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APPENDICES

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APPENDIX A. PORTLAND WATERSHED MANAGEMENT PLAN – CITYWIDE GOALS AND OBJECTIVES (BUREAU OF ENVIRONMENTAL SERVICES, 2006)

Hydrology Goal: Move toward normative stream flow conditions to protect and improve watershed and stream health, channel functions, and public health and safety.

Objectives

Stream Flow and Hydrologic Complexity: Protect and increase rainfall interception areas, create infiltration and detention areas to normalize stream hydrographs, reduce stormwater flow to sewer systems, and reduce basement flooding.

Channel and Floodplain Function: Protect and restore the extent, connectivity, and function of streams, other open drainageways, wetlands, riparian areas and floodplains to improve bank stability and natural hydrologic functions and reduce risk to development and human safety.

Stormwater Conveyance: Maintain stormwater collection and conveyance infrastructure capacity.

Physical Habitat Goal: Protect, enhance, and restore aquatic and terrestrial habitat conditions and support key ecological functions and improved productivity, diversity, capacity, and distribution of native fish and wildlife populations and biological communities.

Objectives

Aquatic Habitat: Protect and improve aquatic, riparian, and floodplain habitat extent, quality, and connectivity that supports the persistence of native fish and wildlife communities.

Terrestrial Habitat: Protect and improve upland habitat extent, quality, and connectivity that support the persistence of native terrestrial communities and connectivity to aquatic and riparian habitat.

Water and Sediment Quality Goal: Protect and improve surface water and groundwater quality to protect public health and support native fish and wildlife populations and biological communities.

Objectives

Stream Temperature: Protect and improve stream temperatures, dissolved oxygen, and pH levels that protect ecological health and achieve applicable water quality standards.

Human Pathogens: Maintain and manage sewer infrastructure and stormwater inputs and runoff to limit sewage overflow and the delivery of pathogens to waterways and achieve applicable water quality and sewer design manual standards.

Urban Pollutants: Manage the sources and transport of urban stormwater and industrial pollutants and nutrients to limit surface water, groundwater, soil, and sediment contamination to levels that protect ecological and human health and achieve applicable water quality standards.

Biological Communities Goals: Protect, enhance, manage and restore native aquatic and terrestrial species and biological communities to improve and maintain biodiversity in Portland's watersheds.

Objectives

Fish and Other Aquatic Organisms: Implement watershed actions to maximize the persistence of native Willamette and Columbia River fish and other aquatic organisms and assist with species recovery and potential population productivity by protecting and improving hydrology, habitat, and water quality.

Terrestrial Wildlife and Vegetation: Implement watershed actions to restore populations of terrestrial organisms to healthy, self-sustaining levels, protect and restore the composition and structure of native vegetation communities, and reduce populations of non-native plants and organisms to levels that do not compete with native species.

DRAFT**APPENDIX B. REGULATORY REQUIREMENTS MEMO****Updated December 2018****Introduction**

There are multiple federal, state and local environmental regulations and requirements that could apply to development actions within the Willamette River and on adjacent lands. Some of those regulations require actions to avoid, minimize or compensate for unavoidable impacts to natural resources. In addition to regulatory requirements, there are guiding policies and goals that go beyond the regulations and are frequently evaluated during these processes.

The purpose of this memo is to summarize federal, state and local environmental regulations, policies and goals that could likely be triggered by future development impacts to natural resources and to generally describe mitigation requirements that may need to be addressed prior to or during future development. The draft memo is information only and does not have any binding or precedent-setting implications; nor does it reflect decisions or positions of the participants. Actual development impacts and permit requirements cannot be determined until there is a development proposal.

Mitigation in the context of natural resources generally means to avoid, minimize or compensate for negative impacts to natural resource features or functions as a result of a change in land use.

Environmental mitigation, compensatory mitigation, and mitigation banking are terms used to describe projects or programs intended to offset unavoidable impacts to existing natural resources such as streams, wetlands, or endangered species. Environmental mitigation is typically a part of an environmental crediting system established by governing bodies which involves allocating debits and credits. Debits occur in situations where a natural resource may be impaired or destroyed and credits are given in situations where a natural resource has been deemed to be improved or preserved. Therefore, when an entity such as a business or individual is likely to incur a “debit” as a result of a project, the entity is required to develop their “credit” on or very near the development site. In other cases, credits may be purchased from “mitigation banks” which are large mitigation projects established to provide credit to multiple parties in advance of development when such compensation cannot be achieved at the development site or is not seen as sufficiently beneficial to the environment. While not all regulatory schemes describe it as a credit system, they generally follow this approach to satisfy their particular functional regulatory goals.

The remainder of this memo is divided into two sections 1) regulatory requirements to assess impacts on natural resources; and 2) policies and goals for natural resources.

1. Regulatory Requirements

Note: The sequencing of federal and state permits varies depends on the agency and permits needed. For example, if a US Army Corps of Engineers (USACE) permit is required, the USACE will coordinate with other federal agencies and in most cases attach additional conditions and permits/certifications to the USACE permit (e.g., these are commonly the National Marine Fisheries biological opinion and the Oregon Department of

DRAFT

Environmental Quality (DEQ) 401 water quality certification, etc.) Some state agency requirements, such as the Oregon State Historic Preservation Office (SHPO) Section 106 requirements, can be added to the USACE permit conditions. The Oregon Department of State Lands can also incorporate DEQ water quality certifications, Oregon Department of Fish and Wildlife fish passage requirements and SHPO conditions into the Removal Fill permit on a case by case.

1.a. Federal Requirements

1.a.1. Clean Water Act (CWA) Section 404 Permit

CWA Section 404 establishes a program to regulate the discharge of dredged and fill material into waters of the United States, including wetlands. Responsibility for administering and enforcing Section 404 is shared by the US Army Corps of Engineers (USACE) and Environmental Protection Agency (EPA).

Permit review and issuance follow a sequential process that encourages avoidance of impacts first, followed by minimizing impacts and, finally, requiring mitigation for unavoidable impacts to the aquatic environment. This sequence is described in CWA Section 404(b)(1). Only after avoidance and minimization criteria are satisfied can the USACE consider compensatory mitigation. The USACE or EPA has the right to require the developer to mitigate any unavoidable impacts on waters of the United States as a condition of an individual 404 permit. The developer can be required to enhance, restore, or create wetlands or aquatic habitat on or near the development site. In establishing mitigation requirements, the USACE must strive to achieve a goal of no overall net loss of functional values and functions, meaning a minimum of one-for-one functional replacement with an adequate margin of safety to reflect scientific uncertainty. Mitigation banking, using a mitigation bank that has been approved by EPA and the USACE for this purpose, is encouraged.

Common activities that take place in waters of the US and require a federal permit include:

Excavation or dredging in waters of the US

- Channel changes, realignments or relocations;
- Construction of a dock, pier, wharf, seawall, boat ramp, intake or outfall structure;
- Placement of fill, riprap or similar material;
- Placing fill to construct levees, roadways and bridges; and
- Bank or shore stabilization projects including jetties and revetments.

A federal permit is required regardless of the amount of area affected by the activity and amount of fill used. Under the CWA, the EPA and USACE follow the mitigation framework set out in the Section 404(b)(1) guidelines to evaluate applications for Section 404 dredge and fill permits.

The issuance of this permit is a federal action that triggers consultation with National Marine Fisheries Services (NMFS) under the Endangered Species Act, tribal governments, US Fish and Wildlife Services (USFWS) and historic preservation delegated to State Historic Preservation Office (SHPO). (See also Oregon Department of State Lands Removal-Fill Permit).

<http://water.epa.gov/lawsregs/guidance/wetlands/sec404.cfm>

DRAFT

1.a.2. Clean Water Act Section 401 Certification

Section 401 of the federal Clean Water Act (CWA) requires that any federal license or permit to conduct an activity that may result in a discharge to waters of the United States must first receive a water quality certification from the state in which the activity will occur. In Oregon, the Department of Environmental Quality (DEQ) is the agency responsible for reviewing proposed projects under this requirement.

A federal permit is required to conduct any activity, including, but not limited to, the construction or operation of facilities which may result in any discharge into navigable waters. Federal permits that are most frequently subject to Section 401 water quality certification include CWA Section 402 (NPDES) permits issued by EPA, Section 404 (dredge and fill) permits issued by the USACE, and Rivers and Harbors Act (RHA) Section 9 and 10 permits issued by the USACE.

There is no compensatory mitigation required under CWA Section 401. However, because water quality certifications are attached to the USACE permit, conditions accompanying Section 401 certifications may be included in the USACE permit conditions. These conditions generally include monitoring and reporting requirements to help the state determine whether water quality is being degraded and may halt operations if conditions are not met during permitted activities and allows for assessment of the effect of operational practices and conditions on water quality to help shape future certification decisions and conditions.

<http://water.epa.gov/lawsregs/guidance/wetlands/sec401.cfm>

1.a.2. National Environmental Policy Act (NEPA)

In enacting NEPA, Congress recognized that nearly all federal activities affect the environment in some way and mandated that before federal agencies make decisions, they must consider the effects of their actions on the quality of the human environment. Under NEPA, the Council on Environmental Quality was established to work with agencies to balance environmental, economic, and social objectives in pursuit of NEPA's goal of "productive harmony" between humans and the human environment (42 U.S.C. §4331(a)). NEPA assigns CEQ the task of ensuring that federal agencies meet their obligations under the Act. CEQ NEPA regulations require an analysis of environmental impacts and, if necessary, identification of mitigation to minimize those impacts.

CEQs regulations (40 C.F.R. Parts 1500-1508) set the standard for NEPA compliance. They also require agencies to create their own NEPA implementing procedures. These procedures must meet the CEQ standard while reflecting each agency's mandate and mission. The NEPA analysis bears similarities with other federal agencies review requirements and can be used to inform review under the Endangered Species Act and National Historic Preservation Act, Executive Orders on Environmental Justice, and other Federal, State, tribal, and local laws and regulations.

The NEPA process begins when a federal agency proposes to take an action, which may include rule making, regulations, plans, funding or specific projects (40 C.F.R. § 1508.18). For example, Department of Transportation funding for a bridge or rail improvement is an action that would trigger the NEPA process. The NEPA process is begun when an action or project is at 10% design. A concept plan, which may not be the preferred design by which permits are acquired, is not considered a 10% design and the NEPA process would not start.

DRAFT

Under NEPA, the agency determines whether the action is a Categorical Exclusion (CE) or if additional analysis is necessary. To perform an analysis, the applicant must identify the purpose and need of the action and alternatives that meet the purpose and needs. Through an Environmental Assessment (EA) or Environmental Impact Statement (EIS), the applicant identifies measures that will be taken to mitigate (avoid, minimize or compensate for) environmental impacts.

The EIS process includes a statement of purpose/need, identification of alternative solutions (including no action), and impacts of the preferred alternative. The Draft EIS is published for public review and comment for a minimum of 45 days. The agency must consider all substantive comments, conduct further analysis if necessary, and prepare a Final EIS, which is available for public review for 30 days. This review period must be completed before the agency makes a decision on the proposed action. The EIS process ends with the completion of a Record of Decision. The ROD explains the agency's decision, describes the alternatives the agency considered (including the environmentally preferred alternative), and discusses plans for mitigating potential environmental effects and monitoring those commitments.

<http://www.epa.gov/compliance/nepa/index.html>

1.a.4 Endangered Species Act

NOAA National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) use the Federal Endangered Species Act (ESA) to protect species including many listed species found in the Willamette River. NMFS is responsible for protecting salmon and other ocean-migrating fish, as well as marine animals. USFWS is responsible for protecting wildlife, bird species and inland (primarily freshwater) fish, such as bull trout and coastal cutthroat trout. Currently, salmon species and trout are federally listed and present in the South Reach.

Under Section 7 of the ESA, federal agencies must use their authorities to protect listed species and habitats that are critical to their survival. Section 7 also requires federal agencies to ensure that their actions, including any actions they authorize, fund or carry out, do not jeopardize listed species or destroy or adversely modify their critical habitat.

NMFS and USFWS designate "critical habitat" for species that are listed under the ESA. "Critical habitat" is the "specific areas within the geographical area occupied by the species at the time it is listed in accordance with the provisions of section 4 of this Act, on which are found those physical or biological considerations or protection." NMFS has designated critical habitat for most of their species that are listed under the ESA that may be found in the South Reach. For several species, it extends 300' from the top of bank, for others to top of bank.

Section 7 requires all federal agencies, including the US Army Corps of Engineers (USACE), to assess whether federally listed threatened or endangered species and/or critical habitat may be affected by a project under their jurisdiction. The USACE requires the applicant to prepare a Biological Assessment to evaluate if such an effect is possible, and if it is, are required to consult with USFWS and/or NMFS before approving a permit that might affect species in these ways. This process is called "consultation". This serves as consultation for the Magnuson-Stevens Act on Essential Fish Habitat (see below).

If no impacts on federally listed threatened or endangered species and/or critical habitat are found to be associated with the proposed project, the USACE will be able to issue a permit without consultation.

DRAFT

If there will be adverse effects to listed species or critical habitat, consultation with NMFS is required. NMFS evaluates the project as proposed for its impacts to ESA listed species. If NMFS determines that the project will not result in jeopardy to the species it will issue an “Incidental Take Statement” that includes reasonable and prudent measures with terms and conditions to minimize incidental take. If NMFS finds that the project will result in jeopardy to the species it will provide a “reasonable and prudent alternative” that would not result in jeopardy.

If the project design and implementation plan are deemed adequate, the USACE issue a permit to the applicant. The permit may include conditions to avoid, minimize, and compensate for expected impacts of the project. Conditions are designed to protect water quality, fish and wildlife and their habitats, and adjacent properties.

Section 9 of the ESA states that no one may “take” an animal that is listed as endangered. “Take” includes the harassment, harm, pursuit, hunting, shooting, wounding, killing, trapping, capture, or collection of any threatened or endangered species. “Harm” may include habitat modification that results in the death or injury of a listed species. This is referred to as a “take prohibition”. For species listed as threatened, Section 4(d) of the ESA (referred to as the “4(d) rules”) requires NMFS to issue rules that citizens, organizations and governments must follow in order to protect the species. The rules may include any or all of the general take prohibitions that apply to endangered species. By regulation, NMFS applies take prohibitions to all threatened species (except plants) at the time of listing or later. The ESA provides some exceptions to general take prohibitions and 4(d) rules, and under section 10 landowners can obtain permits for work that incidentally affects listed species (Incidental Take Permit). These permits can only be issued for:

- Scientific work;
- Projects designed to enhance the survival of the species; or
- Activities that may only incrementally take or harm species during the course of the work.

Incidental Take Permits require development of a Habitat Conservation Plan (HCP) that specifies how impacts to a listed species and its habitat will be minimized. In issuing Incidental Take Permits, USFWS and NMFS must comply with the NEPA as well as state and local environmental laws. For these reasons, HCPs also require an Environmental Assessment or Environmental Impact Statement for the proposed activity.

<http://www.mrsc.org/Subjects/Environment/esa/esa-bioass.aspx>

<http://www.nmfs.noaa.gov/pr/laws/esa/>

1.a.5. Magnuson-Stevens Act – Essential Fish Habitat

The Magnuson-Stevens Fishery Conservation and Management Act is the federal law that governs U.S. marine fisheries management. In 1996 Congress added new habitat conservation provisions to that act in recognition of the importance of fish habitat to productivity and sustainability of U.S. marine fisheries. The re-named Magnuson-Stevens Act mandated identification of Essential Fish Habitat for managed species. The act also requires measures to conserve and enhance the habitat needed by fish to carry out their life cycles. Essential Fish Habitat (EFH) for the Pacific salmon means those waters and substrate necessary for salmon production needed to support a long-term sustainable salmon fishery and salmon contributions to a healthy ecosystem. The definition for EFH includes currently viable aquatic habitat and most of the habitat historically accessible to Pacific Salmon.

DRAFT

The federal agency taking an action can use existing processes to support EFH consultations. For example, as part of ESA Section 7, NMFS and USFWS consult on the conservation of species and assist the agency taking an action to meet their responsibilities under Section 7. This serves as consultation for the Magnuson-Stevens Act on EFH. NMFS/USFWS would evaluate the effects of the action, determine jeopardy and adverse habitat modification and estimate incidental take and issues a take permit if necessary.

<http://www.nwr.noaa.gov/Salmon-Habitat/Salmon-EFH/>

1.a.7. Federal Emergency Management Agency Flood Plain Management

The Federal Emergency Management Agency (FEMA) manages the National Flood Insurance Program (NFIP) which includes regulatory components for floodplain management, floodplain mapping and flood insurance. The NFIP floodplain management regulations (44 CFR 60) are implemented through local jurisdictions. The City of Portland's local floodplain ordinance is found in Portland City Code 24.50. FEMA identifies the nation's floodplains and publishes Flood Insurance Rate Maps (FIRMs), which depict the floodplain data. FEMA maps the area that has a one percent chance of being flooded in any given year. This establishes the 100-year floodplain, which is the standard used by the NFIP and most federal and state agencies for floodplain management and to determine the need for flood insurance. FEMA most recently updated the FIRMs for the Willamette River in 2009.

The principal regulatory requirements for development in the 100-year floodplain include, but are not limited to, the following:

- Development within the Floodway is prohibited unless hydraulic engineering analysis demonstrates the development will result in no increase in 100-year flood elevations.
- Floodway is the channel of the watercourse and that portion of the adjacent floodplain that must remain open for passage of the 100-year flood without significantly increasing flood elevations. Floodway boundaries are depicted on the FIRMs.
- Occupied or inhabited structures must be built at least one foot above the 100-year flood elevation. This is often achieved by placing fill within the 100-year floodplain to raise the ground elevation and allow development in that area. Other site improvements such as parking or exterior storage, may be below the base flood elevation.
- Fill material placed below the 100-year flood elevation must be balanced with an equal or greater volume of excavation below the 100-year flood elevation such that the flood storage capacity of the floodplain is maintained; this is often referred to as flood storage compensation or "balanced cut and fill". (See also Metro Title 3.)

FEMA is undergoing consultation with NMFS under ESA to evaluate the impacts of the NFIP on listed salmon species in Oregon. This consultation is expected to result in additional regulations and changes in how the NFIP is implemented in Oregon. A similar consultation in Washington has resulted in changes in how the NFIP is implemented there.

<http://www.fema.gov/plan/prevent/floodplain/nfipkeywords/permit.shtm>

DRAFT

1.a.8. Rivers and Harbors Act of 1899

The Rivers and Harbors Act addresses projects and activities in navigable waters and harbor and river improvements. The USACE administers Section 9 and Section 10 of the Rivers and Harbors Act.

Section 9 of the Rivers and Harbors Act (33 U.S.C. 401) prohibits the construction of any dam or dike across any navigable water of the United States in the absence of Congressional consent and approval of the plans by the Chief of Engineers and the Secretary of the USACE. Section 9 also pertains to bridges and causeways; however, the authority of the USACE is transferred to the Secretary of Transportation under the Department of Transportation Act.

Section 10 of the Rivers and Harbors Act (33 U.S.C. 403) prohibits the unauthorized obstruction or alteration of any navigable water of the United States. This section provides that the construction of any structure in or over any navigable water of the United States, or the accomplishment of any other work affecting the course, location, condition, or physical capacity of such waters, is unlawful unless the work has been recommended and authorized by USACE. This work includes excavation or fill, which could contain contaminated sediments. (See also NPDES permits.)

http://el.erdc.usace.army.mil/emrrp/emris/emrshelp5/rivers_and_harbors_acts_legal_matters.htm

1.a.9. Marine Mammal Protection Act, 1972

The Marine Mammal Protection Act (MMPA) is intended to conserve marine mammals. All marine mammals are protected under the MMPA. The MMPA prohibits, with certain exceptions, the "take" of marine mammals in U.S. waters and by U.S. citizens on the high seas and the importation of marine mammals and marine mammal products into the U.S.

The implementation of the MMPA is divided between two federal departments. The Department of Commerce, which NMFS is part of, is charged with protection of cetaceans and pinnipeds other than walrus. The Department of the Interior, USFWS, is responsible for all other marine mammals, including sea otter, walrus, polar bear, dugong and manatee.

<http://www.nmfs.noaa.gov/pr/laws/mmpa/>

1.b. State Requirements

1.b.1. Oregon Department of State Lands Removal-Fill Permit

In Oregon, a state permit issued by the Department of State Lands (DSL) is required if activities involve filling or removing more than 50 cubic yards of material in waters of the state. In areas determined to be Essential Salmonid Habitat or a State Scenic Waterway, a permit is required for any amount of fill or removal. DSL regulates all wetlands, including isolated or ephemeral wetlands.

Currently, DSL and the USACE use a joint permit application form so that in many cases applicants need to prepare only one application to obtain both permits. However, all projects require separate authorizations (or permits) from DSL and the USACE and each agency may request information in addition to the application.

DRAFT

The analysis for the permit must include a purpose and need statement and each alternative must meet the purpose and need. If the alternative chosen includes unavoidable impacts to natural resources, then the analysis includes an evaluation of how impacts can be minimized and if compensatory mitigation is necessary.

Compensatory mitigation means activities conducted to restore, create or enhance wetland and waterway impacts (tidal and non-tidal) to compensate for the adverse effects of the project. The ecological functions (biotic and abiotic) that are impacted by the project must be replaced. In addition to determining which ecological functions should be replaced, DSL uses ratios for spatial considerations; ratios are specific to the restoration, creation, or enhancement types of compensatory mitigation. DSL prefers mitigation within the same watershed; payment in lieu of mitigation may be possible or by acquiring mitigation credits from a DSL approved mitigation bank.

<https://www.oregon.gov/dsl/WW/Pages/Permits.aspx>

1.b.2. National Pollutant Discharge Elimination System (NPDES)

As authorized by the Clean Water Act, the National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. Point sources are discrete conveyances such as pipes or man-made ditches. Industrial, municipal, and other facilities must obtain permits if their discharges go directly into surface waters. In Oregon, the NPDES permit program is administered by Oregon Department of Environmental Quality (DEQ).

The NPDES 1200-C, 1200-CN and 1200-CA general permits apply to construction activities including clearing, grading, excavation, materials or equipment staging and stockpiling that will disturb one or more acres of land. These permits also apply to construction activities that will disturb less than one acre that are part of a common plan of development or sale, if the larger common plan of development or sale will ultimately disturb one acre or more. In addition, DEQ may require registration for any other construction activity based on the potential for contribution to an excursion of a water quality standard or potential for significant contribution of pollutants to waters of the state.

DEQ issues stormwater discharge permits to industries that discharge stormwater into rivers, lakes and streams from pipes, outfalls or other point sources at a site. Based on federal regulations, NPDES permit coverage is required for industrial facilities that discharge stormwater from their industrial areas to surface waters of the state or to storm drains that discharge to surface waters. Examples of industrial activities that require a permit include manufacturing, transportation, mining, and steam electric power industries, as well as scrap yards, landfills, certain sewage treatment plants and hazardous waste management facilities.

A municipal separate storm sewer system (MS4) is a conveyance or system of conveyances (e.g., roads with drainage systems, municipal streets, catch basins, curbs, gutters, manmade channels or storm drains) owned or operated by a governmental entity that discharges to waters of the state. Sources that need to obtain an MS4 permit are classified as either "Phase I" or "Phase II". Phase I MS4s are those with populations greater than 100,000, while regulated Phase II (or "small") MS4s serve populations less than 100,000 located within Census Bureau-defined Urbanized Areas.

<http://www.deq.state.or.us/wg/stormwater/stormwater.htm>

DRAFT**1.b.3. Oregon State-owned Waterway Authorization Program**

The Oregon Department of State Lands (DSL) is responsible for establishing rules controlling public use of submerged and submersible land underlying state-owned waterways. State-owned waterways are navigable waterways below ordinary high water. Many uses of and structures occupying state-owned waterways require DSL's written approval. Types of uses that require authorization include but are not limited to:

1. Waterway Lease for commercial and non-commercial marina/moorages, industrial, non-marine uses, floating homes, and large (more than 2,500 square feet) non-commercial docks and boathouses
2. Waterway Structure Registration for non-commercial docks and boathouses under 2,500 square feet.
3. Waterway Registration of a structure that is actively and exclusively used to accommodate ships, boats, or vessels engaged exclusively in the receipt and discharge of goods or merchandise or in the performance of active government functions on the waterway
4. Public Facility License for public agency owned, operated, and maintained docks/floats, boat ramps, boat landings, floating restrooms, navigational aids, and viewing structures with no, or a nominal, fee.

<https://www.oregon.gov/dsl/WW/Pages/Waterways.aspx>

1.b.4. Oregon Department of Fish and Wildlife – Fish Passage

In Oregon, providing fish passage over man-made dams and diversions has been required since before statehood in 1859. Fish passage statutes have evolved over the past 150 years. In 2001, House Bill 3002 (HB 3002), which addresses fish passage at artificial obstructions, was signed into law.

As a state policy, upstream and downstream passage is required at all artificial obstructions in Oregon waters where migratory native fish are currently or have historically been present, except under certain clearly defined circumstances. Overwater structures, such as a dock or pier, would be evaluated under this rule.

HB 3002 requires the Oregon Department of Fish and Wildlife (ODFW) to complete and maintain a statewide inventory of artificial obstructions, which will be used to prioritize artificial barriers. The primary method for implementing this policy should be through active collaboration and cooperation between the ODFW and owners or operators of artificial obstructions. HB 3002 provides the Fish and Wildlife Commission with emergency authority to require installation of fish passage at the owner/operator's expense if a population of native migratory fish is adversely impacted.

The ODFW will review fish passage in consultation to the DSL permit. ODFW also establishes the in-water work windows.

<http://www.dfw.state.or.us/fish/passage/>

1.b.5. Archeological Review Oregon Parks and Recreation Department Heritage Programs: State Historic Preservation Office (SHPO)

A number of federal and state laws protect Oregon's historic properties, such as archaeological sites, historic structures, and other cultural resources. Any state water-related permit must take into account the effects of the applicant's activities on historic properties. When a state agency permits an activity that may affect cultural resources the agency must consult with the SHPO.

DRAFT

SHPO Archaeological Services' staff assists state agencies and their applicants in protecting historic properties in Oregon. This consideration process involves a series of steps:

1. Identify if any historic properties exist within the project area;
2. If there are historic properties, evaluate the eligibility of the historic properties and determine the effects the proposed project will have on those properties; and
3. If the project will have a negative impact on a significant historic property, explore alternatives to avoid, minimize, or mitigate the effects.

Historic properties include all Native American cairns and graves and associated cultural items in Oregon protected under The Native American Graves and Protected Objects State Law (Indian Graves and Protected Objects (ORS 97.740-97.760). Historic properties also include archaeological sites 75 years of age or older, and items of significance and cultural patrimony (ORS 358.905-358.955)

The Scenic Waterways Law (ORS 390.805-390.925) establishes a state policy that protects historic and archaeological sites that are located adjacent to designated scenic waterways (i.e., rivers or lakes) from destruction due to the building of dams, construction, mining, etc., and provides tax incentives to private land owners who agree to restrict their use of such lands.

<https://www.oregon.gov/oprd/HCD/ARCH/Pages/index.aspx>

1.c. Local Requirements

1.c.1. Metro Titles 3 and 13

Metro's Urban Growth Management Functional Plan was adopted in the 1990's to provide a regional approach to growth management by tailoring several key state planning goals to meet regional population growth expectations. The Plan includes nine titles that are derived from or relate to state planning goals (the rest are procedural). Of the nine titles, Titles 3 and 13 pertain most directly to natural resources management and watershed health.

Title 3 (Water Quality, Flood Management, and Fish and Wildlife Conservation) was established to protect the region's health and public safety by reducing flood and landslide hazards, controlling soil erosion, and reducing pollution of the region's waterways (note: fish and wildlife conservation was ultimately addressed in Title 13 as described below). Title 3 contains performance standards related to streams, rivers and wetlands to protect and enhance water quality. It establishes and maps Water Quality Resource Areas (WQRA) along rivers, streams and wetlands, with a designated width of generally 25 feet unless slopes exceed 25 percent, in which case the width increases to 200 feet. The performance standards are intended to prevent encroachment into vegetated corridors along these water bodies, require erosion and sediment control and planting of native vegetation along stream banks when development occurs and prohibit storage of new uses of uncontained hazardous materials in any WQRA. Title 3 also established and mapped Flood Hazard Management Areas and a regional requirement for balanced cut and fill in areas identified on Title 3 maps.

Title 13 (Nature in the Neighborhoods) was established to conserve, protect and restore a continuous ecologically viable streamside corridor system that is integrated with upland wildlife habitat and the surrounding urban landscape, and to control and prevent water pollution. Metro completed the required process to comply

DRAFT

with State Land Use Planning Goal 5 in developing the Nature in the Neighborhoods Program. They first developed an inventory of regionally significant riparian corridors called Class I and Class II corridors and wildlife habitat based on a scientific assessment of functional values. Then, Metro completed an ESEE analysis to assess the tradeoffs of protecting or not protecting the resources identified in the inventory. Based on this ESEE analysis, Metro determined to allow and limit some conflicting uses but not to prohibit any conflicting uses, thereby establishing different levels of protection for significant fish and wildlife habitat based on habitat quality and urban development potential. The resulting High, Moderate and Low Habitat Conservation Areas (HCA) are protected through a tiered approach outlined in Title 13. Within the Urban Growth Boundary, Habitat Conservation Areas were only developed for areas designated in the inventory as Class I or Class II riparian corridors.

The City of Portland will be required to demonstrate that its plans and implementing ordinances comply with Title 3 and are in substantial compliance with Title 13. The City may establish regulatory and non-regulatory mechanisms to protect, conserve and restore significant riparian corridors and fish and wildlife habitat in the South Reach and may establish regulatory protections for areas Metro has designated as HCA without conducting a local ESEE analysis. Metro designated the Willamette River a high HCA and the riparian area a mix of low, moderate and high HCA under Title 13.

<http://www.oregonmetro.gov/index.cfm/go/by.web/id=274>

1.c.2. City of Portland Title 33: Environmental Zoning Program

Chapter 33.430 of the City of Portland Planning and Zoning code establishes environmental protection zones within the City. The City follows the Goal 5 steps: inventory existing natural resource, conduct an ESEE analysis and apply a program to conserve and protect significant resources.

Through the City's ESEE analysis, conflicting uses (aka development) are either allowed, limited, or strictly limited. (The City generally does not prohibit conflicting uses.) The limit decision is typically applied through a conservation overlay zone. Within conservation overlay zones, proposed development must avoid and minimize impacts to natural resources and mitigate for unavoidable impacts. The strictly limit decision is applied through a protection overlay zone. Within the protection overlay zone, development is not allowed unless it is needed for access or if the public benefits outweigh the negative impacts to the natural resources; mitigation for unavoidable impacts is required.

Where development is proposed within the overlay zone the applicant must meet Chapter 33.430 requirements. The proposal will be reviewed by the City using either an Environmental Plan Check or an Environmental Review procedure. The Environmental Review procedure involves a deeper level of environmental impact analysis than is required for the Plan Check, with detailed environmental studies needed to support the analysis. Proposed development location and design will need to be justified and mitigation is required to replace any lost environmental functions.

Depending on the degree of significance of potential impacts, mitigation may be required in either the resource area of an Environmental Conservation Zone or Environmental Protection Zone. A mitigation plan must be

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developed and is subject to land use review by the Bureau of Development Services. The mitigation plan includes:

- Identification of the resources and functional values to be restored, created, or enhanced on the mitigation site;
- Documentation of coordination with appropriate local, regional, special district, state and federal regulatory agencies;
- Construction timetables;
- Operations and maintenance practices;
- Monitoring and evaluation procedures;
- Remedial actions for unsuccessful mitigation; and
- Information showing compliance with Section 33.248.090, Mitigation and Restoration Plantings.

<http://www.portlandonline.com/auditor/index.cfm?c=28197&a=53343>

1.c.3. Legal Agreements as an Alternative Mitigation Tool

As part of a legislative process to refine or apply the City's Environmental Program, the City may consider legal agreements to supplement the requirements of environmental overlay zones within the project area. These agreements are appropriate for large parcels of land under a single ownership that contain diverse, extensive and/or unique natural resource areas and for which a legal agreement would better achieve the goals of the City and compliance with other relevant regulations and goals for natural resources. *Note: Legal Agreements cannot be used to comply with Metro Title 13 or State Land Use Goal 5.*

These agreements offer a customized approach to natural resource protection and mitigation for a specific site. The agreement can be designed to achieve a similar or better level of resource protection and mitigation as would have been achieved using an environmental overlay zone. It could also involve different types of approaches than would typically be achieved through implementing the overlay zone e.g., off-site mitigation or "out-of-kind" mitigation.

The City has used two legal agreement mechanisms in the recent past:

1. Development agreements between the City and a private property owner; or
2. Intergovernmental Agreements, or IGAs, between public agencies.

These types of agreements can be preferable to the environmental overlay zones because they provide certainty to the property owner, City and public. The agreement can eliminate the need to review and identify mitigation requirements for each individual project on a large site. An agreement generally contains monitoring and maintenance requirements for the life of the agreement, which provides certainty to the City and the community that resource protection and mitigation will be carried out and has the best chance of success.

1.c.4. City of Portland Title 11: Trees

The City of Portland adopted a new tree code (Title 11, Trees) in 2011 and implementation began in early 2015. Title 11 consolidated the majority of the City's tree rules into a cohesive framework that addresses trees on public and private property in development and nondevelopment situations. The tree code establishes a permitting system for removal of trees when not associated with a development project and allowed for programmatic permits issued by Parks and Recreation's Urban Forestry department. These rules apply to trees

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that are not addressed through the environmental overlay zone regulations (City of Portland Title 33). In general, the tree code encourages preservation of large healthy trees, ensures trees are managed to expand tree canopy in the city by required tree replacement when trees are removed and mandates that trees are planted as a part of new development.

<https://www.portlandoregon.gov/citycode/66002>

1.c.5. City of Portland Stormwater Management Manual

The Stormwater Management Manual (SWMM) is a technical document originally adopted in 1999 that outlines the City's stormwater management requirements to comply with the National Pollution Discharge Elimination System (NPDES) permit and Safe Drinking Water Act. The SWMM was recently updated 2016. The requirements defined in the manual apply to all development and redevelopment projects within the City of Portland on both private and public property. The SWMM applies to the following:

- Properties that proposed new offsite discharges or new connections to the public system; or
- Projects that develop or redevelop over 500 square feet of impervious area.

The City's approach to stormwater management emphasizes the use of vegetated surface facilities to treat and infiltrate stormwater on the property where the stormwater is created. This approach provides a number of benefits in protecting stormwater infrastructure and improving watershed health, including pollutant reduction, volume and peak flow reduction, and groundwater recharge. If an entity cannot meet the requirement for managing stormwater onsite to the maximum extent feasible, the City may allow the entity to either construct an offsite facility or compensate the City for the future development of offsite facilities through payment of a fee. In this case, a filing of "special circumstances" must be done by the applicant, which will be reviewed and approved by the City before an alternative approach would be allowed.

The SWMM complements and supports the City's Portland Watershed Management Plan, System Plan, Revegetation Program, Sustainable Stormwater Program, and other City standards and practices.

<https://www.portlandoregon.gov/bes/64040>

1.c.6. City of Portland Streamlining Agreement

While not a regulation in and of itself, the City of Portland has a signed agreement with federal agencies that agrees to a shared and cooperative streamlining process for federal ESA consultations. This streamlining agreement process was extended to state and local agencies in 2006 to ensure better coordination and communication between all permitting and consulting agencies.

A Streamlining Team consisting of all participating federal, state and local agencies was created along with standard operating protocols with the purpose of sharing of information needed by the agencies for their review and approval of the proposed activity. In addition to assisting City project teams, the procedures are designed to improve coordination and communication among the agencies. Through this approach, the hoped-for outcome is consistent decisions between the different agencies that occur within the same time period, whenever possible.

DRAFT

The streamlining agreement was originally designed to facilitate the permitting of City-sponsored projects. The process has been extended to private and other public entities whenever it is determined that the City has a strong interest or connection with the proposal.

Projects that participate in the streamlining process must present a purpose and need statement and a range of alternatives to meet the project's goals, including looking at the practicable alternative with the least impacts to natural resources. If the selected option has unavoidable impacts to natural resources, mitigation requirements can also be identified early in the process. The Corps, DSL and BDS require that a mitigation sequence be explored which generally includes analyzing the following options: Avoidance, Minimize, Mitigate (Compensatory or In-kind functional replacement).

<https://www.portlandoregon.gov/bes/58878>

2. Guiding Policies and Goals

The following policies do not have specific requirements that pertain to analysis of environmental impacts and potential mitigation but provide guidance or context that can inform selection of mitigation actions by the regulatory agencies.

2.a. Federal Policies and Goals

2.a.1. The Migratory Bird Treaty Act and the Urban Conservation Treaty for Migratory Birds Program

The Migratory Bird Treaty Act (MBTA), passed in 1918, established the United States' commitment to implement four bilateral treaties, or conventions for the protection of a shared migratory bird resource. The MBTA protects over 800 species of birds. Over 200 migratory bird species migrate through Portland every year and Portland provides critical resting, feeding and nesting habitat for numerous types of migratory and resident birds.

The MBTA uses very broad language to prohibit at any time or in any manner the pursuit, hunting, taking, capturing or killing of any migratory bird. It does not have an incidental take permit or its equivalent. The unauthorized killing of any of approximately 800 identified migratory birds constitutes a violation of the MBTA. The MBTA has no specific mitigation requirements. It is enforced by USFWS, although its enforcement is viewed as somewhat selective because of MBTA's expansive scope. The MBTA's applicability to habitat modification and destruction is unclear; the definition of "take" in the MBTA does not include "harm" or "harass", unlike the ESA. Due diligence with MBTA requirements is typically done by providing baseline studies and preconstruction surveys that document site characteristics and development of a protection plan for species known to be present.

Portland joined four other U.S. cities in 2003 in establishing a local commitment to help migratory birds and enhance their habitats within urban environments by participating in the Urban Conservation Treaty for Migratory Birds program. USFWS selected Portland as a pilot project city due to its location along the Pacific Flyway. The program was designed by USFWS in 1999 to help municipal governments conserve migratory birds that nest or fly through their cities. The Treaty sponsors public education and outreach projects to help increase public understanding of the importance of migratory bird conservation. It also helps finance the creation and restoration of city parks and greenways. Portland has developed guidelines for protecting migratory birds during construction activities.

DRAFT

2.a.2. Environmental Protection Agency (EPA) Strategic Plan

The EPA Strategic Plan has multiple goals including taking action on climate change, improving air quality, protection US waters, clean-up, sustainable development, preventing pollution and enforcing environmental laws. The Columbia River basin is one area specific addressed in the Strategic Plan.

EPA Region 10 works closely with the states of Oregon, Washington, and Idaho, Columbia Basin tribal governments, the Lower Columbia River Estuary Partnership, local governments, citizen groups, industry, and other federal agencies to develop and implement a collaborative strategy to assess and reduce toxics in fish and water in the Columbia River Basin, including its tributaries, and to restore and protect habitat.

<http://www.epa.gov/planandbudget/strategicplan.html>

<https://www.epa.gov/columbiariver/mid-columbia-river-fish-toxics-assessment>

2.b. State Policies and Goals

2.b.1. State Land Use Goal 5

Cities and counties in Oregon have been required to comply with the nineteen Statewide Land Use Planning Goals since 1975 by adopting, implementing and maintaining local comprehensive plans. Portland adopted its first comprehensive plan in 1981 and adopted an updated plan in 2016. Goal 5 governs Natural Resources, Scenic and Historic Areas, and Open Spaces. The Goal 5 process follows three steps. The first step is to inventory significant natural resources, and identify the location, extent, quantity and quality of significant natural resources in the area. If a resource or site is deemed significant, the local government has three policy choices: to preserve the resource and prohibit conflicting uses; fully allow proposed uses that conflict with the resources; or establish a balance between protecting natural resources and allowing uses that conflict with the resource.

The second step of the Goal 5 process is to complete an economic, social, environmental and energy (ESEE) analysis. The ESEE analysis involves evaluating the tradeoffs associated with different levels of natural resource protection. This evaluation involves identifying the consequences of allowing, limiting or prohibiting conflicting uses in areas containing significant natural resources. Common impacts of conflicting uses include activities such as clearing vegetation; grading, excavation, filling and soil compaction; adding impervious surfaces; modifying streams, rivers, and floodplains; generating pollution; landscaping with non-native and/or invasive vegetation; building fences and other wildlife barriers; and other impacts such as activities that create noise and light or introduce litter or domestic pets. The rule requires that this analysis be completed before actions are taken to protect or not protect natural resources.

The third step of the Goal 5 process is to adopt a program which will define how and under what circumstances the local program will protect significant natural resources. Portland's existing Goal 5 program including environmental overlay zone (See "City of Portland Environmental Zoning Program" below) as well as other regulatory and non-regulatory tools.

Goal 5 requirements do not apply in and along the Willamette River. The requirements of Goal 15, Willamette River Greenway, apply in these areas.

<https://www.oregon.gov/lcd/OP/Pages/Goal-5.aspx>

DRAFT

2.b.2. State Land Use Goals 6 and 7

Goal 6, Air, Water, and Land Resources Quality, requires local comprehensive plans and implementing measures to be consistent with state and federal regulations on matters such as stream quality and groundwater pollution. Goal 7, Areas Subject to Natural Hazards, deals with development in places subject to natural hazards, such as floods or landslides. It requires that jurisdictions apply “appropriate safeguards” (floodplain zoning, for example) when planning for development. The City of Portland’s existing Environmental Program, including the environmental overlay zones, was deemed in compliance with Goals 6 and 7 in 2002. (See also Metro Title 3.)

<https://www.oregon.gov/lcd/OP/Pages/Goal-6.aspx>

<http://www.oregon.gov/LCD/docs/goals/goal6.pdf> <https://www.oregon.gov/lcd/OP/Documents/goal7.pdf>

2.b.3. The Oregon Conservation Strategy

The Oregon Conservation Strategy (Strategy) is a non-regulatory statewide approach to species and habitat conservation. The Strategy provides a framework for limited conservation resources, to leverage investments in a more efficient and effective manner. The Strategy was developed by the Oregon Department of Fish and Wildlife (ODFW) in conjunction with a broad base of stakeholders, including, federal, state, and local agency personnel, biologists, citizens, and elected officials. A primary goal of the Strategy is to help recover currently-listed species and prevent additional species listings. The approach taken by ODFW in the Strategy is to identify “Strategy Species” which include those most in need of conservation, and “Strategy Habitats” which benefit a broad suite of species and map Conservation Opportunity Areas (COAs) for those habitat areas where conservation activities would have the greatest benefit.

Actions recommended in the Strategy include protect and maintain priority habitats where they remain; restore and expand habitats to improve conditions and value to fish and wildlife; protect and restore river floodplain interactions; and control invasive species.

<http://www.oregonconservationstrategy.org/>

2.b.4. Columbia River Estuary ESA Recovery Plan Module for Salmon and Steelhead

NOAA NMFS released the Columbia River Estuary ESA Recovery Plan Module in January 2010 to serve as the basis of estuary recovery actions for ESA-listed salmon and steelhead in the Columbia River Basin. It is part of a larger, regional planning effort to develop recovery plans for these species and it will be incorporated into individual recovery plans for the Columbia Basin salmon evolutionary significant units (ESUs) and steelhead distinct population segments (DPSs) by reference.

<https://www.fisheries.noaa.gov/resource/document/columbia-river-estuary-esa-recovery-plan-module-salmon-and-steelhead>

https://www.westcoast.fisheries.noaa.gov/protected_species/salmon_steelhead/recovery_planning_and_implementation/lower_columbia_river/lower_columbia_river_recovery_plan_for_salmon_steelhead.html

DRAFT

2.c. Local Policies and Goals

2.c.1. Urban Forestry Management Plan/Tree Project

The Urban Forestry Management Plan (UFMP, last updated in 2004) provides direction for the maintenance and improvement of Portland's urban forest and makes recommendations to enhance and improve the urban forest now and for the future. Its three main goals are:

- Protect, preserve, restore and expand Portland's urban forest;
- Develop and maintain support for the urban forest; and
- Manage the urban forest to maximize benefits for all residents.

The UFMP responds to recent environmental mandates, clarifies resource management and authority, better coordinates the roles of different agencies and bureaus and provides tree canopy targets for the city. It divides Portland's urban forest into five basic categories called Urban Land Environments (ULEs). Each ULE has particular physical characteristics and issues, provides various benefits and serves different needs. Each ULE is managed by different bureaus, agencies or individuals to achieve different results. The UFMP provides a description of each ULE, management goals, information about property owners/managers, and an analysis of the strengths, weaknesses, opportunities, threats and issues for the ULE. This is followed by specific objectives, recommended actions, and performance measures for assessing progress.

An implementing document for the UFMP, the Urban Forest Action Plan was developed by an interbureau committee and accepted by City Council in 2007 to ensure attainment of the goals and recommendations of the UFMP. The Action Plan, most recently updated in 2016, describes the full array of benefits and services that trees provide across the urban landscape. The prioritized actions are those that can be done by City of Portland bureaus. Achieving all of the UFMP's goals will require participation from private organizations, individuals, and other public agencies.

<https://www.portlandoregon.gov/parks/38306?a=184641>

<https://www.portlandoregon.gov/parks/article/658571>

2.c.2. Portland Watershed Management Plan

The Portland Watershed Management Plan (PWMP), adopted by City Council in 2005, describes the approach that will be used to evaluate conditions in the City's urban watersheds and implement projects to protect and improve watershed health. The approach is used by the Bureau of Environmental Services, other City bureaus, agencies, and citizens' groups that all share a common goal to protect Portland's natural resources, restore critical ecosystems and implement stormwater management solutions that integrate the urban area with the natural environment. Its overarching theme is to improve watershed health through new watershed friendly (more sustainable) development and redevelopment, installation of new stormwater infrastructure, maintenance and retrofitting of existing infrastructure in new ways that will improve watershed health, and extensive restoration and rehabilitation of key habitats both in-water and routine work of all City bureaus.

The Watershed Management Plan presents an integrated City response to local, state, and federal environmental requirements, providing the flexibility to respond to regulatory requirements in a manner that addresses the root causes of problems rather than the more traditional mandate-by-mandate approach that only addresses the symptoms. The Watershed Management Plan includes a description of a management

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system that is used to track City progress toward well-defined watershed health goals and to help the City adapt their strategies as needed to maximize effectiveness. An annual report is developed that tracks the progress toward achievement of the watershed health goals.

The Watershed Management Plan includes strategies and actions that will be implemented to achieve these goals. There are a number of related initiatives, including the River Plan and the Willamette River Natural Resources Inventory that advance the goals, strategies and actions of the Watershed Management Plan.

<http://www.portlandonline.com/bes/index.cfm?c=38965>

2.c.3. Terrestrial Ecology Enhancement Strategy

The purpose of the Terrestrial Ecology Enhancement Strategy (TEES) is to have a common body of information and agreed-upon priorities for conservation and restoration of terrestrial plant and animal species and habitats in Portland, within a regional and state context. TEES is designed to help achieve the watershed health goals and objectives in the PWMP.

The information assembled during the development of the TEES (updated June 2011) is available to BES watershed teams to supplement existing watershed characterizations, inform the selection and prioritization of actions, add value to projects and other actions, and determine monitoring priorities. TEES also supports and informs an array of other City programs, plans, activities, projects, and decision-making processes, including the Portland Plan update, environmental regulatory improvement, parks and natural area management and local bond share land acquisition.

Additionally, TEES supports efforts of Metro (e.g., Nature in Neighborhoods, Intertwine and the Regional Conservation Strategy), the U.S. Fish and Wildlife Service, the Oregon Department of Fish and Wildlife (e.g., the Oregon Conservation Strategy), the Oregon Watershed Enhancement Board and the Northwest Power and Conservation Council's sub-basin planning.

The main elements of TEES include:

- Identification of plant and animal species and terrestrial habitats needing protection, conservation, and/or restoration (Special Status Species and Habitats)
- Identification of key management issues (e.g., invasive species)
- Articulation of watershed-specific objectives for terrestrial habitats and biological communities
- Identification and implementation of priorities and actions for the next 2 to 5 years, as well as identification of long-term actions
- Guidance to City bureaus and citizens for improving habitat and addressing plant and wildlife management issues
- Selection of species and habitats to be monitored over time to determine the health of biological communities in Portland's urban watersheds

<https://www.portlandoregon.gov/bes/51052>

DRAFT



APPENDIX C. CITY OF PORTLAND NATURAL RESOURCES INVENTORY UPDATE: PROJECT REPORT

The *Natural Resources Inventory Project Report* (June 2012) was adopted as factual basis for the Comprehensive Plan. The inventory presented in this document uses the methodology and data sets adopted in the report. The *Natural Resources Inventory Project Report* is available at:

<https://www.portlandoregon.gov/bps/59299>

DRAFT

APPENDIX D. SPECIAL HABITAT AREA CRITERIA

Code	Criteria
P	Area contains sensitive or unique plant populations
W	Wetlands and associated seeps, springs and streams that are part of the wetland complex
O	Native oak
B	Bottomland hardwood forest
I	Riverine island
D	River delta
M	Migratory stopover habitat
C	Corridor between patches or habitats
S	An <i>at risk</i> wildlife species uses the habitat area or feature on more than incidental basis to complete one or more life history stages
E	Elk migratory corridor
G	Upland habitat or landscape feature important to individual grassland-associated species or assemblages of grassland-associated species on more than an incidental basis
U	Resource or structure that provides critical or unique habitat function in natural or built environments (such as bridges or street trees)

P - Area contains sensitive or unique plant species

This criterion applies to areas containing the following plant species:

1. Those listed by USFWS or NOAA Fisheries as Endangered, Threatened, Proposed Endangered, or Proposed Threatened under the Endangered Species Act or by the ODA or ODFW under the
2. Oregon Endangered Species Act; OR
3. Species that receive an Oregon Natural Heritage rank 1, 2 or 3
 - a. 1 = Critically imperiled because of extreme rarity or especially vulnerable to extinction or extirpation
 - b. 2 = Imperiled because of extreme rarity or especially vulnerable to extinction or extirpation
 - c. 3 = Rare, uncommon or threatened, but not immediately imperiled

Not included are plant populations that are listed by USFWS/NOAA or ODA/ODFW as Candidate Taxa or Species of Concern, unless the plant population received an Oregon Natural Heritage rank of 1-3 or is a wetland indicator species. Also not included are those plant populations that received an Oregon Natural Heritage rank of 4 = not rare and apparently secure, but with cause for long-term concern, or 5 = demonstrably widespread and secure.

W – Wetlands and associated seeps, springs and streams that are part of a wetland complex

This criterion applies to selected wetlands, and associated seeps, springs and streams that provide critical watershed functions (i.e., water quality, hydrology, wildlife habitat, etc.) and are increasingly rare within Portland. SHAs include primarily those wetlands that:

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1. Are connected to a stream or flood area;
2. Are part of a larger resource area, such as a wetland located within or adjacent to a forest; or
3. Provide connectivity between other high value habitats.

This criterion may incorporate constructed wetlands where the purpose of the wetland includes providing fish and wildlife habitat. Upland wetlands that are very small and are surrounded by development or intense land uses, such as golf courses, and certain water quality facilities are generally not designated as SHAs.

O – Native oak

The native oak criterion applies to areas that contain Oregon white oaks. Other tree species and vegetation, including invasive plants such as Himalayan blackberries, may be present.

B – Bottomland hardwood forest

This criterion applies to selected areas that contain remnant bottomland hardwood. Not all bottomland hardwood forests in the city are designated as a SHA. To be designated, an area must be considered unique, rare or declining within a particular watershed.

I – Riverine island

This criterion applies to islands or the portions of riverine islands that provide habitat for shorebirds, waterfowl, terns, gulls, Bald Eagles, river otter and other river/island-associated resident and/or migrating wildlife species. Beaches, mudflats, shoals and areas of large wood deposits are included along with other relevant resource features.

D – River delta

This criterion applies to river deltas that provide habitat for shorebirds, waterfowl, terns and gulls, Bald Eagles or other wildlife. The area shall contain beaches, mudflats and/or large wood deposits.

M – Migratory stopover habitat

This criterion is applied to vegetated areas and other landscape features (e.g., buttes) where use by migratory bird species has been documented, or is reasonably expected to occur, on more than an incidental basis. The criterion applies to areas that:

1. Provide nesting opportunities;
2. Provide food and resting opportunities;
3. Provide sufficient cover to reduce predation; and
4. Support a diverse assemblage or high concentration of migratory species

On more than an incidental basis means the identified species is documented to repeatedly or periodically use the habitat or feature.

DRAFT

Reasonably expected to occur generally applies to resource features that typically provide the functions listed above (e.g., buttes, ridge-tops/high elevation features, wetlands, mudflats, riparian areas or focal sites) and where local or regional technical experts state such uses by migratory birds is expected based on existing information or observations.

C – Corridor between patches or habitats

This criterion applies to vegetated areas that:

1. Provide connectivity between high value habitats including other Special Habitat Areas;
2. Provide connectivity between water bodies, riparian areas and upland habitats; or
3. Extend outward from another SHA to provide a wildlife movement corridor.

S – An *at risk* wildlife species uses the habitat area or feature on more than incidental basis to complete one or more life history stages

This criterion applies to areas with documented use by the following wildlife species (see Appendix E.1: Special Status Fish and Wildlife Species in Portland):

1. Species listed by USFWS or NOAA Fisheries as:
 - d. LE - Listed Endangered
 - e. LT - Listed Threatened
 - f. PE - Proposed Endangered
 - g. PT - Proposed Threatened
 - h. SoC - Species of Concern
 - i. C - Candidate
 - j. Includes areas designated as Critical Habitats by NOAA Fisheries

2. Species Listed by Oregon Department of Agriculture (ODA) or ODFW as:
 - a. LE - Listed Endangered
 - b. LT - Listed Threatened
 - c. SC - Critical
 - d. SV – Vulnerable

3. Species that received an Oregon Natural Heritage rank or list 1, 2 or 3.
 - a. 1 = Critically imperiled because of extreme rarity or especially vulnerable to extinction or extirpation
 - b. 2 = Imperiled because of extreme rarity or especially vulnerable to extinction or extirpation
 - c. 3 = Rare, uncommon or threatened, but not immediately imperiled;

Life cycle phases include but are not limited to:

- courtship, nesting, breeding
- rearing young, juvenile development (e.g. noise, light)
- feeding, foraging, hunting
- resting, basking, perching
- cover/protection from predators or disturbances

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- dispersal, migration, migratory stopover
- over-wintering

This criterion may apply to individuals that make up a local population, pairs, colonies or a regional population.

On more than an incidental basis means the identified species is documented to repeatedly or periodically use the habitat or feature.

E – Elk migratory corridor

This criterion is applied to areas that ODFW has designated as elk migratory corridors.

G – Upland habitat or landscape feature important to individual grassland-associated species or assemblages of grassland-associated species on more than an incidental basis

This criterion is applied to areas that contain vegetative structure, topography or soil substrates that provide functions similar to a native meadow, prairie or grassland and where use by grassland-associated wildlife species has been documented. This criterion is also applied to areas that:

1. Are part of a larger resource area, such as a grassy area located adjacent to a forest;
2. Provide connectivity between other high value habitats; or
3. Extend outward from an SHA to provide a wildlife movement corridor.

For the purposes of the G criterion, grassland-associated species include:

- | | |
|-------------------------|------------------------|
| • Deer Mouse | • White-tailed Kite |
| • Gray-tailed Vole | • Short-eared Owl |
| • Camas Pocket Gopher | • Streaked Horned Lark |
| • Red Fox | • Northern Harrier |
| • Oregon Vesper Sparrow | • American Kestrel |
| • Savannah Sparrow | • Common Nighthawk |
| • Western Meadowlark | • Chipping Sparrow |

On more than an incidental basis means the identified species is documented to repeatedly or periodically use the habitat or feature.

U – Resource or structure that provides critical or unique habitat function in natural or built environments

This criterion applies to resources or structures that are generally not accounted for by other criteria, and that provide a documented critical or unique habitat function. Examples include: bridges, chimneys, rock outcrops, groundwater upwelling areas, and street trees.

Note: Special Habitat Areas have been designated based on documented information about specific sites or areas. In addition, some of the SHAs reflect specific watershed conditions.

There are multiple federal, state and local environmental regulations and requirements that could apply to development actions within the Willamette River and on adjacent lands. Some of those regulations require actions to avoid, minimize or compensate for unavoidable impacts to natural resources.

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APPENDIX E.1 SPECIAL STATUS FISH AND WILDLIFE SPECIES

	Common Name	Scientific Name	Federal Status	ODFW Status	ODFW StratSp	ORNHIC Rank	ORNHIC List	NWPCC Subbasin	PIF FocalSp	OWEB Priority	ABC/Audubon Watchlist	SHA At Risk Species
Amphibian	Clouded Salamander	Aneides ferreus		SV		G3/S3	3					X
	Northern Red-legged Frog	Rana aurora aurora	SoC	SV	X	G4T4/S3	2	X		X		X
Reptiles	Northwestern Pond Turtle	Actinemys marmorata	SoC	SC	X	G3T3/S2	1	X		X		X
	Western Painted Turtle	Chrysemys picta bellii		SC	X	G5/S2	2			X		X
Birds	American Bittern	Botaurus lentiginosus								X		
	American Kestrel	Falco sparverius						X	X	X		
	American White Pelican	Pelecanus erythrorhynchos		SV	X	G3/S2B	2					X
	Bald Eagle	Haliaeetus leucocephalus	Delisted	LT		G4/S3B, S4N	2	X				X
	Band-tailed Pigeon	Columba fasciata	SoC			G5/S4	4		X	X		X
	Black-throated Gray Warbler	Dendroica nigrescens							X			
	Brown Creeper	Certhia americana							X			
	Bufflehead	Bucephala albeola				G5/S2B,S5N	4					X
	Bullock's Oriole	Icterus bullockii							X	X		
	Bushtit	Psaltriparus minimus							X			
	Chipping Sparrow	Spizella passerina			X			X	X			
	Common Nighthawk	Chordeiles minor		SC	X	G5/S5	4					X
	Common Yellowthroat	Geothlypis trichas						X				
	Downy Woodpecker	Picoides pubescens							X			
	Dunlin	Calidris alpina						X		X		
	Great Blue Heron	Ardea herodias								X		
Green Heron	Butorides virescens						X					
Hammond's Flycatcher	Empidonax hammondii							X				
Hermit Warbler	Dendroica occidentalis							X		Yellow List		

DRAFT

	Common Name	Scientific Name	Federal Status	ODFW Status	ODFW StratSp	ORNHIC Rank	ORNHIC List	NWPCC Subbasin	PIF FocalSp	OWEB Priority	ABC/Audubon Watchlist	SHA At Risk Species
	Hooded Merganser	Lophodytes cucullatus								X		
	House Wren	Troglodytes aedon							X			
	Hutton's Vireo	Vireo huttoni							X			
	Loggerhead Shrike	Lanius ludovicianus		SV	X	G4/S3B, S2N	4					X
	Long-billed Curlew	Numenius americanus		SV	X	G5/S3B	4				Yellow List	X
	Merlin	Falco columbarius				G5/S1B	2					X
	Nashville Warbler	Vermivora ruficapilla							X			
	Northern Harrier	Circus cyaneus						X	X			
	Olive-sided Flycatcher	Contopus cooperi	SoC	SV		G5/S4	4	X	X	X	Yellow List	X
	Orange-crowned Warbler	Vermivora celata							X			
	Pacific-slope Flycatcher	Empidonax difcilus							X	X		
	Peregrine Falcon	Falco peregrinus	Delisted	SV		G4/T3/S1B	2					X
	Pileated Woodpecker	Dryocopus pileatus		SV		G5/S4	4	X	X			X
	Purple Finch	Carpodacus purpureus								X		
	Purple Martin	Progne subis	SoC	SC	X	G5/S3B	2	X	X	X		X
	Red Crossbill	Loxia curvirostra							X			
	Red-eyed Vireo	Vireo olivaceus						X	X			
	Red-necked Grebe	Podiceps grisegena		SC	X	G5/S1B,S4N	2					X
	Rufous Hummingbird	Selasphorus rufus							X			
	Short-eared Owl	Asio flammeus			X				X	X	Yellow List	
	Sora	Porzana carolina						X				
	Streaked Horned Lark	Eremophila alpestris strigata	C	SC	X	G5/T2/S2B	1	X	X	X		X
	Swainson's Hawk	Buteo swainsoni		SV	X	G5/S3B	4				Yellow List	X
	Swainson's Thrush	Catharus ustulatus							X			
	Thayer's Gull	Larus thayeri									Yellow List	
	Varied Thrush	Ixoreus naevius							X		Yellow List	
	Vaux's Swift	Chaetura vauxi						X	X			

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	Common Name	Scientific Name	Federal Status	ODFW Status	ODFW StratSp	ORNHIC Rank	ORNHIC List	NWPCC Subbasin	PIF FocalSp	OWEB Priority	ABC/Audubon Watchlist	SHA At Risk Species
	Vesper Sparrow (Oregon)	Poocetes gramineus	SoC	SC	X	G5/T3/S2B, S2N	2	X	X	X		X
	Western Meadowlark	Sturnella neglecta		SC WV	X	G5/S5	4	X	X	X		X
	Western Sandpiper	Calidris mauri									Yellow List	
	Western Wood-Pewee	Contopus sordidulus						X	X			
	White-breasted Nuthatch (Slender-billed)	Sitta carolinensis aculeata		SV	X			X	X	X		X
	White-tailed Kite	Elanus leucurus				G5/S1B, S3N	2					X
	Willow Flycatcher (Little)	Empidonax traillii brewsteri		SV	X	G5TU/S1B	4	X	X	X	Yellow List	X
	Wilson's Warbler	Wilsonia pusilla							X			
	Winter Wren	Troglodytes troglodytes							X			
	Wood Duck	Aix sponsa						X				
	Yellow Warbler	Dendroica petechia						X	X	X		
	Yellow-breasted Chat	Icteria virens	SoC	SC WV	X	G5/S4?	4		X			X
Mammals	American Beaver	Castor canadensis						X				
	California Myotis	Myotis californicus		SV		G5/S3	4					X
	Camas Pocket Gopher	Thomomys bulbivorus	SoC			G3G4/S3S4	3					X
	Fringed Myotis	Myotis thysanodes	SoC	SV		G4G5/S2	2					X
	Hoary Bat	Lasiurus cinereus		SV		G5/S3	4					X
	Long-eared Myotis	Myotis evotis	SoC			G5/S3	4					X
	Long-legged Myotis	Myotis volans	SoC	SV		G5/S3	4					X
	Northern River Otter	Lontra canadensis						X				
	Red Tree Vole	Arborimus = Phenacomys longicaudus	SoC	SV		G3G4/S3S4	3	X				X
	Silver-haired Bat	Lasionycteris noctivagans	SoC	SV	X	G5/S3S4	4					X
	Townsend's Big-eared Bat	Corynorhinus townsendii townsendii	SoC	SC	X	G4/T3T4/S2	2	X				X
	Western Gray Squirrel	Sciurus griseus		SV	X	G5/S4	3	X				X

DRAFT

	Common Name	Scientific Name	Federal Status	ODFW Status	ODFW StratSp	ORNHIC Rank	ORNHIC List	NWPCC Subbasin	PIF FocalSp	OWEB Priority	ABC/Audubon Watchlist	SHA At Risk Species	
	White-footed Vole	Arborimus = Phenacomys albipes	SoC			G3G4/S3	4					X	
	Yuma Myotis	Myotis yumanensis	SoC			G5/S3	4					X	
Fish	Chinook Salmon	Oncorhynchus tshawytscha	LT, LE	LT		G5T2Q/S2	1			X		X	
	Chum Salmon	Oncorhynchus keta	LT	SC		G5T2Q/S2	1			X		X	
	Coho Salmon	Oncorhynchus kisutch	LT	LE		G4T2Q/S2	1			X		X	
	Chum Salmon	Oncorhynchus keta	LT							X			
	Sockeye Salmon	Oncorhynchus nerka	LT, LE							X			
	Steelhead Trout	Oncorhynchus mykiss	LT	SC		G5T2Q/S2	1			X		X	
	Coastal Cutthroat Trout	Oncorhynchus clarki clarki	PT	SC		G4T2Q/S2	2					X	
	Columbia Eulachon	Thaleichthys pacificus	LT										
	Pacific Lamprey	Lampetra tridentata	SoC	SV		G5/S3	2			X		X	
	River Lamprey	Lampetra ayresi	SoC			G4/S4	4			X		X	
	Oregon Chub	Oregonichthys crameri	LT	SC						X			

Footnotes:

LE	Listed Endangered	Species listed by the by the USFWS, NMFS, ODFW or ODA as Endangered
LT	Listed Threatened	Species listed by the USFWS, NMFS, ODFW or ODA as Threatened
PE	Proposed Endangered	Species proposed by the USFWS or NMFS to be listed as Endangered under the ESA
PT	Proposed Threatened	Species proposed by the USFWS or NMFS to be listed as Threatened under the ESA
SoC	Species of Concern	Former C2 candidates which need additional information in order to propose as Threatened or Endangered under the ESA. These are species which USFWS is reviewing for consideration as Candidates for listing under the ESA.
C	Candidate	Species for which NMFS or USFWS have sufficient information to support a proposal to list under the ESA
SC	Critical	Species for which listing by ODFW or ODA as threatened or endangered is pending; or those for which listing as threatened or endangered may be appropriate if immediate conservation actions are not taken. Also considered critical are some peripheral species that are at risk throughout their range, and some disjunct populations.
SV	Vulnerable	Species for which listing by ODFW or ODA as threatened or endangered is not believed to be imminent and can be avoided through continued or expanded use of adequate protective measures and monitoring. In some cases the population is sustainable, and protective measures are being implemented; in others, the population may be declining and improved protective measures are needed to maintain sustainable populations over time.

DRAFT



ODFW StratSp		Identified as a 'Strategy Species' in the ODFW Comprehensive Wildlife Conservation Strategy for Oregon (2005) for the Willamette Valley Ecoregion. Strategy species are those closely associated with 'Strategy Habitats' or are declining for a variety of reasons.
ORNHIC Rank	1	Critically imperiled because of extreme rarity or because it is somehow especially vulnerable to extinction or extirpation, typically with 5 or fewer occurrences.
ORNHIC Rank	2	Imperiled because of rarity or because other factors demonstrably make it very vulnerable to extinction (extirpation), typically with 6-20 occurrences.
ORNHIC Rank	3	Rare, uncommon or threatened, but not immediately imperiled, typically with 21-100 occurrences.
ORNHIC Rank	4	Long-term Concern Not rare and apparently secure, but with cause for long-term concern, usually more than 100 occurrences.
ORNHIC Rank	5	Secure Demonstrably widespread, abundant, and secure
ORNHIC Rank	H	Historical Occurrence, formerly part of the native biota with the implied expectation that it may be rediscovered.
ORNHIC Rank	T	The taxon has a trinomial (a subspecies, variety or recognized race)
ORNHIC Rank	U	Unknown rank.
ORNHIC Rank	NR	Not yet ranked
ORNHIC Rank	G	Global rank system was developed by The Nature Conservancy and is maintained by The Association for Biodiversity Information (ABI) in cooperation with Heritage Programs or Conservation Data Centers (CDCs) in all 50 states, in 4 Canadian provinces, and in 13 Latin American countries.
ORNHIC Rank	S	State rank system was developed by The Nature Conservancy and is maintained by The Association for Biodiversity Information (ABI) in cooperation with Heritage Programs or Conservation Data Centers (CDCs) in all 50 states, in 4 Canadian provinces, and in 13 Latin American countries.
ORNHIC Rank	Q	Indicates the taxon has taxonomic questions
ORNHIC Rank	?	Assigned rank is uncertain.
ORNHIC Rank	X	Presumed extirpated or extinct.
ORNHIC List	1	Contains species that are threatened with extinction or presumed to be extinct throughout their entire range.
ORNHIC List	2	Contains species that are threatened with extirpation or presumed to be extirpated from the state of Oregon. These are often peripheral or disjunct species which are of concern when considering species diversity within Oregon's borders. They can be very significant when protecting the genetic diversity of a taxon. ORNHIC regards extreme rarity as a significant threat and has included species that are very rare in Oregon on this list.
ORNHIC List	3	Contains species for which more information is needed before status can be determined, but which may be threatened or endangered in Oregon or throughout their range.
ORNHIC List	4	Contains species that are of conservation concern but are not currently threatened or endangered. This includes species which are very rare but are currently secure, as well as species which are declining in numbers or habitat but are still too common to be proposed as threatened or endangered. While these species currently may not need the same active management attention as threatened or endangered species, they do require continued monitoring.

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APPENDIX E.2 SPECIAL STATUS PLANT SPECIES

Scientific Name	Common Name	ORNH Rank	ORNH List
<i>Agrostis howellii</i>	Howell's bentgrass	S-2	1
<i>Cimicifuga elata var. elata</i>	Tall bugbane	S-3	1
<i>Delphinium leucophaeum</i>	White rock larkspur	S-2	1
<i>Delphinium pavonaceum</i>	Peacock larkspur	S-1	1
<i>Howellia aquatilis</i>	Howellia	S-1	1
<i>Rorippa columbiana</i>	Columbia cress	S-3	1
<i>Sericocarpus rigidus (syn Aster curtus)</i>	White-topped aster	S-2	1
<i>Sullivantia oregana</i>	Oregon sullivantia	S-2	1
<i>Castilleja levisecta</i>	Golden paintbrush	S-H	1-extirpated
<i>Artemisia campestris var. wormskioldii</i>	Northern wormwood	S-X	1-extirpated
<i>Carex comosa</i>	Bristly sedge	S-1	2
<i>Carex retrorsa</i>	Retorse sedge	S-1	2
<i>Delphinium nuttallii</i>	Nuttall's larkspur	S-1	2
<i>Fritillaria camschatcensis</i>	Indian rice / black lilly	S-1	2
<i>Heliotropium curassavicum</i>	Salt heliotrope	S-2	2
<i>Rotala ramosior</i>	Toothcup	S-2	2
<i>Wolffia columbiana</i>	Columbia water-meal	S-1	2
<i>Sedella pumila</i>	Sierra mock-stonecrop	S-H	2-extirpated
<i>Ammannia robusta</i>	Grand redstem (loosestrife family)	S-NR	3
<i>Elodea nuttallii</i>	Nuttall's waterweed	S-NR	3
<i>Hierochloa odorata</i>	Holy grass	S-NR	3
<i>Polygonum punctatum</i>	Dotted smartweed	S-NR	3
<i>Scirpus pallidus</i>	Pale bulrush	S-3	3
<i>Zizia aptera</i>	Golden alexanders	S-NR	3
<i>Bergia texana</i>	Texas bergia	S-3?	4
<i>Bolandra oregana</i>	Oregon bolandra	S-3	4
<i>Cypripedium montanum</i>	Mountain lady's-slipper	S-3, S-4	4
<i>Euonymus occidentalis</i>	Western wahoo	S-3	4
<i>Montia howellii</i>	Howell's montia	S-3, S-4	4
<i>Poa laxiflora</i>	Loose-flowered bluegrass	S-3	4
<i>Poa marcida</i>	Weak bluegrass	S-4	4
<i>Sidalcea campestris</i>	Meadow checker-mallow	S-4	4

Footnotes

- ORNH Rank G Global rank system was developed by The Nature Conservancy and is maintained by The Association for Biodiversity Information (ABI) in cooperation with Heritage Programs or Conservation Data Centers (CDCs) in all 50 states, in 4 Canadian provinces, and in 13 Latin American countries.
- ORNH Rank S State rank system was developed by The Nature Conservancy and is maintained by The Association for Biodiversity Information (ABI) in cooperation with Heritage Programs or Conservation Data Centers (CDCs) in all 50 states, in 4 Canadian provinces, and in 13 Latin American countries.
- ORNH Rank Q Indicates the taxon has taxonomic questions.
- ORNH Rank 1 Critically imperiled because of extreme rarity or because it is somehow especially vulnerable to extinction or extirpation, typically with 5 or fewer occurrences.
- ORNH Rank 2 Imperiled because of rarity or because other factors demonstrably make it very vulnerable to extinction (extirpation), typically with 6-20 occurrences.

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- ORNH Rank 3 Rare, uncommon or threatened, but not immediately imperiled, typically with 21-100 occurrences.
- ORNH Rank 4 Long-term Concern: Not rare and apparently secure, but with cause for long-term concern, usually more than 100 occurrences.
- ORNH Rank 5 Secure. Demonstrably widespread, abundant, and secure.
- ORNH Rank H Historical Occurrence, formerly part of the native biota with the implied expectation that it may be rediscovered.
- ORNH Rank T The taxon has a trinomial (a subspecies, variety or recognized race).
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- ORNH List 1 Contains species that are threatened with extinction or presumed to be extinct throughout their entire range.
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APPENDIX F. TECHNICAL AND PUBLIC REVIEW MEMO (to be added in later draft)