fence between the roadway and path will also include a wire mesh with a 2-inch opening to contain smaller debris.

So that the bridge blends into the landscape the colors chosen for the bridge, the rail, and the fence are from the I-84 Corridor Strategy's Applying Color to Interstate 84 "Dark Earth Tones" Color Chart. Color #2, Sherwin Williams Black Fox #7020, will be used for the concrete stone pattern on the bridge piers and abutments and also for the sides and bottom of the steel box girders. Color #1, Sherwin Williams Otter #6041, will be used for the steel portion of the bridge guard rail and roadway guardrail, the protective fence and the pedestrian rail. Color #5, Miller Paint 0192 "Dapper," will be used for the bridge rail base and the trim on the sides of the bridge deck overhang, pier faces and abutments.

Large surface areas are broken up with line, color and texture so that the bridge blends into the landscape, rather than standing out as one large mass. The 2009 redesigned steel bridge girders for both the eastbound and westbound structures will be broken into multiple separate box shapes to avoid a wide, unbroken surface at the bottom of the bridge. This differs from the 2008 design which used fewer girders and presented a wider, unbroken mass on the underside. The columns of the 2009 redesign are narrower also.

The two Sandy River bridges are built as two separate structures to allow for greater air and light penetration, as well as a reduction in the perceived mass of the structure. The open bridge railing used for the Sandy River bridges delivers a high degree of transparency into the landscape.

Jordan Road Bridges

The design of the repairs to the bridges is in accordance with the *I-84 Corridor Strategy* which indicates that bridge rails, natural slope treatments, drainages, and appropriate shoulder widths are conformance considerations for bridge repair. The two changes that are subject to the guidelines will be the slopes and the rail treatment. Natural slope treatment, revegetated earthen slopes, will be used for the Jordan Road widening and the same rail design and color used on the Sandy River bridges will be used, consistent with the I-84 Corridor Strategy.

The I-84 Corridor guidelines (Exhibit B.1) state the following regarding bridge repair:

These guidelines are intended to be applied as repair designs are developed. Mainline Interstate 84 bridge guidelines that may relate to repair scenarios follow with comments:

- Guidelines related to bridge rail can be applied to bridges that require rail replacement. Bridge designers are cautioned to consider the structural adequacy of the deck if new bridge rail is installed.
- Use natural slope treatments (rocks, boulders, etc.) rather than concrete or other paving materials. (This guideline would apply to reconstruction/repair of slopes adjacent to abutments.)
- Drainage should be continuous along the bridge to avoid erosion at the abutments. (This guideline applies where deck replacement is necessary.)
- Provide standard outside shoulder width to create safe separation between bicycles and lanes of traffic. (This guideline applies where deck replacement is necessary.)

Structural repair of existing foundations, piers, abutments, bridge rails, and other existing bridge elements are not addressed in the mainline Interstate 84 bridge guidelines.

The open bridge railing used for the Jordan Road bridges delivers a high degree of transparency into the landscape. The dark earth tone color of the railing, Color #1, Sherwin-Williams "Otter," from Applying Color to Interstate 84 "Dark Earth Tones" Color chart will ensure the railing blends into the landscape.

Wingwalls will be used to reduce the project footprint and reduce permanent roadway widening impacts. Wingwalls will receive an architecturally enhanced faux stone, stained concrete to match the Cascadian bridge style prescribed in the I-84 Corridor Strategy.

(4) Proposed developments or land use shall be sited to achieve the applicable scenic standards. Development shall be designed to fit the natural topography and to take advantage of vegetation and land form screening, and to minimize visible grading or other modifications of landforms, vegetation cover, and natural characteristics. When screening of development is needed to meet the scenic standard from key viewing areas, use of existing topography and vegetation shall be given priority over other means of achieving the scenic standard such as planting new vegetation or using artificial berms.

Staff: The following paragraphs in this section discuss the bridges' siting, integration with topography, vegetation and landform screening, and minimization of changes to surrounding topography. The designs of the replacement and repaired bridges are in accordance with the *I-84 Corridor Strategy*, including *Bridge Features for Mainline I-84 Bridges*, *Roadway and ROW Features – Landscaping and Vegetation Management*, and *Applying Color to Interstate 84* to minimize mainline bridge features to meet the landscaping standards. The project elevations in The Plan and Elevation Drawings and the Construction Plans and Profiles (Exhibits A.3 and A.16) show how the Sandy River bridges will very close to the existing bridges' profiles and maintain the same context to the surrounding contours.

Sandy River Bridges

Siting

The reconstructed bridge will be located where the existing bridge is sited, minimizing the need for extensive grading or for modification of landforms. The site of the bridge cannot be changed because its location is mandated by its function as a crossing of I-84 over the Sandy River. Consequently, the bridges will be constructed in the same location as the current bridges. The centerlines will remain in the same location. The EB bridge will be approximately 41 feet wider due to the addition of an auxiliary lane, full shoulders and multi-use path. The WB bridge will be approximately 29 feet wider due to the addition of full shoulders and an auxiliary lane. There will be minimal changes to the bridges' vertical alignment and height. The new railings will be 6 inches higher than the existing barriers.

Integration with, and Minimization of Changes to, Existing Topography

There will be minimal changes to existing grades. The existing embankment slopes are generally

1(V):2(H), with a covering of grass, brush and some deciduous trees (Exhibit A.12). A slope stability analysis on existing and proposed embankments was conducted. The existing embankment configurations appear to be performing adequately and the proposed embankment slopes will be similar to the existing slopes. By keeping the new embankments to the same slope as existing embankments matching existing grades at the beginning and end points of the project, changes to the topography will be minimized. A more major change will be only to the previous roadway embankment, not the natural topography. Roadway embankment fill will be removed on the east side of the bridges. There will be a net removal of roadway fill, both above and below OHW, of 1,535 cubic yards. This will restore approximately 0.3 acre (13,045 square feet) of waters and floodplain to the Sandy River. The distance the roadway embankment is pulled back varies as shown on Exhibit A.3 This will limit impacts below the OHW and improve the river habitat. This will also improve the below-deck appearance of the bridge by opening up the area under it.

Vegetation and Landform Screening

The Project Layout sheet in Exhibit A.3 and the photographs in Exhibit A.17 show the existing vegetation. There is little to no screening from land forms. Many of the existing trees in the right-of-way will be removed during construction (Exhibit A.3). Landscaping will replace all of the trees removed at a 1:1.5 ratio and afford some screening (Exhibit A.3 and A.14). New landscaping will use only native plant species. Douglas fir, red alder, Pacific dogwood, black cottonwood, Oregon white oak, and Scouler's willow trees are included in the plant palette, consistent with the largely deciduous forest called for in the River Bottomlands landscape setting.

Jordan Road Bridges

The bridge repair work conforms with the guidelines for repairs to bridges in the *I-84 Corridor Strategy* by using natural slope treatments and bridge railing design recommended by the *I-84 Corridor Strategy* guidelines (Exhibit A.6 and B.1). As noted in the *I-84 Corridor Strategy*, structural repair of existing foundations, piers, abutments, bridge rails, and other existing bridge elements are not addressed in the mainline Interstate 84 bridge guidelines.

Siting

The bridge project site is fixed due to its purpose as a structure providing continuity for the I-84 facility. Jordan Road bridges are not being replaced so no new development will occur. Repairs to the bridge to widen it will allow existing structures to remain in place and minimize impacts from the widening. The EB bridge will be approximately 14 feet wider and the WB bridge will be approximately 10 feet wider. There will be minimal changes to the bridges' vertical alignments and heights. The new railings will be 10 inches higher than the existing barriers.

Integration with, and Minimization of Changes to, Existing Topography

Wingwalls and retaining walls will be used to reduce the project footprint and reduce permanent roadway widening impacts. The proposed slopes are designed with 1(V):2(H) slopes which are consistent with the existing embankment, which has slopes that range from 1.5:1 to 2:1. The Jordan Road bridges will be widened and strengthened to increase the load rating. The EB bridge will be widened by approximately 14 feet and the WB bridge will be widened by approximately 10 feet in order to provide two through lanes, an acceleration/deceleration lane, and full shoulders.

Vegetation and Landform Screening

The Project Layout sheet and the photographs in Exhibit A.17 show the existing vegetation. Many of the existing trees in the right-of-way will be removed during construction. Landscaping will replace all of the trees removed at a 1:1.5 ratio and afford some screening. New landscaping will use only native plant species. Douglas fir, red alder, Pacific dogwood, black cottonwood, Oregon white oak, and Scouler's willow trees are included in the plant palette, consistent with the largely deciduous forest called for in the River Bottomlands landscape setting.

(5) The extent and type of conditions applied to a proposed development or use to achieve the scenic standard shall be proportionate to its degree of visibility from key viewing areas.
(a) Decisions shall include written findings addressing the Primary factors influencing the degree of visibility, including but not limited to:

- 1. The amount of area of the building site exposed to key viewing areas,**
- 2. The degree of existing vegetation providing screening,**
- 3. The distance from the building site to the key viewing areas from which it is visible,**
- 4. The number of key viewing areas from which it is visible, and**
- 5. The linear distance along the key viewing areas from which the building site is visible (for linear key viewing areas, such as roads).**

Staff: The bridges are existing structures which were built prior to establishment of NSA regulations without any of the dark earth tones, textures and design proposed. The existing bridge is visible from the same KVAs. The proposed bridges utilizes the strategies, textures, colors and materials outlined in the I-84 Corridor Strategy Plan to improve the vistas from the various KVAs by building a bridge that is *Not Visually Evident and Visually Subordinate* from them. The resulting bridge will be dark earth-toned, will not use reflective building materials, will be located within an evergreen landscape and will not use lighting. Considering how close a number of the KVAs are to the project, the proposed conditions relating to the design are necessary to ensure that the proposed bridge complies with the standards outlined in the NSA Site Review criteria. *This criterion has been met.*

(b) Conditions may be applied to various elements of proposed developments to ensure they are visually subordinate to their setting as seen from key viewing areas, including but not limited to:

- 1. Siting (location of development on the subject property, building orientation, and other elements),**
- 2. Retention of existing vegetation,**
- 3. Design (color, reflectivity, size, shape, height, architectural and design details and other elements), and**
- 4. New landscaping.**

Staff: The proposed conditions are related to the cultural and natural resource criteria. The proposed bridge design utilizes the various elements outlined in the I-84 Corridor Strategy Plan to achieve visual subordination in the River Bottomlands landscape setting and from the KVAs. No additional conditions are needed. *This criterion has been met.*

(6) Sites approved for new development to achieve scenic standards shall be consistent with guidelines to protect wetlands, riparian corridors, sensitive plant or wildlife sites and the buffer zones of each of these natural resources, and guidelines to protect cultural resources.

Staff: Since project does not restore the existing bridges but replaces the Sandy River Bridges and widens the Jordan Road Bridges, the proposed bridges are a new development. The proposed project has complied with the SMA Natural Resource standards of MCC 38.7075, as found in Findings 2.60 of this decision. *This criterion has been met.*

(7) Proposed developments shall not protrude above the line of a bluff, cliff, or skyline as seen from Key Viewing Areas.

Staff: The bridge replacements will not protrude above the line of a bluff, cliff or skyline. The new

bridges can be constructed on the current horizontal alignment. The proposed bridges serve as a horizontal continuation of the I-84 roadway, with east and west bridge landings matching existing roadway pavement and grades. The vertical profile will be raised such that the maximum deck elevation on the bridge will be approximately 53 feet. The railings will extend another 3 feet, 2 inches. The proposed bridges will be approximately 800 feet lower than the nearest bluff. The immediate foreground surrounding the Sandy River and Jordan Road bridges is a relatively flat landscape, with Broughton Bluff rising up to the southeast approximately one-half mile away. *This criterion is met.*

(8) Structure height shall remain below the average tree canopy height of the natural vegetation adjacent to the structure, except if it has been demonstrated that compliance with this standard is not feasible considering the function of the structure.

Staff: The trees and vegetation surrounding the development are taller than the highway. *This criterion has been met.*

(9) The following guidelines shall apply to new landscaping used to screen development from key viewing areas:

(a) New landscaping (including new earth berms) to achieve the required scenic standard from key viewing areas shall be required only when application of all other available guidelines in this chapter is not sufficient to make the development meet the scenic standard from key viewing areas. Development shall be sited to avoid the need for new landscaping wherever possible.

(b) If new landscaping is necessary to meet the required standard, existing on-site vegetative screening and other visibility factors shall be analyzed to determine the extent of new landscaping, and the size of new trees needed to achieve the standard. Any vegetation planted pursuant to this guideline shall be sized to provide sufficient screening to meet the scenic standard within five years or less from the commencement of construction.

(c) Landscaping shall be installed as soon as practicable, and prior to project completion. Applicants and successors in interest for the subject parcel are responsible for the proper maintenance and survival of planted vegetation, and replacement of such vegetation that does not survive.

(d) The Scenic Resources Implementation Handbook shall include recommended species for each landscape setting consistent with the Landscape Settings Design Guidelines in this chapter, and minimum recommended sizes of new trees planted (based on average growth rates expected for recommended species).

Staff: The design, texture and colors of the proposed bridge make the structure *Not Visually Evident* and *Visually Subordinate* from the KVAs. Revegetation of disturbed areas is proposed but is not intended to or required to screen the bridge. Vegetation will be used partially to blend the bridge abutments into the landscape. All new plantings will use native species. *This criterion is met.*

(10) Unless expressly exempted by other provisions in this chapter, colors of structures on sites visible from key viewing areas shall be dark earth-tones found at the specific site or the surrounding landscape. The specific colors or list of acceptable colors shall be included as a condition of approval. The *Scenic Resources Implementation Handbook* will include a recommended palette of colors as dark or darker than the colors in the shadows of the natural features surrounding each landscape setting

Staff: All chosen colors are dark earth tones as identified in the Table below. Exhibit A.16 also provides samples of the colors chosen and includes renderings of the proposed bridges. *This criterion*

has been met.

Table 2. Proposed Bridge Colors

Color Number	Color	Used On
1	Sherwin Williams Otter #6041	Steel portion of bridge guard rail and roadway guardrail, protective fence and pedestrian rail
2	Sherwin Williams Black Fox #7020	Concrete stone pattern on bridge and retaining walls; sides and underside of bridge steel girders
3	Not used	
4	Not used	
5	Miller Paint Dapper #0192	Bridge rail base and bent trim

(11) The exterior of buildings on lands seen from key viewing areas shall be composed of non-reflective materials or materials with low reflectivity. The *Scenic Resources Implementation Handbook* will include a recommended list of exterior materials. These recommended materials and other materials may be deemed consistent with this guideline, including those where the specific application meets approval thresholds in the “Visibility and Reflectivity Matrices” in the *Implementation Handbook*. Continuous surfaces of glass unscreened from key viewing areas shall be limited to ensure meeting the scenic standard. Recommended square footage limitations for such surfaces will be provided for guidance in the *Implementation Handbook*.

Staff: Staff concurs that the proposed structure is not a building. A *building* is a structure used or intended to support or shelter any use or occupancy (MCC 38.0005). Buildings have a roof supported by columns or walls. The purpose of a bridge is not to shelter any use but to allow travel over a ravine, stream, etc. No glass is proposed. *This criterion is not applicable.*

(12) Any exterior lighting shall be sited, limited in intensity, shielded or hooded in a manner that prevents lights from being highly visible from Key Viewing Areas and from noticeably contrasting with the surrounding landscape setting except for road lighting necessary for safety purposes.

Staff: Temporary lighting will be necessary throughout the work zone during construction to allow work to be done at night and improve safety for drivers on the detour alignments. All temporary lighting will be removed at the conclusion of the work. No permanent lighting is proposed for the replacement bridge. *This criterion has been met.*

(13) Seasonal lighting displays shall be permitted on a temporary basis, not to exceed three months duration.

Staff: Seasonal lighting displays are not included as part of this proposal. *This criterion is not applicable.*

2.31 MCC 38.7040(B) The following shall apply to all lands within SMA landscape settings regardless of visibility from KVAs (includes areas seen from KVAs as well as areas not seen from KVAs):

(3) River Bottomlands: River bottomland shall retain the overall visual character of a floodplain and associated islands.

(a) Buildings should have an overall horizontal appearance in areas with little tree cover.

	(b) Use of plant species native to the landscape setting shall be encouraged. Where non-native plants are used, they shall have native appearing characteristics. Staff: The standard above is intended for buildings. While the bridges are not buildings, it will have a vertical appearance from the pylons as viewed from the future trail beneath and along the Interstate. The replacement on an existing bridge in the interstate system will not alter the overall visual character of the surrounding landscape. The I-84 right-of-way has limited vegetation due to the nature of the use. Along the edges, and sometimes within the center of the interstate, vegetation exists. The restoration plantings for the new bridges will use native plantings (Exhibit A.14). <i>These criteria have been met.</i>
2.32	MCC 38.7040(C) SMA Requirements for KVA Foregrounds and Scenic Routes (1) All new developments and land uses immediately adjacent to the Historic Columbia River Highway, Interstate 84, and Larch Mountain Road shall be in conformance with state or county scenic route standards. Staff: The I-84 Corridor Strategy Team has reviewed the proposed bridge designs and has found them to be consistent with the scenic route standards (Exhibits A.6 and A.15). Multnomah County agrees with this assessment. <i>This criterion has been met.</i> (2) The following guidelines shall apply only to development within the immediate foregrounds of key viewing areas. Immediate foregrounds are defined as within the developed prism of a road or trail KVA or within the boundary of the developed area of KVAs such as Crown Pt. and Multnomah Falls. They shall apply in addition to MCC 38.7040(A). (a)The proposed development shall be designed and sited to meet the applicable scenic standard from the foreground of the subject KVA. If the development cannot meet the standard, findings must be made documenting why the project cannot meet the requirements of 38.7040(A) and why it cannot be redesigned or wholly or partly relocated to meet the scenic standard. Staff: I-84 is a Key Viewing Area and the proposed bridge is within the developed road prism of the KVA. These criteria are applicable. Based on the findings in section 2.40 above, the project has met the applicable standards listed in MCC 38.7040(A)(1) through (A)(13). The bridge is <i>Not Visually Evident</i> and <i>Visually Subordinate</i> from the various KVAs. <i>This criterion has been met.</i> (b)Findings must evaluate the following: 1. The limiting factors to meeting the required scenic standard and/or applicable provisions of 38.7040(A), 2. Reduction in project size; 3. Options for alternative sites for all or part of the project, considering parcel configuration and on-site topographic or vegetative screening; 4. Options for design changes including changing the design shape, configuration, color, height, or texture in order to meet the scenic standard. Staff: The criteria under (b) above are not applicable as the proposed bridges have demonstrated compliance with MCC 38.7040(A). (c) Form, line, color, texture, and design of a proposed development shall be evaluated to ensure that the development blends with its setting as seen from the foreground of key viewing areas: 1. Form and Line-Design of the development shall minimize changes to the form of

the natural landscape. Development shall borrow form and line from the landscape setting and blend with the form and line of the landscape setting. Design of the development shall avoid contrasting form and line that unnecessarily call attention to the development.

2. Color-Color shall be found in the project's surrounding landscape setting.

Colors shall be chosen and repeated as needed to provide unity to the whole design.

3. Texture-Textures borrowed from the landscape setting shall be emphasized in the design of structures. Landscape textures are generally rough, irregular, and complex rather than smooth, regular, and uniform.

4. Design-Design solutions shall be compatible with the natural scenic quality of the Gorge. Building materials shall be natural or natural appearing. Building materials such as concrete, steel, aluminum, or plastic shall use form, line color and texture to harmonize with the natural environment. Design shall balance all design elements into a harmonious whole, using repetition of elements and blending of elements as necessary.

Staff: To help ODOT design replacement bridges for I-84, ODOT, Columbia River Gorge Commission, USDA Forest Service, the Federal Highway Administration and the Oregon Counties in the National Scenic Area developed the I-84 Corridor Strategy. This Strategy outlined appropriate designs, textures, form and line and colors for the Western and Eastern Columbia River Gorge Area. The proposed bridge and retaining walls integrate the approved elements and colors of the Strategy to blend with its setting as seen from the key viewing area of Interstate-84. *These criteria have been met.*

(3) Right-of-way vegetation shall be managed to minimize visual impact of clearing and other vegetation removal as seen from Key Viewing Areas. Roadside vegetation management should enhance views out from the highway (vista clearing, planting, etc.).

Staff: The above criterion is not applicable because the construction of a replacement bridge is not a vegetation management project. ODOT has designed the project to minimize tree removal. *This criterion is not applicable.*

(4) Encourage existing and require new road maintenance warehouse and stockpile areas to be screened from view from Key Viewing Areas.

Staff: This proposal does not include any new road maintenance warehouses or permanent stockpile areas. During construction native materials will be left where they are found if possible. Native materials (e.g., downed wood) that are damaged or destroyed will be replaced with a functional equivalent during site restoration. All large wood, native vegetation, weed-free topsoil, and native channel material displaced by construction will be stockpiled for use during site restoration in-channel, in the riparian area, or in adjacent uplands, as appropriate. *This criterion is not applicable.*

(5) Development along Interstate 84 and the Historic Columbia River Highway shall be consistent with the scenic corridor strategies developed for these roadways.

Staff: The proposed replacement bridges over the Sandy River are on Interstate 84. The bridge designs are consistent with the *I-84 Corridor Strategy* guidelines table (Exhibit A.6) outlining the applicable criteria for the guidelines as applicable to the project. See section 1.00 of these findings for additional information. *This criterion has been met.*

(D) SMA Requirements for areas not seen from KVAs

Unless expressly exempted by other provisions in MCC 38.7040, colors of structures on sites not visible from key viewing areas shall be earth-tones found at the specific site. The

	specific colors or list of acceptable colors shall be approved as a condition of approval, drawing from the recommended palette of colors included in the Scenic Resources Implementation Handbook. Staff: The replacement bridges are visible from various KVAs. <i>This criterion is not applicable.</i>
2.40	§ 38.7050 SMA CULTURAL RESOURCE REVIEW CRITERIA (A) The cultural resource review criteria shall be deemed satisfied, except MCC 38.7050 (H), if the U.S. Forest Service or Planning Director does not require a cultural resource survey and no comment is received during the comment period provided in MCC 38.7025 (B). (B) If comment is received during the comment period provided in MCC 38.7025 (B), the applicant shall offer to meet with the interested persons within 10 calendar days. The 10 day consultation period may be extended upon agreement between the project applicant and the interested persons. (1) Consultation meetings should provide an opportunity for interested persons to explain how the proposed use may affect cultural resources. Recommendations to avoid potential conflicts should be discussed. (2) All written comments and consultation meeting minutes shall be incorporated into the reconnaissance or historic survey report. In instances where a survey is not required, all such information shall be recorded and addressed in a report that typifies a survey report; inapplicable elements may be omitted. (C) The procedures of MCC 38.7045 shall be utilized for all proposed developments or land uses other than those on all Federal lands, federally assisted projects and forest practices. (D) All cultural resource information shall remain confidential, according to the Act, Section 6(a)(1)(A). Federal agency cultural resource information is also exempt by statute from the Freedom of Information Act under 16 USC 470 hh and 36 CFR 296.18. (E) Principal investigators shall meet the professional standards published in 36 CFR part 61. (F) The U.S. Forest Service will provide for doing (1) through (5) of subsection (G) below for forest practices and National Forest system lands. Staff: ODOT recognizes and accepts these consultation requirements and will meet this standard if comments are received. Comments were received from the State Historic Preservation Office (SHPO) and the United State Department of Agriculture Forest Service Columbia River Gorge National Scenic Area. The comments were addressed by the applicant and conditions have been included to address the received comments. This proposal is federally assisted. Therefore, the application must be reviewed under the SMA cultural resources standards MCC 38.7050; however, the procedures followed are those for GMA resources subject MCC 38.7045. Initial investigation was conducted by Ian Edwards and Kaylon McAlister of the State Museum of Anthropology, University of Oregon, on July 24, 2003. A subsequent investigation was conducted by three Jones & Stokes archaeologists July 9-11, 2007. The field crew was led by Jason Cooper, M.A., RPA, who meets the Secretary of the Interior's Standards for Archaeology. The project will not affect U.S. Forest Service land. Cultural resource surveys were completed and SHPO concurrence is documented in Exhibits A.5, D.3 and D.4. <i>These criteria are met.</i> (G) If the U.S. Forest Service or Planning Director determines that a cultural resource survey is required for a new development or land use on all Federal lands, federally assisted projects and forest practices, it shall consist of the following: (1) Literature Review and Consultation (a) An assessment of the presence of any cultural resources, listed on the National Register of Historic Places at the national, state or county level, on or within the area of potential direct and indirect impacts. (b) A search of state and county government, National Scenic Area/U.S. Forest Service

and any other pertinent inventories, such as archives and photographs, to identify cultural resources, including consultation with the State Historic Preservation Office (SHPO) and tribal governments.

(c) Consultation with cultural resource professionals knowledgeable about the area.

(d) If the U.S. Forest Service determines that there no recorded or known cultural resource, after consultation with the tribal governments on or within the immediate vicinity of a new development or land use, the cultural resource review shall be complete.

(e) If the U.S. Forest Service determines that there is the presence of a recorded or known cultural resources, including those reported in consultation with the tribal governments on or within the immediate vicinity of a new development or land use, a field inventory by a cultural resource professional shall be required.

Staff: The proper literature review was completed per steps (a) through (e) above. *These criteria have been met.*

(2) Field Inventory

(a) Tribal representatives shall be invited to participate in the field inventory.

(b) The field inventory shall consist of one or the other of the following standards, as determined by the cultural resource professional:

1. Complete survey: the systematic examination of the ground surface through a controlled procedure, such as walking an area in evenly-spaced transects. A complete survey may also require techniques such as clearing of vegetation, angering or shovel probing of subsurface soils for the presence of buried cultural resources.

2. Sample survey: the sampling of an area to assess the potential of cultural resources within the area of proposed development or use. This technique is generally used for large or difficult to survey parcels, and is generally accomplished by a stratified random or non-stratified random sampling strategy. A parcel is either stratified by variables such as vegetation, topography or elevation, or by non-environmental factors such as a survey grid.

Under this method, statistically valid samples are selected and surveyed to indicate the probability of presence, numbers and types of cultural resources throughout the sampling strata. Depending on the results of the sample, a complete survey may or may not subsequently be recommended.

(c) A field inventory report is required, and shall include the following:

1. A narrative integrating the literature review of subsection (1) above with the field inventory of subsection (2) (b) above.

2. A description of the field inventory methodology utilized under subsection (2) (b) above, describing the type and extent of field inventory, supplemented by maps which graphically illustrate the areas surveyed, not surveyed, and the rationale for each.

3. A statement of the presence or absence of cultural resources within the area of the new development or land in use.

4. When cultural resources are not located, a statement of the likelihood of buried or otherwise concealed cultural resources shall be included. Recommendations and standards for monitoring, if appropriate, shall be included.

(d) Report format shall follow that specified by the Oregon State Historic Preservation Office.

(e) The field inventory report shall be presented to the U.S. Forest Service for review.

(f) If the field inventory determines that there are no cultural resources within the area of the new development or land use, the cultural resource review shall be complete.

(3) Evaluations of Significance

- (a) When cultural resources are found within the area of the new development or land use, an evaluation of significance shall be completed for each cultural resource relative to the criteria of the National Register of Historic Places (36 CFR 60.4).
- (b) Evaluations of cultural resource significance shall be guided by previous and current research designs relevant to specific research questions for the area.
- (c) Evaluations of the significance of traditional cultural properties should follow National Register Bulletin 38, *Guidelines for the Evaluation and Documentation of Traditional Cultural Properties*, within local and regional contexts.
- (d) Recommendations for eligibility of individual cultural resources under National Register Criteria A through D (36 CFR 60.4) shall be completed for each identified resource. The U.S. Forest Service shall review evaluations for adequacy.
- (e) Evidence of consultation with tribal governments and individuals with knowledge of the cultural resources in the project area, and documentation of their concerns, shall be included as part of the evaluation of significance.
- (f) If the U.S. Forest Service determines that the inventoried cultural resources are not significant, the cultural resource review shall be complete.
- (g) If the determines that the inventoried cultural resources are significant, an assessment of effect shall be required.

(4) Assessment of Effect

- (a) For each significant (*i.e.*, National Register eligible) cultural resource inventoried within the area of the proposed development or change in use, assessments of effect shall be completed, using the criteria outlined in 36 CFR 800.9 *Assessing Effects*. Evidence of consultation with tribal governments and individuals with knowledge of the cultural resources of the project area shall be included for subsections (b) through (d) below. The U.S. Forest Service shall review each determination for adequacy and appropriate action.
- (b) If the proposed development or change in use will have "No Adverse Effect" (36 CFR 800.8) to a significant cultural resource, documentation for that finding shall be completed, following the "Documentation Requirements" of 36 CFR 800.8(a).
- (c) If the proposed development or change in use will have an "Adverse Effect" as defined by 36 CFR 800.9(b) to a cultural resource, the type and extent of "Adverse Effect" upon the qualities of the property that make it eligible to the National Register shall be documented. This documentation shall follow the process outlined under 36 CFR 800.5(e).
- (d) If the "effect" appears to be beneficial (*i.e.*, an enhancement to cultural resources), documentation shall be completed for the recommendation of that effect upon the qualities of the significant cultural resource that make it eligible to the National Register. This documentation shall follow the process outlined under 36 CFR 800.8 *Documentation Requirements*.

(5) Mitigation

- (a) If there will be an effect on cultural resources, measures shall be provided for mitigation of effects. These measures shall address factors such as avoidance of the property through project design or modification and subsequent protection, burial under fill, data recovery excavations, or other measures which are proposed to mitigate effects.
- (b) Evidence of consultation with tribal governments and individuals with knowledge of the resources to be affected, and documentation of their concerns, shall be included for all mitigation proposals.
- (c) The U.S. Forest Service shall review all mitigation proposals for adequacy.

Staff: Field inventory of the project area has been completed. The US Forest Service has completed

the review and has noted that as a result of the historic inventory, evaluation of significance and finding of adverse effect, a Memorandum of Agreement was entered into by the Federal Highway Administration, Oregon State Historic Preservation Office, and Oregon Department of Transportation (Misc. Contracts and Agreements document No. 22496 and dated 2005 of Exhibit A.5). In part, this agreement states that each party agrees that specific bridges are eligible for inclusion on the National Register of Historic Places. This list includes the Sandy River and Jordan Road Bridges, which are subject of this review. The parties also agreed that the proposed bridge replacement and retro-fit project would have an adverse effect on the significant historic structures. Further it is stated that “it is in the public interest to expend funds for appropriate mitigation for the loss of a historic resource.” Specific mitigation measures listed under the Memorandum of Agreement have been completed, however their remains mitigation measures that still need to be met. It has been recommended, as part of the US Forest Service review, to include the following mitigations as conditions of approval in order ensure that no actions cause adverse effects to cultural resource sites. The following two mitigations have been included as conditions of approval. *As conditioned, the Cultural and Historic Resource Criteria have been satisfied.*

(1) “Should Bridge Nos. 06875 and/or 06945, located within the Columbia River Gorge National Scenic Area, need to be replaced, ODOT shall coordinate with the United States Forest Service, National Scenic Area, and appropriate local jurisdictions, regarding appropriate mitigation measures to offset loss of the historic resources; this may include, but not be necessarily limited to interpretive signage, and consideration of bridge replacement design measures that would complement affected historic considerations. If needed, as determined by affected government agencies, a separate Agreement between the effected parties will be prepared to accommodate this measure (2005:4).”

(2) “The cost for coordination, interpretive signage and consideration of each bridge replacement design measures for Bridge Nos. 06875 and/or 06945 shall not exceed \$15,000 per bridge, which is estimated to cost in total up to \$30,000 (2 bridges at \$15,000 each) as part of the anticipated operating funds of the OTIA III Program. This stipulation, if needed, shall be completed by June 2010 (2005:4).”

(H) Discovery During Construction

All authorizations for new developments or land uses shall be conditioned to require the immediate notification of the Planning Director in the event of the inadvertent discovery of cultural resources during construction or development.

(1) In the event of the discovery of cultural resources, work in the immediate area of discovery shall be suspended until a cultural resource professional can evaluate the potential significance of the discovery pursuant to MCC 38.7050 (G) (3).

(2) If the discovered material is suspected to be human bone or a burial, the following procedure shall be used:

(a) Stop all work in the vicinity of the discovery.

(b) The applicant shall immediately notify the U.S. Forest Service, the applicant’s cultural resource professional, the State Medical Examiner, and appropriate law enforcement agencies.

(c) The U.S. Forest Service shall notify the tribal governments if the discovery is determined to be an Indian burial or a cultural resource.

(d) A cultural resource professional shall evaluate the potential significance of the discovery pursuant to MCC 38.7050 (G) (3) and report the results to the U.S. Forest Service which shall have 30 days to comment on the report.

(3) If the U.S. Forest Service determines that the cultural resource is not significant or does not respond within the 30 day response period, the cultural resource review process shall be complete and work may continue.

	(4) If the U.S. Forest Service determines that the cultural resource is significant, the cultural resource professional shall recommend measures to protect and/or recover the resource pursuant to MCC 38.7050 (G) (4) and (5) Staff: These requirements can be addressed through conditions that would include the language in this criterion. <i>This criterion is met through conditions.</i>
2.50	§ 38.7075 SMA NATURAL RESOURCE REVIEW CRITERIA All new developments and land uses shall be evaluated using the following standards to ensure that natural resources are protected from adverse effects. Comments from state and federal agencies shall be carefully considered. (A) All Water Resources shall, in part, be protected by establishing undisturbed buffer zones as specified in MCC 38.7075 (2)(a) and (2)(b). These buffer zones are measured horizontally from a wetland, stream, lake, or pond boundary as defined in MCC 38.7075 (2)(a) and (2)(b). (1) All buffer zones shall be retained undisturbed and in their natural condition, except as permitted with a mitigation plan. (2) Buffer zones shall be measured outward from the bank full flow boundary for streams, the high water mark for ponds and lakes, the normal pool elevation for the Columbia River, and the wetland delineation boundary for wetlands on a horizontal scale that is perpendicular to the wetlands, stream, pond or lake boundary. On the main stem of the Columbia River above Bonneville Dam, buffer zones shall be measured landward from the normal pool elevation of the Columbia River. The following buffer zone widths shall be required: (a) A minimum 200 foot buffer on each wetland, pond, lake, and each bank of a perennial or fish bearing stream, some of which can be intermittent. (b) A 50-foot buffer zone along each bank of intermittent (including ephemeral), non-fish bearing streams. (c) Maintenance, repair, reconstruction and realignment of roads and railroads within their rights-of-way shall be exempted from the wetlands and riparian guidelines upon demonstration of all of the following: 1. The wetland within the right-of-way is a drainage ditch not part of a larger wetland outside of the right-of-way. 2. The wetland is not critical habitat. 3. Proposed activities within the right-of-way would not adversely affect a wetland adjacent to the right-of-way. Staff: The Sandy River replacement bridge crosses the Sandy River, a perennial stream, and is adjacent to wetlands. The Jordan Road eastbound bridge embankment is within the buffer of the Sandy River OHW and wetland. Therefore, a 200-foot buffer zone applies to both resources. The submitted project drawings show the boundaries of the buffers associated with the OHW of the Sandy River and the wetlands in the project area. The project requires disturbance of the buffers because the buffers extend over portions of the bridges and the bridges are being replaced. Activities disturbing the buffer include demolition, excavation, fill, construction and restoration activities. Permanent and temporary mitigation of impacts will be accomplished through the implementation of a Site Restoration Plan (Exhibit A.14) that mitigates disturbance impacts to the Sandy River below OHW and the buffers associated with wetlands and the river. Restoration will be accomplished by planting native vegetation, removing invasive weed species, and restoring waters and upland areas, which will provide soil stabilization, water quality treatment, and water storage. If damaged during construction, waters and roadside ditches will be restored to a natural slope, pattern, and profile suitable for establishment of permanent vegetation and restoration of water storage function. To the greatest extent possible, native topsoil and native vegetation will be used to restore the project site to pre-project conditions. Various mechanical or hand methods may be used to control weeds and unwanted vegetation that may compete with new

plantings. No pesticides, herbicides will be applied within 150 feet of the Sandy River and no fertilizer will be applied within 50 feet of waters of the state. The Site Restoration Plan includes a five-year monitoring and maintenance plan. *This criterion is met.*

(3) The buffer width shall be increased for the following:

- (a) When the channel migration zone exceeds the recommended buffer width, the buffer width shall extend to the outer edge of the channel migration zone.**
- (b) When the frequently flooded area exceeds the recommended riparian buffer zone width, the buffer width shall be extended to the outer edge of the frequently flooded area.**
- (c) When an erosion or landslide hazard area exceeds the recommended width of the buffer, the buffer width shall be extended to include the hazard area.**

Staff: The project's hydraulic engineer has confirmed that neither the channel migration zone nor the frequently flooded area exceeds the recommended riparian buffer zone width. There is no erosion or landslide hazard area exceeding the recommended width of the buffer. Therefore, no increase in the buffer is required or needed. *This criterion is not applicable.*

(4) Buffer zones can be reconfigured if a project applicant demonstrates all of the following:

- (a) The integrity and function of the buffer zones is maintained.**
- (b) The total buffer area on the development proposal is not decreased.**
- (c) The width reduction shall not occur within another buffer.**
- (d) The buffer zone width is not reduced more than 50% at any particular location.**
Such features as intervening topography, vegetation, man made features, natural plant or wildlife habitat boundaries, and flood plain characteristics could be considered.
- (5) Requests to reconfigure buffer zones shall be considered if an appropriate professional (botanist, plant ecologist, wildlife biologist, or hydrologist), hired by the project applicant (1) identifies the precise location of the sensitive wildlife/plant or water resource, (2) describes the biology of the sensitive wildlife/plant or hydrologic condition of the water resource, and (3) demonstrates that the proposed use will not have any negative effects, either direct or indirect, on the affected wildlife/plant and their surrounding habitat that is vital to their long-term survival or water resource and its long term function.**
- (6) The local government shall submit all requests to re-configure sensitive wildlife/plant or water resource buffers to the U.S. Forest Service and the appropriate state agencies for review. All written comments shall be included in the project file. Based on the comments from the state and federal agencies, the local government will make a final decision on whether the reconfigured buffer zones are justified. If the final decision contradicts the comments submitted by the federal and state agencies, the local government shall justify how it reached an opposing conclusion.**

Staff: The applicant does not request a reconfiguration of the buffer zones. *These criteria are not applicable.*

(B) When a buffer zone is disturbed by a new use, it shall be replanted with only native plant species of the Columbia River Gorge.

Staff: The planting plans (Exhibits A.3 and A.14) list the native species proposed. The Site Restoration Plan, contains the revegetation plan. New landscaping will use only native plant species. *This criterion is met.*

Approximately 181 trees with a diameter at breast height (dbh) of at least 6 inches, as well as several

smaller trees, will be removed along the north and south embankment of I-84 for construction of the detour bridge and permanent widening of the existing roadway.

Removed trees will be replaced with 273 trees (24 willows, 73 Oregon white oaks, 51 Pacific dogwood, 98 Oregon Ash, and 27 Douglas fir) to provide shade and large woody debris (LWD) inputs. Therefore, trees will be replaced at a ratio of 1.5 (replaced) to 1(removed). The site restoration planting includes upland planting and planting along the east bank of the Sandy River. The plant schedules for upland and water quality areas are shown in Table 6. The site restoration seed mix is described in Table 6. The seed mix for the water quality area is in Table 7.

Table 3. Planting Schedule

Botanical Name	Common Name	Quantity
Trees		
<i>Pseudotsuga menziesii</i>	Douglas Fir	27
<i>Cornus nuttallii</i>	Pacific Dogwood	51
<i>Fraxinus latifolia</i>	Oregon Ash	98
<i>Quercus garryana</i>	Oregon White Oak	73
<i>Salix scouleriana</i>	Scouler's Willow	24
Shrubs		
<i>Salix columbiana</i>	Columbia River Willow	200
<i>Cornus sericea</i>	Red Twig Dogwood	2,864
<i>Salix Scouleriana</i>	Scouler's Willow (soil lift)	2,506
Native Upland Shrubs		
<i>Gaultheria shallon</i>	Salal	150
<i>Symphoricarpos albus</i>	Snowberry	150
<i>Mahonia aquifolium</i>	Oregon grape	150
Forbs		
<i>Carex obnupta</i>	Slough Sedge	575
<i>Juncus effusus</i>	Soft Rush	600
<i>Juncus patens</i>	Slender Rush	435

Table 4. Permanent Seeding Mix for Site Restoration

Botanical Name	Common Name	Acres	Pounds P.L.S.(pure live seed)/Acre
<i>Bromus carinatus</i>	California brome	7	49.2 lbs/acre
<i>Bromus vulgaris</i>	Columbia brome		
<i>Elymus glaucus</i>	Blue Wildrye		
<i>Agropyron spicatum</i>	Bluebunch Wheatgrass		
<i>Festuca occidentalis</i>	Western Fescue		

Table 5. Permanent Seeding Mix for Water Quality Facility

Botanical Name	Common Name	Acres	Pounds P.L.S./Acre
<i>Agrostis exarta</i>	Spike Bentgrass	0.41	10.3 lbs/acre
<i>Beckmannia syzigachne</i>	American Sloughgrass		
<i>Carex obnupta</i>	Slough Sedge		
<i>Deschampsia cespitosa</i>	Tufted Hairgrass		
<i>Danthonia californica</i>	California Oatgrass		
<i>Juncus ensifolius</i>	Daggerleaf Rush		

(C) The applicant shall be responsible for identifying all water resources and their appropriate buffers.

Staff: ODOT has identified the Sandy River and associated wetlands and their appropriate buffers

(Exhibits A.3 and A.8). *This criterion has been met.*

(D) Wetlands Boundaries shall be delineated using the following:

- (1) The approximate location and extent of wetlands in the Scenic Area is shown on the National Wetlands Inventory (U. S. Department of the Interior 1987). In addition, the list of hydric soils and the soil survey maps shall be used as an indicator of wetlands.**
- (2) Some wetlands may not be shown on the wetlands inventory or soil survey maps. Wetlands that are discovered by the local planning staff during an inspection of a potential project site shall be delineated and protected.**
- (3) The project applicant shall be responsible for determining the exact location of a wetlands boundary. Wetlands boundaries shall be delineated using the procedures specified in the ‘1987 Corps of Engineers Wetland Delineation Manual (on-line Edition)’.**
- (4) All wetlands delineations shall be conducted by a professional who has been trained to use the federal delineation procedures, such as a soil scientist, botanist, or wetlands ecologist.**

Staff: ODOT has submitted a Wetlands/Waters of the US Determination Report for the area of proposed development. The Sandy River, a perennial tributary of the Columbia River, and associated wetlands are the aquatic resources within the project area for the bridges. A wetland delineation was conducted for the area in the vicinity of the project. The NWI indicates that eight wetlands are within the study area. Four wetlands that are part of the Sandy River system or occupied depression adjacent to the roadway corridor were mapped, three of which are in Multnomah County and one in Troutdale. The wetlands identified are classified as palustrine emergent (PEM) and palustrine scrub-shrub (PSS), palustrine forested (PFO), and riverine (R3W). Hydrogeomorphic classes include slope flats (outflow and impounding) and riverine impounding. Wetlands along the corridor are saturated by a combination of surface runoff collecting in depressions along the I-84 corridor and surface and subsurface flows from the Sandy River. Wetlands A, B, and D will not be affected by the project. Wetland C as shown in the wetland delineation (Exhibit A.8) extends from north of the bridges along the edge of the Sandy River to south of the bridges. Subsequent to the delineation, the boundary of Wetland C was found to be below the OHW elevation. Permitting agencies now consider that portion of Wetland C below the OHW to be “waters” not “wetlands”. There will be impacts to those waters (Wetland C below OHW) but they are no longer considered impacts to wetlands. During the 2009 redesign phase, a potential staging area was identified on the south side of the bridge and west of the river, in Troutdale. A wetland reconnaissance of the staging area was conducted and no wetlands were found. A memorandum concerning the results of the determination is included in Exhibit A.8.

The Access/Staging EPS (Exhibit A.9) is appropriate guidance for this project because sensitive aquatic habitats (Sandy River and wetlands) exist in the project vicinity. Design and construction will limit impacts to the minimum areas necessary, marking the boundaries of disturbance limits in the field to protect sensitive areas, and appropriately locating vehicle and equipment staging, cleaning, maintenance, refueling, and fuel storage areas to minimize impacts. A proposed staging area has been designated on City of Troutdale property on the west side of the river. The applicant is working with the city for use of this property. Portions of the staging area are within 150 feet of the Sandy River. Existing access will be used during construction to the extent possible, although bridge replacement activities will require the installation of temporary work structures for construction access. It is anticipated that temporary gravel bar access will be necessary to allow equipment to access work areas on the dry gravel bar. Equipment will not be allowed to cross through the wetted channel. ODOT will implement standard specifications for staging and disposal sites to protect the environment during construction. *This criterion is met.*

(E) Stream, pond, and lake boundaries shall be delineated using the bank full flow boundary for streams and the high water mark for ponds and lakes. The project applicant shall be responsible for determining the exact location of the appropriate boundary for the water resource.

Staff: The boundary of the Sandy River is offset 200 feet from the bank full flow boundary as shown on the project drawings. (Exhibit A.3) *This criterion is met.*

(F) The local government may verify the accuracy of, and render adjustments to, a bank full flow, high water mark, normal pool elevation (for the Columbia River), or wetland boundary delineation. If the adjusted boundary is contested by the project applicant, the local government shall obtain professional services, at the project applicant's expense, or the county will ask for technical assistance from the U.S. Forest Service to render a final delineation.

Staff: Multnomah County finds ODOT's delineation of the Ordinary High Water Mark to be acceptable. No comments were received from the US Forest Service indicating that a problem may exist. *This criterion has been met.*

(G) Buffer zones shall be undisturbed unless the following criteria have been satisfied:

(1) The proposed use must have no practicable alternative as determined by the practicable alternative test. Those portions of a proposed use that have a practicable alternative will not be located in wetlands, stream, pond, lake, and riparian areas and/or their buffer zone.

Staff: The proposed Sandy River and Jordan Road bridge replacements meet the practicable alternative test. Alternatives to the proposed project consist of not replacing the bridge, or building the replacement bridges in a different location and/or employing a different design. ODOT's Bridge Engineering Section gathered data to evaluate the severity of shear cracking for bridges built from the late 1940s through the early 1960s. The evaluation and baseline recommendations to replace the bridges included a review of ODOT's data, assumptions, criteria and key results. The evaluation addressed the cracking stage of each bridge and its load rating, identification of structural elements considering feasible long-term repairs, structural and functional deficiencies, and repair and retrofit costs to improve the bridges to current standards. The Sandy River bridges were identified as candidate bridges for replacement by ODOT because the reinforced concrete bridge girders are in Crack Stage 3 with cracking throughout (maximum crack widths are 0.050 inches in concrete girders and 0.025 inches in steel girders), both bridges have a substandard roadway width of 30-0 inches, and both bridges are vulnerable to scour even though corrective actions have been implemented. Both structures are structurally deficient due to inadequate stirrup spacing in the reinforced concrete bridge girder spans and pin-hangers in the steel spans. The eastbound structure has deck rutting and cracking, and cracks in the steel spans. The westbound structure shows 1 inch of deck rutting and rust in the rivets. Since each bridge is fracture critical with 2 girder steel spans, widening and repair of the existing bridges will be difficult. Overall, the cost to repair the structural deficiencies and widen the structures exceeds one-half of their replacement cost. Based on evaluation of existing ODOT information and review of field information the feasible options for both bridges are replacement.

In addition, the bridges are element of the Interstate 84 travel lanes. It is not possible to move the bridge out of the Gorge or to a different location as the bridge is locationally dependent. Interstate 84 is part of the Federal Highway system and is used to move freight and people from Western Oregon to Eastern Oregon and beyond. The amount of vehicle trips generated can not be rerouted onto another right-of-way as there is limited infrastructure in the area. *There is no practical alternative.*

(2) Filling and draining of wetlands shall be prohibited with exceptions related to public safety or restoration/enhancement activities as permitted when all of the following criteria have been met:

- (a) A documented public safety hazard exists or a restoration/ enhancement project exists that would benefit the public and is corrected or achieved only by impacting the wetland in question.**
- (b) Impacts to the wetland must be the last possible documented alternative in fixing the public safety concern or completing the restoration/enhancement project.**
- (c) The proposed project minimizes the impacts to the wetland.**

Staff: There will be no filling or draining of wetlands or any other temporary or permanent wetland impacts. As noted in the response to paragraph 38.7075 (D)(1), at one time a portion of Wetland C was considered to be in the project footprint where existing piles will be removed, fill replaced, and planting occur, but this area is all below OHW and now considered to be impacts to “waters” not “wetlands”. As indicated in the submittal, there will be no impacts to wetlands. *This criterion is met.*

(3) Unavoidable impacts to wetlands and aquatic and riparian areas and their buffer zones shall be offset by deliberate restoration and enhancement or creation (wetlands only) measures as required by the completion of a mitigation plan.

Staff: ODOT has limited the impacts to stream buffer to the minimum necessary to remove the existing bridges components and construction of the replacement bridges. The objectives of the restoration plan are to replace the functions of the vegetation and waters (including roadside ditches) that are to be altered during this project. This will be done by planting native vegetation, removing invasive weed species, and restoring waters, which will provide soil stabilization, water quality treatment, and water storage. In addition, ODOT will be removing nuisance plant species and weeds as part of the restoration plan for the area (Exhibit A.14). This nuisance species removal qualifies as enhancement to the site. *This criterion has been met.*

(H) Protection of sensitive wildlife/plant areas and sites shall begin when proposed new developments or uses are within 1000 feet of a sensitive wildlife/plant site and/or area. Sensitive Wildlife Areas are those areas depicted in the wildlife inventory and listed in Table 4 of the Management Plan titled “Types of Wildlife Areas and Sites Inventoried in the Columbia Gorge”, including all Priority Habitats Table. Sensitive Plants are listed in Table 7 of the Management Plan, titled “Columbia Gorge and Vicinity Endemic Plant Species.” The approximate locations of sensitive wildlife and/or plant areas and sites are shown in the wildlife and rare plant inventory.

Staff: The Sandy River is identified by Multnomah County as a sensitive wildlife area and the project area is closer than 1,000 feet to the river. Therefore, this section applies to the project. Sensitive wildlife and plant areas have been mapped (Exhibit A.3 and A.19) and the resources are described in application submittals. Protection plans are required for the sensitive wildlife species during the replacement bridge construction period. No state or federally listed rare plant species or species of concern were found. *This criterion is met.*

(I) The local government shall submit site plans (of uses that are proposed within 1,000 feet of a sensitive wildlife and/or plant area or site) for review to the U.S. Forest Service and the appropriate state agencies (Oregon Department of Fish and Wildlife for wildlife issues and by the Oregon Natural Heritage Program for plant issues).

Staff: During completeness review and the Opportunity to Comment, the US Forest Service, Oregon Fish and Wildlife and Oregon Natural Heritage Program were given the opportunity to review and

comment on the proposed site plans. No comments were received. Staff contacted the US Forest Service to verify that they had no comments on the proposed plans. Diana Ross, USFS, concurred. *This criterion has been met.*

(J) The U.S. Forest Service wildlife biologists and/or botanists, in consultation with the appropriate state biologists, shall review the site plan and their field survey records. They shall:

- (1) Identify/verify the precise location of the wildlife and/or plant area or site.**
- (2) Determine if a field survey will be required.**
- (3) Determine, based on the biology and habitat requirements of the affected wildlife/plant species, if the proposed use would compromise the integrity and function of or result in adverse affects (including cumulative effects) to the wildlife or plant area or site. This would include considering the time of year when wildlife or plant species are sensitive to disturbance, such as nesting, rearing seasons, or flowering season.**
- (4) Delineate the undisturbed 200 ft buffer on the site plan for sensitive plants and/or the appropriate buffer for sensitive wildlife areas or sites, including nesting, roosting and perching sites.**
 - (a) Buffer zones can be reconfigured if a project applicant demonstrates all of the following: (1) the integrity and function of the buffer zones is maintained, (2) the total buffer area on the development proposal is not decreased, (3) the width reduction shall not occur within another buffer, and (4) the buffer zone width is not reduced more than 50% at any particular location. Such features as intervening topography, vegetation, man made features, natural plant or wildlife habitat boundaries, and flood plain characteristics could be considered.**
 - (b) Requests to reduce buffer zones shall be considered if an appropriate professional (botanist, plant ecologist, wildlife biologist, or hydrologist), hired by the project applicant, (1) identifies the precise location of the sensitive wildlife/plant or water resource, (2) describes the biology of the sensitive wildlife/plant or hydrologic condition of the water resource, and (3) demonstrates that the proposed use will not have any negative effects, either direct or indirect, on the affected wildlife/plant and their surrounding habitat that is vital to their long-term survival or water resource and its long term function.**
 - (c) The local government shall submit all requests to re-configure sensitive wildlife/plant or water resource buffers to the U.S. Forest Service and the appropriate state agencies for review. All written comments shall be included in the record of application and based on the comments from the state and federal agencies, the local government will make a final decision on whether the reduced buffer zones is justified. If the final decision contradicts the comments submitted by the federal and state agencies, the local government shall justify how it reached an opposing conclusion.**

Staff: The U.S. Forest Service reviewed the proposed project through the I-84 Corridor Strategy team and found that the proposed construction plan would not compromise the integrity and function of or result in adverse affects (including cumulative effects) to the wildlife area or site. No additional field surveys were requested as part of this land use application. *This criterion has been met.*

(K) The local government, in consultation with the State and federal wildlife biologists and/or botanists, shall use the following criteria in reviewing and evaluating the site plan to ensure that the proposed developments or uses do not compromise the integrity and function of or result in adverse affects to the wildlife or plant area or site:

- (1) Published guidelines regarding the protection and management of the affected wildlife/plant species. Examples include: the Oregon Department of Forestry has prepared technical papers that include management guidelines for osprey and great blue heron; the**

Washington Department of Wildlife has prepared similar guidelines for a variety of species, including the western pond turtle, the peregrine falcon, and the Larch Mountain salamander (Rodrick and Milner 1991).

(2) Physical characteristics of the subject parcel and vicinity, including topography and vegetation.

(3) Historic, current, and proposed uses in the vicinity of the sensitive wildlife/plant area or site.

(4) Existing condition of the wildlife/plant area or site and the surrounding habitat and the useful life of the area or site.

(5) In areas of winter range, habitat components, such as forage, and thermal cover, important to the viability of the wildlife must be maintained or, if impacts are to occur, enhancement must mitigate the impacts so as to maintain overall values and function of winter range.

(6) The site plan is consistent with the "Oregon Guidelines for Timing of In-Water Work to Protect Fish and Wildlife Resources" (Oregon Department of Fish and Wildlife 2000).

(7) The site plan activities coincide with periods when fish and wildlife are least sensitive to disturbance. These would include, among others, nesting and brooding periods (from nest building to fledgling of young) and those periods specified.

(8) The site plan illustrates that new developments and uses, including bridges, culverts, and utility corridors, shall not interfere with fish and wildlife passage.

(9) Maintain, protect, and enhance the integrity and function of Priority Habitats (such as old growth forests, talus slopes, and oak woodlands) as listed in the Priority Habitats Table. This includes maintaining structural, species, and age diversity, maintaining connectivity within and between plant communities, and ensuring that cumulative impacts are considered in documenting integrity and function.

	PRIORITY HABITATS TABLE
Priority Habitats	Criteria
Aspen stands	High fish and wildlife species diversity, limited availability, high vulnerability to habitat alteration.
Caves	Significant wildlife breeding habitat, limited availability, dependent species.
Old-growth forest	High fish and wildlife density, species diversity, breeding habitat, seasonal ranges, and limited and declining availability, high vulnerability.
Oregon white oak woodlands	Comparatively high fish and wildlife density, species diversity, declining availability, high vulnerability
Prairies and steppe	Comparatively high fish and wildlife density, species diversity, important breeding habitat, declining and limited availability, high vulnerability.
Riparian	High fish and wildlife density, species diversity, breeding habitat, movement corridor, high vulnerability, dependent species.
Wetlands	High species density, high species diversity, important breeding habitat and seasonal ranges, limited availability, high vulnerability.
Snags and logs	High fish and wildlife density, species diversity, limited availability, high vulnerability, dependent species.
Talus	Limited availability, unique and dependent species, high vulnerability.
Cliffs	Significant breeding habitat, limited availability, dependent species.
Dunes	Unique species habitat, limited availability, high vulnerability, dependent species.

Staff: The project plans including site plan, erosion control plans, restoration plan, mitigation plan, etc. were made available to the USFS for review (Exhibits A1-A.19 and C.1, C4.-C.5). No comments or concern were raised regarding the proposed project and the construction methods. *This criterion has been met.*

(L) The wildlife/plant protection process may terminate if the local government, in consultation with the U.S. Forest Service and state wildlife agency or Heritage program, determines (1) the sensitive wildlife area or site is not active, or (2) the proposed use is not within the buffer zones and would not compromise the integrity of the wildlife/plant area or site, and (3) the proposed use is within the buffer and could be easily moved out of the buffer by simply modifying the project proposal (site plan modifications). If the project applicant accepts these recommendations, the local government shall incorporate them into its development review order and the wildlife/plant protection process may conclude.

Staff: The wildlife protection process must continue as the USFS has not indicated that (1) the sensitive wildlife area has been abandoned, (2) the proposed use is within a buffer zone and could compromise the integrity of the wildlife area, and (3) the replacement bridge cannot be moved out of the sensitive wildlife area.

(M) If the above measures fail to eliminate the adverse affects, the proposed project shall be prohibited, unless the project applicant can meet the Practicable Alternative Test and prepare a mitigation plan to offset the adverse effects by deliberate restoration and enhancement.

Staff: The measures under (L) cannot be achieved. The replacement bridge application will need to meet the no practical alternative test under (Q) below. A mitigation plan has been provided to restore and enhance the area after construction of the new bridge and removal of the old structure.

(N) The local government shall submit a copy of all field surveys (if completed) and mitigation plans to the U.S. Forest Service and appropriate state agencies. The local government shall include all comments in the record of application and address any written comments submitted by the state and federal wildlife agency/heritage programs in its development review order. Based on the comments from the state and federal wildlife agency/heritage program, the local government shall make a final decision on whether the proposed use would be consistent with the wildlife/plant policies and guidelines. If the final decision contradicts the comments submitted by the state and federal wildlife agency/heritage program, the local government shall justify how it reached an opposing conclusion.

Staff: Multnomah County provided the opportunity to comment on all submitted evidence. No comments were submitted by the USFS, ODFW or Oregon Natural Heritage Program. Planning staff contacted USFS to verify that they had no issues with the plan. *This criterion is met.*

(O) The local government shall require the project applicant to revise the mitigation plan as necessary to ensure that the proposed use would not adversely affect a sensitive wildlife/plant area or site.

Staff: No revisions are needed. *This criterion is met.*

(P) Soil productivity shall be protected using the following guidelines:

(1) A description or illustration showing the mitigation measures to control soil erosion and stream sedimentation.

(2) New developments and land uses shall control all soil movement within the area shown on the site plan.

- (3) The soil area disturbed by new development or land uses, except for new cultivation, shall not exceed 15 percent of the project area.**
- (4) Within 1 year of project completion, 80 percent of the project area with surface disturbance shall be established with effective native ground cover species or other soil-stabilizing methods to prevent soil erosion until the area has 80 percent vegetative cover.**

Staff: ODOT has submitted a Hillside Development Permit (HDP) which addresses soil erosion and stream sedimentation issues (Exhibits A.7 and A.12). The information submitted includes a narrative addressing the HDP criteria and erosion control plans. Erosion control measures were designed to protect areas outside of the disturbance area from sedimentation and cut and fill slopes from erosion. Once the Sandy River bridges are replaced, the disturbed areas will be seeded or landscaped with native plants. No additional soil movement will be expected following construction. The Jordan Road repairs do not include new developments or land uses; however, sediment and erosion control practices during construction for the bridges will strictly adhere to best management practices. The replacement bridge over Sandy River is part of the larger land use known as Interstate – 84. Interstate – 84 runs from Portland Oregon to the Idaho border. This construction project does not exceed 15 percent of the interstate corridor. A condition of approval has been included requiring an 80% native vegetative cover within 1 year of project completion. *As conditioned, this criterion has been met.*

(Q) An alternative site for a proposed use shall be considered practicable if it is available and the proposed use can be undertaken on that site after taking into consideration cost, technology, logistics, and overall project purposes. A practicable alternative does not exist if a project applicant satisfactorily demonstrates all of the following:

- (1) The basic purpose of the use cannot be reasonably accomplished using one or more other sites in the vicinity that would avoid or result in less adverse effects on wetlands, ponds, lakes, riparian areas, wildlife or plant areas and/or sites.**
- (2) The basic purpose of the use cannot be reasonably accomplished by reducing its proposed size, scope, configuration, or density, or by changing the design of the use in a way that would avoid or result in less adverse effects on wetlands, ponds, lakes, riparian areas, wildlife or plant areas and/or sites.**
- (3) Reasonable attempts were made to remove or accommodate constraints that caused a project applicant to reject alternatives to the proposed use. Such constraints include inadequate infrastructure, parcel size, and land use designations. If a land use designation or recreation intensity class is a constraint, an applicant must request a Management Plan amendment to demonstrate that practicable alternatives do not exist.**

Staff:

(1) Interstate - 84 runs across Oregon from west to east through the Columbia River Gorge. It was constructed prior to designating this area a National Scenic Area. The Sandy River flows approximately perpendicular to Interstate -84. A bridge is needed for autos and trucks to travel over the river. The purpose of Interstate – 84 is vehicle travel. Without the replacement of the bridge, it would not be feasible to maintain vehicle travel across Northern Oregon. It should be noted that if the bridge was moved to the north or south, it would still cross the Sandy River. To build the bridges in a different location, even shifting the centerline slightly in one direction or another, would significantly increase impacts on the environment by creating new impacts where none exist.

With respect to the Jordan Road bridges, changes to the footprint for the Jordan Road bridge repairs are needed to bring the road section up to current standards and match the improvements at the Sandy River bridges. Alternative sites for the use would increase the adverse impacts far beyond the limited impacts of this widening. No direct impacts to wetlands or the Sandy River would occur, only to the buffer zones.

(2) The basic purpose of the I-84 bridges is to carry traffic safely on the interstate highway system. The

Sandy River bridges need to be replaced for safety reasons. Other alignment options were not investigated because they would involve reconstruction of the existing interchanges on each side of the proposed bridges greatly increasing environmental and land use impacts. Since no alternative use or site can accomplish the purpose of the bridges, the bridges have been designed to minimize negative effects on surrounding lands. The proposed replacement bridges will be widened partially towards the middle of the right-of-way. As a result, the ODOT right-of-way footprint will only be increased slightly to accommodate the multi-path connection on the south side. The distance between the two bridges will be reduced by about 50 feet. This width will allow for an auxiliary lane, wider shoulders meeting current safety standards, and a multi-use path to be added. The new bridge design will improve overall fish habitat. The proposed bridge is considered self mitigating since it will reduce the number of overall permanent bents below OHW from 17 to 6, reduce the volume of material below OHW, restore waters of the U.S., and widen the floodplain by removing roadway embankment material. This will result in a net improvement to salmonid rearing habitat. There will be a net decrease in the amount of material within the functional floodplain.

(3) ODOT looked at restoring the bridge versus replacing it. Although the bridge replacements impact the buffer zones of wetlands and the Sandy River, they are the option with the least impact that could still meet the purpose of the project within a reasonable cost. There are no other feasible and practicable alternatives, even with removable constraints, that would have a lesser impact.

Based upon the above three findings, there is no practical alternative to replacing the Sandy River Bridges and Jordan Road Bridges at its proposed location. *This criterion has been met.*

(R) The Mitigation Plan shall be prepared when:

(1) The proposed development or use is within a buffer zone (wetland, pond, lakes, riparian areas, wildlife or plant areas and/or sites).

(2) There is no practicable alternative as determined by MCC 38.7075 (Q).

Staff: The bents for the replacement bridges will be within the 200 ft buffer of the Sandy River. Planning staff found in the sections above that there is no practicable alternative for the bridge. ODOT has prepared a mitigation plan (Exhibit A.14). *This criterion has been met.*

(S) In all cases, Mitigation Plans are the responsibility of the applicant and shall be prepared by an appropriate professional (botanist/ecologist for plant sites, a wildlife/fish biologist for wildlife/fish sites, and a qualified professional for water resource sites).

Staff: No comments were received from the USFS or ODFW that the above professionals are not qualified. *This criterion has been met.*

(T) The primary purpose of this information is to provide a basis for the project applicant to redesign the proposed use in a manner that protects sensitive water resources, and wildlife/plant areas and sites, that maximizes his/her development options, and that mitigates, through restoration, enhancement, and replacement measures, impacts to the water resources and/or wildlife/plant area or site and/or buffer zones.

Staff: The USFS and ODFW had the opportunity to review the restoration and mitigation plans submitted by ODOT. No revisions have been proposed or required by these agencies. *This criterion has been met.*

(U) The applicant shall submit the mitigation plan to the local government. The local government shall submit a copy of the mitigation plan to the U.S. Forest Service, and appropriate state agencies. If the final decision contradicts the comments submitted by the state and federal wildlife agency/heritage program, the local government shall justify how it

reached an opposing conclusion.

Staff: ODOT submitted a mitigation plan as part of the application package. Multnomah County provided opportunity to comment to the USFS, ODFW, and Oregon Natural Heritage Program. No comments were received. *This criterion has been met.*

(V) A project applicant shall demonstrate sufficient fiscal, technical, and administrative competence to successfully execute a mitigation plan involving wetland creation.

Staff: No wetland creation is proposed for this project. *This criterion is not applicable.*

(W) Mitigation plans shall include maps, photographs, and text. The text shall:

- (1) Describe the biology and/or function of the sensitive resources (e.g. Wildlife/plant species, or wetland) that will be affected by a proposed use. An ecological assessment of the sensitive resource to be altered or destroyed and the condition of the resource that will result after restoration will be required. Reference published protection and management guidelines.**
- (2) Describe the physical characteristics of the subject parcel, past, present, and future uses, and the past, present, and future potential impacts to the sensitive resources. Include the size, scope, configuration, or density of new uses being proposed within the buffer zone.**
- (3) Explain the techniques that will be used to protect the sensitive resources and their surrounding habitat that will not be altered or destroyed (for examples, delineation of core habitat of the sensitive wildlife/plant species and key components that are essential to maintain the long-term use and integrity of the wildlife/plant area or site).**
- (4) Show how restoration, enhancement, and replacement (creation) measures will be applied to ensure that the proposed use results in minimum feasible impacts to sensitive resources, their buffer zones, and associated habitats.**
- (5) Show how the proposed restoration, enhancement, or replacement (creation) mitigation measures are NOT alternatives to avoidance. A proposed development/use must first avoid a sensitive resource, and only if this is not possible should restoration, enhancement, or creation be considered as mitigation. In reviewing mitigation plans, the local government, appropriate state agencies, and U.S. Forest Service shall critically examine all proposals to ensure that they are indeed last resort options.**

Staff: ODOT has submitted the required information as identified above. The Site Restoration Plan contains a summary of the baseline environmental information (Exhibits A.4 and A.14). The Wetland Delineation Report, the Environmental Baseline Report, and the Joint Permit Application (JPA) (Exhibits A.8-A.10) describe in more detail the biology and/or function of the two main sensitive resources in the project area wetlands and fish habitat in the Sandy River. There will be no impacts to wetlands, so their function and biology are not described further here. The Site Restoration Plan constitutes the mitigation plan for this project. *This criterion has been met.*

(X) At a minimum, a project applicant shall provide to the local government a progress report every 3-years that documents milestones, successes, problems, and contingency actions. Photographic monitoring stations shall be established and photographs shall be used to monitor all mitigation progress.

Staff: Section VIII of the submitted Site Restoration Plan (Exhibit A.14) describes the proposed monitoring program which is a 5-year monitoring program. As indicated by the applicant, no photographic monitoring stations is planned to be established. However, monitoring and maintenance is proposed to be conducted for five-years or until success criteria is achieved, which ever occurs first.

VIII. Monitoring and Maintenance Plan

A. Establishment Period

- Watering and Mulching - Water all plants as necessary to promote and maintain growth using temporary irrigation methods. Keep planted areas raked to a smooth and even finish grade. Maintain mulch within plant saucers at a 50 mm (2 inch) depth, unless otherwise specified.
- Fertilizer - Fertilizer is not required for this project.
- Weeding - Begin vegetation management activities immediately after planting is completed. Remove noxious weed species from the Weed Management Area.
- Disease Control - Within 15 days of discovery or notification, control plant diseases with applicable products and in accordance with the manufacturer's recommendation.
- Soil Testing and Corrective Soil Amendments - If specified for the original planting, have a soil test performed by a soil ecology lab between the second and third periodic inspection. Present the recommendations to the Agency at the third inspection. Apply the amendments as recommended by the soil test report and as directed by the Agency.
- Inspections - Inspect the area once quarterly and adjust exact timing of the listed activities to maintain a healthy growing condition of landscape items. Walk through area and pick up noticeable trash and debris. Keep area free from accumulation of work-related materials, equipment, and debris. Report to owner vandalism, dumping, homeless encampments or other unauthorized activity. Contractor shall not initiate contact with unauthorized personnel.
- Final Inspection - After plant replacement work and any other required work has been completed, the Agency (ODOT) will make a final inspection. Ensure that all plant materials, planting beds, and other facilities are according to the Specifications as a prerequisite for acceptance.

Table 6. One-Year Landscape Maintenance Service Program

	No. of Visits per Month(agency or agent)											
	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C
1. Site Inspection			1			1			1			1
2. Weed Control (Yr. 1)			1			1			1			1
3. Water Check and replace time release water					1		1		1			
4. Mulch To maintain specified conditions												1
5. Maintain Staking, guying, browse protectors, and wire mesh cages to meet specified conditions												
6. Remove Staking, guying, browse protectors, and wire mesh cages upon completion of 5-year maintenance period												

B. Post-Construction Monitoring

Per ODOT environmental performance standards, monitoring and maintenance will be conducted for five-years or until success criteria is achieved – which ever occurs first. ODOT will assume monitoring responsibility for all but the first year of monitoring. The One-Year Landscape Maintenance Service Program is outlined in Table 12. The Contractor will assume monitoring responsibility for the first year following construction. During the site visit, the Contractor will inspect for and make plans to correct factors that may prevent attainment of design and success criteria established in this plan or in permits issued by regulatory agencies. For each site monitoring visit, a written record will document the date, site conditions, and any corrective action that will be taken.

(Y) A final monitoring report shall be submitted to the local government for review upon completion of the restoration, enhancement, or replacement activity. This monitoring report

shall document successes, problems encountered, resource recovery, status of any sensitive wildlife/plant species and shall demonstrate the success of restoration and/or enhancement actions. The local government shall submit copies of the monitoring report to the U.S. Forest Service; who shall offer technical assistance to the local government in helping to evaluate the completion of the mitigation plan. In instances where restoration and enhancement efforts have failed, the monitoring process shall be extended until the applicant satisfies the restoration and enhancement guidelines.

Staff: ODOT has accepted responsibility for a final monitoring report. A condition of approval has been included to remind all parties of this requirement in the future. *This criterion will be met through a condition of approval.*

(Z) Mitigation measures to offset impacts to resources and/or buffers shall result in no net loss of water quality, natural drainage, fish/wildlife/plant habitat, and water resources by addressing the following:

(1) Restoration and enhancement efforts shall be completed no later than one year after the sensitive resource or buffer zone has been altered or destroyed, or as soon thereafter as is practicable.

Staff: According to the Site Restoration Plan, upon removal of the detour bridge and work bridges, the streambank will be restored to a natural slope, pattern, and profile suitable for establishment of permanent woody vegetation. Much of the existing bank within the right-of-way is currently road embankment. Some of the existing roadway fill will be removed on the east side of the river. During construction the following steps will be taken to ensure the protection and restoration of riparian conditions.

1. Native materials will be left where they are found if possible.
2. Native materials (e.g., downed wood) that are damaged or destroyed will be replaced with a functional equivalent during site restoration.
3. All large wood, native vegetation, weed-free topsoil, and native channel material displaced by construction will be stockpiled for use during site restoration in-channel, in the riparian area, or in adjacent uplands, as appropriate. *This criterion is met.*

(2) All natural vegetation within the buffer zone shall be retained to the greatest extent practicable. Appropriate protection and maintenance techniques shall be applied, such as fencing, conservation buffers, livestock management, and noxious weed control. Within five years, at least 75 percent of the replacement vegetation must survive. All plantings must be with native plant species that replicate the original vegetation community.

Staff: All natural vegetation within the project area will be retained as much as possible. Retaining, protecting and supplementing natural vegetation will be much more feasible outside of the cut/fill lines. However, it is not feasible in some areas within the project area to retain natural vegetation. All proposed plantings are native species, as detailed in the Planting Plan (Exhibits A.3 and A.14). New landscaping will use only native plant species. Implementation of construction specifications for clearing will protect vegetation where possible within the associated work areas. The revegetation plan will supplement existing vegetation by replacing removed trees at a 1:1.5 ratio. Douglas fir, Pacific dogwood, Oregon ash, Oregon white oak, and Scouler's willow trees are included in the plant palette, consistent with the largely deciduous forest called for in the River Bottomlands landscape setting. The Site Restoration Plan identifies that planted woody species have 75% survival, not including live stakes, at the end of the 5-year monitoring period, and requires seeding to cover 70% of the ground surface by the fifth year. *This criterion is met.*

(3) Habitat that will be affected by either temporary or permanent uses shall be rehabilitated to a natural condition. Habitat shall be replicated in composition, structure, and function, including tree, shrub and herbaceous species, snags, pool-riffle ratios, substrata, and structures, such as large woody debris and boulders.

Staff: The applicant submittal includes a Site Restoration Plan (Exhibit A.14) that details the restoration of the riparian habitat. The new bridge design will improve overall fish habitat by having a net reduction in material below OHW, restoring approximately 13,000 square feet of waters and floodplain in the river, reducing the number of bents, providing further spacing between the bents which would improve large woody debris transport and fluvial functions (channel-forming processes) under the bridge. *This criterion is met.*

(4) If this standard is not feasible or practical because of technical constraints, a sensitive resource of equal or greater benefit may be substituted, provided that no net loss of sensitive resource functions occurs and provided the County, in consultation with the appropriate State and Federal agency, determine that such substitution is justified.

Staff: As addressed above, this criterion can be met, therefore no substitute area is proposed.

(5) Sensitive plants that will be destroyed shall be transplanted or replaced, to the maximum extent practicable. Replacement is used here to mean the establishment of a particular plant species in areas of suitable habitat not affected by new uses. Replacement may be accomplished by seeds, cuttings, or other appropriate methods. Replacement shall occur as close to the original plant site as practicable. The project applicant shall ensure that at least 75 percent of the replacement plants survive 3 years after the date they are planted

Staff: As indicated by the applicant, no sensitive plants are known to be near the site; therefore, no impacts are expected. Staff concurs. *This criterion is met.*

(6) Nonstructural controls and natural processes shall be used to the greatest extent practicable.

(a) Bridges, roads, pipeline and utility corridors, and other water crossings shall be minimized and should serve multiple purposes and properties.

Staff: The replacement bridges over the Sandy River have been designed to minimize impacts by limiting the width to the minimum necessary to meet the current design standards for highways and to meet the U.S. Forest Service Open Space plan for a multi-use trail access across Eastbound I-84. The multi-use path serves recreationalists and trail users while the roadway serves as the main interstate highway, east-west route between western and eastern Oregon. Bridge repair will incorporate mitigation measures to avoid or minimize impacts to resources to the greatest extent possible. The mitigation plan details some of the measures implemented so that the proposed use results in minimum feasible impacts to sensitive resources, their buffer zones, and associated habitats. *This criterion is met.*

(b) Stream channels shall not be placed in culverts unless absolutely necessary for property access. Bridges are preferred for water crossings to reduce disruption to hydrologic and biologic functions. Culverts shall only be permitted if there are no practicable alternatives as determined by MCC .38.7075 (Q).

Staff: This proposal is for bridge replacements and repairs and does not include placing stream channels in culverts. *This criterion is met.*

(c) Fish passage shall be protected from obstruction.

Staff: ODOT has submitted a fish passage plan (A.19) for the work done in association with the Sandy River Bridges. The Jordan Road bridges do not constitute a barrier to fish passage as they do not cross any fish bearing waterways. Fish passage will be provided for any adult or juvenile fish species present in the project area during and after construction, for the life of the project, unless otherwise approved in writing by the United States Army Corps of Engineers (USACE) in consultation with appropriate resource agencies. The new bridges will meet the large-scale crossing design criteria outlined in Oregon Department of Fish and Wildlife (ODFW) fish passage rule (OAR 635 Division 412). The criteria apply to work outside of the designated in-water work window and includes the following: it will have at least one clear span of 35 feet within the channel, will fill no more than 25% of the active channel width or area, and cover no more than 25% of the bed and banks. The proposed structures will improve fish passage by reducing the number of bents in the river. Two navigational channels, at least 35 feet wide, will be provided during construction that will also provide fish passage through the project area. The isolation measures for demolition and cofferdams for new bent construction are anticipated to only be in place during the in-water work. Due to the short In Water Work Window (IWWW), the cofferdams may remain in place until the next window for the contractor to complete construction within the cofferdam. *This criterion is met.*

(d) Restoration of fish passage should occur wherever possible.

Staff: No potential barriers to fish passage are identified for the project. Fish passage will be maintained during construction of the Sandy River bridges and will be improved following construction because of the reduced in-water impacts from fewer in-water structures. The Jordan Road bridges do not constitute a barrier to fish passage as they do not cross any fish bearing waterways. *This criterion is met.*

(e) Show location and nature of temporary and permanent control measures that shall be applied to minimize erosion and sedimentation when riparian areas are disturbed, including slope netting, berms and ditches, tree protection, sediment barriers, infiltration systems, and culverts.

Staff: Temporary and permanent control measures to minimize erosion and sedimentation when riparian areas are disturbed are shown on the Erosion Control Plan (Exhibit A.3) and described in the Design Criteria for the Site Restoration Plan (A.14). *This criterion is met.*

(f) Groundwater and surface water quality will not be degraded by the proposed use. Natural hydrologic conditions shall be maintained, restored, or enhanced in such a manner that replicates natural conditions, including current patterns (circulation, velocity, volume, and normal water fluctuation), natural stream channel and shoreline dimensions and materials, including slope, depth, width, length, cross-sectional profile, and gradient.

Staff: A hydraulic and scour assessment was conducted for the proposed bridge replacing the Sandy River bridges (A.11). The Sandy River bridges are located within a regulatory (FEMA) floodway. According to the hydraulic and scour assessment report, navigational clearance for large ships is not an issue at the bridge site. More support structures are being removed from the functional floodplain than are being added. The existing structures will be removed to an average elevation of 5 feet below existing grade. However, piers are being removed to the greatest extent practicable. The project will result in a net decrease in the volume of material below Ordinary High Watermark (OHW). Removing this material returns the system to a more natural condition. The proposed bridges will not induce localized scour of streambanks or reasonably likely spawning areas.

A study of the fluvial processes of the Sandy River in the vicinity of the Interstate 84 Bridges was

conducted in support of the hydraulic and scours analyses for the replacement bridges. It was found that the proposed bridge alternative does not appear to have a significant impact on the transport of sediment in the reach evaluated. Further, it is expected that the proposed replacement bridge will not create an increase in backwater for the Base Flood as compared to the existing bridge. A certification of “No Rise” is included in Exhibit A.11.

The project discharges into the Sandy River just upstream from its confluence with the Columbia River. Given the vast differences in drainage areas and hydrologic response between the site and the receiving waters, water quantity control (detention) is not considered effective here. Therefore the water quality facilities here are not designed for flow control. The proposed stormwater collection system will help to improve water quality in the Sandy and Columbia Rivers. Water quality treatment and conveyance replacement of the Sandy River bridges and widening of the Jordan Road Bridges along I-84 is addressed in the Stormwater Management Plan (Exhibit A.7). The bridge replacement is anticipated to create 1.97 acres of net new impervious area. The criterion used by DEQ for review requires treatment of as much as possible of the entire project impervious area (7.42 acres) plus any off-project area that drains through the project area. Facilities will treat 4.74 acres and an additional 2.68 acres will receive natural treatment as runoff sheet flows onto grassy embankments. Thus, stormwater will be treated to “the maximum extent practicable.”

SANDY RIVER BRIDGES STORMWATER MANAGEMENT PLAN

This hydraulic design eliminates the need for deck drains. Stormwater runoff will drain to the shoulders and be picked up by inlets near the ends of each bridge. Note that inlets are only required where curbs are used to direct and collect water for treatment. Elsewhere, runoff will sheet-flow over the roadway embankment and onto grassy slopes. Bridge runoff draining to the west will be conveyed to the existing water quality swale near the northwest corner of the project. Runoff from the bridge draining eastward will be conveyed to a proposed water quality swale in the median between the eastbound and westbound travel lanes. A new outfall will be constructed draining the swale to the Sandy River. The pipe elevation at the outfall will be kept above the ordinary high water elevation (OHW) as shown on the plans (23.3 feet). Erosion control at the outfall will consist of a rock lining.

Existing Swale – West End

The existing water quality treatment swale west of the bridge treats runoff from 1.06 acres of existing bridge deck area. This will be increased to 2.61 acres for the new bridge deck plus roadway approach areas. Runoff from the west half of the project will be collected in inlets. Some of the existing pipe system will be utilized to convey water to the swale. The inside lanes on the west end of the East and West bound lanes will drain toward the median area. It is assumed that the water quality storm from these impervious areas will completely infiltrate into the median. However, any flow that is not infiltrated would drain to an area drain at Station 27+00 that ultimately drains into the existing water quality swale. This drain will also serve as an overflow during larger storm events. Some ponding may occur in this area during high flow conditions.

The existing swale will be upgraded with 12 inches of amended topsoil. The details of this are shown in the Roadside Development Plan in Exhibit A.3.

Proposed Swale – East End

A proposed water quality swale east of the bridge will treat an area of 2.13 acres. As illustrated in the appendixes of Exhibit A.7, the Stormwater Management Plan and the Roadside Development Plan (Sheets GN-3 through GN-5), it will be located in the median area east of the bridge. Its effective length is 140 feet. As shown in the calculations in the Stormwater Management Plan, it will be adequate to treat the design water quality flow. Bridge runoff will be collected using inlets at the east end of the bridge and piped to the proposed water quality swale. Drainage curb will be installed along the outside lanes of each roadway (eastbound and westbound) where needed to direct flow to the inlets. The swale

design is based on the 2005 ODOT Hydraulics Manual and the water quality guidance bulletin by ODOT's Geo-Environmental Section dated 7/24/07. It will have 3:1 side slopes, evenly spaced check dams, and a 10-foot wide bottom sloping at 0.5 percent. This will provide the required 9 minutes of residence time. Planting and amended soil complete the treatment swale as shown on the Roadside Development Plan in Exhibit A.3.

JORDAN ROAD BRIDGES

Runoff from the Jordan Road bridges will not flow to designed treatment facilities. However, significant natural treatment will occur. The runoff will flow to the end of each structure then down the vegetated embankment to Jordan Road as with the existing structures and drain the same way as does the existing road. It appears that the existing drainage on Jordan Road goes to a sump, which appears to be plugged. Thus, drainage is apparently diverted into the 600-foot-long swale-like grassy area between Jordan Road and the north side of I-84. In any case, significant natural treatment occurs before this water enters the Sandy River or other body of water. *This criterion is met.*

(g) Those portions of a proposed use that are not water-dependent or that have a practicable alternative will be located outside of stream, pond, and lake buffer zones.

Staff: The location of the proposed replacement bridges does not have a practical alternative that would not affect the Sandy River buffer. *This criterion has been met.*

(h) Streambank and shoreline stability shall be maintained or restored with natural revegetation.

Staff: Streambank and shoreline stability will be maintained or restored with natural revegetation when possible. However, it is not feasible in some areas within the project area to retain natural vegetation. Some riprap will be used above the OHW on the east bank to protect the bridge structure. Roadway embankment will be removed allowing natural stream and floodplain function and will be protected with riprap graded at a 1.5:1 slope (Exhibit A.3) and will incorporate netted soil lifts and a brush layer. The west slope will remain stable since existing riprap will not be removed or disturbed. Retaining, protecting and supplementing natural vegetation will be much more feasible outside of the cut/fill lines. The fill lines on the General Construction plan (Exhibit A.3) show where disturbance will occur, which will be most of the slopes on the bridge approaches and some disturbance of slopes under the bridge. Implementation of construction specifications for clearing will protect vegetation where possible within the associated work areas. The revegetation plan will supplement existing vegetation by replacing removed trees at a 1:1.5 ratio as depicted in the submitted project plans (Exhibit A.3). *This criterion is met.*

(i) The size of restored, enhanced, and replacement (creation) wetlands shall equal or exceed the following ratios. The first number specifies the required acreage of replacement wetlands, and the second number specifies the acreage of wetlands altered or destroyed.

Restoration: 2: 1

Creation: 3: 1

Enhancement: 4: 1

Staff: There are no identified impacts on wetlands and therefore no mitigation required. *This criterion is not applicable.*

(7) Wetland creation mitigation shall be deemed complete when the wetland is self-functioning for 5 consecutive years. Self-functioning is defined by the expected function of the wetland as written in the mitigation plan. The monitoring report shall be submitted to

	the local government to ensure compliance. The U.S. Forest Service, in consultation with appropriate state agencies, shall extend technical assistance to the local government to help evaluate such reports and any subsequent activities associated with compliance. (8) Wetland restoration/enhancement can be mitigated successfully by donating appropriate funds to a non-profit wetland conservancy or land trust with explicit instructions that those funds are to be used specifically to purchase protection easements or fee title protection of appropriate wetlands acreage in or adjacent to the Columbia River Gorge meeting the ratios given above in MCC 38.7075 (Z) (6) (i). These transactions shall be explained in detail in the Mitigation Plan and shall be fully monitored and documented in the monitoring report. Staff: There will be no wetland creation with this project. <i>These criteria are not applicable.</i>
2.60	§ 38.7085 SMA RECREATION RESOURCE REVIEW CRITERIA (A) The following shall apply to all new developments and land uses: (1) New developments and land uses shall be natural resource-based and not displace existing recreational use. Staff: No new developments or land uses that would displace existing recreational uses are proposed. A new multi-use path connection across the Sandy River eastbound I-84 bridge is part of the project, but the proposed project is primarily to replace and repair existing bridges. The acquisitions of land or easements will not affect recreation resources. Benching the disturbed ground under the east side of the Sandy River bridges for a future pedestrian trail connection is part of the proposal but the trail itself will be permitted and constructed by others at a later date and approval of that trail is not requested as part of this application. <i>This criterion is met.</i> (2) Protect recreation resources from adverse effects by evaluating new developments and land uses as proposed in the site plan. An analysis of both on and off site cumulative effects such as site accessibility and the adverse effects on the Historic Columbia River Highway shall be required. Staff: The applicant has submitted project plans (Exhibit A.3 and A.16) showing the location of the new multi-use path. The path is not intended for access by motorized vehicles, but pedestrians and cyclists only. Cumulative impacts aren't anticipated on any recreation resources or the Historic Columbia River highway. Pedestrians and cyclists can currently cross the I-84 bridges on the 10-foot shoulder, but the crossing is currently unsafe compared to the proposed 12-foot-wide path that will be separated from motor vehicle traffic by a barrier. The safety of the new multi-use path could encourage more frequent use, but is not expected to create any adverse cumulative effects as the use will remain the same. <i>This criterion is met.</i> (3) New pedestrian or equestrian trails shall not have motorized uses, except for emergency services. Staff: The proposed multi-use path over the Sandy River Bridges is not intended for access by motorized vehicles, but pedestrians and cyclists only. The path will be separated from motor vehicle traffic by a barrier and have separate access points on the east and west sides that will prevent use by motor vehicles. <i>This criterion is met.</i>

(4) Mitigation measures shall be provided to preclude adverse effects on the recreation resource.

Staff: No adverse effects on the recreation resources is expected, therefore no mitigation has been identified. *This criterion is not applicable.*

(5) The facility standards contained herein are intended to apply to individual recreation facilities. For the purposes of these standards, a recreation facility is considered a cluster or grouping of recreational developments or improvements located in relatively close proximity to one another. Recreation developments or improvements to be considered a separate facility from other developments or improvements within the same Recreation Intensity Class must be separated by at least one-quarter mile of undeveloped land (excluding trails, pathways, or access roads) from such developments or improvements.

Staff: No individual recreation facilities as described in the above standard are proposed. *This standard is not Applicable.*

(6) New development and reconstruction of scenic routes (see Part III, Chapter 1 of the Management Plan) shall include provisions for bicycle lanes.

Staff: The applicant has submitted project plans (Exhibits A.3 and A.16) showing the location of the new multi-use path. The path is not intended for access by motorized vehicles, but pedestrians and cyclists only. *This criterion is met.*

(7) The Planning Director may grant a variance of up to 10 percent to the standards of Recreation Intensity Class 4 for parking and campground units upon demonstration that:

Staff: No parking or campground units are proposed. *This is not applicable.*

(8) New interpretive or education programs and/or facilities shall follow recommendations of the Interpretive Strategy for the Columbia River Gorge National Scenic Area.

Staff: No new interpretive or education programs and/or facilities are proposed. *This is not applicable.*

(9) Proposals to change the Recreation Intensity Class of an area to a different class shall require a Plan Amendment pursuant to MCC 38.0100.

Staff: No change to the Recreation Intensity Class is proposed. *This is not applicable.*

(10) A demonstration that the proposed project or use will not generate traffic, either by type or volume, which would adversely affect the Historic Columbia River Highway, shall be required prior to approval.

Staff: The proposed project will enhance the safety of a current use, which is transporting people and vehicles on I-84 over the Sandy River. No additional capacity will be provided. The current shoulder is 10 feet wide and the proposed path is 12 feet wide, with a safety barrier between vehicle traffic and the path. Some additional pedestrian and bicycle traffic may be attracted by the increased safety of the multi-use path. None of that volume is expected to adversely affect the Historic Columbia River Highway, which is south of the project area. No impacts to the Historic Highway have been identified by this short-term project. No significant travel volume will be created by the proposed project. *This criterion is met.*

(B) SMA Recreation Intensity Class Standards. The recreation intensity classes are designed to protect recreation resources by limiting land development and land uses.

Staff: The Sandy River is mapped as Recreational Intensity Class 2. Lands east of the Sandy River in the project area are mapped as Class 1.

(1) Intensity Class 1

Emphasis is to provide opportunities for semi-primitive recreation opportunities.

(a) Uses permitted are those in which people participate in outdoor activities to realize experiences such as solitude, tension reduction, and nature appreciation.

(b) Maximum site design capacity shall not exceed 35 people at one time on the site.

Maximum design capacity for parking areas shall be 10 vehicles.

(c) The following uses may be permitted:

- 1. Trails and trailheads.**
- 2. Parking areas.**
- 3. Dispersed campsites accessible only by a trail.**
- 4. Viewpoints and overlooks.**
- 5. Picnic areas.**
- 6. Signs.**
- 7. Interpretive exhibits and displays.**
- 8. Rest-rooms.**

Staff: The lands east of the Sandy River are designated as Class I. The only recreation aspect of the project on land east of the river will be a connection from the multi-path trail on the eastbound bridge to the east bank of the river (to the limit of ODOT right-of-way). The multi-use path is a use that is designed to convey recreationists safely over the river and provide a connection between facilities on either side of the river. Those facilities can be associated with solitude, tension reduction, and nature appreciation, which are passive recreation facilities. No active recreation facilities are associated with this project. No parking areas, campsites, viewpoints, picnic areas, interpretive exhibits or restrooms are proposed. *This criterion is met.*

(2) Intensity Class 2

Emphasis is to provide semi-primitive recreation opportunities.

(a) Permitted uses are those that provide settings where people can participate in activities such as physical fitness, outdoor learning, relaxation, and escape from noise and crowds.

(b) The maximum site design capacity shall not exceed 70 people at one time on the site.

The maximum design capacity shall be 25 vehicles.

(c) All uses permitted in Class 1 are permitted in Class 2. The following uses may also be permitted:

- 1. Campground with vehicle access.**
- 2. Boat anchorages designed for no more than 10 boats at one time.**
- 3. Swimming areas.**

Staff: The Sandy River is designated as Class II. The only recreation aspect of the project over the river will be the multi-path trail on the eastbound to convey recreationists safely over the river and provide a connection between facilities on either side of the river. Those facilities can be associated with the uses in Class I areas, as well as physical fitness (for example, walking and cycling), outdoor learning (having access to the Sandy River), and escape from crowds (in urban areas to the west). Noise avoidance will not be provided by the multi-use path on the bridge, as it will be immediately next to the vehicle traffic on I-84. However, its function is to convey people safely over the river to access other recreation areas.

The Sandy River bridge site is expected to accommodate all of the demand by non-motorized users.

	There are no volume projections for the uses nor is there a volume standard. Because the bridge is removed from a central business district or busy area, it is not anticipated that the volumes will be of any safety concern or fail to meet the demand. <i>This criterion is met.</i>
3.00	HILLSIDE DEVELOPMENT PERMIT
3.10	§ 38.5515 APPLICATION INFORMATION REQUIRED *** Staff: The application submittal included the information as listed in this code section and is included in the case file. <i>This criterion is met.</i>
3.20	§ 38.5520 GRADING AND EROSION CONTROL STANDARDS Approval of development plans on sites subject to a Hillside Development Permit shall be based on findings that the proposal adequately addresses the following standards. Conditions of approval may be imposed to assure the design meets the standards: (A) Design Standards For Grading and Erosion Control (1) Grading Standards (a) Fill materials, compaction methods and density specifications shall be indicated. Fill areas intended to support structures shall be identified on the plan. The Director or delegate may require additional studies or information or work regarding fill materials and compaction; Staff: The fill areas are shown by the fill lines on the Construction Plans (Exhibit A.3) submitted by the applicant. The plans provide details for supporting the Sandy River bridges and the Footing Plans for the Jordan Road Bridges. The applicant has proposed the following for Earthwork Compaction: • Compact natural ground, embankment foundations, foundations for structures, each layer of embankment, fills, and backfills, the upper 1 foot of roadbeds in cuts and other earthwork which is to support any part of the roadbed prism according to this subsection. • Unless otherwise specified, compact in place the entire surface of each layer of all specified materials with a minimum of three coverages, using equipment made specifically for compaction. • Select compaction equipment based on the type of material being compacted and the layer thickness. Normal compaction equipment consists of sheeps-foot rollers, tamping-foot rollers, grid rollers, pneumatic-tired rollers, and vibratory rollers. Routing of hauling and grading equipment will not be accepted as adequate to achieve compaction, except if it cannot be reached by normal compaction equipment, compact with machine-operated pneumatic or mechanical tampers, or by hand methods if allowed, as required to ensure intimate contact between the backfill material and the structure or fragment and provide thorough compaction. (b) Cut and fill slopes shall not be steeper than 3:1 unless a geological and/or engineering analysis certifies that steep slopes are safe and erosion control measures are specified; Staff: The cut and fill slopes affected by the project are limited to the existing embankment slopes. The existing embankment slopes appear to be performing adequately and the proposed embankment slopes will match the existing slopes at 2(H):1(V) except where the embankment under I-84 near OHW on the east side will be steepened to 1.5:1. The proposed slope development involves widening the embankment by up to 30 feet. Proposed embankment slopes will be similar to existing slopes. Flatter embankment slopes will increase the construction footprint and impact to vegetation, but are not necessary for stable slopes. Slope stability analysis was performed by the geotechnical engineer for the

existing and proposed embankment configurations. Details of the slope stability analysis are included in the Foundation Reports for the Sandy River bridges and the Jordan Road bridges and the slope stability memorandum (Exhibit A.12). Slope stability analysis for the embankment slopes indicated that the proposed slopes will result in an increase in stability over the existing slopes. The calculated factor of safety of the proposed embankment slopes is greater than 1.5. Therefore, the project meets this standard. *This criterion is met.*

(c) Cuts and fills shall not endanger or disturb adjoining property;

Staff: The cuts and fills will be stable under ordinary conditions and will not endanger or disturb adjoining property as the slopes are well within the ODOT right-of-way limits. As noted in the introduction, the existing approach embankments appear to be susceptible to settlement, lateral spreading and slope instability during a major seismic event. Stone columns will be emplaced to limit risk of future instability of the proposed new fill areas on the east. *This criterion is met.*

(d) The proposed drainage system shall have adequate capacity to bypass through the development the existing upstream flow from a storm of 10-year design frequency;

Staff: Water quality treatment and conveyance replacement of the Sandy River bridges and widening of the Jordan Road Bridges along I-84 is addressed in the Stormwater Management Plan (Exhibit A.7) and designed per the requirements of this standard. The bridge replacement is anticipated to create 1.97 acres of net new impervious area. The criterion used by DEQ for review requires treatment of as much as possible of the entire project impervious area (7.42 acres) plus any off-project area that drains through the project area. Facilities will treat 4.74 acres and an additional 2.68 acres will receive natural treatment as runoff sheet flows onto grassy embankments. *This criterion is met.*

(e) Fills shall not encroach on natural watercourses or constructed channels unless measures are approved which will adequately handle the displaced streamflow for a storm of 10-year design frequency;

Staff: At the end of construction, there will be a net permanent removal of 450 cubic yards of material from within the water column of the Sandy River (the area between existing riverbed and the OHW (23.3 feet)). A majority of the cut will be removal of rip rap which was placed when the existing bridge was constructed. Removing this material returns the system to a more natural condition. The OHW is close to the elevation of a 2-year flood event. Therefore, there will be a net reduction of fill within the waters of the Sandy River which will increase flood storage for the storm of 10-year design frequency. In addition, the 450 cubic yard amount does not include the removal of roadway fill embankment on the east side because that excavation will be above the OHW. There will be a net removal of roadway fill, both above and below OHW, of 1,535 cubic yards. This will restore approximately 0.3 acre (13,045 square feet) of waters and floodplain to the Sandy River. The distance the roadway embankment is pulled back varies as shown on Exhibit A.3. The 100-year floodplain is at elevation 37.3 feet. So there will be an even greater amount of flood storage added for the 100-year flood event, as 0.3 acres of embankment will be removed. Also for the proposed bridge, there is a decrease in the backwater for the 50-year, 100-year and 500-year storm events compared to the existing conditions. *This criterion is met.*

(2) Erosion Control Standards

(a) Stripping of vegetation, grading, or other soil disturbance shall be done in a manner which will minimize soil erosion, stabilize the soil as quickly as practicable, and expose the smallest practical area at any one time during construction;

Staff: The application has submitted an erosion control plan (Exhibit A.3 and A.7) to ensure that soil erosion is minimized and soil is stabilized as quickly as practicable and that the smallest practical area is

exposed at any one time during construction.

Temporary stabilization includes, but is not limited to, chemical soil binders, mulching and tacking, erosion control matting, plastic sheeting, and temporary seeding or other Best Management Practices (BMP) required to achieve the necessary stabilization. Ensure that permanent slope stabilization is achieved before removing temporary BMP.

Permanent stabilization methods include, but are not limited to, seeding, mulching, structural surface coverings such as riprap, and vegetative stabilization. Permanent stabilization includes stabilization of temporary structures such as detours and staged earthwork. Immediately perform permanent stabilization at each completed excavation and embankment area except for areas that are scheduled to be redisturbed. Compost blankets are proposed as a permanent erosion prevention material.

The work also includes preserving vegetation and objects designated to remain in place. Additionally, special provisions applying specifically to the project and amending the water quality standard specifications is also included in the submitted project plans.

The streambank protection is also being implemented for the project due to unavoidable streambank impacts occurring as a result of bridge construction activities on both the east and west sides of the Sandy River. The intent of this environmental performance standard will be followed since roadway embankment will be removed allowing natural stream and floodplain function protected with riprap graded at a 1.5:1 slope (Exhibit A.3) and will incorporate netted soil lifts and a brush layer. The west slope will remain stable since existing riprap will not be removed or disturbed. The construction plans show compost blanket and sediment fencing protecting the streambank and other upland areas that drain to the Sandy River. *This criterion is met.*

(b) Development Plans shall minimize cut or fill operations and ensure conformity with topography so as to create the least erosion potential and adequately accommodate the volume and velocity of surface runoff;

Staff: The plans minimize the amount of cut and fill by restricting fill to areas needed to recreate slopes that will be affected by the project, specifically as the result of widening both bridges and the areas next to the bridge abutments. The proposed slopes will be similar to the existing slopes with the exception of the steeper east side embankment of riprap below the bridges. *This criterion is met.*

(c) Temporary vegetation and/or mulching shall be used to protect exposed critical areas during development;

Staff: The applicant has submitted an Erosion Control Plan (Exhibit A.3 and A.7). Temporary stabilization methods to be implemented include temporary seeding, temporary mulching, and other temporary cover and stabilization measures. Temporary stabilization includes, but is not limited to, chemical soil binders, mulching and tacking, erosion control matting, plastic sheeting, and temporary seeding or other BMP required to achieve the necessary stabilization. Permanent slope stabilization is achieved before removing temporary BMP. *This criterion is met.*

(d) Whenever feasible, natural vegetation shall be retained, protected, and supplemented;

1. A 100-foot undisturbed buffer of natural vegetation shall be retained from the top of the bank of a stream, or from the ordinary high watermark (line of vegetation) of a water body, or within 100-feet of a wetland;

Staff: A 100-foot undisturbed buffer of natural vegetation from the OHW of the Sandy River is not feasible because construction equipment needs to access the bridge between the OHW and the project

limits. All vegetation within the cut and fill lines may need to be removed to allow for maneuvering and constructing the bridge in place. The Special Provisions that will reduce impacts to the vegetated 100-foot buffer to the extent feasible are Water Quality, Erosion Control, and Clearing and Grubbing, which are described above under code section 38.5520 (A) (2). All natural vegetation within the project area will be retained as much as possible. Retaining, protecting and supplementing natural vegetation will be much more feasible outside of the cut/fill lines will. However, it is not feasible in some areas within the project area to retain natural vegetation. The fill lines on the General Construction plan, Sheet No. 4, show where disturbance will occur, which will be most of the slopes on the bridge approaches and some disturbance of slopes under the bridge. The revegetation plan will supplement existing vegetation by replacing removed trees at a 1:1.5 ratio. The goal of the site restoration plan (Exhibit A.14) is to replace habitat elements that may be temporarily impacted during construction, such as habitat access, water quality, production of habitat elements (e.g., large wood), channel conditions, flows, and streambank stability. This will be done by planting native vegetation, removing invasive weed species, and restoring waters and upland areas, which will provide soil stabilization, water quality treatment, and water storage. To the greatest extent possible, native topsoil and native vegetation will be used to restore the project site to pre-project conditions. Various mechanical or hand methods may be used to control weeds and unwanted vegetation that may compete with new plantings. *This criterion is met.*

2. The buffer required in 1. may only be disturbed upon the approval of a mitigation plan which utilizes erosion and stormwater control features designed to perform as effectively as those prescribed in the currently adopted edition of the "Erosion Prevention & Sediment Control Plans Technical Guidance Handbook (1994)" and the "City of Portland Stormwater Quality Facilities, A Design Guidance Manual (1995)" and which is consistent with attaining equivalent surface water quality standards as those established for the Tualatin River Drainage Basin in OAR 340;

Staff: The buffer will need to be disturbed as described in the previous response and there is no feasible alternative. Mitigation for impacts to the buffer will be accomplished through the Site Restoration Plan contained in Exhibit A.14, as well as the standard specifications on erosion prevention, runoff control, and sediment control materials, permanent and temporary site stabilization, and erosion prevent, runoff control, and sediment control Best Management Practices. Special Provisions have been developed to supplement ODOT's standard construction specifications, including erosion control, clearing, and management of runoff and preventing sedimentation.

Stormwater Management is provided to avoid or minimize adverse effects resulting from changes to the quality and quantity of stormwater runoff for the life of the project by improving or maintaining natural runoff conditions within project watersheds and it requires implementation of a Stormwater Management Plan. This application contains the Stormwater Management Plan for the Sandy River and Jordan Road Bridges in Exhibits A.3 and A.7. The plan addresses treatment of new impervious surface associated with the bridge replacement. The bridge replacement is anticipated to create 1.97 acres of net new impervious area.

(e) Permanent plantings and any required structural erosion control and drainage measures shall be installed as soon as practical;

Staff: ODOT Standard Specifications and Special Provision establish time limits for exposed soil and other erosion control measures. Permanent stabilization methods include, but are not limited to, seeding, mulching, structural surface coverings such as riprap, and vegetative stabilization. It requires immediate permanent stabilization at each completed excavation and embankment area except for areas that are scheduled to be redisturbed.

The Site Restoration Plan (Exhibit A.14) ensures that all habitats and vegetation disturbed by the project are restored in accordance with the criteria listed in the performance standard for Site Restoration.

Details regarding streambank shaping and revegetation efforts (e.g., species selection) are included in the Site Restoration Plan. *This criterion is met.*

(f) Provisions shall be made to effectively accommodate increased runoff caused by altered soil and surface conditions during and after development. The rate of surface water runoff shall be structurally retarded where necessary;

Staff: ODOT will be using BMP measures including check dams, diversion dikes and swales, temporary drainage curbs, slope drains, and flow spreaders. A stormwater management plan has been developed to address surface water runoff to control and hold back surface water run-off from the construction site and finished project (Exhibit A.7). *This criterion has been met.*

(g) Sediment in the runoff water shall be trapped by use of debris basins, silt traps, or other measures until the disturbed area is stabilized;

Staff: Sediment will be trapped by measures as shown on the Erosion Control Plan (Exhibits A.3 and A.7). Sediment in the runoff water shall be trapped by sediment fences and barriers, check dams, and inlet protection. *This criterion is met.*

(h) Provisions shall be made to prevent surface water from damaging the cut face of excavations or the sloping surface of fills by installation of temporary or permanent drainage across or above such areas, or by other suitable stabilization measures such as mulching or seeding;

Staff: Permanent protection from damage is accomplished foremost by drainage design (Exhibit A.7) and also by site landscape planting plans (Exhibit A.3) and the Site Restoration Plan (Exhibit A.14). Temporary stabilization includes, but is not limited to, chemical soil binders, mulching and tacking, erosion control matting, plastic sheeting, and temporary seeding or other BMP required to achieve the necessary stabilization. Ensure that permanent slope stabilization is achieved before removing temporary BMP. Permanent stabilization methods include, but are not limited to, seeding, mulching, structural surface coverings such as riprap, and vegetative stabilization. Permanent stabilization includes stabilization of temporary structures such as detours and staged earthwork. Immediately perform permanent stabilization at each completed excavation and embankment area except for areas that are scheduled to be redisturbed. *This criterion is met.*

(i) All drainage provisions shall be designed to adequately carry existing and potential surface runoff to suitable drainageways such as storm drains, natural watercourses, drainage swales, or an approved drywell system;

Staff: Water quality treatment and conveyance replacement of the Sandy River bridges and widening of the Jordan Road bridges along I-84 is addressed in the Stormwater Management Plan (Exhibits A.3 and A.7). The bridge replacement is anticipated to create 1.97 acres of net new impervious area. Treatment of as much as possible of the entire project impervious area (7.42 acres) plus an off-project area that drains through the project area is proposed. Facilities will treat 4.74 acres and an additional 2.68 acres will receive natural treatment as it sheet flows onto grassy embankments. Thus, stormwater will be treated to “the maximum extent practicable.” *This criterion is met.*

(j) Where drainage swales are used to divert surface waters, they shall be vegetated or protected as required to minimize potential erosion;

Staff: A stormwater management plan has been developed to address surface water runoff to control and retard surface water run-off from the construction site and finished project (Exhibit A.7). The receiving areas will be planted and the existing swale will be upgraded with 12 inches of amended

topsoil. *This criterion is met.*

(k) Erosion and sediment control devices shall be required where necessary to prevent polluting discharges from occurring. Control devices and measures which may be required include, but are not limited to:

- 1. Energy absorbing devices to reduce runoff water velocity;**
- 2. Sedimentation controls such as sediment or debris basins. Any trapped materials shall be removed to an approved disposal site on an approved schedule;**
- 3. Dispersal of water runoff from developed areas over large undisturbed areas.**

(1) Disposed spoil material or stockpiled topsoil shall be prevented from eroding into streams or drainageways by applying mulch or other protective covering; or by location at a sufficient distance from streams or drainageways; or by other sediment reduction measures;

Staff: An Erosion Control Plan has been submitted (Exhibits A.3 and A.7) identifying the use of erosion and sediment control devices that will be used to prevent polluting discharges from occurring. The Erosion Control Plan illustrates the type and placement of control measures such as check dams. Work Restrictions, requires that during the wet season, excavation and bare ground activities are limited to only that required for immediate operations. Soil stockpiles must be stabilized at the end of each workday by diverting flows, placing covers, or installing sediment barriers at the stockpiles. Erosion Prevention BMPs calls for placing plastic sheeting on disturbed, temporary slopes or stockpiles where immediate protection is required where mulching or other methods of soil stabilization are not feasible. *These criteria are met.*

(m) Such non-erosion pollution associated with construction such as pesticides, fertilizers, petrochemicals, solid wastes, construction chemicals, or wastewaters shall be prevented from leaving the construction site through proper handling, disposal, continuous site monitoring and clean-up activities.

Staff: The submitted Pollution and Erosion Control Plan EPS and Deleterious Waste Materials EPS (Exhibits A.3, A.4 and A.7) provides guidance for the monitoring hazardous, toxic and waste materials during construction. These documents ensure that these materials will not be allowed to enter wetlands and waterways, contaminate fill materials, or be left on site after project completion. *This criterion is met.*

(B) Responsibility

- (1) Whenever sedimentation is caused by stripping vegetation, regrading or other development, it shall be the responsibility of the person, corporation or other entity causing such sedimentation to remove it from all adjoining surfaces and drainage systems prior to issuance of occupancy or final approvals for the project;**
- (2) It is the responsibility of any person, corporation or other entity doing any act on or across a communal stream watercourse or swale, or upon the floodplain or right-of-way thereof, to maintain as nearly as possible in its present state the stream, watercourse, swale, floodplain, or right-of-way during such activity, and to return it to its original or equal condition.**

(C) Implementation

- (1) Performance Bond – A performance bond may be required to assure the full cost of any required erosion and sediment control measures. The bond may be used to provide for the installation of the measures if not completed by the contractor. The bond shall be released upon determination the control measures have or can be expected to perform satisfactorily. The bond may be waived if the Director determines the scale and duration of**

	the project and the potential problems arising there from will be minor. (2) Inspection and Enforcement. The requirements of this subdistrict shall be enforced by the Planning Director. If inspection by County staff reveals erosive conditions which exceed those prescribed by the Hillside Development, work may be stopped until appropriate correction measures are completed. (D) Final Approvals A Certificate of Occupancy or other final approval shall be granted for development subject to the provisions of this subdistrict only upon satisfactory completion of all applicable requirements. Staff: Conditions have been included to address these requirements. <i>As conditioned, these criteria are met.</i>																																																																																																
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	Based on the findings and other information provided above, the applicant has carried the burden necessary for a National Scenic Area Site Review and Hillside Development Permit to replace the Interstate-84 east and west bound bridges over the Sandy River, construct a bike/pedestrian path on the new east bound span over the river, and widen the east and west bound Interstate bridges over Jordan Road.																																																																																																
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	‘A’ Applicant’s Exhibits ‘B’ Staff Exhibits ‘C’ Procedural Exhibits ‘D’ Comments Received All exhibits are available for review in Case File T2-08-066 at the Land Use Planning office. <table><tr><th>Exhibit #</th><th># of Pages</th><th>Description of Exhibit</th><th>Date Received/ Submitted</th></tr><tr><td>A.0</td><td>1</td><td>NSA Application Form</td><td>10/28/08</td></tr><tr><td>A.1</td><td>175</td><td>Narrative</td><td>7/16/09</td></tr><tr><td>A.2</td><td>7</td><td>Pre-Application Notes (Appendix A)</td><td>7/16/09</td></tr><tr><td>A.3</td><td>50</td><td>Project Plan Sheets (Appendix B)</td><td>7/16/09</td></tr><tr><td>A.4</td><td>65</td><td>EPS, Special Provisions and ODOT Standard Specifications (Appendix C)</td><td>7/16/09</td></tr><tr><td>A.5</td><td>174</td><td>Cultural Resources Reports (Appendix D)</td><td>7/16/09</td></tr><tr><td>A.6</td><td>12</td><td>I-84 Corridor Strategy Guidelines Table (Appendix E)</td><td>7/16/09</td></tr><tr><td>A.7</td><td>48</td><td>Stormwater Management Plan (Appendix F)</td><td>7/16/09</td></tr><tr><td>A.8</td><td>13</td><td>Wetland Delineation Documentation (Appendix G)</td><td>7/16/09</td></tr><tr><td>A.9</td><td>37</td><td>Environmental Baseline Memorandum (Appendix I)</td><td>7/16/09</td></tr><tr><td>A.10</td><td>161</td><td>Joint Permit Application (Appendix J)</td><td>7/16/09</td></tr><tr><td>A.11</td><td>122</td><td>Hydraulic Studies (Appendix K)</td><td>7/16/09</td></tr><tr><td>A.12</td><td>28</td><td>Geotechnical Reports and Memorandums (Appendix L)</td><td>7/16/09</td></tr><tr><td>A.13</td><td>113</td><td>Hazmat Reports (Appendix M)</td><td>7/16/09</td></tr><tr><td>A.14</td><td>25</td><td>Site Restoration (Appendix N)</td><td>7/16/09</td></tr><tr><td>A.15</td><td>9</td><td>Public Involvement (Appendix O)</td><td>7/16/09</td></tr><tr><td>A.16</td><td>8</td><td>Bridge Renderings, Viewshed, and Paint Colors (Appendix P)</td><td>7/16/09</td></tr><tr><td>A.17</td><td>12</td><td>Photos (Appendix Q)</td><td>7/16/09</td></tr><tr><td>A.18</td><td>12</td><td>Port of Portland Letter and FAA 7460-1 Applications (Appendix R)</td><td>7/16/09</td></tr><tr><td>A.19</td><td>77</td><td>Biological Studies (Appendix S)</td><td>7/16/09</td></tr><tr><td>‘B’</td><td>#</td><td>Staff Exhibits</td><td></td></tr><tr><td>B.1</td><td>110</td><td>I-84 Corridor Strategy Plan November 2005</td><td></td></tr><tr><td>B.2</td><td>1</td><td>Grading and excavation contractor affidavit</td><td></td></tr></table>	Exhibit #	# of Pages	Description of Exhibit	Date Received/ Submitted	A.0	1	NSA Application Form	10/28/08	A.1	175	Narrative	7/16/09	A.2	7	Pre-Application Notes (Appendix A)	7/16/09	A.3	50	Project Plan Sheets (Appendix B)	7/16/09	A.4	65	EPS, Special Provisions and ODOT Standard Specifications (Appendix C)	7/16/09	A.5	174	Cultural Resources Reports (Appendix D)	7/16/09	A.6	12	I-84 Corridor Strategy Guidelines Table (Appendix E)	7/16/09	A.7	48	Stormwater Management Plan (Appendix F)	7/16/09	A.8	13	Wetland Delineation Documentation (Appendix G)	7/16/09	A.9	37	Environmental Baseline Memorandum (Appendix I)	7/16/09	A.10	161	Joint Permit Application (Appendix J)	7/16/09	A.11	122	Hydraulic Studies (Appendix K)	7/16/09	A.12	28	Geotechnical Reports and Memorandums (Appendix L)	7/16/09	A.13	113	Hazmat Reports (Appendix M)	7/16/09	A.14	25	Site Restoration (Appendix N)	7/16/09	A.15	9	Public Involvement (Appendix O)	7/16/09	A.16	8	Bridge Renderings, Viewshed, and Paint Colors (Appendix P)	7/16/09	A.17	12	Photos (Appendix Q)	7/16/09	A.18	12	Port of Portland Letter and FAA 7460-1 Applications (Appendix R)	7/16/09	A.19	77	Biological Studies (Appendix S)	7/16/09	‘B’	#	Staff Exhibits		B.1	110	I-84 Corridor Strategy Plan November 2005		B.2	1	Grading and excavation contractor affidavit	
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B.3	1	County Zoning Map	
'C'	#	Administration & Procedures	Date
C.1	1	Completeness Review	11/4/2008
C.1	2	Incomplete Letter	11/26/08
C.2	1	Applicant's Acceptance of 180 Day Clock	
C.3	1	Complete Letter (Day 1)	1/16/09
C.4	14	Opportunity to Comment for 2008 submittal	1/16/09
C.4	4	Request to Toll Clock from Applicant (Day 41)	2/25/09 and 3/25/09
C.5	10	Opportunity to Comment for 2009 resubmittal	8/13/09
'D'	#	Comments Received	Date
D.1	1	Memo from Multnomah County Land Use and Transportation Planning: Transportation Division	12/8/2008
D.2	1	Friends of the Columbia River Gorge	8/21/09
D.3	4	United States Department of Agriculture Forest Service Columbia River Gorge National Scenic Area	11/20/08
D.4	2	Parks and Recreation Department: State Historic Preservation Office	1/23/09
D.5	6	Friends of the Columbia River Gorge	1/30/09