



memorandum

date August 4, 2023

to Winterbrook Planning

cc Project file

from Sarah Hartung, Senior Ecologist, ESA

subject Potential wildlife habitat impacts from the Bull Run Water Filtration Project and measures for avoidance and mitigation

Introduction and Background

At the request of Winterbrook Planning, ESA prepared this memorandum to respond to written testimony related to potential impacts to wildlife species and habitat due to the Portland Water Bureau's (PWB) Bull Run Water Filtration Project (Project) located outside of Gresham, Oregon in unincorporated Multnomah County. PWB proposes to construct a new water filtration facility at a city-owned 90-acre parcel and install water pipes to connect to existing Bull Run conduits using a combination of trenchless and open trench methods.

The extent of the Project is shown in Exhibit 1 below and consists of three types of proposed pipeline sections (unfiltered, filtered, and local distribution main) as well as the planned filtration site on tax lots 100 and 400, map 1S4E22D southeast of the Dodge Park Road / SE Cottrell Road intersection. The unfiltered pipeline alignment is proposed to be installed in a rural residential area west of Lusted Road. The steep forested slope rising to the west contains areas mapped by Multnomah County as a district of Significant Environmental Concern (SEC-h) for wildlife habitat. The filtered pipeline and local distribution main alignments are generally proposed outside of SEC-h district in road rights-of-way and on parcels currently used for plant nurseries and farm fields. The local distribution main crosses into SEC-h at the Lusted Hill site. The filtration site is proposed for construction on the high terrace on somewhat rolling terrain that was recently in agricultural use. Land uses adjacent to Project also consist of plant nurseries and farm fields with hedgerows along roads. The northeastern edge of the planned filtration site along the top of slope is mapped as SEC-h and the southwestern corner is mapped as SEC-w for water resources (Attachment A).

This memo describes how the Project avoids or mitigates impacts to wildlife habitat where avoidance is not practicable. Topics raised in public testimony include: 1) removal of woody vegetation along finished and raw water pipelines; 2) communication tower bird impacts; and 3) general wildlife impacts.



Exhibit 1. Extent of the Project

Methods

ESA environmental staff conducted field visits and reviewed relevant information to prepare this memo. The planned filtration site and portions of the pipeline alignment were observed in April, June and July of 2021 and in August 2023. This memo also relies on design information from the City of Portland Project team. Sources reviewed include:

- GoogleEarth Imagery (2023)
- Multnomah County zoning and development code. Available at: <https://www.multco.us/landuse>
- Relevant data from Audubon, Oregon Explorer, and USFWS.

- Oregon Biodiversity Information Center (ORBIC 2019). Note: An updated record search has been requested and is in progress as of August 2, 2023.
- IPaC Threatened and Endangered Species Act Planning Tool (USFWS 2023): <https://ipac.ecosphere.fws.gov/>

Discussion

Potential impacts to wildlife habitat and measures for avoiding or mitigating those impacts are described below.

Woody Vegetation Removal

Public testimony identifies the planned removal of 348 trees due to pipeline installation in two general locations: 1) 324 trees along the south side of a section of Dodge Park Road and within the right-of-way (ROW) generally between the intersection with SE Altman Road and SE Cottrell Road (Photos 1 and 2), and 2) 24 trees along the unfiltered pipeline on property east of Lusted Road (Photo 3). The woody plants south of Dodge Park Road are located outside of mapped SEC zones. By siting the pipeline south of the ROW, the alignment avoids mapped SEC areas on the north side of the road. No trees will be removed from the north side of the ROW.



Photo 1. Looking southeast at the south side of SE Dodge Park Road ROW where vegetation removal is proposed. The single-line of saplings and trees forms a hedgerow consisting of native and non-native plant species that provides limited food and shelter functions for common wildlife species due to the proximity to the roadway and the narrow width of the hedgerow.



Photo 2. Looking west at the south side of SE Dodge Park Road where vegetation removal is proposed. Extensive Himalayan blackberry (non-native/invasive species) is in the foreground.



Photo 3. Looking west on the property east of Lusted Road where limited tree removal would occur, including the small trees and saplings along the two-track dirt road highlighted with the red “X”.

Based on field review, characteristics of the proposed woody vegetation removal along Dodge Park Blvd. are generally as follows:

- Several sections on the south side of SE Dodge Park Road between Cottrell Road and Altman Road lack woody plants (Photo 2);
- Approximately a quarter of the trees proposed for removal are small in size (less than 6 inches in diameter);
- Approximately three-quarters of the trees are 12 inches diameter or less; and
- A small percentage (approximately 5%) of the trees are mature canopy trees
- Trees proposed for removal are a mix of native and non-native species and include Oregon ash (native), big-leaf maple (native), Douglas fir (native), sweet cherry (non-native), and English hawthorn (non-native).

Based on field review, characteristics of the proposed woody vegetation removal at Lusted Road are generally as follows:

- Approximately half of the trees are small saplings, up to 3 inches in diameter;
- Most (approximately 90%) of the remaining trees are 12 inches diameter or less; and
- Trees proposed for removal are a mix of native and non-native species.

An examination of the areas where woody vegetation removal is proposed concludes: 1) the woody plants are mostly small trees and saplings, 2) they include invasive and non-native tree species, 3) substantial areas of woody vegetation in both locations will be retained, and 4) boring sections of unfiltered pipe under the steep, forested hillside west of Lusted Road will preserve all of the trees and vegetation within the SEC-h zone.

Public testimony contends that the removal of saplings and trees would negatively impact wildlife and that the existing trees along SE Dodge Park Road effectively function as a hedgerow. Although the trees and saplings provide some shelter and foraging opportunities for common birds and small- to medium-sized mammals habituated to living in urban environments, wildlife habitat functions are limited due to the proximity of the roadway, which generates noise and dust and reduces the quality of habitat, as well as the narrow width and overall sparseness of the hedgerow which limits areas for cover and other wildlife functions. The trees proposed for removal along the filtered water pipeline at Lusted Road are part of a larger wooded landscape that would retain its wooded character. Despite the limited amount of tree removal proposed for the Project relative to the surrounding landscape, the following avoidance and mitigation measures are recommended to avoid loss of resource functional value due to vegetation removal required for to the Project:

- More than 200 trees will be retained in the Dodge Park Road ROW which will maintain substantial hedgerow function for wildlife. This is largely the result of the applicant eliminating one of the filtered pipelines along this alignment, which preserved trees on both the north and south sides of the road.
- The overall wooded habitat character of the area near Lusted Road will be retained as only a handful of canopy trees will be removed.
- Any loss of habitat will be offset by a proposed planting of native shrubs and trees at the proposed filtration site, including a hedgerow to the north, wooded habitat adjacent to the headwaters of Johnson Creek, and plantings along the wooded northeastern boundary of the site. All trees will be replaced at a 1.5:1 ratio at the Project site. Refer to the mitigation planting plan (Attachment A) for a depiction of proposed plantings.

Proposed plantings of native trees and shrubs at the filtration site will compensate for the removal of woody vegetation within the Dodge Park Road ROW and the unfiltered water pipeline alignment off of Lusted Road and no adverse impacts to wildlife are anticipated to result. Mitigation would occur at the planned filtration site in relatively close proximity to the proposed impact locations but in an area not subject to frequent disturbances found in road rights-of-way (noise, dust, pesticide/herbicide, pruning, etc.). Replacing woody vegetation adjacent to SEC zones and expanding existing, larger patches of habitat would be a greater benefit to wildlife than replacing trees in or near road rights-of-way.

Communication Tower

A component of the Project includes the construction of a 180-foot-high communication tower at the filtration site. The tower will not be lit and will not have guy wires for support.

Public testimony states that the project should, *“provide an assessment of the habitat and species present in the areas surround the proposed Tower. In particular, an assessment of the night-migrating birds, such as the chipping sparrow (Spizella passerine) is known to have utilize the habitat around the proposed Tower (Figure 2).”* The testimony cites a Biological Diversity Guide for the Greater Portland-Vancouver Region published by Intertwine as follows: *“Communication towers and the aviation lighting and high tension lines or guy wires that are sometimes associated with them pose a hazard to birds in flight, especially night-migrating birds. Communication towers kill an estimated 4 to 5 million birds in the United States each year.”*

The applicant does not refute that communication towers and guy wires in general can pose risks to night-migrating birds; however, no site-specific evaluation or study of the effects of the proposed communication tower on night-migrating birds (including sparrows and other songbirds) is needed because the design of the tower incorporates key avoidance and minimization measures recommended by the U.S. Fish and Wildlife Service (USFWS). Guidance from USFWS (2022) indicates that the risk of birds colliding with towers during night migration increases when: 1) the tower has a solid light, 2) has guy wires, 3) is taller than 350 feet, 4) is located where inclement weather occurs, 5) is located in areas with high densities of migrating birds, and 6) is located along ridgelines.

The following features of the proposed tower and site features for the Project will minimize the risk of bird collisions including:

- The tower will not have a solid light which would attract birds at night and cause collisions.
- The tower will not have guy wires.
- The tower will be 180 feet high, substantially lower than the altitudes of night-migrating birds (Ehrlich et al., 1988).
- The project site and vicinity are not within an area known for especially inclement weather.
- The project site is within the Pacific Flyway which is a broad region several hundred miles in width, but the project site is not within a birding hotspot (Audubon 2023).
- The proposed tower will be 150 to 200 horizontal feet from to the top of slope of the forested hillslope west of the Sandy River; but its position at the site is not expected to negatively affect birds because of the relatively short stature of the tower and the fact that it will not have guy wires nor a solid light.

Resident birds flying around the area during the day would be able to see the tower and avoid it. Night-migrating birds such as the chipping sparrow and several other bird species in the project vicinity migrate several hundreds

and occasionally thousands of feet high to catch prevailing winds (Ehrlich et al., 1988), substantially higher than the proposed 180-foot tower. Because of the tower design standards that meet USFWS guidelines for reducing risks to night-migrating birds and low-risk site characteristics, no adverse impacts to avian populations are anticipated due to the Project.

General Wildlife and Oregon Conservation Strategy

Public testimony contends that the Project is mapped as crucial habitat based on planning maps generated by the Oregon Department of Fish and Wildlife Compass Mapping Tool (ODFW 2021). The ODFW Compass Mapping Tool provides coarse-scale, non-regulatory fish and wildlife information intended for general planning purposes and warranting site verification. Two figures from the testimony reportedly showing crucial habitat at the planned filtration site are entitled as follows: Figure 1, *"State designated "Crucial Habitat" of federally threatened or endangered Northern Spotted Owl (S.o. caurina), Columbia white-tailed deer, under the Oregon Conservation Strategy (OCS) by the ODFW"*; and Figure 2, *"State designated "Crucial Habitat" of the night-migrating Chipping Sparrow (Spizella passerina) listed under the Oregon Conservation Strategy (OCS) by the ODFW. Orange denotes crucial habitat designated within the Johnson Creek and Sandy River watersheds for resident species. Species are listed in Table 1."*

Figures 1 and 2 provided in Exhibit E.17 are misleading as the data from ODFW are derived from large landscape mapping efforts that require site-specific evaluation and are not intended to indicate confirmed presence for a particular parcel. Figure 1, which shows purple areas of crucial habitat overlapping with the planned filtration site, does not reflect current mapping of the northern spotted owl nor the Columbian white-tailed deer. The nearest critical habitat designation for the northern spotted owl, under the jurisdiction of the U.S. Fish and Wildlife Service and which requires relatively large tracts of mature and old-growth forest, is located in the Mount Hood National Forest more than 10 miles west of the Project area (USFWS 2012 and 2023). Columbia white-tailed deer are known to occur in lowland and floodplain areas in the lower Columbia River located several miles to the northwest (ODFW 2023), but do not occur in the Sandy River valley or on or within the Project alignment. The nearest rare wildlife species known for the vicinity of the Project is the Oregon slender salamander, a state sensitive species and federal species of concern, mapped on the west side of the Sandy River, over 1 mile from the western portion of the Project (ORBIC 2019, updated 2023). Additionally, stating that the planned filtration provides *"State designated "Crucial Habitat" of the night-migrating Chipping Sparrow (Spizella passerina) listed under the Oregon Conservation Strategy (OCS) by the ODFW"* as presented in Figure 2 is also misleading, because the filtration site is a small percentage of the mapping which covers thousands of acres in developed areas of Troutdale, Gresham, Corbet, Boring and beyond and is intended to depict the widespread range of the chipping sparrow which is adapted to lawns, fields, woodland edges and pine oak forests (Dunn and Alderfer 1983). One of the main goals of the ODFW conservation mapping is to identify voluntary conservation opportunities at a landscape scale and is not intended to prevent reasonable use of non-forested parcels like the filtration site.

No rare or state or federally threatened or endangered wildlife species are known to occur on or adjacent to the Project (ORBIC 2019, updated 2023; USFWS 2012 and 2023), but several common wildlife species are either known or expected to occur on-site and the project vicinity based on field visits, data from the Oregon Biodiversity Center, and based on the types of vegetation present (i.e., agricultural land, plant nurseries, and

wooded areas in a rural residential setting). Common species observed or detected during field visits include: American crow, songbirds such as the spotted towhee, house wren, scrub jay, American robin, song sparrow, savannah sparrow, birds of prey such as American kestrel, red-tailed hawk, and Cooper's hawk, turkey vulture; great blue heron, and signs of garter snake (tracks in the dirt). Other animals anticipated to be present in the vicinity include but are not limited to: amphibians (rough-skinned newt, Pacific chorus frog); small, medium and large mammals – voles, moles, raccoon, skunk, Opossum, coyote, deer, elk and possibly bobcat or black bear in the Sandy River valley. No rare habitats or natural wetlands occur in the pipeline alignments or the filtration site (ORWAP 2023).

Based on field observations of the project and a review of existing information, the project is judged to provide limited habitat for common wildlife species adapted to living in rural residential settings with frequent human presence or disturbance. The linear geometry of the pipeline alignments and the sparse vegetation at the planned filtration site restrict wildlife opportunities to seasonal movement corridors and limited breeding habitat and limited cover/shelter for common songbirds, small to medium mammals and possibly birds of prey in hedgerows. The road rights-of-way and farmland along the pipeline corridors have relatively frequent human disturbance that includes mowing, pruning, tilling, spraying and the general maintenance and management required for plant nurseries that reduce the quality and extent of habitat for wildlife.

Medium and larger mammals that may be using the filtration site as a movement corridor are expected to be found along the edge of or just within the forest along the hillslope which would provide cover from human activity. The movement corridor on the hillslope and at the top of the slope would be maintained during construction. No removal of trees along the forest edge is proposed, and in the long-term, the project would expand the extent of shrubs and trees and increase the amount of migration corridor habitat along the northeastern property line (Attachment A).

Once constructed, the PWB facility will be quiet with little activity and will be buffered by native vegetation that is anticipated to improve habitat values over current conditions by increasing species diversity which increases cover/shelter and foraging habitat functions at the site. A diverse mix of groundcover, shrubs and trees are proposed for establishment at the planned filtration site (see the attached mitigation plan). Eight different tree species consisting of conifers and deciduous trees and eight shrub species will expand the riparian habitat adjacent to the Johnson Creek headwaters in the southeast portion of the filtration site and expand the forested corridor on the hillslope west of the filtration site property line for the benefit of a multitude of wildlife species. Hedgerow functions will be replaced by establishing a corridor of shrubs/short-statured trees near the top of the slope. Additionally, the proposed pipeline alignments will be restored to natural groundcover following construction using native seeding and/or native woody plantings to benefit local and migrating wildlife species.

Citations

- Audubon, 2023. Oregon Birding Hotspots. Available at: <https://audubonportland.org/go-outside/destinations/oregon-birding/>
- Dunn, J. L. and J. Alderfer. 1983. Field Guide to the Birds of North America. National Geographic, seventh edition.
- Erlich, P. R., D. S. Dobkin, and D. Wheye. 1988. The Birder's Handbook: A Field Guide to the Natural History of North American Birds. Simon and Schuster, New York.
- ODFW (Oregon Department of Fish and Wildlife). 2021. Compass Oregon Conservation Strategy Reporting Tool. Available at: <https://oregonconservationstrategy.org/ecoregion/willamette-valley/>
- ODFW (Oregon Department of Fish and Wildlife). 2022. Oregon Conservation Strategy. Available at: <https://oregonconservationstrategy.org/ecoregion/willamette-valley/>
- ODFW. 2023. Columbian white-tailed deer. Available at: <https://myodfw.com/big-game-hunting/species/columbian-white-tailed-deer>
- ORBIC (Oregon Biodiversity Information Center). 2019, updated 2023. Data system search for rare, threatened, and endangered plants, animals, and fungi within the vicinity of 45.463270; -122.295406 (SE of the SE Dodge Park Road / SE Cottrell Road Intersection).
- Oregon Explorer. 2023. Oregon Wetland Rapid Assessment Protocol Report for the Bull Run Filtration Site. Available at: [ORWAP & SFAM Map Viewer \(oregonexplorer.info\)](https://oregonexplorer.info/ORWAP%20SFAM%20Map%20Viewer)
- USFWS (U.S. Fish and Wildlife Service). 2022. Incidental Take Beneficial Practices: Communication Towers. Available at: <https://www.fws.gov/story/incidental-take>
- USFWS. 2012. Critical Habitat Mapper for Northern Spotted Owl and Marbled Murrelet. Available at: <https://databasin.org/maps/new/#datasets=d15113e3006042bc87714ba557364bc9>
- USFWS. 2023. IPaC Threatened and Endangered Species Act Planning Tool. Available at: <https://ipac.ecosphere.fws.gov/>

Attachment A:

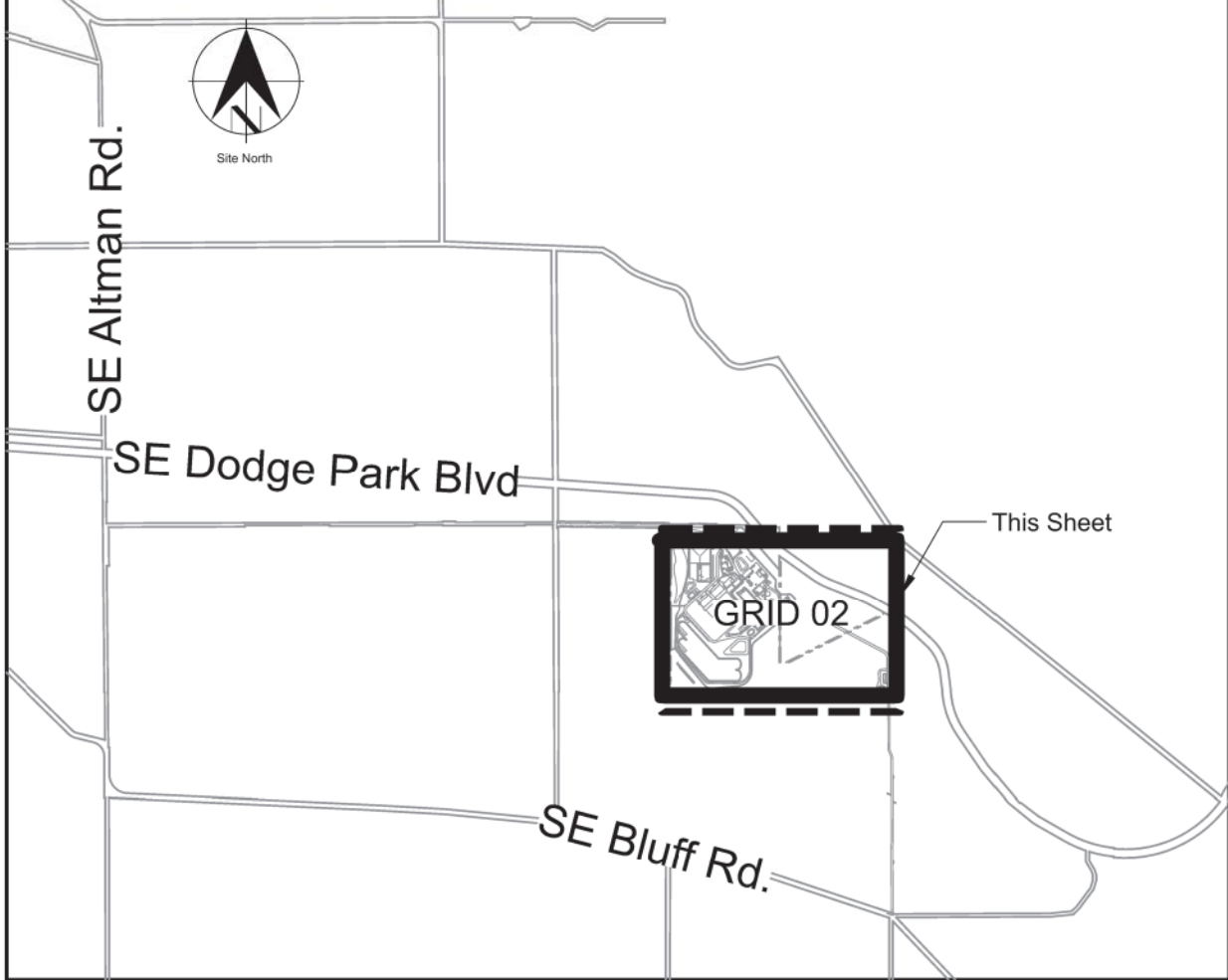
Mitigation Plan

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PLAN
SCALE: 1" = 200'-0"

KEY PLAN



General Sheet Notes

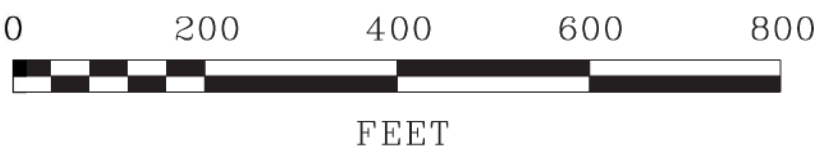
- 552 mitigation trees planted overall, with 269 of those within an SEC zone.

Shrub plantings within these areas will be included at a 10x density to trees.

See sheet 00-LU-40M for Mitigation Planting describing types, density, installation method etc...

Legend

- Mitigation Planting Area
- Hedgerow Planting Area
- Significant Environmental Concern (SEC) Zones - See Labels
- Lot Line
- ROW Line
- Topographic Lines - Existing - 5' Interval
- Structure
- Edge of Existing Vegetation Areas



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Revision				
Survey				



Designed By	NNA	Design Mgr	XX/XX
Drawn By	NNA	Const Mgr	XX/XX
Checked By	NNA	Const Supvr	XX/XX
Project Mgr	XX/XX	Date	XX/XX/XX

Warning
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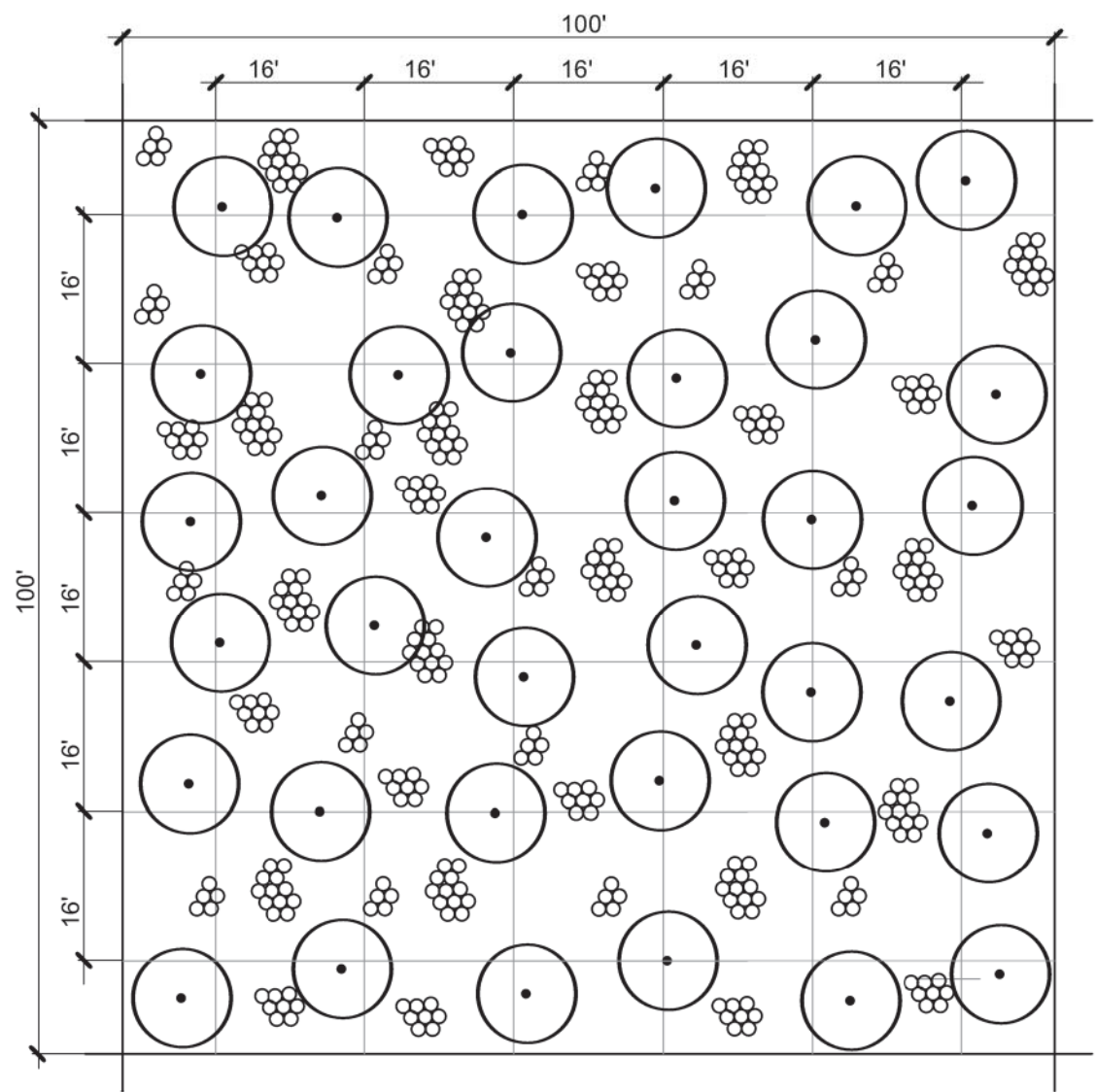
Bull Run Filtration Facility
Land Use Plans
Mitigation Plan

SAP Project No W02229
1/4 Section -
Sheet No 00-LU-30M
of

David W. Peters, Engineering Manager, PE No 16683

Date

Plot Date: 1-AUG-2023 13:53 User: JASON File: W02229-FF-00-LU-40M.dgn Model: Layout1 ColorTable: user attached from dialog DesignScript: PWB_PenTable.pen PlotScale: 1:0.08333333



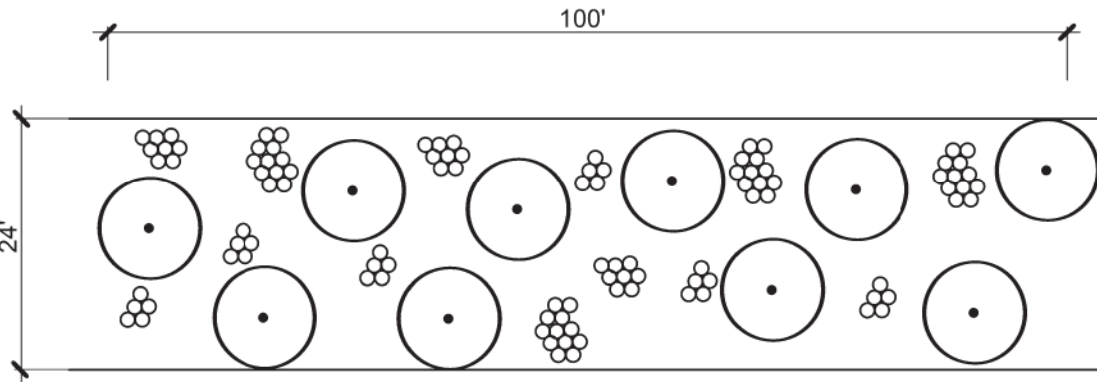
NOTES

- 1) Prior to installing plants, apply Grassland Seeding mix and establish for 45-days minimum.
- 2) Install trees at an overall density of 39 trees/10,000 s.f. (170/acre)
- 3) Install trees 10'-22' on-center; average 16' on-center.
- 4) Install shrubs at an overall density of 399 shrubs/10,000 s.f.
- 5) Install shrubs in groups of 3-12 plants per species. Space shrubs 1' min to 3' max on-center.
- 6) provide 5' minimum spacing between shrub groups and between a tree and shrubs group.
- 7) Spread species throughout the given planting area to avoid monocultures, a random 10,000 s.f. sample should contain all species.
- 8) Maintain a 1' diameter plant-free area around all stems and mulch with wood chip mulch to prevent weeds.



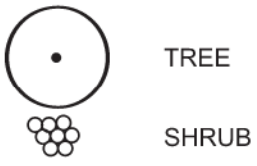
Mitigation Planting
NTS

Mitigation Planting			
Botanical Name	Common Name	Plant Size	Composition
Trees			
<i>Abies grandis</i>	Grand Fir	2' Ht. Bareroot	10/10,000 sf
<i>Acer macrophyllum</i>	Bigleaf Maple	1/2" Bareroot	3/10,000 sf
<i>Calocedrus decurrens</i>	Incense Cedar	2' Ht. Bareroot	3/10,000 sf
<i>Larix occidentalis</i>	Western Larch	2' Ht. Bareroot	1/10,000 sf
<i>Pinus ponderosa</i>	Ponderosa Pine	2' Ht. Bareroot	10/10,000 sf
<i>Pseudotsuga menziesii</i>	Douglas Fir	2' Ht. Bareroot	3/10,000 sf
<i>Rhamnus purshiana</i>	Cascara	1/2" Bareroot	6/10,000 sf
<i>Salix scouleriana</i>	Scouler's Willow	1/2" Bareroot	3/10,000 sf
Shrubs			
<i>Mahonia aquifolium</i>	Tall Oregon Grape	Bareroot	57/10,000 sf
<i>Oemleria ceracisformis</i>	Osoberry	Bareroot	28/10,000 sf
<i>Physocarpus capitatus</i>	Pacific ninebark	Bareroot	57/10,000 sf
<i>Polystichum munitum</i>	Swordfern	Bareroot	28/10,000 sf
<i>Rubus parviflorus</i>	Thimbleberry	Bareroot	57/10,000 sf
<i>Rosa pisocarpa</i>	Swamp Rose	Bareroot	57/10,000 sf
<i>Spiraea douglasii</i>	Douglas Spiraea	Bareroot	57/10,000 sf
<i>Symphoricarpos albus</i>	Snowberry	Bareroot	57/10,000 sf



NOTES

- 1) Prior to installing plants, apply Grassland Seeding mix and establish for 45-days minimum.
- 2) Install trees at an overall density of 39 trees/10,000 s.f. (170/acre)
- 3) Install trees in a naturalistic manner, dispersed throughout the hedgerow. Min. 12', Max. 18' on-center.
- 4) Install shrubs at an overall density of 399 shrubs/10,000 s.f.
- 5) Install shrubs in groups of 3-12 plants per species. Space shrubs 1' min to 3' max on-center.
- 6) provide 5' minimum spacing between shrub groups and between a tree and shrubs group.
- 7) Spread species throughout the given planting area to avoid monocultures, a random 10,000 s.f. sample should contain all species.
- 8) Maintain a 1' diameter plant-free area around all stems and mulch with wood chip mulch to prevent weeds.



Hedgerow Planting
NTS

Hedgerow Planting			
Botanical Name	Common Name	Plant Size	Composition
Trees			
<i>Rhamnus purshiana</i>	Cascara	1/2" Bareroot	39/10,000 sf
Shrubs			
<i>Mahonia aquifolium</i>	Tall Oregon Grape	Bareroot	57/10,000 sf
<i>Ribes malvaceum</i>	Chapparral Currant	Bareroot	57/10,000 sf
<i>Rosa gymnocarpa</i>	Baldhip Rose	Bareroot	57/10,000 sf
<i>Rosa nutkana</i>	Nootka Rose	Bareroot	57/10,000 sf
<i>Rubus parviflorus</i>	Thimbleberry	Bareroot	57/10,000 sf
<i>Spiraea douglasii</i>	Douglas Spiraea	Bareroot	57/10,000 sf
<i>Symphoricarpos albus</i>	Snowberry	Bareroot	57/10,000 sf

No	Date	Description	Appd	
Revision				
Survey				



Designed By	XXX	Design Mgr	XXX
Drawn By	XXX	Const Mgr	XXX
Checked By	XXX	Const Supvr	XXX
Project Mgr	XXX	Date	XXX



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David W. Peters, Engineering Manager, PE No 16683

Date



Bull Run Filtration Facility
Land Use Plans
Mitigation Planting Details

SAP Project No W02229
1/4 Section -
Sheet No 00-LU-40M
of