APPEALS
City of Portland
Bureau of Development Services
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Building Code Appeal Form
(Appeal Information Sheet)
BLD

To Appellant:

Each item you are appealing requires a separate Appeal Information Sheet to be filled out. All requested information is to be filled out completely with as much detail as possible. **Failure to do so may cause your appeal to be held over until adequate information is received.** For help in filling out these forms, consult with the Plans Examiner assigned to your project or with a Plans Examiner in the Development Services Center.

Any alternative method or modification of a Building Code requirement requires an appeal. A reasonable degree of equivalent health, accessibility, structural capacity, energy conservation, life safety or fire protection **must** be demonstrated before an appeal may be considered.

Code Section being appealed: 24.50.060.F.8 Balanced Cut and Fill Required

Regulation Requirement:

In all Flood Management Areas of the City not addressed by Section 24.50.060 G, balanced cut and fill shall be required. All fill placed at or below the base flood elevation shall be balanced with at least an equal amount of soil material removal. Soil material removal shall be within the same flood hazard area identified in Section 24.50.050 A. through I.

Proposed Design: (Describe the alternate methods or materials of construction to be used or that exist. Be as specific as possible)

Portland General Electric (PGE) is proposing to construct a sediment isolation cap over contaminated river sediments at River Mile 13.5 in the Willamette River in Portland, Oregon, during the summer of 2015 (Figure 1). The project is documented in Case File PR 15-178698/15-115367-EA. The proposed remedial action consists of installing a chemical isolation cap over contaminated river sediments to prevent receptor exposure to the impacted sediments and also reduce migration (mobility) of the contaminants of concern present in the river sediments. The isolation cap footprint is approximately 48,547 square feet (sf; 1.1 acres) located adjacent to the eastern river bank. The sediment cap occurs primarily on lands owned and managed by the Oregon Department of State Lands (DSL), which is zoned General Industrial (IG1). Approximately 1% of the cap (4,315 sf or 0.099 acres) extends onto property owned by the Oregon Museum of Science and Industry (OMSI), which is zoned General Employment (EG2). The tax lots in question are 1S1E03DD-RIV and 1S1E03DD-002200, respectively (Figure 2). The isolation cap will occur entirely within the floodway of the Willamette River (Flood Hazard Zone AE; Figure 3).

The isolation cap will be extended from the eastern riverbank, across the river bottom, to the limits of the footprint (Sheets F05-F08). The isolation cap is comprised of two parts: a 60-centimeter (cm; 23.6 inches) chemical isolation cap comprised of sand, which is covered by a 20 cm (7.9 inches) gravel armor layer. The armor layer provides resistance to erosion for the underlying chemical isolation layer. The armor layer will consist of clean stone or gravel, free of shale, clay, friable material, sand, or debris, and graded between 0.5 and 2.5 inches in diameter. The cap will key into a band of armor protection at the toe of slope to prevent lateral movement of the cap towards lower river elevations. Toe armor will be approximately 60 cm (23.6 inches) wide at its thickest point and will consist of 3-inch-diameter ballast rock (Figure 4; Sheets F07- F09).

The volume of fill associated with the cap is 7,450 cubic yards (cy), comprised of: 5,600 cy course sand; 1,600 cy angular gravel, 0.5–2.5 inches in diameter; and 250 cy ballast rock, 3.0 inches in diameter. In general, fill slopes for the isolation sand layer and overlying gravel would be no steeper than 3 feet horizontal to 1 foot vertical (3:1) to maintain cap stability. The ballast rock would be no more than 2 feet horizontal to 1 foot vertical (2:1) along the toe of the cap.

The proposed project is scheduled for implementation in September 2015. The project will be completed during

the Oregon Department of Fish and Wildlife (ODFW) in-water work window (July 1 through October 31)[1], in compliance with requirements of federal and state permits.

PGE attended a Remedial Action Exempt Review Conference on February 24, 2015 to discuss the proposed project and identify applicable city code with which the project must comply. As a result of this meeting, Portland City Code (PCC) 24.50.060.F.8 (Balanced Cut and Fill) was identified as necessary for project approval. It was further clarified that the cut balance is expected to precede or be concurrent with the proposed action resulting in fill.[2] The cut and fill balance requirement was not identified until the Remedial Action Exempt Review; consequently, a location where the cut balance could be carried out prior to, or concurrent with the proposed fill activities had not been identified and included in the state and federal permits submitted for the River Mile 13.5 project. Consequently, the project as proposed does not include balanced cut and fill per Portland City Code (PCC) 24.50.060.F.8.

Reason for Alternate: (Describe why the alternate is required and how it will provide equivalent health, accessibility, structural capacity, energy conservation, life safety or fire protection to what the code requires).

Upon learning of the cut-fill balance code requirement for the River Mile 13.5 project, PGE identified a down-river location where compliance with the cut and fill requirement could be met. The proposed compliance location, at PGE's Harborton property (Figure 1), is a restoration project designed to create off-channel habitat within the Willamette River floodplain.

The Harborton property is located at 12500 NW Marina Way, Portland, Oregon. The Harborton property is located between river miles 2.7 and 3.7, where Multnomah Channel diverges from the mainstem Willamette River. This section of the river is within the Willamette River FIRM Flood Zone AE. The Harborton property is located within the Willamette River's historic floodplain and tidally influenced lower reach. The site encompasses 73.8 acres of the west bank of the Willamette River and the southwestern bank of Multnomah Channel. The Harborton property includes 21.2 developed acres. The remainder of the site is a mix of shoreline and remnant native riparian and backwater floodplain habits (35.3 acres) and a diked area that has been filled with dredge spoils (17.4 acres), which have disconnected from the river's floodplain influence as a result of past development. Two intermittent tributaries occur along the northern and southern boundaries of the Property, both of which have partial fish passage barriers limiting access and fish use under Willamette River and Multnomah Channel flow regimes less than bankfull conditions.

PGE proposes to restore and enhance approximately 62 acres of the Property to serve as a restoration site. Key elements of the proposed restoration activities include:

- Removal of fish passage barriers located on the southern and northern tributaries.
- Enhancement of fish habitat and riparian habitat characteristics in and along the southern tributary.
- Construction of a new northern tributary stream channel to establish a hydraulic connection to the Willamette River.
- Enhancement of fish habitat and riparian habitat characteristics in and along the new northern tributary channel.
- Excavation and re-grading of portions of the site to provide 28.1 acres of seasonally available off-channel habitat within the floodplain.
- Preservation and enhancement of wetland area utilized by red-legged frogs.
- Excavation within wetland areas to enhance amphibian (red-legged frog) habitat.
- Control of invasive plant species found throughout the Site through removal, site re-vegetation, and routine maintenance.
- Enhancement of shoreline, riparian, and upland habitats through native re-vegetation plantings and maintenance.

Earth-moving activities will occur over 31.5 acres of the Site, providing access to off-channel habitat that will

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1 Oregon Department of Fish and Wildlife (ODFW). 2008. Oregon guidelines for timing of in-water work to protect fish and wildlife resources. Salem, Oregon. June 2008.

2 City of Portland, Bureau of Development Services. Remedial Action Exempt Review Conference Pre-Application Conference Response. Prepared by Douglas Morgan, Structural Engineering Section Manager. 26 February 2015.

become available when river stage is greater than 9 feet elevation City of Portland Datum (CPD) and totaling 28.1 acres of off-channel habitat at bankfull river stage (Figure 5). More than 150,000 cy of soil will be removed from the Willamette River floodplain and converted into upland habitat on the property. In total, approximately 62 acres of the site is proposed for restoration or enhancement.

Both the River Mile 13.5 and the Harborton projects are located in the Willamette River FIRM Flood Zone AE,[3] which is required under 24.50.060.F.8.[4] PGE proposes to comply with River Mile 13.5's balanced cut-fill requirement at the Harborton Restoration Project. All other aspects pertaining to activities at River Mile 13.5 are unchanged, as those documented in the section above. Balancing the River Mile 13.5 project's fill at the Harborton site not only meets the intent of the code, but has the advantage of creating ecological benefits for species inhabiting and passing through the Portland Harbor. The Harborton property is identified as a high-value restoration opportunity in the City's 2009 River Plan North Reach Recommended Draft, and by the Portland Harbor Natural Resource Trustee Council's (Trustee Council) Expert Panel, as part of the Trustee's Ecological Restoration Portfolio.

At issue is the proposed timing for when the cut balance will be completed. PGE has received funding approval from the Public Utilities Commission (PUC) for the construction of the River Mile 13.5 project during fiscal 2015 and the Harborton project during fiscal 2017. The 60% design engineering for the Harborton project will be submitted to the Trustee Council for final approval at the end of August 2015. Upon approval from the Trustee Council, anticipated in fall 2015, PGE will begin state, federal, and local permitting for the Harborton project. Permitting necessary to complete the Harborton Restoration project is expected to take more than a year to prepare, submit, and review prior to agency approval. This schedule precludes construction during the 2016 construction season because of restrictions associated with the ODFW in-water work to protect salmonids. Because of the permitting schedule complexities and PUC funding requirements, the Harborton project is scheduled for construction in 2017. As such, neither project funding nor the anticipated receipt of permits and approvals will allow for the cut balance to be completed at the Harborton site in either 2015 or 2016.

PGE is proposing approval for the River Mille 13.5 project, allowing the project to proceed in 2015 as proposed, with compliance for project-related floodplain fill to be balanced at PGE's Harborton property during that project's proposed construction during 2017. To address the timing discrepancy between fill activities from the River Mile 13.5 project and cut balance compliance at the Harborton site, PGE is requesting a variance to the balanced cut and fill requirement, allowing the cut balance for River Mile 13.5 to be delayed until the 2017 construction season, two years after the River Mile 13.5 Project will be constructed.

Additionally, PGE will be proposing to construct a second sediment isolation cap over contaminated river sediments at River Mile 13.1 of the Willamette River during the summer of 2016 (Figure 1). The River Mile 13.1 remedial action has an estimated cap volume of approximately 5,000 cy, based on conceptual design (Figure 6). Design engineering and permitting for the River Mile 13.1 Project will begin in late summer 2015, with a proposed construction date in late summer 2016. PGE is proposing to satisfy the cut and fill balance for the River Mile 13.1 Project at the Harborton site as well. As such, the fill associated with both remediation projects (River Mile 13.5 in 2015 and River Mile 13.1 in 2016) is proposed to be balanced by floodplain removal at the Harborton Restoration Project in 2017. PGE requests that the variance to the cut and fill balance requirement address both remediation projects and the Harborton compliance location.

Failure to construct the River Mile 13.5 Project in 2015 would result in PGE not complying with a Department of Environmental Quality (DEQ) Consent Order and losing PUC funding authorized to carry out the remedial action in fiscal year 2015. Additionally, delay of the River Mile 13.5 project could impact the schedule and funding for the River Mile 13.1 project, authorized for construction in 2016. The funding for the Harborton Restoration project has been authorized by the PUC for construction during fiscal year 2017. Construction of the sediment isolation cap at River Mile 13.5 is a public good that limits ecological and human receptors from existing contaminants present in the river sediments. As such, the proposed project, will incrementally improve sediment quality in the lower Willamette River, leading to improvements in water quality, aquatic life, and public health and safety. Failure to construct the River Mile 13.5 Project in 2015 will prolong ecological and human exposure to identified contaminants.

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[3] Flood Insurance Rate Map. City of Portland, Oregon. Map Number 4101830093E,Panel 93 of 250. Map Revised: October 19, 2004.

[4] Portland City Code 24.50.060.F.8. Provisions for Flood Hazard Reduction. Special flood hazard areas. Balanced Cut and Fill Required. Office of the City Auditor. City of Portland, 2015. Available on-line at: https://www.portlandonline.com/auditor/?c=28665.

PGE has limited options where cut balance can occur, as most properties in the Willamette River floodplain are developed facilities. To complete the cut balance within state-owned lands would require additional state and federal permitting that would delay project implementation by at least a year and would jeopardize capital funding authorization already granted by the PUC. PGE has identified a location at which the cut balance for both the River Mile 13.5 and 13.1 projects can be accomplished. However, the permitting and funding requirements necessary to complete the cut balance at the Harborton Restoration site would delay implementation until 2017. As such, PGE is seeking a variance to the balanced cut and fill requirement, whereby the cut balance would be allowed to occur after the fill activities proposed at both River Mile 13.5 and River Mile 13.1.

To ensure that PGE will comply with the cut balance requirement, the City has requested that the code requirement be included as a condition of the federal Joint Permit for waterway fill, issued by the U.S. Army Corps of Engineers (Corps). PGE has included a description of the code requirement and proposed compliance in the Joint Permit Application (JPA; #NWP-2015-40), which is currently under review by the Corps. PGE has also proposed sample "condition" language to both the Corps and the City for inclusion in the Joint Permit.[5] In the event that the Harborton restoration project is delayed or cancelled, PGE has committed to complete the balance cut requirement at the Harborton site during 2017.

The following is a response to the variance criteria specified in PCC 24.50.070.B and 24.50.070.C, as requested by the Site Development Section in their Land Use Review Response.[6] The text of the code is presented in black text, with the response presented in blue text.

PCC 24.50.070.B Variances

B. Variances. If variances from requirements of this Chapter are requested, all relevant factors and standards specified in other sections of this Chapter shall be considered, as well as the following:

1. The danger that materials may be swept into other lands to the injury of others;
   Construction of the River Mile 13.5 isolation cap will occur during late summer 2015 and the construction of the River Mile 13.1 isolation cap will occur during late summer 2016. There is little risk of project material or equipment being swept into other lands during construction, as it coincides with seasonal low water conditions in the Willamette River, when discharge is at its lowest levels. Additionally, the Remedial Design Work Plan is designed to ensure that the proper equipment and procedures are employed that account for expected river conditions during construction and prevent the loss of equipment or other materials into the river.

   At issue is the stability of the isolation cap, given expected river conditions. The River Mile 13.5 isolation cap was designed based on hydraulic modeling of the Willamette River specific to the cap location. Analysis for the River Mile 13.1 cap is currently in development. Hydraulic modeling determined that the armor layer designed for the River Mile 13.5 location (20 cm [7.9 inches] depth of 0.5-2.5 inch diameter angular gravel) would provide required scour protection for the sand cap under the 100-year flood event. As such, there should be no risk to downstream lands from the cap materials itself, and the cap should remain stable under expected river conditions for its design life.

   Completion of a no rise analysis for the River Mile 13.5 cap concluded that the project will not impact the 100-year base flood elevations, floodway elevations and floodway widths, in compliance with the FEMA requirements. As such, the risk to downstream land as a result of the fill within the floodway is *de minimis* and should not result in injury to others. A no rise analysis for River Mile 13.1 is currently in development.

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5 AECOM. PGE River Mile 13.5 Sediment Isolation Cap Project: Draft "Cut-Fill Balance" Language for inclusion in the permit conditions of the Corps' Nationwide Permit for project activities. Memo prepared by Brad Rawls, Senior Ecologist, AECOM. Distributed by email on 24 June 2015.

6 City of Portland, Bureau of Development Services. Remedial Action Exempt Review Land Use Review Response. Prepared by Douglas Morgan, Structural Engineering Section Manager. 24 June 2015.

2. The danger to life and property due to flooding or erosion damage;
   As discussed in B.1, above, the danger to life and property due to flooding or erosion is *de minimis* as the project, based on hydraulic modeling, will not increase the risk of downstream flooding or erosion.

3. The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;
   As discussed in B.1, above, the susceptibility of the proposed isolation cap (facility) to flood damage has been modeled and the design of the gravel armor layer is sufficient to withstand flood-related damage for conditions exceeding the base flood design criteria. Routine monitoring of the cap will be conducted at 1-year, 3-year, and 5-year events following construction, to ensure that it is functional and undamaged. The routine monitoring frequency will be re-evaluated after the 5-year monitoring event. Monitoring will also occur following large storm or earthquake events that could result in damage to the cap. Monitoring will be carried out by a high-resolution, multi-beam, side-scan SONAR survey, with a diver survey to follow-up for additional inspection, as needed. Any damage to the cap observed will be evaluated for risk and an appropriate response will be developed, reviewed and approved by the DEQ, and implemented in a timeframe appropriate to the risk posed. The effect of any damage to the cap on PGE is limited to costs associated with monitoring and repairs beyond those already planned for as part of its long-term monitoring obligations.

4. The importance of the services provided by the proposed facility to the community;
   The proposed facility serves the public good by isolating ecological and human receptors from existing contaminants present in the river sediments. As such, the proposed project will incrementally improve sediment quality in the lower Willamette River, leading to improvements in water quality, aquatic life, and public health and safety.

5. The necessity to the facility of a waterfront location, where applicable;
   Not applicable. The facility is intended to remediate contaminated sediments found in the river at the proposed location. As such, the proposed facility must be located in the river where the contaminated sediments occur.

6. The availability of alternative locations, not subject to flooding or erosion damage;
   There are no alternative locations available that meet the objectives of the proposed project. The proposed facility has been designed to withstand anticipated flooding and erosion risks at the specific location in the river.

7. The compatibility of the proposed use with existing anticipated development;
   There is no anticipated development where the facility is located. Further, the proposed use will not limit future development in the adjacent upland. A long-term easement will restrict development over the cap, so that it is not compromised; however, it is unlikely that the in-water location of the facility would be suitable for development, given the land use restrictions in the City's code.

8. The relationship of the proposed use to the Comprehensive Plan and Floodplain Management Program for that area;
   While not specifically identified in the City's Comprehensive Plan and Floodplain Management Program, remediation of contaminated sediments is consistent with the intent of these Plans and Programs to improve sediment and water quality within the City's jurisdiction. The results of this action will also increase public health and safety by incrementally decreasing contamination risk associated with consumption of aquatic species from the Willamette River within the City's limits.

9. The safety of access to the property in times of flood for ordinary and emergency vehicles;
   The proposed project will not alter safety of access to the property during times of flood or under ordinary river discharge conditions. Emergency vehicles (boats) will continue to have unrestricted access to the shoreline and cap site from the water.

10. The expected heights, velocity, duration, rate of rise, and sediment transport of the flood waters and the effects of wave action, if applicable, expected at the site;

The predicted 100-year flow in the Willamette River is 375,000 cubic feet per second (cfs) and the corresponding water surface elevation is 29.63 feet CPD (31.73 feet NAVD 88). As documented in the fluvial analysis for the project, the predicted river bottom velocities are between 4 and 5 feet per second, located approximately 50 feet from the shoreline within the cap area. The duration of flood waters, rate of rise, sediment transport, and effects of wave action will all remain unchanged from current conditions.

11. The costs of providing governmental services during and after flood conditions including maintenance and repair of public utilities and facilities such as sewer, gas, electrical, and water systems, and streets and bridges; Upon consideration of the factors listed above and the purposes of this Chapter, such conditions may be attached to the granting of variances as deemed necessary. The isolation cap was designed to allow access to existing public utility and facility easements. A Northwest Natural 20-inch gas line, a City of Portland 36-inch water line, and the eastern footings of the Tilikum Bridge Crossing are located immediately upstream of the proposed isolation cap (Sheet F02). The sediment cap was designed so that it does not encroach on the easement of either utility or the bridge facility. As such, the construction of the cap will not impede access to either utility of facility for routine or emergency maintenance. Consequently, the construction of the isolation cap will not increase costs of government services for repair of these utilities and facilities.

PCC 24.50.070.C Conditions for Variances

1. Generally the only condition under which variance from the elevation standard may be issued is for new construction and substantial improvements to be erected on a lot of 1/2 acre or less in size contiguous to and surrounded by lots with existing structures constructed below the base flood level, providing items (1-11) have been fully considered. As the lot size increases, the technical justification required for issuing the variance increases.
   Condition is not applicable to the facility since it is not a commercial or residential facility.

2. Variances shall not be issued within designated floodway if any increase in flood levels during the base flood discharge would result.
   Completion of a no rise analysis for the River Mile 13.5 isolation cap concluded that the project will not impact the 100-year base flood elevations, floodway elevations and floodway widths, in compliance with the FEMA requirements. As such, no rise in flood levels would occur as a result of base flood conditions. A no rise analysis for River Mile 13.1 is currently in development.

3. Variances may be issued for the reconstruction, rehabilitation or restoration of structures listed on the National Register of Historic Places or the State Inventory of Historic Places, without regard to the procedures set forth in this Section.
   Not applicable. Facility is not a structure on the National Register or State Inventory of Historic Places.

4. Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.
   Issuance of the variance will not alter the intent or extent of the code, but will allow more time so that the code can be complied with, while still allowing project construction to move forward on the proposed schedule. The no rise analysis conducted for the site concludes that the flood hazard associated with the isolation cap's fill will be *de minimis* and will not place downstream properties at additional risk from flooding.

5. Variances shall only be issued upon:
   a. A showing of good and sufficient cause,
      Construction of the sediment isolation cap at River Mile 13.5 is a public good that limits ecological and human receptors from existing contaminants present in the river sediments. As such, the proposed project will incrementally improve sediment quality in the lower Willamette River, leading to improvements in water quality, aquatic life, and public health and safety. Failure to construct the River Mile 13.5 Project in 2015 will prolong ecological and human exposure to identified contaminants and result in a violation of a DEQ Consent Order. Failure to construct the River Mile 13.5 isolation cap during the 2015 in-water work window could jeopardize the schedule and funding for the River Mile 13.1 Project, as PGE will not remediate the downstream site (River Mile 13.1) before the upstream site (River Mile 13.5) work is complete.

PGE has identified a location at which the cut balance for both the River Mile 13.5 and 13.1 projects can be accomplished that not only meets the intent of the code, but has the advantage of creating ecological benefits for species inhabiting and passing through the Portland Harbor. The Harborton property is identified as a high-value restoration opportunity in the City's 2009 River Plan North Reach Recommended Draft[7,8] and by the Trustee Council's Expert Panel, as part of the Trustee's Ecological Restoration Portfolio.[9]

b. A determination that failure to grant the variance would result in exceptional hardship to the applicant,
PGE has limited options where cut balance can occur, as most of its properties in the Willamette River floodplain are developed facilities that provide critical transmission and distribution services. To complete the cut balance within state-owned lands (or other private lands) would require additional sediment characterization studies at the proposed site, and compliance with local, state, and federal permitting that would delay project implementation by at least a year and possibly longer, depending on sediment quality. Much of the background sediment analysis has been completed for the Harborton property, with final Sediment Evaluation Framework (SEF) compliance from the Corps, DEQ, U.S. Fish and Wildlife Service (FWS), and National Marine Fisheries Service (NMFS) anticipated in September 2015. Also, the proposed Harborton Restoration project has been authorized by the PUC for construction during fiscal 2017, so PGE would not need to seek additional capital for project funding.

Failure to construct the River Mile 13.5 Project in 2015 would result in PGE violating a DEQ Consent Order and losing funding authorized by the PUC to carry out the remedial action and would impact the schedule of additional remedial actions proposed downstream of the River Mile 13.5 project. While there is significant financial cost associated with not constructing in 2015, the greater concern is that both remediation projects (River Mile 13.5 and 13.1) could be delayed should the PUC not re-authorize funding. The PUC's decision is based on a variety of factors including: other capital projects PGE has proposed or is required to undertake; corporate revenues and reserves, which have been impacted by warm winter temperatures during the winter of 2014-2015; authorized rate increases by the PUC. Delay in completing the approved remedial actions would also necessitate re-issuing the Record of Decision issued by the DEQ for both projects, which would prevent agency staff from directing their attention to other projects, reducing the overall efficiency of statewide efforts to clean-up the Portland Harbor.

c. A determination that the granting of a variance would not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public, or conflict with existing local laws or ordinances.
True.

6. Any applicant to whom a variance is granted shall be given written notice that the structure will be permitted to be built with a lowest floor elevation below the base flood elevation and that the cost of flood insurance will be commensurate with the increased risk resulting from the reduced lowest floor elevation.
Noted.

7. Variances as interpreted in the National Flood Insurance Program are based on the general zoning law principle that they pertain to a physical piece of property; they are not personal in nature and do not pertain to the structure, its inhabitants, economic or financial circumstances. They primarily address small lots in densely populated residential neighborhoods. As such, variances from the flood elevations should be quite rare.
Noted.

8. Variances may be issued for nonresidential buildings in very limited circumstances to allow a lesser degree

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7 City of Portland (COP). 2009. River Plan North Reach, Recommended Draft 2009, Volume 3A: Natural Resources Inventory: Riparian Corridors and Wildlife Habitat.

8 COP. 2011. The River Plan. Bureau of Planning and Sustainability, City of Portland, Oregon. Available at: http://www.portlandonline.com/ bps /index.cfm?c=42540. Accessed May 17, 2012.

9 Portland Harbor Natural Resource Trustee Council (Trustee Council). 2012. Ecological Restoration Portfolio. April 2012. From: http://www.fws.gov/ filedownloads/ftp_OFWO/PortlandHarborNRDAWebSupport/Documents/Restoration_Portfolio.pdf. Accessed May 22, 2012.

of floodproofing than watertight or dry-floodproofing, where it can be determined that such action will have low damage potential, complies with all other variance criteria except 24.50.070 C.1. and otherwise complies with Section 24.50.060 F.1. and 24.50.060 F.7.
Conditions relating to floodproofing do not apply to the proposed project. The proposed isolation cap complies with PCC 24.50.060.F.1, as the armor layer and toe armor are proposed components of the cap are designed to "anchor to prevent floatation [or scour], collapse, or lateral movement of the structure. The proposed isolation cap complies with PCC 24.50.060F.7, as the construction methods and materials are specifically designed to resist and minimize flood damage and the isolation cap has no associated equipment or services that require flood protection.

07/10/15


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