

Natural Resource Review
for the Proposed Kellogg Creek
Subdivision in Milwaukie, Oregon
(Township 2 South, Range 2 East, Section 6AD,
Clackamas County, TL 600 and Portions of 700, 900, 901)

Prepared for
Brownstone Development, Inc.
Attn: Randy Myers
PO Box 2375
Lake Oswego, Oregon 97035

Prepared by
Caroline Rim
Craig Tumer
John van Staveren
Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, Oregon 97070
(503) 570-0800
(503) 570-0855 FAX
PHS Project Number: 5975

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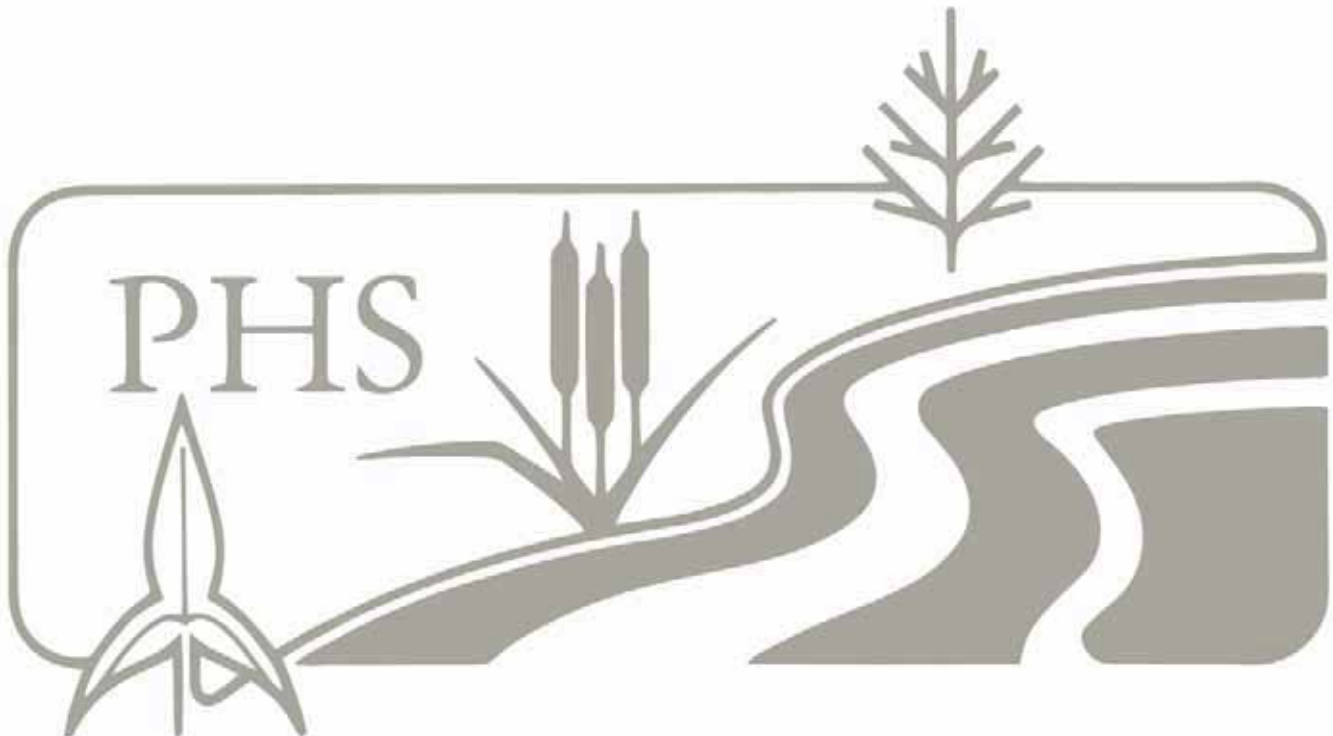


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1.0 INTRODUCTION

The City of Milwaukie (the “City”) has mapped Water Quality Resource (WQR) and Habitat Conservation Area (HCA) within the proposed Kellogg Creek Subdivision project site. Brownstone Development, Inc. (the “Applicant”) seeks approval for the proposed development through a Type III General Discretionary Review. The following document demonstrates how the proposed project will be in compliance with the applicable development standards that are listed in the Natural Resources (NR) Zoning Code Section 19.402 of the City of Milwaukie Municipal Code (MMC). Pacific Habitat Services, Inc. (PHS) has prepared a Natural Resource Review in accordance with MMC Section 19.402 to support the land use application. The information necessary to process the application is provided in the following sections. Supporting information is included in Attachment A (Figures) and Attachment B (Wetland Delineation Report).

2.0 APPLICANT INFORMATION

2.1 Applicant

Brownstone Development, Inc.
Attn: Randy Myers
PO Box 2375
Lake Oswego, OR 97035
Phone: 503-358-4460
Email: Randy@brownstonehomes.net

2.2 Applicant’s Agent

Pacific Habitat Services, Inc.
Attn: Caroline Rim
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070
Phone: 503-570-0800
Email: cr@pacifichabitat.com

3.0 SITE INFORMATION

The following information is for the parcel which is the subject of this natural resource review.

Site Address: 13333 SE Rusk Road, Milwaukie, OR 97222
Zoning: Residential R-3 and R-10
Legal Description: Tax Lot (TL) 600 and portions of TL 700, 900, 901, Section 6AD 2S 2E (15.58 acres), Clackamas County

3.1 Site Description

The site is located southwest of Highway 224 (Pacific Highway), north of SE Kellogg Creek Drive, and north and west of SE Rusk Road. Mt. Scott Creek flows to the west along the northern edge of the study area, and the North Clackamas Park Milwaukie Center borders the western edge. The site is located within a residential area; undeveloped woodland is located immediately to the north and northwest of the study area, and the Turning Point Church is located in the southeast corner of the site at 13333 SE Rusk Road (Figures 1 and 2). The eastern half of the property, near the church, is relatively level; however, the western half descends abruptly to a lower woodland area. Site elevations range from approximately 80 feet National Geodetic Vertical Datum (NGVD) in the eastern half of the site, to approximately 66 feet NGVD in the lower reaches of the western half of the site. The site has not been subject to recent construction activities; however, it appears that the substrate throughout much of the central and eastern half of the site consists of fill material, up to more than 12 feet thick, likely associated with the construction of the church, over two decades ago.

On November 21, 2016, PHS identified and delineated one potential wetland area (Wetland A) and Mt. Scott Creek (south bank only), as well as six potentially artificially created wetland areas (Wetlands B through G). Descriptions of the on-site wetlands and non-wetland waters are provided below, and are further detailed in the Wetland Delineation Report (Attachment B). Figure 3 shows the existing site conditions.

Mt. Scott Creek, a tributary to Kellogg Creek and the Willamette River, is a perennial stream that generally flows to the west along the northern boundary of the study area. The stream banks are well defined and near vertical at the location of the OHW line. The plant community of the riparian area along the creek includes a deciduous overstory of big-leaf maple (*Acer macrophyllum*), Oregon white oak (*Quercus garryana*), Oregon ash (*Fraxinus latifolia*), and red alder (*Alnus rubra*); and a shrub and herbaceous understory composed of species such as snowberry (*Symphoricarpos albus*), Pacific ninebark (*Physocarpus capitatus*), Scouler's willow (*Salix scouleriana*), English hawthorn (*Crataegus monogyna*), Fuller's teasel (*Dipsacus fullonum*), and spreading bentgrass (*Agrostis stolonifera*). Mt. Scott Creek continues outside the project area to the north, west and east.

An approximately 0.70-acre (30,386 square feet) wetland (Wetland A) is located in the low-lying woodland area in the western half of the site, south of Mt. Scott Creek. The plant community within Wetland A is a combination of deciduous woodland bordered by open fields. Dominant species within the woodland include an overstory of Oregon ash and black cottonwood (*Populus balsamifera*), with a woody understory of Oregon ash, black cottonwood, red-osier dogwood (*Cornus alba*), snowberry, and Himalayan blackberry (*Rubus armeniacus*). The open fields include reed canarygrass (*Phalaris arundinacea*), creeping buttercup (*Ranunculus repens*), large-leaf avens (*Geum macrophyllum*), slender rush (*Juncus tenuis*), rough bluegrass (*Poa trivialis*), bitter dock (*Rumex obtusifolius*), and common dandelion (*Taraxacum officinale*).

The adjacent upland areas include Oregon ash, Himalayan blackberry, snowberry, English hawthorn, reed canarygrass, Fuller's teasel, large-leaf avens, bull thistle (*Cirsium vulgare*), fringed willowherb (*Epilobium ciliatum*), Dewey sedge (*Carex deweyana*), common selfheal (*Prunella vulgaris*), Western swordfern (*Polystichum munitum*), lentil vetch (*Vicia tetrasperma*), creeping buttercup, spreading bentgrass, field horsetail (*Equisetum arvense*), narrow-leaf goosefoot (*Chenopodium leptophyllum*), spotted cat's ear (*Hypochaeris radicata*), European centaury (*Centaurium erythraea*), wild carrot (*Daucus carota*), tansy ragwort (*Senecio jacobaea*), and colonial bentgrass (*Agrostis capillaris*).

In addition to Wetland A, six potentially artificially created wetlands (Wetlands B –G) are located in the central portion of the site. These wetlands generally consist of small, shallow, isolated depressions. Table 2 lists the area of each wetland.

Wetland	Area (square feet / acres)
B	905 / 0.02
C	176 / 0.004
D	172 / 0.004
E	998 / 0.02
F	301 / 0.007
G	666 / 0.02
Total	3,218 / 0.07

All six of these wetlands are similar in character. The plant communities in both the wetland and upland areas are primarily composed of weedy grasses and herbs; the wetland areas include reed canarygrass, spreading bentgrass, soft rush (*Juncus effusus*), spotted cat’s ear, and oxeye daisy (*Chrysanthemum vulgare*); the adjacent upland areas include wild carrot, curly dock (*Rumex crispus*), colonial bentgrass, bluegrass (*Poa sp.*), common velvet grass (*Holcus lanatus*), tall fescue (*Schedonorus arundinaceus*), yellow glandweed (*Parentucellia viscosa*), and English plantain (*Plantago lanceolata*).

Hydrology within Wetlands B through G primarily consists of surface runoff and precipitation. As discussed in the *Subsurface Conditions* section of the geotechnical evaluation report (Appendix E of the Wetland Delineation Report), fill material in the central portion of the site was observed to be approximately 10 feet thick, and groundwater was not encountered in the test pits in the vicinity of these wetlands. Therefore, it is reasonable to assume that these wetlands are not hydrologically connected to the water table, and as such, are considered to be non-jurisdictional artificially created wetlands.

The wetland delineation report (Attachment B) was submitted to the Oregon Department of State Lands (DSL) for review and has received approval. On June 8, 2017, DSL conducted a site visit to verify the delineated wetland boundary. During the site visit, DSL took additional data and concluded that it concurred with PHS’s delineated wetland boundary. A copy of the concurrence letter is included with this report (Attachment C).

4.0 PROJECT DESCRIPTION

The Kellogg Creek Subdivision will consist of the construction of a planned residential development with 92 dwelling units, associated parking, roads, utilities, landscaping, and four stormwater treatment facilities. Mt. Scott Creek (a perennial stream) and Wetland A (a Title 3 wetland) are both Primary Protected Water Features, as defined in the City’s Natural Resources Code (MMC 19.402). As such, the proposed project is subject to discretionary review under MMC Subsections 19.402.8, 19.402.9, 19.402.11, 19.402.12, and 19.402.13I – J. This Natural Resource Review describes the

existing Water Quality Resource (WQR) and Habitat Conservation Area (HCA) on the site and demonstrates project compliance with the applicable sections of the municipal code.

This Natural Resource review includes an evaluation of the condition of the WQR on the site, an analysis of potential impacts from the proposed development on the WQR and the HCA, a mitigation plan to compensate for those impacts, and an HCA boundary verification and updated map.

5.0 EXISTING WQR AND HCA ON THE PROJECT SITE

Mt. Scott Creek and Wetland A are primary protected water features, and as described in Table 19.402.15, Determination of WQR Location in MMC Subsection 19.402.15, primary protected water features have an associated vegetated corridor of 50 to 200 feet wide depending on the slopes adjacent to the resource. The slopes adjacent to the south side of Mt. Scott Creek are less than 25 percent, and therefore, the associated vegetated corridor in this area is 50 feet wide. For the same reason, the vegetated corridor along the north, south and west sides of Wetland A are also 50 feet wide. However, the slopes along a short segment of vegetated corridor adjacent to the eastern edge of Wetland A, vary in steepness from less than to greater than 25 percent near the fill slope; therefore, in this area, the width of the vegetated corridor ranges from 50 to 130 feet. The extent of the vegetated corridor on the project site, based on the surveyed boundaries of the wetland and waterway is depicted on Figure 4. The total area of WQR on the site (not including the stream and wetland) is approximately 103,187 sf (2.37 acres). Section 6.3 MMC19.402.11.C describes the condition of the vegetated corridor.

Mt. Scott Creek and Wetland A also have associated HCAs. The Milwaukie Interactive Zoning Map (<http://milwaukie.maps.arcgis.com/apps/webappviewer/index.html?id=48bfb9fc517446f9af954d4d1c4413af>) shows HCAs extending onto the northern and western portions of the site. The City's GIS-mapped HCA is depicted on Figure 4. The total area of HCA on the project site is approximately 175,791 sf (4.04 acres). This HCA, and the WQR noted above, are used in the impact evaluation and alternatives analysis below.

6.0 COMPLIANCE WITH MILWAUKIE MUNICIPAL CODE

6.1 MMC 19.402.8 – Activities Requiring Type III Review

Within either WQRs or HCAs, the following activities are subject to Type III review and approval by the Planning Commission under Section 19.1006, unless they are otherwise exempt or permitted as a Type I or II activity.

B. The activities listed below shall be subject to the review criteria for partitions and subdivisions provided in Subsections 19.402.13.H and I, respectively:

- 2. The subdividing of land containing a WQR or HCA.*

The proposed project site contains both WQR and HCA, and the project will require the subdividing of land.

6.2 MMC 19.402.9 – Construction Management Plans

B. Construction management plans shall provide the following information:

- 1. Description of work to be done.*
- 2. Scaled site plan showing a demarcation of WQRs and HCAs and the location of excavation areas for building foundations, utilities, stormwater facilities, etc.*
- 3. Location of site access and egress that construction equipment will use.*
- 4. Equipment and material stockpile areas.*
- 5. Erosion and sediment control measures.*

As stated above in Section 4, the project is the construction of a planned residential development with 92 dwelling units, associated parking, roads, utilities, landscaping, four stormwater treatment facilities, and balanced cut/fill in the floodplain. Site preparation will include grubbing and grading. A demarcation of WQRs and HCAs and the location of excavation areas for building foundations, utilities, stormwater facilities, etc. are shown on Figure 5. Figures 5A and 5B show alternative site plans, which are discussed below in Section 6.4. The site access and egress locations that construction equipment will use, as well as equipment and material stockpile/staging areas, are shown on the Construction Management Plan (Figure 6). As shown on Figure 6, erosion control fencing will be placed at the limits of disturbance. This fencing will act as a physical barrier and prevent the encroachment of machinery into portions of the WQR and HCA areas that are to remain undisturbed.

The following components of the erosion control plan will protect against erosion, prevent the transport of sediments offsite and into the remaining WQR and HCA areas, and ensure that impacts are minimized. The proposed project will have no detrimental impact on resources or functional values of WQR and HCA areas designated to be left undisturbed. The use of construction fencing and erosion and sediment control barriers at the limits of work, as well as other methods described below will prevent direct physical impacts to nearby areas of WQR and HCA to remain undisturbed.

- Prior to the start of any earth-moving activities, construction fencing will be installed at the limits of the work area, which in this case will be along the outer edge of the proposed development. Sediment fence will be installed inside the construction fencing.
- All base erosion and sediment prevention control measures (including inlet protection, perimeter sediment control, gravel construction entrances, etc.) will be in place, functional, and approved in an initial inspection prior to the start of any construction activities.
- Construction entrances will be installed prior to construction and maintained for the duration of the project.
- Active inlets to stormwater systems will be protected with approved inlet protection measures. All inlet protection measures will be regularly inspected and maintained as necessary. These inlet protection measures will prevent runoff from reaching discharge points.
- Exposed cut and fill areas will be stabilized through the use of temporary seeding and mulching or other appropriate measures.
- Seed used for temporary or permanent seeding will be per specifications.

- Slopes receiving temporary or permanent seeding will have the surface roughened to improve seed bedding and reduce run-off velocities.
- Stockpiled soil or strippings will be placed in an approved, stable location and configuration. During “wet weather” periods, stockpiles will be covered with straw mulch. Sediment fence will be placed around the perimeter of all stockpiles.
- Appropriate dust control measures, including the application of a fine spray of water, straw mulching or other approved measures, will be used in areas subject to wind erosion. Any saturated materials hauled off site will be transported in watertight trucks to prevent the spillage of sediment or sediment-laden water.

The proposed project will have no detrimental impact on resources or functional values of WQR and HCA areas designated to be left undisturbed. The use of construction fencing and erosion and sediment control barriers at the limits of work, as well as other methods described in the Construction Management Plan will prevent direct physical impacts to nearby areas of WQR and HCA to remain undisturbed.

6. *Measures to protect trees and other vegetation located within the potentially affected WQR and/or HCA. A root protection zone shall be established around each tree in the WRQ or HCA that is adjacent to any approved work area. The root protection zone shall extend from the trunk to the outer edge of the tree’s canopy, or as close to the outer edge of the canopy as is practicable for the approved project. The perimeter of the root protection zone shall be flagged, fenced, or otherwise marked and shall remain undisturbed. Material storage and construction access is prohibited within the perimeter. The root protection zone shall be maintained until construction is complete.*

The Tree Removal and Protection Plan is shown on Figure 7 and the accompanying Tree Survey and Removal Table is shown on Figure 7A. Tree protection will be as recommended by a qualified arborist or, at minimum, will include the following protective measures:

- All trees to be protected on the project site and adjacent to the site shall be clearly identified and protective fencing will be installed at the perimeter of the dripline (to avoid soil compaction, removal of vegetation, and/or tree branches) prior to any grubbing, clearing, grading, parking, preparation or storage of materials or machinery, or other construction activity on the site. The fencing will be secured and consist of a material that cannot be easily moved, removed, or broken during construction activities
- No machinery repair, cleaning or fueling will be performed within 10 feet of the dripline of any of trees identified for protection;
- There will be no digging of trenches for placement of public or private utilities or other structure within the critical root zones of trees to be protected;
- If required by the City, a consulting arborist or other qualified biologist will be present during construction or grading activities that may affect the dripline of the trees to be protected.

6.3 MMC 19.402.11 – Development Standards

A. Protection of Natural Resources During Site Development

During development of any site containing a designated natural resource, the following standards shall apply:

1. *Work areas shall be marked to reduce potential damage to the WQR and/or HCA.*

In addition to erosion and sediment control measures, previously discussed in the Construction Management section, work areas shall be marked to reduce potential damage to the WQR and/or HCA.

2. *Trees in WQRs or HCAs shall not be used as anchors for stabilizing construction equipment.*

No trees within the WQR or HCA will be used as anchors for stabilizing construction equipment.

3. *Native soils disturbed during the development shall be conserved on the property.*

Native soils disturbed during development will be conserved on the property.

4. *An erosion and sediment control plan is required and shall be prepared in compliance with requirements set forth in the City's Public Works Standards.*

The erosion and sediment control plan is shown on the Construction Management Plan (Figure 6), was discussed in the previous section, Construction Management Plan, and was prepared in compliance with requirements set forth in the City's Public Works Standards.

5. *Site preparation and construction practices shall be followed that prevent drainage of hazardous materials or erosion, pollution, or sedimentation to any WQR adjacent to the project area.*

As discussed above in the Construction Management Plans section, Best Management Practices (BMPs) will be implemented during site preparation and construction in order to prevent drainage of hazardous materials or erosion, pollution, or sedimentation to any WQR adjacent to the project area.

6. *Stormwater flows that result from proposed development within and to natural drainage courses shall not exceed predevelopment flows.*

The primary purpose of the stormwater management plan (Figure 8) is to effectively treat the stormwater runoff from the new development while maintaining the same hydrologic input as is currently present at pre-development/pre-Lewis and Clark conditions. Key components of the stormwater management plan will include treating and detaining stormwater in four vegetated stormwater treatment facilities/ponds (A – D). Treated stormwater from facilities A, B and C will be discharged with the use of flow spreaders; and storm facility D will connect back into the existing storm sewer system in SE Kellogg Creek Drive.

7. *Prior to construction, the WQR and/or HCA that is to remain undeveloped shall be flagged, fenced, or otherwise marked and shall remain undisturbed. Such markings shall be maintained until construction is complete.*

As discussed above in the Construction Management Plans section, prior to construction, construction fencing, sediment fencing, and other erosion and sediment control barriers will be installed at the limits of work, in order to prevent impacts to nearby areas of WQR and HCA to remain undisturbed.

8. *The construction phase of the development shall be done in such a manner as to safeguard the resource portions of the site that have not been approved for development.*

As discussed above in the Construction Management Plans section, BMPs will be implemented and erosion and sediment control methods will be in place prior to construction in such a manner as to safeguard the resource portions of the site that have not been approved for development.

9. *Where practicable, lights shall be placed so that they do not shine directly into any WQR and/or HCA location. The type, size, and intensity of lighting shall be selected so that impacts to habitat functions are minimized.*

Where practicable, lights will be placed so that they do not shine directly into the WQR and/or HCA. The type, size, and intensity of lighting will be selected so that impacts to habitat functions are minimized.

10. *All work on the property shall conform to a construction management plan prepared according to Subsection 19.402.9.*

All work on the property will conform to a construction management plan, as previously discussed, prepared according to Subsection 19.402.9.

B. General Standards for Required Mitigation

Where mitigation is required by Section 19.402 for disturbance to WQRs and/or HCAs, the following general standards apply:

1. Disturbance

- a. *Designated natural resources that are affected by temporary disturbances shall be restored, and those affected by permanent disturbances shall be mitigated, in accordance with the standards provided in Subsection 19.402.11.C for WQRs and Subsection 19.402.D.2 for HCAs, as applicable.*

Designated natural resources that are affected by temporary disturbances will be restored. The proposed site plan will unavoidably result in permanent disturbances to both WQR and HCA areas, and as such, the areas of permanent disturbances will be mitigated in accordance with the standards provided in Subsections 19.402.11.C and 19.402.D.2, respectively. See Figure 9 - Mitigation Plan.

2. Required Plants

Unless specified elsewhere in Section 19.402, all trees, shrubs, and ground cover planted as mitigation shall be native plants, as identified on the Milwaukie Native Plant List. Applicants are encouraged to choose particular native species that are appropriately suited for the specific conditions of the planting site; e.g., shade, soil type, moisture, topography, etc.

All proposed mitigation plants will consist of native species as identified on the Milwaukie Native Plant List. Plants will be chosen for: 1) their suitability to the soils and hydrology of the site, 2) their natural occurrence in the area, 3) their wildlife habitat enhancement value, and 4) their local availability. The table on Figure 9A shows selected species to be planted.

3. Plant Size

Replacement trees shall average at least a ½-in caliper – measured at 6 in above the ground level for field-grown trees or above the soil line for container-grown trees – unless they are oak or madrone, which may be 1-gallon size. Shrubs shall be at least 1-gallon size and 12 in high.

4. Plant Spacing

Trees shall be planted between 8 and 12 ft on center. Shrubs shall be planted between 4 and 5 ft on center or clustered in single-species groups of no more than 4 plants, with each cluster planted between 8 and 10 ft on center. When planting near existing trees, the dripline of the existing tree shall be the starting point for plant spacing measurements.

5. Plant Diversity

Shrubs shall consist of at least 2 different species, If 10 trees or more are planted, then no more than 50% of the trees shall be of the same genus.

Mitigation plant size, spacing and diversity will be in accordance with the requirements stated in items 3 – 5, above (See table on Figure 9A).

6. Location of Mitigation Area

a. On-Site Mitigation

All mitigation vegetation shall be planted on the applicant’s site within the designated natural resource that is disturbed, or in an area contiguous to the resource area; however, if the vegetation is planted outside of the resource area, the applicant shall preserve the contiguous planting area by executing a deed restriction such as a restrictive covenant.

All mitigation vegetation will be planted on-site and within the designated natural resource that is disturbed or in an area contiguous to the resource area. The mitigation areas proposed for planting are shown in Figure 9 Mitigation Plan.

In addition to required mitigation, the project will provide enhancement to three areas on the site, one of which is currently mapped as a natural resource area and two of which are partially mapped as natural resource areas. Those areas are shown as Additional Enhancement Areas A, B and C on Figure 9 and planting lists for the areas are shown on Figure 9A. Enhancement Area A is approximately 0.34 acre and is located north of Mt. Scott Creek. Enhancement Areas B and C are approximately 0.40 acre and 0.35 acre, respectively, and are located south of Mt. Scott Creek in the northern portion of the site. These three areas will be enhanced through the removal of man-made debris, removal of invasive plant species and planting with native trees, shrubs and seed mix. Those plantings will improve the native plant community, vegetation structure and diversity – all of which will improve the overall quality of wildlife habitat on the site.

7. Invasive Vegetation

Invasive nonnative or noxious vegetation shall be removed within the mitigation area prior to planting, including, but not limited to, species identified as nuisance plants on the Milwaukie Native Plant List.

Invasive nonnative or noxious vegetation, and nuisance plants will be removed from the mitigation area prior to planting.

8. Ground Cover

Bare or open soil areas remaining after the required tree and shrub plantings shall be planted or seeded to 10% surface coverage with grasses or other ground cover species identified as native on the Milwaukie Native Plant List. Revegetation shall occur during the next planting season following the site disturbance.

Following the installation of the required tree and shrub plantings, remaining bare/open soil areas will be planted or seeded to 100% surface coverage with a native grass seed mix or other ground cover species during the next planting season following the site disturbance.

9. Tree and Shrub Survival

A minimum of 80% of the trees and shrubs planted shall remain alive on the second anniversary of the date that the mitigation planting is completed.

a. Required Practices

To enhance survival of the mitigation plantings, the following practices are required:

- (1) Mulch new plantings to a minimum of 3-in depth and 18-in diameter to retain moisture and discourage weed growth.*
- (2) Remove or control nonnative or noxious vegetation throughout the maintenance period.*

b. Recommended Practices

To enhance survival of tree replacement and vegetation plantings, the following practices are recommended:

- (1) Plant bare root trees between December 1 and April 15; plant potted plants between October 15 and April 30.*
- (2) Use plant sleeves or fencing to protect trees and shrubs against wildlife browsing and the resulting damage to plants.*
- (3) Water new plantings at a rate of 1 in per week between June 15 and October 15 for the first two years following planting.*

In order to meet the minimum of 80% tree and shrub survival of the mitigation plantings on the second anniversary of the date that the mitigation planting is completed, the applicant will follow the “Required” and “Recommended” planting and maintenance practices, as described above in Items a and b.

c. Monitoring and Reporting

Monitoring of the mitigation site is the ongoing responsibility of the property owner. Plants that die shall be replaced in kind as needed to ensure the minimum 80% survival rate. The Planning Director may require a maintenance bond to cover the continued health and survival of all plantings. A maintenance bond shall not be required for land use applications related to owner-occupied single-family residential projects. An annual report on the survival rate of all plantings shall be submitted for 2 years.

An annual monitoring site visit will be conducted and a report will be prepared and submitted to the City for two years after planting. The report will allow an analysis of the survival rate of the mitigation plantings and what corrective measures, if any, are needed to ensure the minimum 80% required survival rate for woody plantings at the end of the second monitoring season.

10. Light Impacts

Where practicable, lights shall be placed so that they do not shine directly into any WQR and/or HCA location. The type, size, and intensity of lighting shall be selected so that impacts to habitat functions are minimized.

Where practicable, lights will be placed so that they do not shine directly into the WQR and/or HCA. The type, size, and intensity of lighting will be selected so that impacts to habitat functions are minimized.

C. Mitigation Requirements for Disturbance within WQRs

- 1. The requirements for mitigation vary depending on the existing condition of the WQR on the project site at the time of application. The existing condition of the WQR shall be assessed in accordance with the categories established in Table 19.402.11.C.**

Plant communities within the vegetated corridor include a mixture of wooded and non-wooded communities. PHS identified two separate plant communities within the on-site vegetated corridor based on the predominance of woody species in the community. South of Mt. Scott Creek, and along the western property boundary to the north and south of the west end of Wetland A, the vegetated corridor has a well-developed forest canopy; while along the eastern and southern edges of Wetland A, the vegetated corridor has only a few scattered trees. PHS took seven sample points to characterize the plant communities; two along the south side of the creek, two along the northeast side of Wetland A, one along the south side of Wetland A, and two near the western property boundary to the north and south of Wetland A. A brief description and an evaluation of the condition of each of the communities are provided below (See Figure 4 for location of sample points).

South of Mt. Scott Creek

The WQR south of Mt. Scott Creek contains a moderately dense canopy predominantly composed of red alder (*Alnus rubra*), Oregon white oak (*Quercus garryana*), black cotton wood (*Populus balsamifera*), and big-leaf maple (*Acer macrophyllum*). Common species in the understory include English hawthorn (*Crataegus monogyna*), snowberry (*Symphoricarpos alba*), Pacific willow (*Salix lasiandra*), Scouler’s willow (*Salix scouleriana*), Pacific ninebark (*Physocarpus capitatus*), red-osier dogwood (*Cornus alba*), clustered rose (*Rosa pisocarpa*), twinberry honeysuckle (*Lonicera involucrata*), Himalayan blackberry (*Rubus armeniacus*), and beaked hazel (*Corylus cornuta*). The groundcover contains a diverse mixture of native and non-native species, including Pacific dewberry (*Rubus ursinus*), Fuller’s teasel (*Dipsacus sylvestris*), Waton’s willow-herb (*Epilobium watsonii*), nipplewort (*Lapsana communis*), common velvetgrass (*Holcus lanatus*), colonial bentgrass (*Agrostis capillaris*), fringe-cup (*Tellima grandiflora*), brome (*Bromus sp.*), and Western swordfern (*Polystichum munitum*). Tables 1 and 2 summarize the species composition at two sample points within the plant community.

Table 1. Plant Community South of Mt. Scott, Characterized by Sample Point 1

Botanical Name	Common Name	♦Cover (%)
Trees		50
<i>Alnus rubra</i>	Red alder	30
<i>Fraxinus latifolia</i>	Oregon ash	5
<i>Salix scouleriana</i>	Scouler’s willow	7
<i>Salix lasiandra</i>	Pacific willow	2
<i>Acer macrophyllum</i>	Big-leaf maple	1
<i>Crataegus monogyna</i>	English hawthorn	10
Shrubs and Saplings		60
<i>Populus balsamifera</i>	Black cottonwood	5
<i>Symphoricarpos albus</i>	Common snowberry	5
<i>Rosa pisocarpa</i>	Clustered rose	13
<i>Quercus garryana</i>	Oregon white oak	10
<i>Rubus armeniacus</i> ***	Himalayan blackberry	2
<i>Physocarpus capitatus</i>	Pacific ninebark	15
<i>Crataegus monogyna</i>	English hawthorn	5
<i>Corylus cornuta</i>	Beaked hazelnut	3

Botanical Name	Common Name	♦Cover (%)
<i>Cornus alba</i>	Red-osier dogwood	2
Groundcover		55
<i>Rubus ursinus</i>	California dewberry	5
<i>Dipsacus sylvestris</i> **	Fuller's teasel	25
<i>Epilobium watsonii</i>	Watson's willow-herb	30
<i>Lapsana communis</i> **	Nipplewort	10
<i>Holcus lanatus</i>	Common velvetgrass	5
<i>Agrostis capillaris</i>	Colonial bentgrass	20
<i>Tellima grandiflora</i>	Fringecup	2
<i>Bromus sp.</i>	Common brome	3

*Invasive species or noxious weed (Oregon Dept. of Agriculture (ODA))

**Nuisance Plant List (Milwaukie Plant List/Portland Plant List)

♦Absolute Percent Cover

Table 2. Plant Community South of Mt. Scott, Characterized by Sample Point 2

Botanical Name	Common Name	♦Cover (%)
Trees		60
<i>Alnus rubra</i>	Red alder	20
<i>Quercus garyana</i>	Oregon white oak	40
<i>Salix scouleriana</i>	Scouler's willow	5
<i>Populus balsamifera</i>	Black cottonwood	10
<i>Acer macrophyllum</i>	Big-leaf maple	5
Shrubs and Saplings		80
<i>Lonicera involucrate</i>	Twinberry honeysuckle	2
<i>Symphoricarpos albus</i>	Common snowberry	30
<i>Rosa pisocarpa</i>	Clustered rose	5
<i>Oregon white oak</i>	<i>Quercus garryana</i>	5
<i>Populus balsamifera</i>	Black cottonwood	5
<i>Physocarpus capitatus</i>	Pacific ninebark	10
<i>Crataegus monogyna</i>	English hawthorn	5
<i>Corylus cornuta</i>	Beaked hazelnut	3
<i>Cornus alba</i>	Red-osier dogwood	2
Groundcover		35
<i>Rubus ursinus</i>	California dewberry	5
<i>Dipsacus sylvestris</i> **	Fuller's teasel	2
<i>Polystichum munitum</i>	Western swordfern	3
<i>Lapsana communis</i> **	Nipplewort	3
<i>Holcus lanatus</i>	Common velvetgrass	3
<i>Agrostis capillaris</i>	Colonial bentgrass	10
<i>Tellima grandiflora</i>	Fringecup	5
<i>Bromus sp.</i>	Common brome	22

*Invasive species or noxious weed (Oregon Dept. of Agriculture (ODA))

**Nuisance Plant List (Milwaukie Plant List/Portland Plant List)

♦Absolute Percent Cover

The plant community south of Mt. Scott Creek has a moderately dense tree canopy with coverage that varies from 50 to 60 percent. Canopy coverage across the entire plant community exceeds 50 percent. The combined tree, shrub and groundcover layers provide coverage that exceeds 80 percent. As such, the existing condition of the WQR south of Mt. Scott Creek meets the definition of a Class A (“Good”) WQR, as defined in Table 19.402.11.C of the municipal code.

Northeast of Wetland A

A few scattered trees are present within the vegetated corridor northeast of Wetland A; however, the plant community in this area generally lacks a canopy layer and is predominantly composed of reed canarygrass (*Phalaris arundinacea*) and other grasses and various groundcover. Tables 3 and 4 summarize the species composition within the plant community east of Wetland A.

Table 3. Plant Community Northeast of Wetland A, Characterized by Sample Point 3

Botanical Name	Common Name	♦Cover (%)
Trees		20
<i>Salix scouleriana</i>	Scouler’s willow	20
<i>Crataegus monogyna</i>	English hawthorn	20
<i>Fraxinus latifolia</i>	Oregon ash	5
<i>Populus balsamifera</i>	Black cottonwood	5
Shrubs and Saplings		40
<i>Salix scouleriana</i>	Scouler’s willow	20
<i>Rosa pisocarpa</i>	Clustered rose	10
<i>Crataegus monogyna</i>	English hawthorn	20
<i>Corylus cornuta</i>	Beaked hazelnut	5
<i>Rubus armeniacus</i> ***	Himalayan blackberry	5
Groundcover		90
<i>Phalaris arundinacea</i> **	Reed canarygrass	60
<i>Dipsacus sylvestris</i> **	Fuller’s teasel	40
<i>Tanacetum vulgare</i> **	Common tansy	15
<i>Epilobium watsonii</i>	Watson’s willow-herb	15
<i>Cirsium arvense</i>	Canada thistle	5

*Invasive species or noxious weed (Oregon Dept. of Agriculture (ODA))

**Nuisance Plant List (Milwaukie Plant List/Portland Plant List)

♦Absolute Percent Cover

Table 4. Plant Community Northeast of Wetland A, Characterized by Sample Point 4

Botanical Name	Common Name	♦Cover (%)
Trees		5
<i>Acer macrophyllum</i>	Big-leaf maple	5
Shrubs and Saplings		10
<i>Acer macrophyllum</i>	Big-leaf maple	10
<i>Rosa pisocarpa</i>	Clustered rose	10
<i>Rubus armeniacus</i> ***	Himalayan blackberry	5
Groundcover		100
<i>Phalaris arundinacea</i> **	Reed canarygrass	100

<i>Dipsacus sylvestris</i> **	Fuller's teasel	15
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*Invasive species or noxious weed (Oregon Dept. of Agriculture (ODA))

**Nuisance Plant List (Milwaukie Plant List/Portland Plant List)

♦Absolute Percent Cover

As described above and shown by Sample Points 3 and 4, the plant community northeast of Wetland A has little to no tree canopy coverage. The combined tree, shrub and groundcover layers provide coverage that exceeds 80 percent; however, tree canopy coverage is less than 25 percent. Therefore, the existing condition of the WQR east of Wetland A meets the definition of a Class C (“Poor”) WQR, as defined in Table 19.402.11.C of the municipal code.

South of Wetland A

Similar to the vegetated corridor along the northeast side of Wetland A, the area to the south of Wetland A also has a few scattered trees present. The plant community south of Wetland A also generally lacks a canopy layer and is primarily composed of reed canarygrass and a few other species of grasses and various groundcover. Table 5 summarizes the species composition within the plant community south of Wetland A.

Table 5. Plant Community South of Wetland A, Characterized by Sample Point5

Botanical Name	Common Name	♦Cover (%)
Trees		5
<i>Crataegus monogyna</i>	English hawthorn	5
Shrubs and Saplings		10
<i>Quercus garyana</i>	Oregon white oak	10
<i>Rubus laciniatus</i> **	Cut-leaf blackberry	5
<i>Rubus armeniacus</i> ***	Himalayan blackberry	10
Groundcover		100
<i>Phalaris arundinacea</i> **	Reed canarygrass	90
<i>Dipsacus sylvestris</i> **	Fuller's teasel	40
<i>Epilobium watsonii</i>	Watson's willow-herb	10
<i>Cirsium arvense</i> ***	Canada thistle	10

*Invasive species or noxious weed (Oregon Dept. of Agriculture (ODA))

**Nuisance Plant List (Milwaukie Plant List/Portland Plant List)

♦Absolute Percent Cover

As described above and shown by Sample Point 5, the plant community south of Wetland A has almost no tree canopy coverage. The combined tree, shrub and groundcover layers provide coverage that exceeds 80 percent; however, tree canopy coverage is less than 25 percent. Therefore, the existing condition of the WQR south of Wetland A meets the definition of a Class C (“Poor”) WQR, as defined in Table 19.402.11.C of the municipal code.

West of Wetland A

The WQR west of Wetland A contains a dense canopy predominantly composed of Oregon ash and Oregon white oak. Common species in the understory include English hawthorn, snowberry, Himalayan blackberry, bald-hip rose (*Rosa gymnocarpa*), and clustered rose. The groundcover contains a diverse mixture of native and non-native species, including Pacific dewberry, English ivy (*Hedera helix*), Fuller's teasel, Watson's willow-herb, nipplewort, Western swordfern, big-leaf avens

(*Geum macrophyllum*), and common dandelion (*Taraxacum officinale*). Tables 6 and 7 summarize the species composition at two sample points within the plant community.

Table 6. Plant Community West of Wetland A. Characterized by Sample Point 6

Botanical Name	Common Name	♦Cover (%)
Trees		90
<i>Fraxinus latifolia</i>	Oregon ash	25
<i>Quercus garyana</i>	Oregon white oak	30
Shrubs and Saplings		40
<i>Symphoricarpos albus</i>	Common snowberry	50
<i>Rubus armeniacus</i> ***	Himalayan blackberry	10
<i>Crataegus monogyna</i>	English hawthorn	15
Groundcover		55
<i>Rubus ursinus</i>	California dewberry	15
<i>Geum macrophyllum</i>	Big-leaf avens	20
<i>Epilobium watsonii</i>	Watson's willow-herb	5
<i>Lapsana communis</i> **	Nipplewort	35
<i>Taraxacum officinale</i>	Common dandelion	15
<i>Polystichum munitum</i>	Western swordfern	5
<i>Hedera helix</i> **	English ivy	5

*Invasive species or noxious weed (Oregon Dept. of Agriculture (ODA))

**Nuisance Plant List (Milwaukie Plant List/Portland Plant List)

♦Absolute Percent Cover

Table 7. Plant Community West of Wetland A, Characterized by Sample 7

Botanical Name	Common Name	♦Cover (%)
Trees		90
<i>Fraxinus latifolia</i>	Oregon ash	10
<i>Quercus garyana</i>	Oregon white oak	5
Shrubs and Saplings		50
<i>Symphoricarpos albus</i>	Common snowberry	50
<i>Rosa gymnocarpa</i>	Bald-hip rose	10
<i>Rosa pisocarpa</i>	Clustered rose	10
<i>Crataegus monogyna</i>	English hawthorn	40
Groundcover		60
<i>Rubus ursinus</i>	California dewberry	60
<i>Geum macrophyllum</i>	Big-leaf avens	40
<i>Epilobium watsonii</i>	Watson's willow-herb	10
<i>Dipsacus sylvestris</i> **	Fuller's teasel	20
<i>Polystichum munitum</i>	Western swordfern	15

*Invasive species or noxious weed (Oregon Dept. of Agriculture (ODA))

**Nuisance Plant List (Milwaukie Plant List/Portland Plant List)

♦Absolute Percent Cover

The plant community west of Wetland A has a dense tree canopy averaging 90 percent. Canopy coverage across the entire plant community exceeds 50 percent. The combined tree, shrub and groundcover layers provide coverage that exceeds 80 percent. As such, the existing condition of the WQR west of Wetland A meets the definition of a Class A (“Good”) WQR, as defined in Table 19.402.11.C of the municipal code.

6.4 MMC 19.402.12 - General Discretionary Review

A. Impact Evaluation and Alternatives Analysis

An impact evaluation and alternatives analysis is required to determine compliance with the approval criteria for general discretionary review and to evaluate development alternatives for a particular property. A report presenting this evaluation and analysis shall be prepared and signed by a knowledgeable and qualified natural resource professional, such as a wildlife biologist, botanist, or hydrologist. At the Planning Director’s discretion, the requirement to provide such a report may be waived for small projects that trigger discretionary review but can be evaluated without professional assistance.

The alternatives shall be evaluated on the basis of their impact on WQRs and HCAs, the ecological functions provided by the resource on the property, and off-site impacts within the subwatershed (6th Field Hydrologic Unit Code) where the property is located. The evaluation and analysis shall include the following:

1. *Identification of the ecological functions of riparian habitat found on the property, as described in Subsection 19.402.1.C.2.*

Subsection 19.402.1.C.2 of the MMC identifies seven functions and values that contribute to water quality and to fish and wildlife habitat in urban streamside areas. Descriptions of the functions and values provided by the riparian habitat on the project site are provided below.

Vegetated corridors to separate protected water features from development – With exception of the southeast corner of the site, at the location of the church, the site is undeveloped. The vegetated buffer south of Mt. Scott Creek provides a buffer that separates this existing development in the southeast corner of the site from the primary protected water features. The moderately dense tree cover and the dense shrub and herbaceous vegetation along the south side of the creek provide wildlife habitat and water quality benefits to the stream.

Microclimate and shade – Trees within the WQR provide shade to the stream and help to regulate the microclimate within the riparian corridor.

Streamflow moderation and water storage – The floodplain on the south side of Mt. Scott Creek is vegetated with a mixture of trees, shrubs and herbaceous vegetation. During high flow events, vegetation within the floodplain helps to slow floodwaters and reduce downstream flooding. Although much of the floodplain south of the creek predominantly consists of non-woody vegetation, the stream gradient within the site is relatively gradual, and therefore, the riparian corridor within the project area provides limited streamflow moderation and water storage functions.

Water filtration, infiltration, and natural purification – Vegetation within the riparian corridor along Mt. Scott Creek slows runoff from adjacent areas and filters sediments and other pollutants from the runoff before it reaches the stream. By slowing the runoff, the vegetation also increases the potential for water to infiltrate into the soil before reaching the stream. However, the predominantly clay loam soils within the project area reduce the ability of the water to infiltrate into the soil.

Bank stabilization and sediment and pollution control – Streambanks within the project area are generally well-vegetated with trees, shrubs and herbaceous vegetation. This vegetation helps to stabilize the banks, and no evidence of active bank erosion within the project site was observed.

Large wood recruitment and retention and natural channel dynamics – Within the project area, trees occur on both the north and south sides of Mt. Scott Creek. These trees have the potential to become large woody material. When these trees fall into the stream, they have the potential to affect the natural channel dynamics. However, because of the relatively small size of the stream, any large woody material that falls into the stream is likely to remain on the project site rather than be carried downstream.

Organic material resources –Vegetation within the riparian corridor provides organic material that serves as the basis for the aquatic food web. Under the existing conditions, the riparian corridor within the project site is vegetated with a mixture of trees, shrubs, and herbaceous species, which contribute organic materials to the stream.

2. *An inventory of vegetation, sufficient to categorize the existing condition of the WQR per Table 19.402.11.C, including the percentage of ground and canopy coverage materials within the WQR.*

An inventory of vegetation, sufficient to categorize the existing condition of the WQR per Table 19.402.11.C, including the percentage of ground and canopy coverage materials within the WQR, was provided earlier in this document in Subsection 19.402.11.C “Mitigation Requirements for Disturbance within WQRs” of the Development Standards.

3. *An assessment of the water quality impacts related to the development, including sediments, temperature and nutrients, sediment control, and temperature control, or any other condition with the potential to cause the protected water feature to be listed on DEQ’s 303(d) list.*

The proposed project will result in impacts to WQR and HCA associated with Mt. Scott Creek and Wetland A. A 92-unit residential subdivision will be constructed in the central portion of the site. Construction of the subdivision will include four stormwater facilities and grading in the northwest corner of the site for floodplain storage; these features will result in impacts to 40,155 sf (0.92 acre) of WQR and approximately 46,192 sf (1.06 acres) of HCA beyond the limits of the WQR. The WQR impact also includes approximately 1,557 sf (0.04 acre) of wetland impact. The wetlands proposed for impact are of low quality, lacking vegetated structure, and primarily composed of a monoculture of reed canarygrass. Required permits from the State (Department of State Lands (DSL)) and Federal (U.S. Army Corps of Engineers (COE)) agencies for the proposed wetland impacts, and associated wetland mitigation plan, will be obtained, and upon receipt, the Applicant will provide a copy to the City for its files. The areas of permanent and temporary disturbance within the HCA and WQR are summarized in Table 8, below and shown on Figure 5.

It should be noted that the proposed soft-surface paths within the WQR and / or HCA are unpaved and no wider than 30 inches, and therefore, are exempt trails, and as such, meet the standards established in MMC Subsection 19.402.4.A.17, and are not considered to be permanent disturbance within the WQR and HCA.

Table 8. Summary of Permanent and Temporary Disturbance in the WQR and HCA

Activity	Permanent Disturbance (sq.ft./ac.)		Temporary Disturbance (sq.ft./ac.)	
	WQR	HCA	WQR	HCA
92-Unit Subdivision	31,799 / 0.73	40,684 / 0.93	0 / 0	0 / 0
Floodplain storage	0/0	0/0	8,356 / 0.19	5,508 / 0.13
Total	31,799 / 0.73	40,684/ 0.93	8,356 / 0.19	5,508 / 0.13

The proposed project is not anticipated to have any adverse impacts to water quality. The use of erosion and sediment controls during construction will prevent sediment-related impacts to water quality. The proposed project is not anticipated to result in additional nutrient inputs to the stream, and the restoration of the floodplain/ on the south side of Mt. Scott Creek will increase shade on the stream as the riparian plantings mature, helping to reduce water temperatures in the stream. The stormwater outfalls will discharge treated stormwater to the WQR, and the flow-spreaders at the outfalls will dissipate flows preventing erosion and sedimentation downslope of the outfalls and prevent impacts to water quality.

4. *An alternatives analysis, providing an explanation of the rationale behind choosing the alternative selected, listing measures that will be taken to avoid and/or minimize adverse impacts to designated natural resources, and demonstrating that:*
 - a. *No practicable alternatives to the requested development exist that will not disturb the WQR or HCA.*

Because of the location, size and orientation of the resources within the site, and the existing development/church, and limited access points from SE Kellogg Creek Drive, impacts to the WQR and HCA are unavoidable. The alternative site plan (Figure 5A) would have resulted in approximately 48% more permanent impacts to the WQR, with a total of 46,666 sf / 1.07 ac of WQR impacts; permanent impacts to the HCA (42,823 sf / 0.98 acre) resulting from the alternative site plan would have been greater than 5% more than the proposed site plan; and impacts to the wetland (17,592 sf / 0.40 acre) resulting from the alternative site plan would have been significantly greater, resulting in more than 11 times the amount of wetland impact than the proposed site plan. In order to avoid and minimize impacts to the resources, while still allowing the project to be practicable, the Applicant conducted an alternatives analysis, resulting in the proposed plan, which has significantly less adverse effects to the water resources than the alternative design.

An additional alternative site plan was analyzed in order to investigate whether the natural resource impacts could be further minimized. Figure 5B illustrates the additional alternative site plan. However, due to the complexities associated with the combination of the R-10 and R-3 zones transecting the central portion of the site, this alternative would not have allowed the development to meet the City’s minimum density requirements, and therefore, is not a practicable option. This site layout generally shows how the site could be designed under standard R-10 and R-3 zoning without using the Planned Development provisions and within the context of the Natural Resource standards in MMC 19.402.13.I related to subdivisions. The language in that section provides two options for lot layout:

1. *At least 90% of the property’s HCA and 100% of the property’s WQR shall be located in a separate tract. Applications that meet this standard are not subject to the discretionary review requirements of Subsection 19.402.12.*

or

2. If a subdivision cannot comply with the standards in Subsection 19.402.13.I.1, the application shall comply with the following standards:

a. All proposed lots shall have adequate buildable area outside of the WQR and HCA...

The alternative site layout complies with subsection (1) above and indicates that 100 percent of the WQR and 90 percent of the HCA will remain intact in a separate tract. Lots have been laid out on the site consistent with that standard and consistent with the existing split zoning (10,000 square foot lots in R-10 and 3,000 square foot lots in R-3). As shown, the alternative site plan provides 34 lots (27 R-3 lots and 7 R-10 lots). However, this is not a sufficient number of lots to meet the City’s required minimum density for the R-3 zone. The table below shows how minimum density was calculated for the site.

Zone	Gross Acres	Deduct Gross SF	Deduct Floodway	Deduct Proposed ROW	Deduct Open Space	Net SF	Net Acres	Min Required Units
R3	9.58	417,305	52,359	39,837	189,922	135,187	3.10	36
R10	4.44	193,406	21,753	37,517	74,488	59,649	1.37	5

These calculations assume the entire WQR area and more than 90 percent of the HCA will remain in a separate tract owned in common by the future residents of the subdivision. Once floodway, right-of-way and common open space are deducted from the gross R-3 acreage, the net buildable area is 3.10 acres. With a minimum density requirement of 11.6 units per acre, the total amount of units required for the R-3 zone is 36 units. As shown on the alternative site plan, only 27 units fit within the R-3 portion of the site. In order to meet minimum density requirements in the R-3 zone, nine additional units would be needed, which would result in substantial impacts to the WQR and HCA.

b. Development in the WQR and/or HCA has been limited to the area necessary to allow for the proposed use.

Development within the WQR and HCA has been limited to the area necessary to allow for the proposed use. The development has been designed taking into consideration the City’s building, design, and development requirements, while avoiding and minimizing resource impacts to the greatest extent practicable, and still allowing the project to be financially feasible. As such development in the WQR and HCA has been limited to the outer portions of each, in areas that are of lowest quality.

c. If disturbed, the WQR can be restored to an equal or better condition in accordance with Table 19.402.11.C; and the HCA can be restored consistent with the mitigation requirements of Subsection 19.402.11.D.2.

Restoration and mitigation for impacts to the WQR and HCA will be done in accordance with Table 19.402.11.C and Subsection 19.402.11.D.2, respectively. Details of the restoration and mitigation are described in more detail below in Subsection 19.402.12.A.6.b.

It should be noted that the DSL and COE requirement for mitigation for the wetland impact will be met and details will be discussed in the permit, which upon receipt, the Applicant will provide to the City.

d. Road crossings will be minimized as much as possible.

Road crossings are located along the inside edge of the development, which will eliminate the need for side slopes, and thereby, minimize the area of impact to the WQR and HCA.

5. Evidence that the applicant has done the following, for applications proposing routine repair and maintenance, alteration, and/or total replacement of existing structures located within the WQR:

- a. Demonstrated that no practicable alternative design or method of development exists that would have a lesser impact on the WQR than the one proposed. If no such practicable alternative design or method of development exists, the project shall be conditioned to limit its disturbance and impact on the WQR to the minimum extent necessary to achieve the proposed repair/maintenance, alteration, and/or replacement.*
- b. Provided mitigation to ensure that impacts to the functions and values of the WQR will be mitigated or restored to the extent practicable.*

Not applicable. The proposed project does not include routine repair and maintenance, alteration, and/or total replacement of existing structures within the WQR.

6. A mitigation plan for the designated natural resource that contains the following information:

- a. A description of adverse impacts that will be caused as a result of development.*

The proposed project will result in impacts to WQR and HCA associated with Mt. Scott Creek and Wetland A. A 92-unit residential subdivision will be constructed in the central portion of the site. Construction of the subdivision will include four stormwater facilities and grading in the northwest corner of the site for floodplain storage; these features will result in impacts to a total of 40,155 sf (0.92 acre) of WQR and approximately 46,192 sf (1.06 acres) of HCA beyond the limits of the WQR. The WQR impact also includes approximately 1,557 sf (0.04 acre) of wetland impact. The areas proposed for grading for floodplain storage will be restored with native vegetation plantings. The areas of permanent and temporary disturbance within the HCA and WQR are summarized in Table 8, above.

- b. An explanation of measures that will be taken to avoid, minimize, and/or mitigate adverse impacts to the designated natural resource; in accordance with, but not limited to, Table 19.402.11.C for WQRs and Subsection 19.402.11.D.2 for HCAs.*

As discussed above, impacts to the WQR and HCA are unavoidable. Adverse effects to the resources have been minimized by reducing the number of dwelling units (from 100 to 92) and redesigning the development layout, thereby, limiting impacts to the outer edges of the resources to the greatest extent practicable.

Mitigation for the unavoidable impacts will be provided through the inventory of man-made debris and noxious materials that might be present within the WQR and the removal of any such material present; the implementation of a stormwater plan that meets City requirements for runoff rates and water quality; the removal of non-native, invasive plants from the riparian corridor along the south side of Mt. Scott Creek; and the installation of tree and shrub plantings within the remaining WQR and HCA areas, the floodplain storage area, and three additional enhancement areas to restore a diverse, native plant community. Compliance with the mitigation requirements outlined in Table 19.402.11.C and Subsection 19.402.11.D.2 to compensate for proposed impacts to the WQR and HCA are described below. Planting the three additional enhancement areas is in addition to the required mitigation.

As depicted on Figure 4, the existing condition of WQR along the south side of Mt. Scott Creek and the west edge of the property, north and south of Wetland A, is Class A (“Good”); the existing condition of the WQR along the northeast and south sides of Wetland A is Class C (“Poor”). Mitigation requirements for disturbance in a Class A and Class C WQR, as listed in Table 19.402.11.C, are listed below, as are the components of the project design that have been incorporated to insure compliance with the mitigation requirements.

- ***Submit a plan for mitigating water quality impacts related to the development, including: sediments, temperature, nutrients, or any other condition that may have caused the protected water feature to be listed on DEQ’s 303(d) list.***

DOWL will be submitting a Preliminary Drainage Report (dated January 12, 2017) demonstrating that the proposed stormwater management facilities treat runoff to meet the City of Milwaukie’s water quality requirements and detain post-development runoff at or below pre-development release rates.

- ***Inventory and remove debris and noxious materials.***

At the time of site construction, the Applicant will identify man-made debris and noxious materials that may be present within the WQR. Any such debris or materials will be removed from the WQR. This will occur within mitigation and restoration areas, as shown on Figure 9.

Mitigation requirements for disturbance in a Class C WQR, as listed in Table 19.402.11.C, are listed below, as are the components of the project design that have been incorporated to insure compliance with the mitigation requirements.

- ***Restore and mitigate disturbed areas with native species from the Milwaukie Native Plant List, using a City-approved plan developed to represent the vegetative composition that would naturally occur on the site.***

All disturbed areas within the WQR and HCA will be restored with native trees and shrubs and reseeded with a native seed mix. Trees and shrubs will be planted within the mitigation and restoration areas on the south side of Mt. Scott Creek to restore a native plant community within the WQR and HCA areas. In addition to the required mitigation, three additional enhancement areas will be planted with native trees, shrubs and seed mix, which will further improve vegetation structure and diversity.

The number of trees and shrubs to be planted was determined in accordance with MMC Subsection 19.402.11.D.2. Sixteen trees will be removed from the WQR, as shown on Figure 7. As prescribed by Table 19.402.11.D.2.a, 112 trees and 183 shrubs would be required under Mitigation Option 1 to mitigate for the trees to be removed. Under Mitigation Option 2, 863 trees (86,347 sf impact area x 5 trees per 500 sf of impact area = 863 trees) and 4,317 shrubs (86,347 sf impact area x 25 shrubs per 500 sf of impact area = 4,317 shrubs) would be planted to mitigate for the 86,347 sf of impacts to the WQR and HCA. Because Mitigation Option 2 results in more tree plantings, Mitigation Option 2 was used to determine the number of trees and shrubs to be planted in accordance with MMC Subsection 19.402.11.D.2. A list of trees and shrubs proposed for planting is provided in Table 9 below, and on Figure 9A – Planting Lists.

These mitigation plantings meet the requirements of MMC Subsection 19.402.11.D, as follows:

- All areas temporarily disturbed will be restored and permanent impacts will be mitigated by the tree and shrub plantings, as described above.
- All species proposed for planting are native species, as identified on the Milwaukie Native Plant List.
- Trees to be planted will average at least a ½-in caliper (measured at 6 inches above the ground level for field-grown trees or above the soil line for container-grown trees). Shrubs shall be at least 1-gallon size and 12 inches high.
- Trees will be planted between 8 and 12 feet on center. Shrubs will be planted between 4 and 5 feet on center or clustered in single-species groups of no more than 4 plants, with each cluster planted between 8 and 10 feet on center. When planting near existing trees, the dripline of the existing tree shall be the starting point for plant spacing measurements.
- More than two species of shrubs are proposed, and not more than 50 percent of the trees to be planted are of the same genus.
- All mitigation will occur on site.
- Invasive non-native or noxious vegetation will be removed within the mitigation area prior to planting, including, but not limited to, species identified as nuisance plants on the Milwaukie Native Plant List.
- Bare or open soil areas remaining after the required tree and shrub plantings will be seeded to 100% surface coverage with grasses or other groundcover species identified as native on the Milwaukie Native Plant List. Revegetation will occur during the next planting season following the site disturbance.

Table 9. Mitigation Area A Planting List

Species	Common Name	Quantity	Stock Type	Plant Size
Trees				
<i>Alnus rubra</i>	Red alder	173	Container or field-grown	½ in caliper
<i>Crataegus suksdorfii</i>	Black hawthorn	172	Container or field grown	½ in caliper
<i>Fraxinus latifolia</i>	Oregon ash	173	Container or field grown	½ in caliper
<i>Populus balsamifera</i>	Black cottonwood	173	Container or field-grown	½ in caliper
<i>Salix scouleriana</i>	Scouler’s willow	172	Container or field-grown	½ in caliper
Shrubs				
<i>Cornus alba</i>	Red-osier dogwood	720	1 gal.	12 in
<i>Rosa pisocarpa</i>	Clustered rose	720	1 gal.	12 in
<i>Malus fusca</i>	Western crabapple	719	1 gal	12 in
<i>Physocarpus capitatus</i>	Pacific ninebark	719	1 gal.	12 in
<i>Sambucus racemosa</i>	Red elderberry	719	1 gal.	12 in
<i>Symphoricarpos albus</i>	Snowberry	720	1 gal.	12 in
Herbaceous seed mix				
<i>Agrostis exarata</i>	Spike bentgrass	2.0 lbs/ac	Seed	n/a

Species	Common Name	Quantity	Stock Type	Plant Size
<i>Bromus carinatus</i>	California brome	2.0 lbs/ac	Seed	n/a
<i>Deschampsia cespitosa</i>	Tufted hairgrass	3.0 lbs/ac	Seed	n/a
<i>Elymus glaucus</i>	Blue wildrye	3.0 lbs/ac	Seed	n/a
<i>Hordeum brachyantherum</i>	Meadow barley	2.0 lbs/ac	Seed	n/a
<i>Lupinus rivularis</i>	Riverbank lupine	3.5 lbs/ac	Seed	n/a

The types of plants to be installed were chosen from the Milwaukie Native Plant List and by the suitability to site conditions and the types of native species that were observed on the site. The tree and shrub plantings will improve vegetation structure and diversity, and thereby, enhance wildlife habitat, in areas that presently consist of a monoculture of reed canarygrass.

- ***Plant and/or seed all bare areas to provide 100% surface coverage.***

All disturbed soil surfaces will be seeded with a native seed mix, as described in Table 9, above. Areas temporarily disturbed for the construction of stormwater outfalls and due to the removal of invasive plant species will be seeded with this seed mix.

- ***Inventory and remove debris and noxious materials.***

At the time of site construction, the Applicant will identify man-made debris and noxious materials that may be present within the WQR. Any such debris or materials will be removed from the WQR. This will occur within mitigation and restoration areas, as shown on Figure 9.

- c. ***Sufficient description to demonstrate how the following standards will be achieved:***

(1) ***Where existing vegetation has been removed, the site shall be revegetated as soon as practicable.***

Following the completion of the construction of the proposed stormwater outfalls, disturbed soils will be reseeded with the native seed mix described in Table 9, above. Within the mitigation and restoration areas, soils disturbed as a result of the removal of non-native invasive plants will be seeded with the native seed mix described in Table 9 as soon as practicable following the removal of the invasive plants. Woody material will be planted in the mitigation and restoration areas in the fall/winter immediately following construction to maximize the survival of the plantings.

(2) ***Where practicable, lights shall be placed so that they do not shine directly into any WQR and/or HCA location. The type, size, and intensity of lighting shall be selected so that impacts to habitat functions are minimized.***

Lights will be placed so that they do not shine directly into the WQR and/or HCA. The type, size, and intensity of lighting will be selected so that impacts to habitat functions are minimized.

(3) ***Areas of standing trees, shrubs, and natural vegetation will remain connected or contiguous; particularly along natural drainage courses, except where mitigation is approved; so as to provide a transition between the proposed development and the designated natural resource and to provide opportunity for food, water, and cover for animals located within the WQR.***

With the exception of the removal of invasive plants from the proposed mitigation and restoration areas, existing trees, shrubs, and natural vegetation within the WQR will remain undisturbed during the proposed construction.

- d. *A map showing where the specific mitigation activities will occur. Off-site mitigation related to WQRs shall not be used to meet the mitigation requirements of Section 19.402.*

Figure 9 depicts the location of proposed mitigation activities. No mitigation is proposed to occur off-site.

- e. *An implementation schedule; including a timeline for construction, mitigation, mitigation maintenance, monitoring, and reporting; as well as a contingency plan. All in-stream work in fish-bearing streams shall be done in accordance with the allowable windows for in-water work as designated by ODFW.*

Construction of the proposed project is anticipated to begin in the late summer of 2017. Activities associated with the WQR/HCA mitigation are anticipated to begin in summer 2017. Removal of any existing man-made debris and noxious materials from the WQR will occur in summer 2017, as will the removal of invasive plants from the mitigation and restoration areas (Figure 9). Restoration plantings will be installed in the mitigation and enhancement areas in late fall of 2017.

Monitoring of the restoration area will be conducted in the summer of 2018 and again in the summer of 2019. An annual monitoring report documenting the survival of the restoration plantings will be submitted to the City of Milwaukie by December 31 of each monitoring year. Plants that die shall be replaced in kind as needed to ensure the minimum 80% survival rate.

No in-stream work is proposed to occur as part of this project.

B. Approval Criteria

1. *Unless specified elsewhere in Section 19.402, applications subject to the discretionary review process shall demonstrate how the proposed activity complies with the following criteria:*

a. *Avoid*

The proposed activity avoids the intrusion of development into the WQR and/or HCA to the extent practicable. The proposed activity shall have less detrimental impact to the designated natural resource than other practicable alternatives, including significantly different practicable alternatives that propose less development within the resource area.

The proposed project avoids development within the WQR and HCA to the extent practicable, given the limitations due to zoning constraints and minimum density requirements. As discussed earlier in this document, the alternative site designs (Figures 5A and 5B) have greater impacts to the WQR, HCA and wetlands, and therefore, the proposed site design is the optimal alternative for site development that would meet the City's minimum density requirements while also avoiding and minimizing impacts to natural resources on the site to the extent practicable.

b. *Minimize*

If the applicant demonstrates that there is no practicable alternative that will avoid disturbance of the designated natural resource, then the proposed activity within the resource area shall minimize detrimental impacts to the extent practicable.

- (1) *The proposed activity shall minimize detrimental impacts to ecological functions and loss of habitat, consistent with uses allowed by right under the base zone, to the extent practicable.*

Implementation of the proposed mitigation will ensure the proposed project minimizes adverse effects to the ecological functions of the WQR and loss of habitat, as follows:

- The minimization of areal impacts as well as the proposed plantings to restore native plant communities on the south side of Mt. Scott Creek, along the northeast and south sides of

Wetland A, and within the floodplain storage area will ensure that the WQR continues to provide vegetated corridors that separate protected water features from development.

- As the proposed tree and shrub plantings south of Mt. Scott Creek, around Wetland A, and within the floodplain storage area mature, they will increasingly provide microclimate regulation and shade for the stream and wetland, and provide better microclimate regulation and shade as compared to the existing plant communities.
- As the proposed tree and shrub plantings south of Mt. Scott Creek, around Wetland A, and the floodplain storage area mature, they will provide more effective streamflow moderation during high flow events than the herbaceous plant community, predominantly composed of reed canarygrass, that is present under existing conditions.
- The diverse plant community within the WQR, HCA and floodplain storage area will continue to provide water filtration, infiltration, and natural purification functions. The proposed project will not adversely affect these functions.
- The proposed restoration plantings and the resulting diverse plant community within the WQR, HCA and floodplain storage area will continue to provide bank stabilization and sediment and pollution control functions. The proposed project will not adversely affect these functions.
- Trees will remain within the vegetated corridor following construction, and therefore, the WQR will continue to provide the potential for large wood recruitment and retention functions. No impacts are proposed for the creek, and therefore, there will be no adverse impact on channel dynamics.
- Because the WQR will continue to be vegetated with a diverse plant community, the proposed project will not adversely affect the resource's ability to provide organic inputs to the stream and riparian area.

(2) *To the extent practicable within the designated natural resource, the proposed activity shall be designed, located, and constructed to:*

(a) Minimize grading, removal of native vegetation, and disturbance and removal of native soils; by using the approaches described in Subsection 19.402.11.A, reducing building footprints, and using minimal excavation foundation systems (e.g., pier, post, or piling foundation).

In accordance with MMC Subsection 19.402.11.A, the following measures will be implemented to minimize impacts to the WQR on the site:

- Work areas will be marked to reduce potential damage to the WQR.
- Trees in the WQR will not be used as anchors for stabilizing construction equipment.
- Native soils disturbed during development shall be conserved on the property.
- The Applicant has prepared a preliminary grading and erosion control plan. Prior to the start of any construction activities, the applicant will apply for a grading and erosion control permit, consistent with the standards required by the City's Public Works Department.
- The Applicant will implement best management practices on site to prevent the drainage of hazardous materials, erosion, pollution or sedimentation within the resources and the vegetative corridors.

- The Applicant has prepared a preliminary stormwater detention and water quality plan for the project which has been designed to prevent flows within and to natural drainage courses which might exceed pre-developed conditions.
- Prior to construction, the WQR and HCA that are to remain undeveloped will be flagged, fenced, or otherwise marked and shall remain undisturbed. Such markings will be maintained until construction is complete.
- The construction phase of the development shall be done in such a manner as to safeguard the resource portions of the site that have not been approved for development.
- Lights will be placed so that they do not shine directly into the WQR and/or HCA.
- The Applicant has prepared a construction management plan which will conform to the requirements of 19.402.9. The Final Construction management plan will be provided to the City's Engineering Department prior to the commencement of construction activities.

(b) Minimize adverse hydrological impacts on water resources.

The implementation of the proposed stormwater management plan, which detains post-development runoff at or below pre-development release rates will ensure that hydrologic impacts to the water resources are minimized. Since no work is proposed in the stream, this will ensure the project avoids hydraulic impacts to the stream channel.

(c) Minimize impacts on wildlife corridors and fish passage.

No work is proposed in the stream, which will ensure the project avoids impacts to fish passage along this reach of Mt. Scott Creek. Restoration with a diverse native plant community within the riparian corridor will ensure that impacts to wildlife habitat are minimized.

(d) Allow for use of other techniques to further minimize the impacts of development in the resource area; such as using native plants throughout the site (not just in the resource area), locating other required landscaping adjacent to the resource area, reducing light spill-off into the resource area from development, preserving and maintaining existing trees and tree canopy coverage, and/or planting trees where appropriate to maximize future tree canopy coverage.

Impacts to the on-site resources have been minimized to the extent practicable.

c. Mitigate

If the applicant demonstrates that there is no practicable alternative that will avoid disturbance of the designated natural resource, then the proposed activity shall mitigate for adverse impacts to the resource area. All proposed mitigation plans shall meet the following standards:

- (1) The mitigation plan shall demonstrate that it compensates for detrimental impacts to the ecological functions of resource areas, after taking into consideration the applicant's efforts to minimize such detrimental impacts.*

As described above, implementation of the proposed mitigation will ensure the proposed project minimizes adverse effects to the ecological functions of the WQR and loss of habitat, as follows:

- The minimization of areal impacts as well as the proposed plantings to restore a native plant community on the south side of Mt. Scott Creek, around Wetland A, and within the floodplain storage area will ensure that the WQR continues to provide a vegetated corridor that separates protected water features from development.

- As the proposed tree and shrub plantings south of Mt. Scott Creek; around Wetland A, and within the floodplain storage area mature, they will increasingly provide microclimate regulation and shade for the stream, and provide better microclimate regulation and shade as compared to the existing plant community on the south side of the creek.
- As the proposed tree and shrub plantings south of Mt. Scott Creek, around Wetland A, and within the floodplain storage area mature, they will provide more effective streamflow moderation during high flow events than the predominantly reed canarygrass herbaceous plant community that is present under existing conditions.
- The diverse plant community within the WQR, HCA and floodplain storage area will continue to provide water filtration, infiltration, and natural purification functions. The proposed project will not adversely affect these functions.
- The proposed restoration plantings and the resulting diverse plant community within the WQR, HCA and floodplain storage area will continue to provide bank stabilization and sediment and pollution control functions. The proposed project will not adversely affect these functions.
- Trees will remain within the vegetated corridor following construction, and therefore, the WQR will continue to provide the potential for large wood recruitment and retention functions. No impacts are proposed for the creek, and therefore, there will be no adverse impact on channel dynamics.
- Because the WQR will continue to be vegetated with a diverse plant community, the proposed project will not adversely affect the resource's ability to provide organic inputs to the stream and riparian area.

(2) Mitigation shall occur on the site of the disturbance, to the extent practicable. Off-site mitigation for disturbance of WQRs shall not be approved. Off-site mitigation for disturbance of HCAs shall be approved if the applicant has demonstrated that it is not practicable to complete the mitigation on-site and if the applicant has documented that they can carry out and ensure the success of the off-site mitigation as outlined in Subsection 19.402.11.B.5.

In addition, if the off-site mitigation area is not within the same subwatershed (6th Field Hydrologic Unit Code) as the related disturbed HCA, the applicant shall demonstrate that it is not practicable to complete the mitigation within the same subwatershed and that, considering the purpose of the mitigation, the mitigation will provide more ecological functional value if implemented outside of the subwatershed.

All mitigation will occur on site.

(3) All revegetation plantings shall use native plants listed on the Milwaukie Native Plant List.

Only native species will be installed in the revegetation plantings. A list of species to be planted is provided on Figure 9A.

(4) All in-stream work in fish-bearing streams shall be done in accordance with the allowable windows for in-water work as designated by ODFW.

No in-stream work is proposed to occur with this project.

(5) A mitigation maintenance plan shall be included and shall be sufficient to ensure the success of the planting. Compliance with the plan shall be a condition of development approval.

The Applicant will undertake the following mitigation maintenance measures to ensure a minimum of 80 percent of the trees and shrubs planted remain alive two years after the mitigation planting is completed.

- New plantings will be mulched to a minimum of 3-inch depth and 18-inch diameter to retain moisture and discourage weed growth.
- Non-native or noxious vegetation will be removed or controlled throughout the maintenance period.
- Plant sleeves or fencing will be used to protect trees and shrubs against wildlife browsing and the resulting damage to plants.
- New plantings will be watered at a rate of 1 inch per week between June 15 and October 15 for the first two years following planting.

It should be noted that as described in the sections above, mitigation for proposed impacts to the HCA and WQR are primarily in the form of restoration and enhancement plantings. Due to the size, shape and location of the wetland areas and associated WQR and HCA within the site, options for other mitigation measures, such as grading with gradual slopes, while avoiding further impacts to natural resources, is quite limited. As such, grading with gradual slopes, 3:1 or less, were limited to areas along the south and east sides of the existing wetland.

6.5 MMC 19.402.13 – Land Division and Property Line Adjustments

I. Subdivisions

Applications for subdivisions are subject to Type III review and shall comply with one of the following two standards:

- 1. At least 90% of the property's HCA and 100% of the property's WQR shall be located in a separate tract. Applications that meet this standard are not subject to the discretionary review requirements of Subsection 19.402.12.*

This standard is not met. As such the application is subject to the discretionary review provided in Section 6.4, above.

- 2. If a subdivision cannot comply with the standards in Subsection 9.402.13.I.1, the application shall comply with the following standards:*
 - a. All proposed lots shall have adequate buildable area outside of the WQR and HCA.*
 - b. To the extent practicable, the lot and access configurations shall mitigate the potential future impacts to the WQR and HCA from access and development.*
 - c. An Impact Evaluation and Alternatives Analysis shall be prepared in accordance with the relevant portions of Subsection 19.402.12.A.*
 - d. For properties where the HCA covers more than 85% of the total lot area, the Impact Evaluation and Alternatives Analysis shall address how the applicant's proposal retains the greatest practicable degree of contiguity of the HCA across the new lots.*

Standards b, c and d are being met, and have been discussed above in Section 6.4. Standard a cannot be met, however, mitigation for impacts to WQR and HCA has been provided. Some of the developable lots within the proposed development will not provide adequate buildable area outside of

WQR and HCA areas on the site, and therefore, will remain with a WQR and/or HCA. As such, a formal variance request has been made by the Applicant, and will be subject to a Type III review. A Type III Variance Application has been submitted to the City by DOWL.

J. Resource Area as a Separate Tract

Where required by Section 19.402, the new subdivision or partition plat shall delineate and show all WQRs and HCAs as being located in a separate unbuildable tract(s) according to the following process:

1. *Prior to preliminary plat approval, the designated natural resource (whether WQR, HCA, or both) shall be shown as a separate tract(s), which shall not be part of any lot or parcel used for construction of any structures.*

Prior to preliminary plat approval, the WQR and HCA will be shown as separate tracts, which will not be part of any lot or parcel used for construction of any structures. Figure 10 shows the locations of the revised WQR and HCA boundaries upon completion of the proposed development.

2. *Prior to final plat approval, ownership of the separate natural resource tract(s) shall be identified to distinguish it from lots or parcels intended for sale. Ownership in common or by a homeowners association is strongly discouraged. The tract(s) may be identified as any of the following:*
 - a. *Private natural area held by the owner with a restrictive covenant and/or conservation easement.*
 - b. *For residential subdivisions, private natural area subject to an easement conveying storm and surface water management rights to the City of Milwaukie, Clackamas County Water Environment Services, and/or any other relevant jurisdiction, and preventing the owner of the tract from activities and uses inconsistent with the purposes of Section 19.402.*
 - c. *Public natural area where the tract has been dedicated to the City of Milwaukie or a private nonprofit with the mission of land conservation.*

As the proposed development is a residential subdivision, prior to final plat approval, the ownership of the separate natural resource tract(s) will be identified to distinguish it from lots or parcels intended for sale by identifying it as a private natural area subject to an easement conveying storm and surface water management rights to the City of Milwaukie, Clackamas County Water Environment Services, and/or any other relevant jurisdiction, and preventing the owner of the tract from activities and uses inconsistent with the purposes of Section 19.402.

3. *The boundaries of all such tracts shall be demarcated with stakes, flags, or some similar means so that the boundaries between tracts and adjacent properties are defined in perpetuity. Fences that prevent the unfettered passage of wildlife shall not be installed along the boundary of any tract.*

The boundaries of all such tracts will be demarcated with stakes, flags, or some similar means so that the boundaries between tracts and adjacent properties are visibly defined in perpetuity. The exact means that will be used will be determined at the time of construction; however, fences that prevent the unfettered passage of wildlife will not be installed along the boundary of any tract.

6.6 MMC 19.402.15 – Boundary Verification and Map Administration

A. Boundary Verification

To determine whether the standards of Section 19.402 apply to a proposed activity at any given location, the boundaries of any designated natural resource(s) on or near the site shall be verified.

Agreement with the accuracy of the NR Administrative Map does not constitute or require a land use decision. However, for activities proposed within 100 feet of a wetland or its associated vegetated corridor, the boundary verification process outlined in Subsection 19.402.15.A.2.a(1)(b) shall be followed to identify the specific location of wetlands on the subject property. The Planning Director may waive the requirement for official wetland

delineation, depending on the specific circumstances of the site and the proposed activity. Such circumstances may include, but are not limited to, the scale and potential impacts of the proposed activity, the proximity of the proposed activity to the mapped resource, and the Director's confidence in the accuracy of the NR Administrative Map relative to the resource in question. An applicant may challenge the accuracy of the NR Administrative Map through either of the boundary verification processes outlined in Subsections 19.402.15.A.1 and 2.

1. Type I Boundary Verification

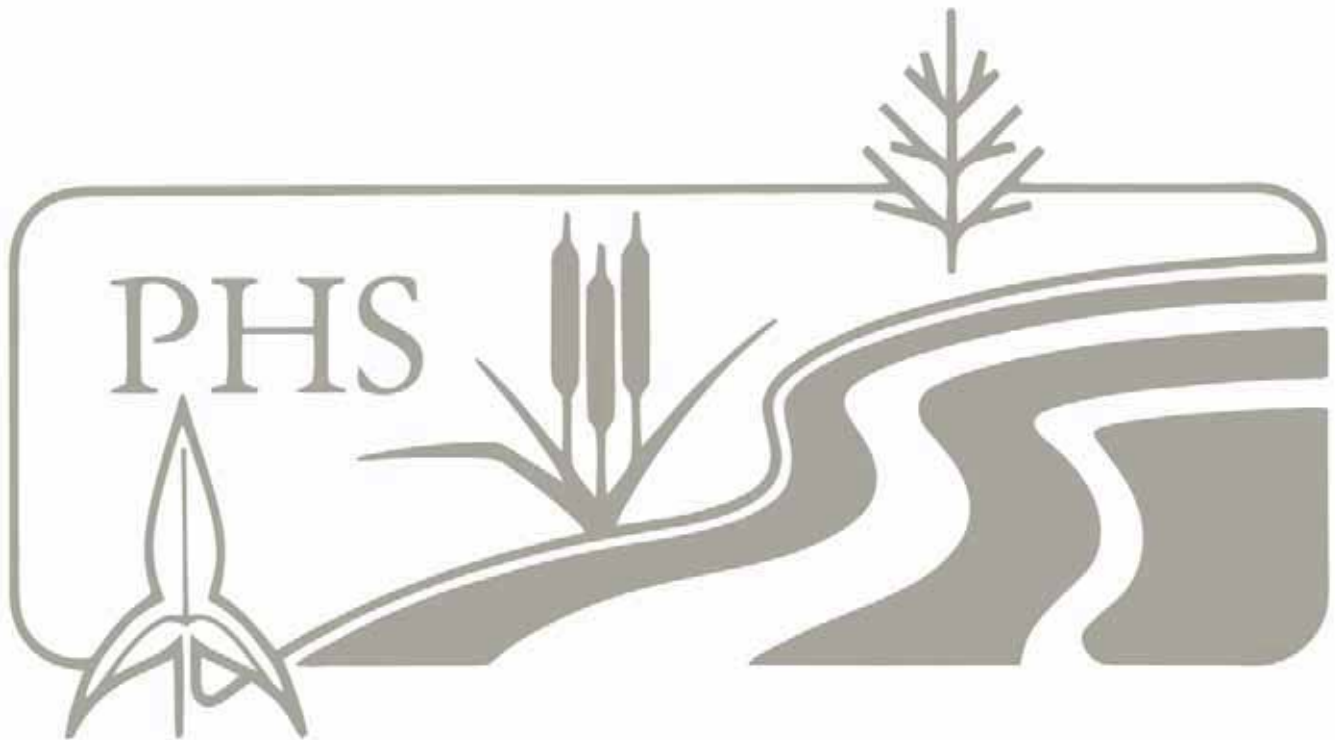
The following minor corrections to mapped HCAs may be proposed according to one of the following procedures, and are subject to Type I review per Section 19.1004:

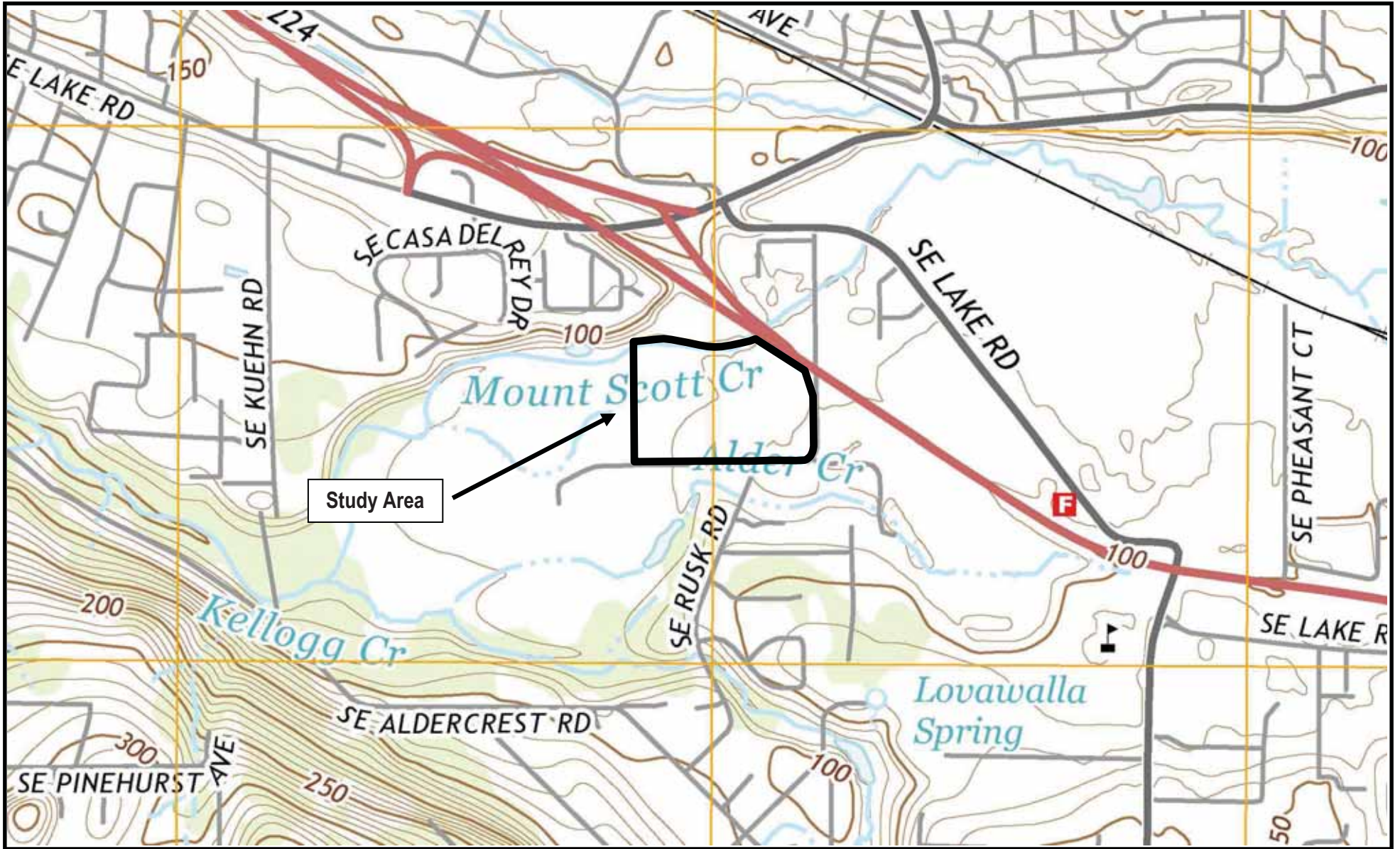
a. Simple Incongruities

The proposed site plan per approval will result in a revised HCA boundary resulting from simple incongruities associated with the development of the subject site. The proposed updated HCA boundary verification map is presented on Figure 10.

Attachment A

Figures





5975
1/16/2017



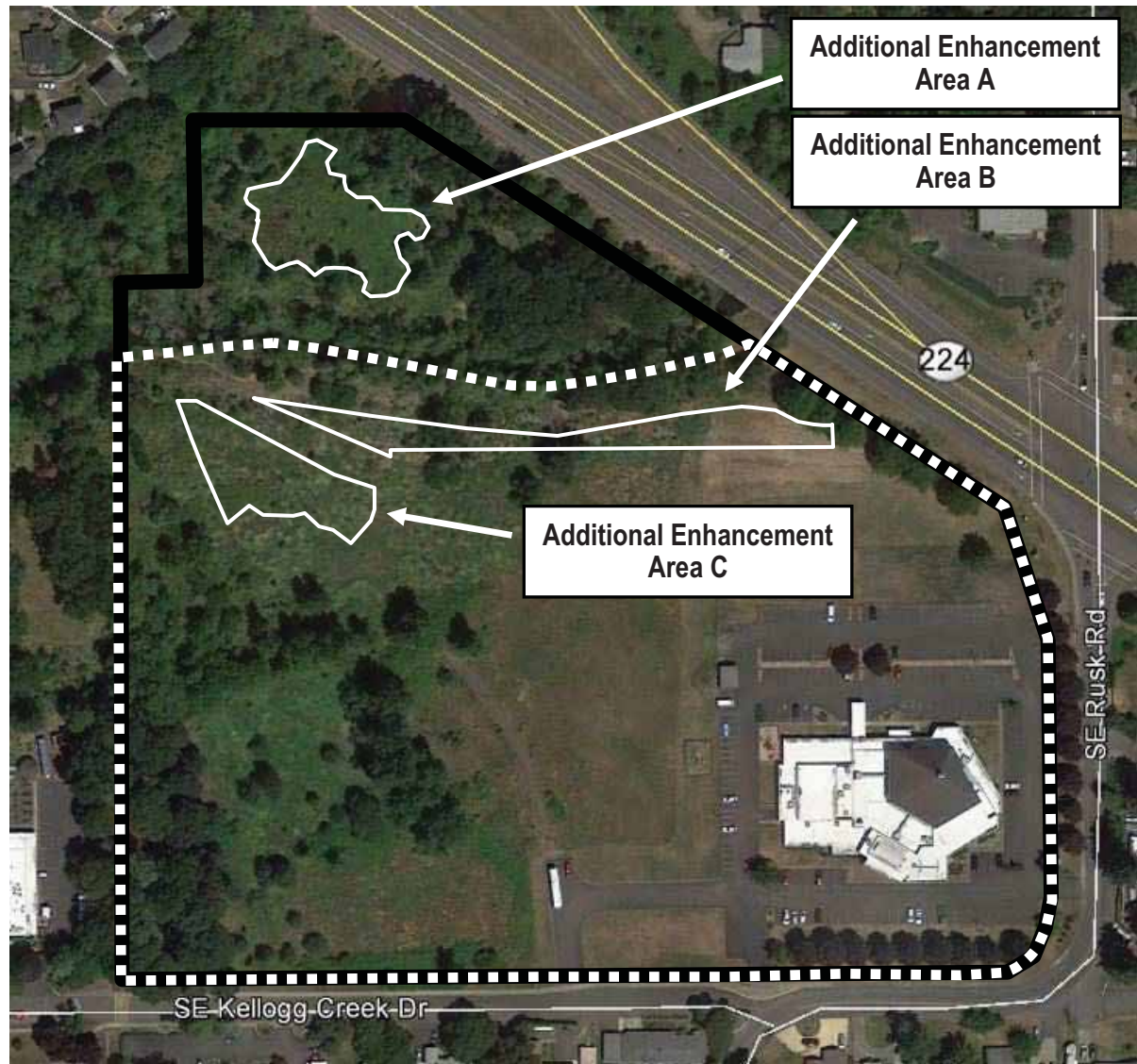
Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

General Location and Topography
SE Kellogg Creek Drive - Milwaukie, Oregon
United States Geological Survey (USGS), Gladstone, Oregon, 7.5 Quadrangle, 2014
(viewer/nationalmap.gov/basic)

FIGURE

1

— Tax Lot Boundary
- - - Study Area



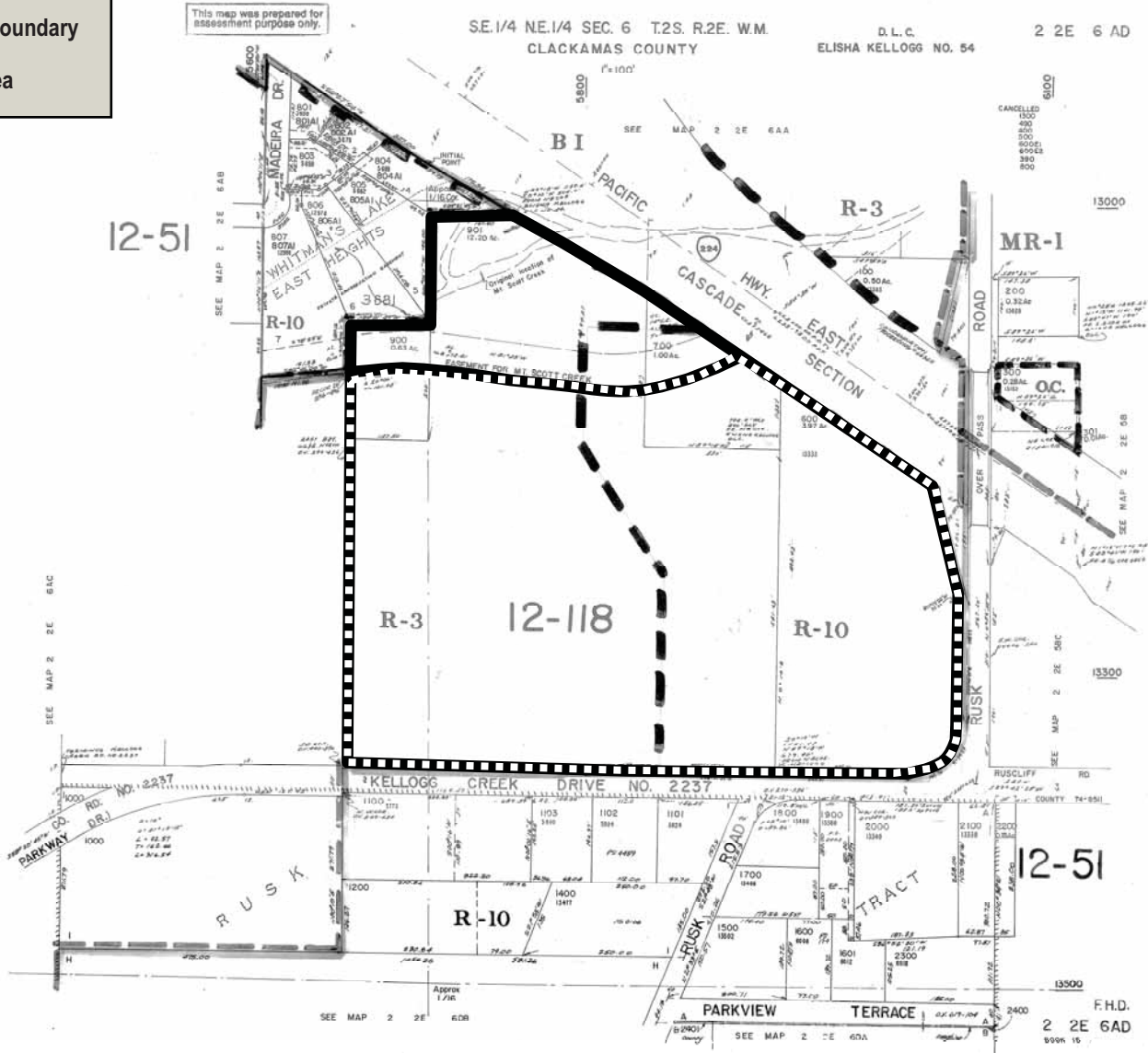
5975
4/19/2017

Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Additional Enhancement Areas A, B and C
SE Kellogg Creek Drive - Milwaukie, Oregon
Aerial Photo - Google Earth, 2016

FIGURE
1A

Tax Lot Boundary
 Study Area



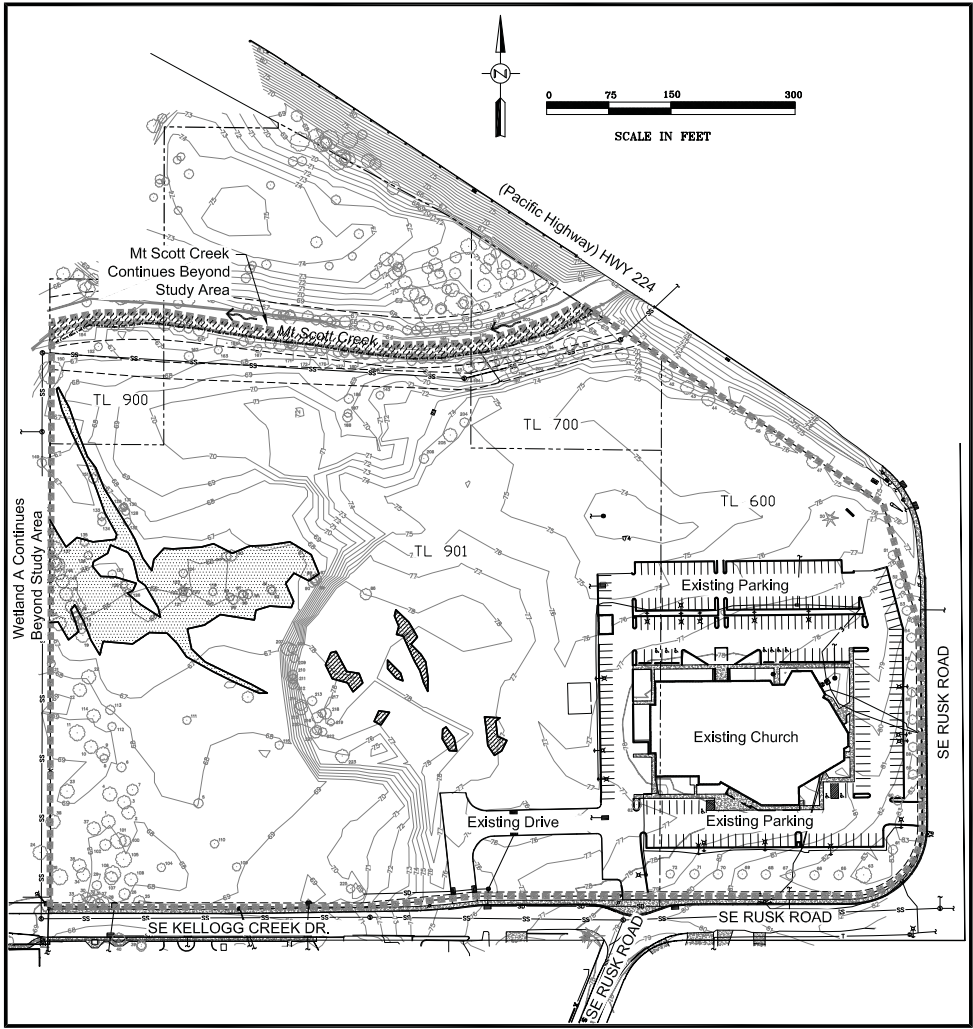
5975
12/21/2016



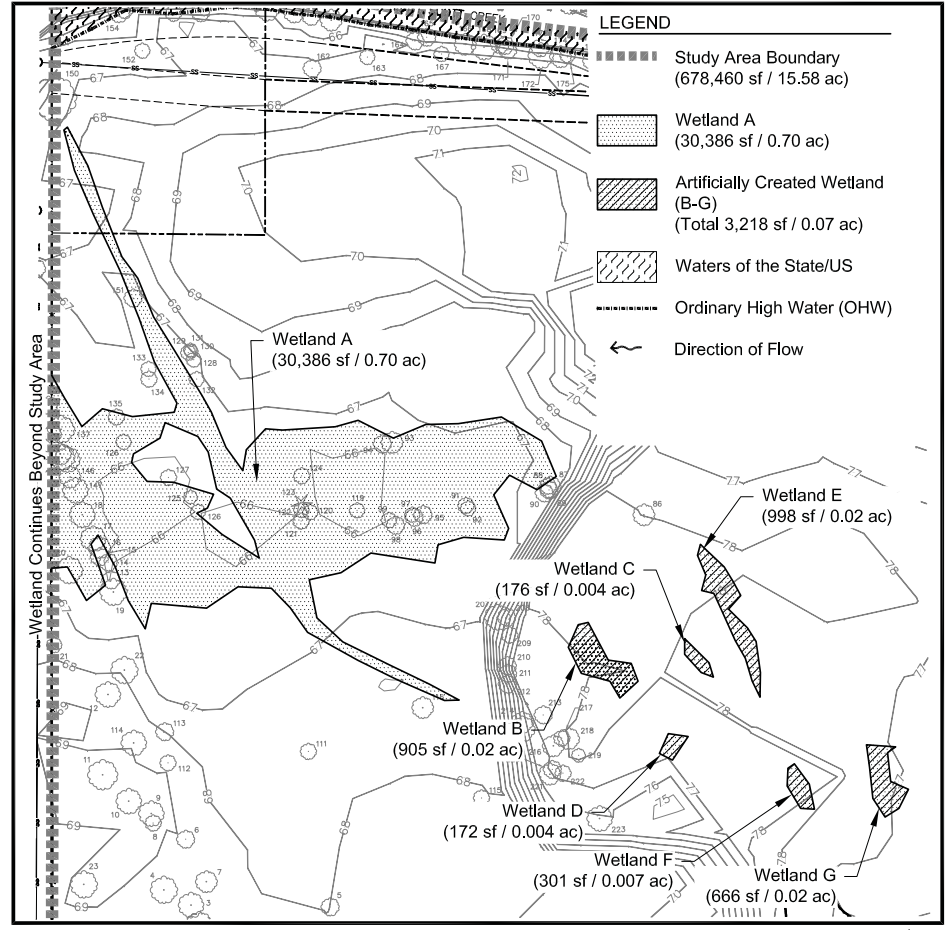
Pacific Habitat Services, Inc.
 9450 SW Commerce Circle, Suite 180
 Wilsonville, OR 97070

Tax Lot Map
 SE Kellogg Creek Drive - Milwaukie, Oregon
 The Oregon Map (ormap.net)

FIGURE
 2



TAX LOT OVERVIEW



SCALE IN FEET

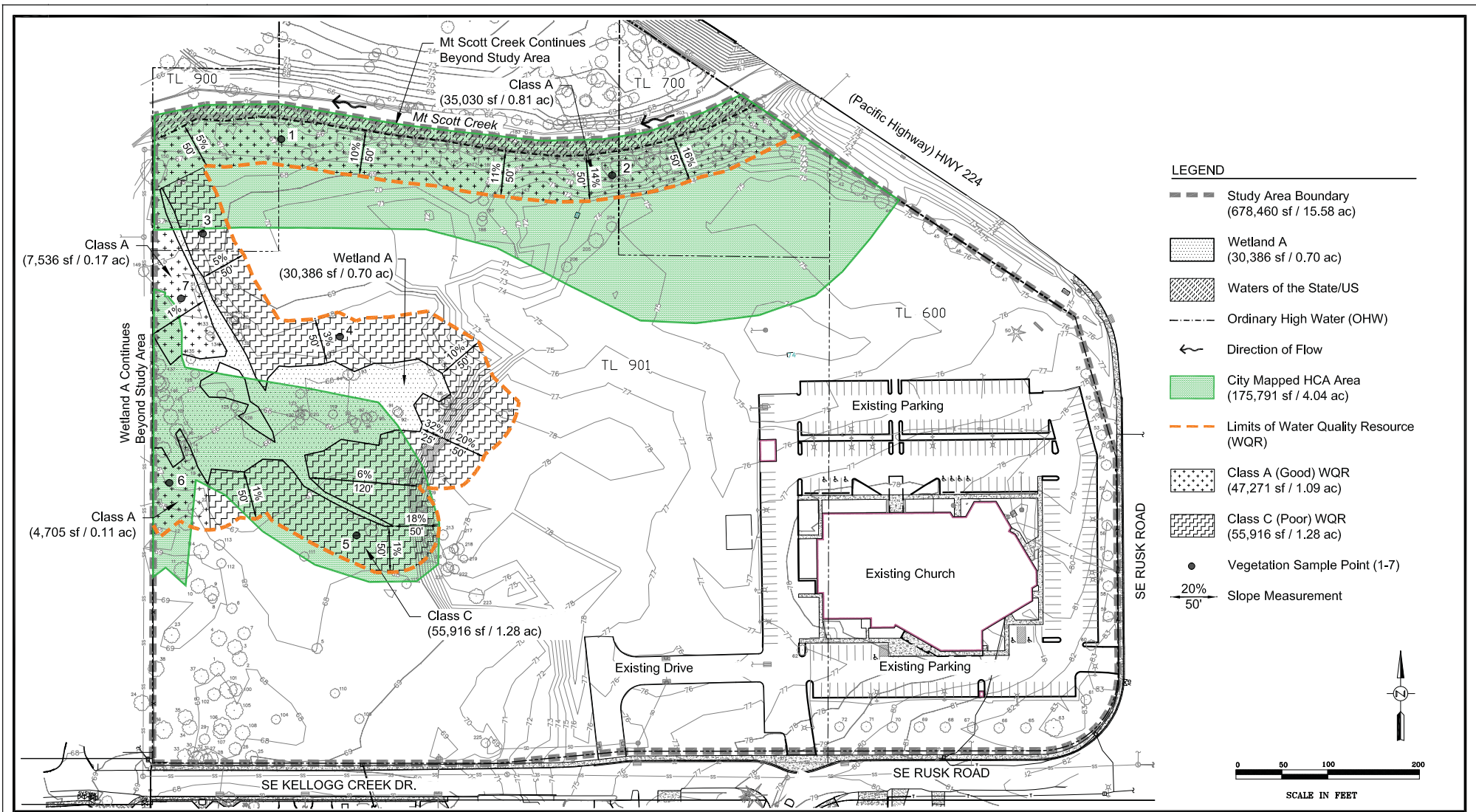


Survey provided by
 TerraCalc Land Surveying, Inc., 2016
 Survey accuracy is sub-centimeter and
 Sample Point accuracy is ± 3 feet.

Existing Conditions
 Kellogg Creek Subdivision - Milwaukie, Oregon

FIGURE
3

1-31-2017



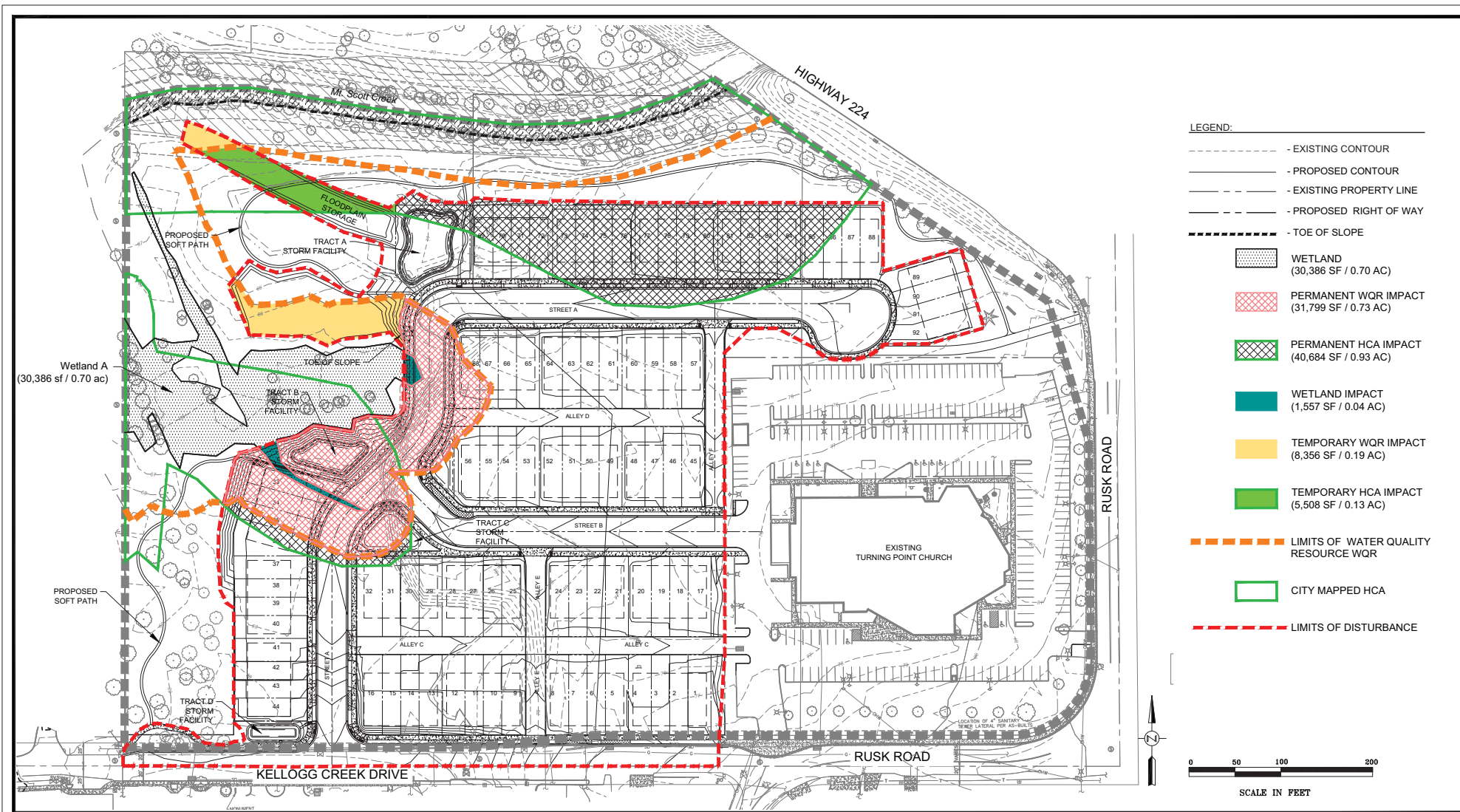
Survey provided by
TerraCalc Land Surveying, Inc., 2016.

Pacific Habitat Services, Inc.
940 SW Commerce Circle, Suite 180 Milwaukie, Oregon 97131
Phone: (503) 671-4200 Fax: (503) 671-4252

Water Quality Resource and Habitat Conservation Area Map
SE Kellogg Creek Drive - Milwaukie, Oregon

FIGURE
4

2-1-2017



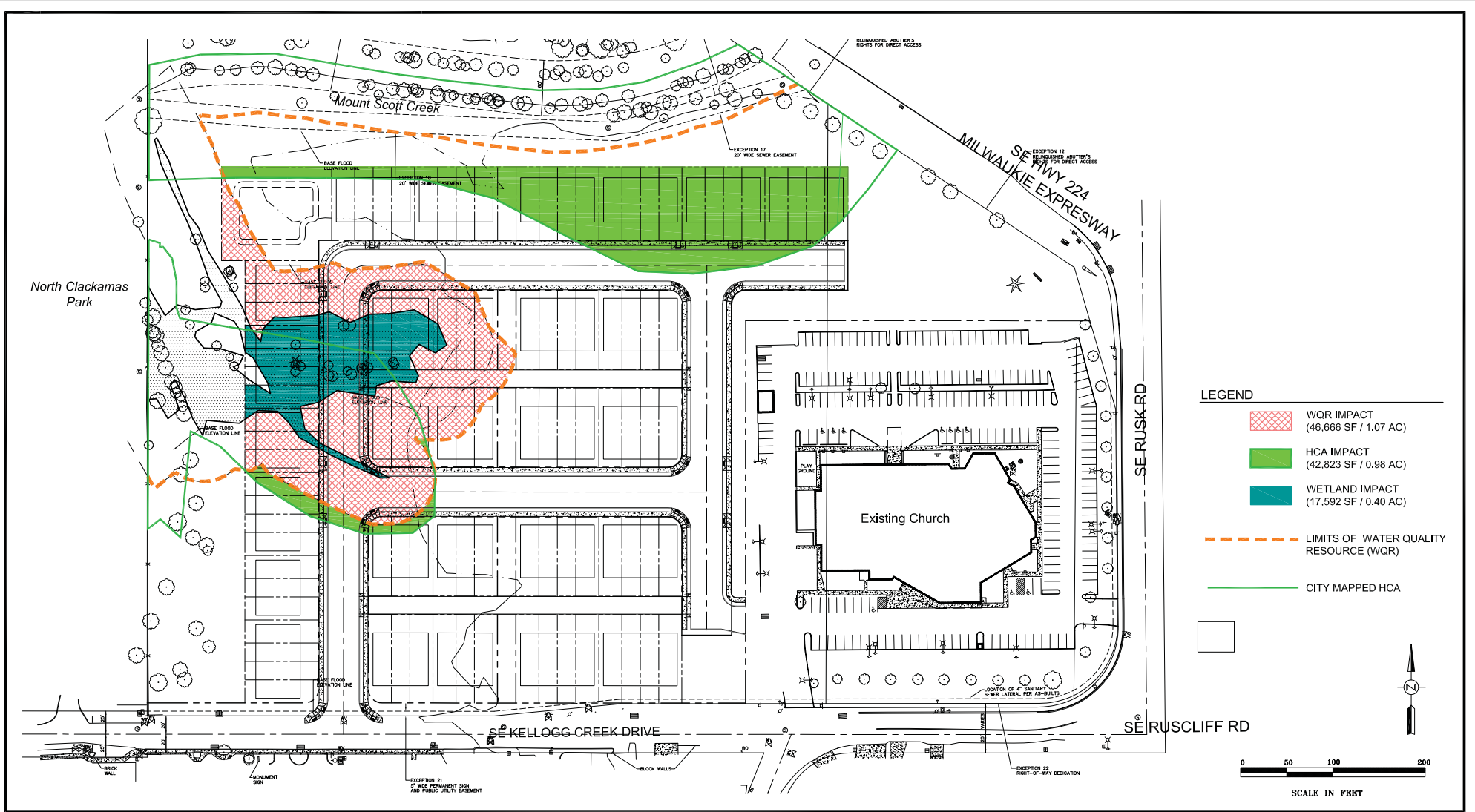
Plans provided by DOWL.

Pacific Habitat Services, Inc.
 9420 SW Commerce Circle, Suite 180, Milwaukie, Oregon 97131
 Phone: (503) 670-0800 Fax: (503) 670-0802

Site Plan and WQR, HCA and Wetland Impacts
 Kellogg Creek Subdivision - Milwaukie, Oregon

FIGURE
5

6-14-2017



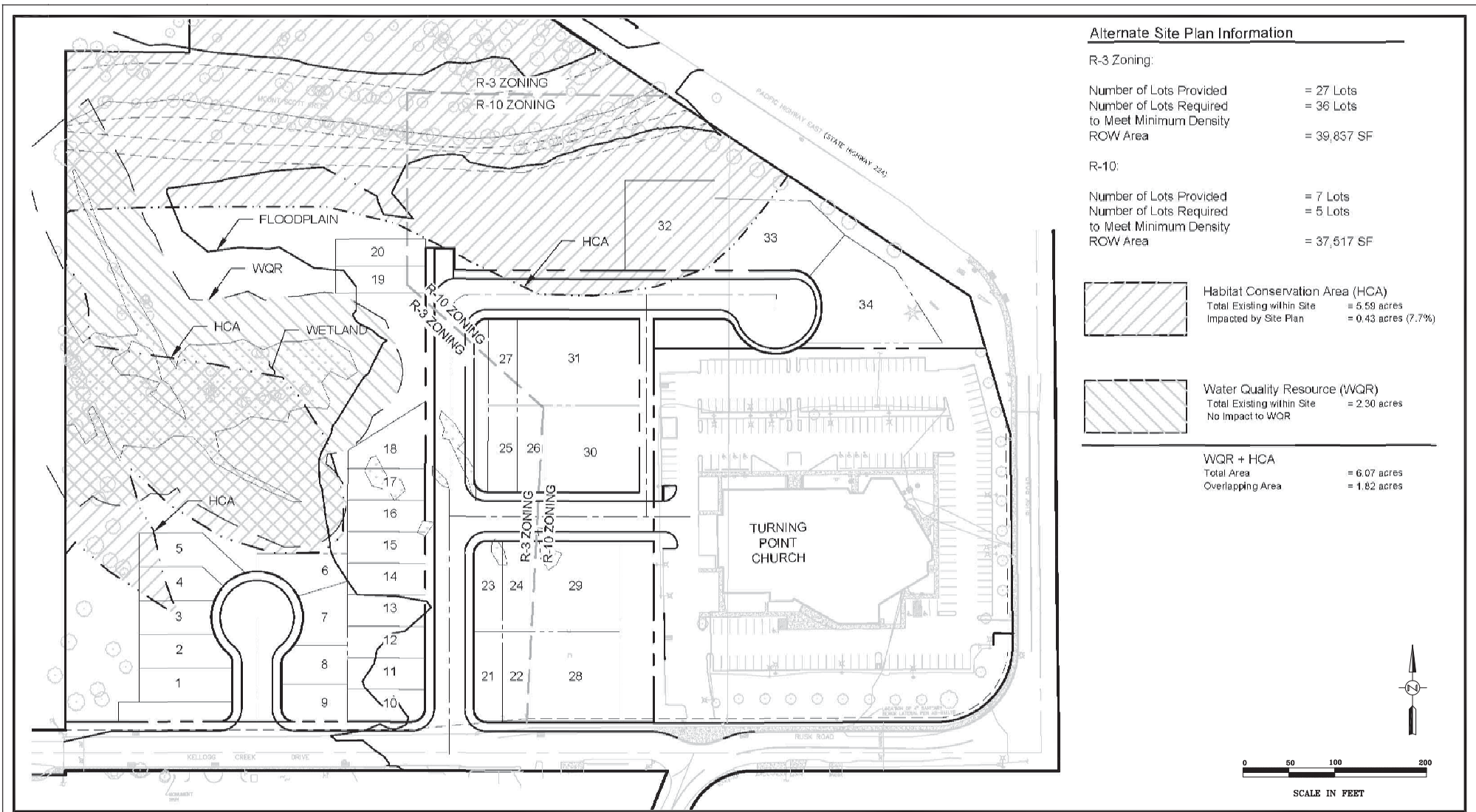
Plans provided by DOWL.

Pacific Habitat Services, Inc.
 9450 SW Commerce Drive, Suite 180 Milwaukie, Oregon 97131
 Phone: (503) 674-0300 Fax: (503) 674-0355

Alternative Site Plan and WQR, HCA and Wetland Impacts
 Kellogg Creek Subdivision - Milwaukie, Oregon

FIGURE
5A

2-1-2017

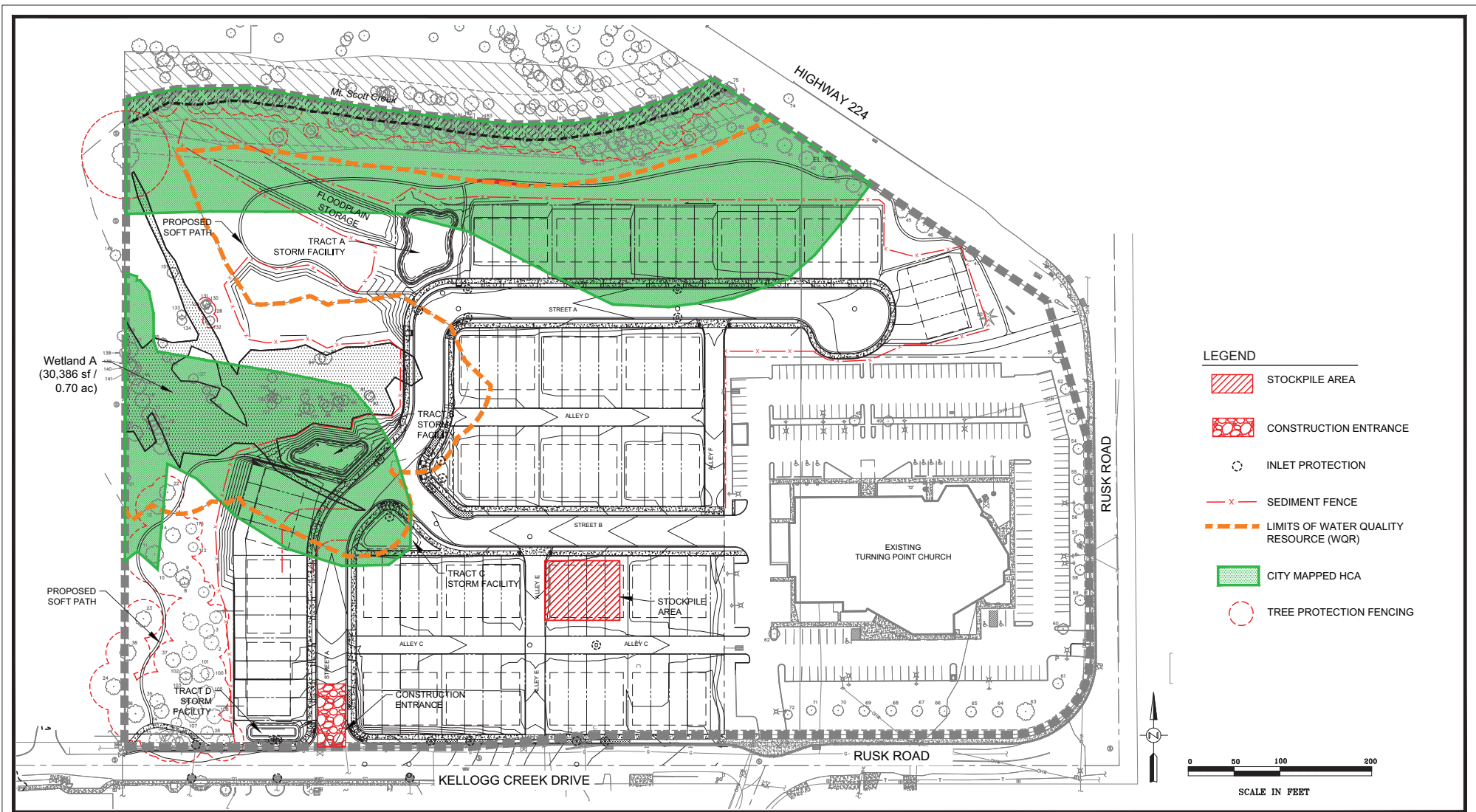


Site Plan (April 3, 2017) provided by DOWL.

Additional Alternative Site Plan
 Kellogg Creek Subdivision - Milwaukie, Oregon

FIGURE 5B

4-6-2017



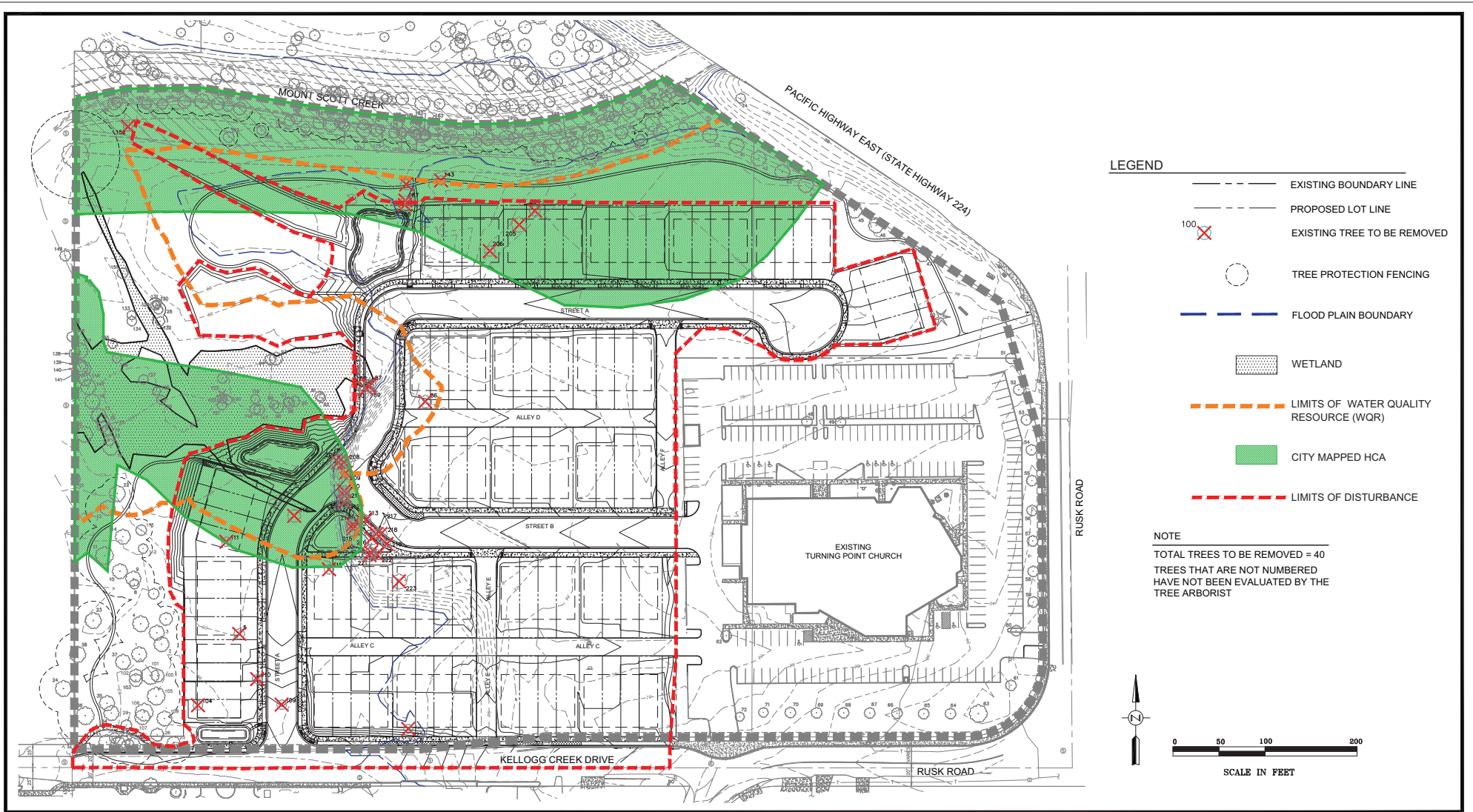
Plans provided by DOWL.

Pacific Habitat Services, Inc.
 9420 SW Commerce Circle, Suite 189, Wilson, Oregon 97150
 Phone: (503) 670-0800 Fax: (503) 670-0800

Construction Management / Erosion and Sediment Control Plan
 Kellogg Creek Subdivision - Milwaukie, Oregon

FIGURE
6

6-14-2017

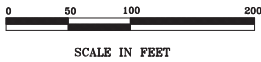


LEGEND

- EXISTING BOUNDARY LINE
- - - PROPOSED LOT LINE
- 100 X EXISTING TREE TO BE REMOVED
- TREE PROTECTION FENCING
- FLOOD PLAIN BOUNDARY
- WETLAND
- LIMITS OF WATER QUALITY RESOURCE (WQR)
- CITY MAPPED HCA
- LIMITS OF DISTURBANCE

NOTE

TOTAL TREES TO BE REMOVED = 40
 TREES THAT ARE NOT NUMBERED
 HAVE NOT BEEN EVALUATED BY THE
 TREE ARBORIST



Plans provided by DOWL.

Pacific Habitat Services, Inc.
 9405 SW Commerce Circle, Suite 180 Milwaukie, Oregon 97131
 Phone: (503) 670-0800 Fax: (503) 670-0804

Tree Removal and Protection Plan
 Kellogg Creek Subdivision - Milwaukie, Oregon

FIGURE
7

6-14-2017

Number	Dia (in)	Remove (Y/N)	Number	Dia (in)	Remove (Y/N)	Number	Dia (in)	Remove (Y/N)	Number	Dia (in)	Remove (Y/N)
1	18	N	61	12	N	119	2x8	N	178	8	N
2	18	N	62	14	N	120	8	N	179	2x10	N
3	22	N	63	19	N	121	10	N	180	10	N
4	28	N	64	12	N	122	8	N	181	14	N
5	12	Y	65	15	N	123	6	N	182	10	N
6	12	N	66	20	N	124	2x10	N	183	10	N
7	14	N	67	17	N	125	6	N	184	2x14	N
8	10	N	68	15	N	126	8	N	185	18	N
9	28	N	69	14	N	127	10	N	186	3x12	Y
10	20	N	70	17	N	128	8	N	187	2x8	Y
11	38	N	71	14	N	129	8	N	188	2x10	Y
12	24	N	72	10	N	130	6	N	189	2x14	N
13	12	N	73	18	N	131	6	N	190	14	N
14	15	N	74	10	N	132	8	N	191	12	N
15	12	N	75	16	N	133	8	N	192	2x12	N
16	2x14	N	76	3x12	N	134	10	N	193	14	N
17	16	N	77	12	N	135	10	N	194	20	N
18	2x16	N	78	12	N	136	2x8	N	195	20	N
19	24	N	79	12	N	137	20	N	196	12	N
20	24	N	80	20	N	138	14	N	197	16	N
21	8	N	81	21	N	139	14	N	198	8	N
22	23	N	82	8	N	140	18	N	199	23	N
23	22	N	83	18	N	141	16	N	200	23	N
24	28	N	84	14	N	143	8	Y	201	12	N
25	22	N	85	8	N	144	12	N	202	12	N
26	2x16	N	86	14	Y	145	2x14	N	203	2x10	N
27	14	N	87	2x14	Y	146	14	N	204	16	Y
28	22	N	88	10	Y	147	16	N	205	2x18	Y
29	18	N	89	12	Y	148	10	N	206	4x12	Y
30	12	N	90	12	Y	149	10	N	207	16	Y
31	22	N	91	10	N	150	48	N	208	2x12	Y
32	21	N	92	8	N	151	12	N	209	9x10	Y
33	18	N	93	14	N	152	8	Y	210	12	Y
34	18	N	94	12	N	153	12	N	211	12	Y
35	2x20	N	95	12	N	154	14	N	212	12	Y
36	36	N	96	12	N	155	2x10	N	213	12	Y
37	26	N	97	8	N	156	12	N	214	14	Y
38	29	N	98	12	N	157	14	N	215	16	Y
41	18	N	99	12	N	158	16	N	216	14	Y
42	22	N	100	17	N	159	14	N	217	10	Y
43	21	N	101	28	N	160	3x8	N	218	14	Y
44	18	N	102	6x8	N	161	14	N	219	3x6	Y
45	18	N	103	16	N	162	10	N	220	12	Y
46	18	N	104	10	Y	163	2x8	N	221	14	Y
47	21	N	105	26	N	164	12	N	222	10	Y
48	12	Y	106	24	N	165	12	N	223	2x16	Y
49	12	Y	107	18	N	166	12	N	225	3x8	Y
50	2x16	N	108	2x16	N	167	8	N			
51	14	N	109	10	Y	168	18	N			
52	14	N	110	10	Y	169	12	N			
53	16	N	111	5x10	Y	170	12	N			
54	13	N	112	10	N	171	12	N			
55	19	N	113	12	N	172	10	N			
56	12	N	114	24	N	173	12	N			
57	14	N	115	8x10	Y	174	11	N			
58	15	N	116	14	Y	175	8	N			
59	14	N	117	12	N	176	12	N			
60	12	N	118	12	N	177	10	N			

TOTAL TREES TO BE REMOVED = 40

TREES THAT ARE NOT NUMBERED HAVE NOT BEEN EVALUATED BY THE ARBORIST



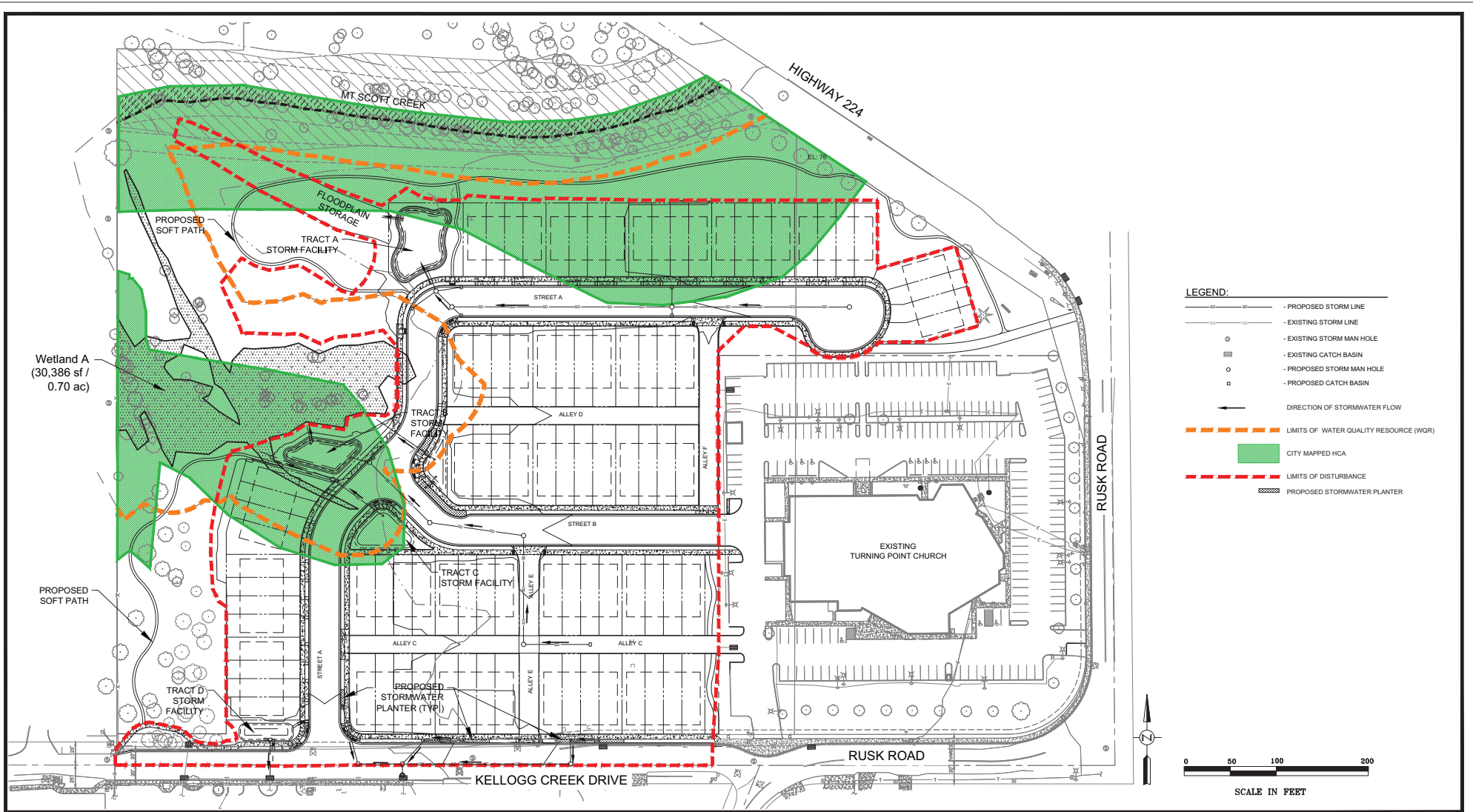
Plans provided by DOWL.

Pacific Habitat Services, Inc.
 940 SW Commerce Drive, Suite 180 Milwaukie, Oregon 97139
 Phone: (503) 671-6300 Fax: (503) 671-6355

Tree Survey and Removal Table
 Kellogg Creek Subdivision - Milwaukie, Oregon

FIGURE
7A

6-14-2017



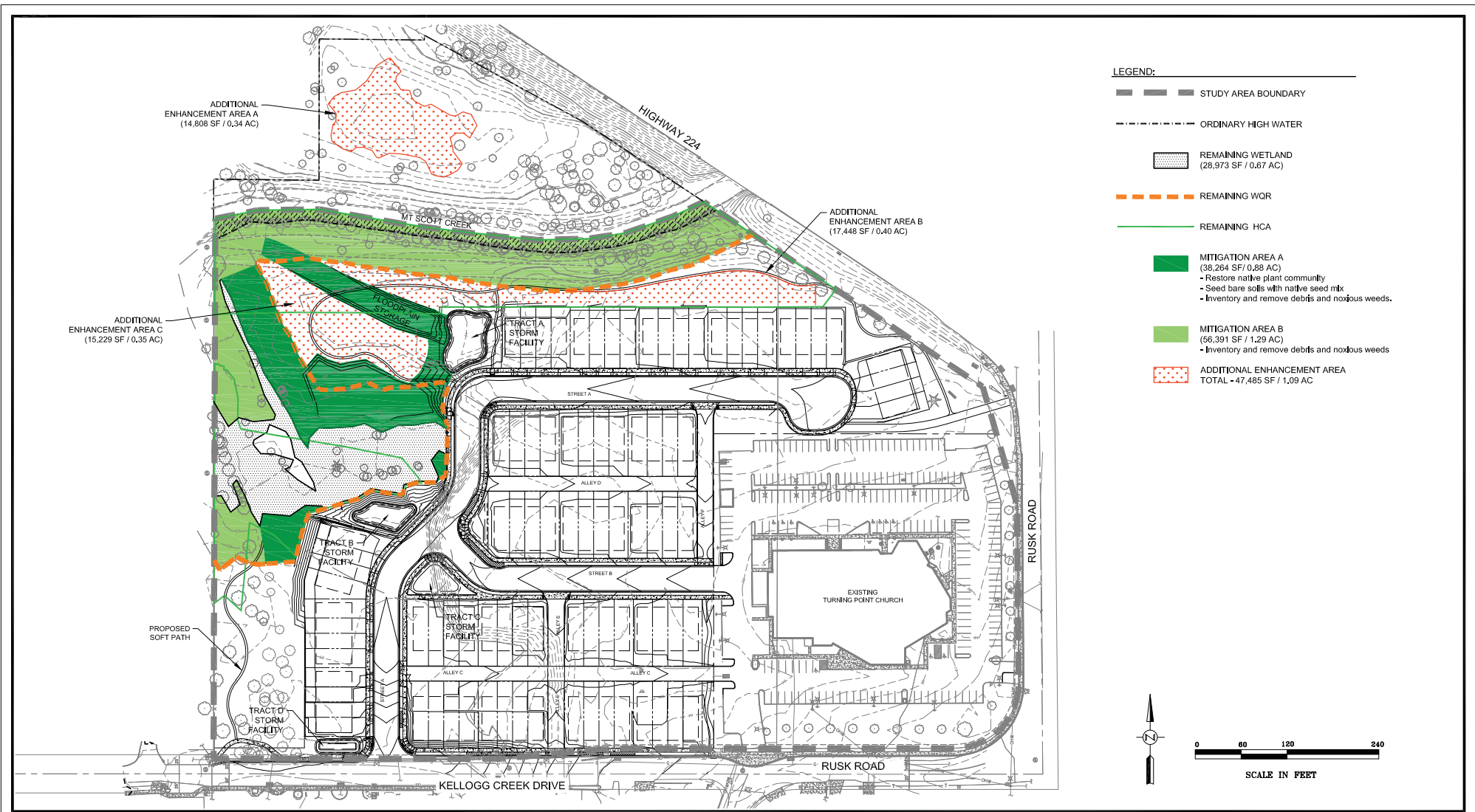
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 Phone: (503) 670-0800 Fax: (503) 670-0802

Stormwater Management Plan
 SE Kellogg Creek Drive - Milwaukie, Oregon

FIGURE
8

6-14-2017



Plans provided by DOWL.

Mitigation Plan
 Kellogg Creek Subdivision - Milwaukie, Oregon

FIGURE
 9

6-14-2017

Mitigation Area A Planting List

Species	Common Name	Quantity	Stock Type	Plant Size
Trees				
<i>Alnus rubra</i>	Red alder	173	Container or field-grown	½ in caliper
<i>Crataegus douglasii</i>	Douglas hawthorn	172	Container or field grown	½ in caliper
<i>Fraxinus latifolia</i>	Oregon ash	173	Container or field grown	½ in caliper
<i>Populus balsamifera</i>	Black cottonwood	173	Container or field-grown	½ in caliper
<i>Salix scouleriana</i>	Scouler's willow	172	Container or field-grown	½ in caliper
Shrubs				
<i>Cornus alba</i>	Red-osier dogwood	720	1 gal.	12 in
<i>Rosa pisocarpa</i>	Clustered rose	720	1 gal.	12 in
<i>Malus fusca</i>	Western crabapple	719	1 gal.	12 in
<i>Physocarpus capitatus</i>	Pacific ninebark	719	1 gal.	12 in
<i>Sambucus racemosa</i>	Red elderberry	719	1 gal.	12 in
<i>Symphoricarpos albus</i>	Snowberry	720	1 gal.	12 in
Herbaceous seed mix				
<i>Agrostis exarata</i>	Spike bentgrass	2.0 lbs/ac	Seed	n/a
<i>Bromus carinatus</i>	California brome	2.0 lbs/ac	Seed	n/a
<i>Deschampsia cespitosa</i>	Tufted hairgrass	3.0 lbs/ac	Seed	n/a
<i>Elymus glaucus</i>	Blue wildrye	3.0 lbs/ac	Seed	n/a
<i>Hordeum brachyantherum</i>	Meadow barley	2.0 lbs/ac	Seed	n/a
<i>Lupinus rivularis</i>	Riverbank lupine	3.5 lbs/ac	Seed	n/a

Additional Enhancement Area A Planting List

Species	Common Name	Quantity	Stock Type	Plant Size
Trees				
<i>Crataegus douglasii</i>	Douglas hawthorn	81	Container or field grown	½ in caliper
<i>Fraxinus latifolia</i>	Oregon ash	81	Container or field grown	½ in caliper
<i>Populus balsamifera</i>	Black cottonwood	81	Container or field-grown	½ in caliper
Shrubs				
<i>Rosa pisocarpa</i>	Clustered rose	243	1 gal.	12 in
<i>Malus fusca</i>	Western crabapple	243	1 gal.	12 in
<i>Physocarpus capitatus</i>	Pacific ninebark	243	1 gal.	12 in
<i>Sambucus racemosa</i>	Red elderberry	243	1 gal.	12 in
<i>Symphoricarpos albus</i>	Snowberry	243	1 gal.	12 in
Herbaceous seed mix				
<i>Agrostis exarata</i>	Spike bentgrass	2.0 lbs/ac	Seed	n/a
<i>Bromus carinatus</i>	California brome	2.0 lbs/ac	Seed	n/a
<i>Deschampsia cespitosa</i>	Tufted hairgrass	3.0 lbs/ac	Seed	n/a
<i>Elymus glaucus</i>	Blue wildrye	3.0 lbs/ac	Seed	n/a
<i>Hordeum brachyantherum</i>	Meadow barley	2.0 lbs/ac	Seed	n/a

Additional Enhancement Area B Planting List

Species	Common Name	Quantity	Stock Type	Plant Size
Trees				
<i>Acer macrophyllum</i>	Big-leaf maple	54	Container or field-grown	½ in caliper
<i>Populus balsamifera</i>	Black cottonwood	54	Container or field grown	½ in caliper
<i>Quercus garryana</i>	Oregon white oak	54	Container or field grown	½ in caliper
Shrubs				
<i>Mahonia aquifolium</i>	Tall Oregon grape	286	1 gal.	12 in
<i>Rosa gymnocarpa</i>	Baldhip rose	286	1 gal.	12 in
<i>Symphoricarpos albus</i>	Snowberry	286	1 gal.	12 in
Herbaceous seed mix				
<i>Achillea millefolium</i>	Yarrow	3.0 lbs/ac	Seed	n/a
<i>Bromus carinatus</i>	California brome	2.0 lbs/ac	Seed	n/a
<i>Elymus glaucus</i>	Blue wildrye	3.0 lbs/ac	Seed	n/a

Additional Enhancement Area C Planting List

Species	Common Name	Quantity	Stock Type	Plant Size
Trees				
<i>Alnus rubra</i>	Red alder	87	Container or field-grown	½ in caliper
<i>Crataegus douglasii</i>	Douglas hawthorn	86	Container or field grown	½ in caliper
<i>Fraxinus latifolia</i>	Oregon ash	87	Container or field grown	½ in caliper
<i>Populus balsamifera</i>	Black cottonwood	87	Container or field-grown	½ in caliper
<i>Salix scouleriana</i>	Scouler's willow	86	Container or field-grown	½ in caliper
Shrubs				
<i>Cornus alba</i>	Red-osier dogwood	360	1 gal.	12 in
<i>Rosa pisocarpa</i>	Clustered rose	360	1 gal.	12 in
<i>Malus fusca</i>	Western crabapple	360	1 gal.	12 in
<i>Physocarpus capitatus</i>	Pacific ninebark	360	1 gal.	12 in
<i>Sambucus racemosa</i>	Red elderberry	360	1 gal.	12 in
<i>Symphoricarpos albus</i>	Snowberry	360	1 gal.	12 in
Herbaceous seed mix				
<i>Agrostis exarata</i>	Spike bentgrass	2.0 lbs/ac	Seed	n/a
<i>Bromus carinatus</i>	California brome	2.0 lbs/ac	Seed	n/a
<i>Deschampsia cespitosa</i>	Tufted hairgrass	3.0 lbs/ac	Seed	n/a
<i>Elymus glaucus</i>	Blue wildrye	3.0 lbs/ac	Seed	n/a
<i>Hordeum brachyantherum</i>	Meadow barley	2.0 lbs/ac	Seed	n/a
<i>Lupinus rivularis</i>	Riverbank lupine	3.5 lbs/ac	Seed	n/a



Plans provided by DOWL.

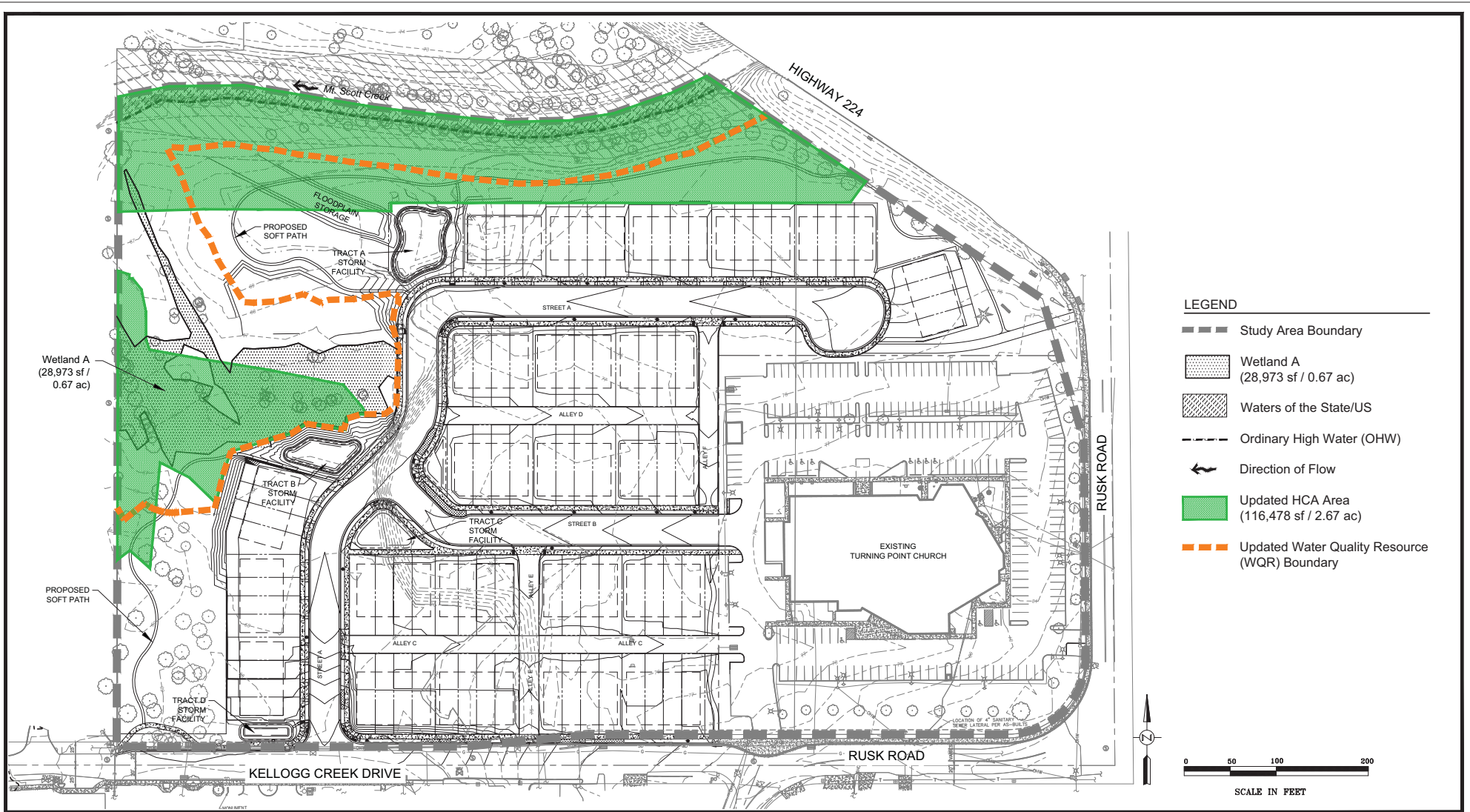
Pacific Habitat Services, Inc.
 9420 SW Commerce Circle, Suite 100, Milwaukie, Oregon 97131
 Phone: (503) 670-0850 Fax: (503) 670-0852

Planting Lists

Kellogg Creek Subdivision - Milwaukie, Oregon

FIGURE
9A

6-14-2017



Plans provided by DOWL.

Pacific Habitat Services, Inc.
 9405 SW Commerce Circle, Suite 180, Milwaukie, Oregon 97131
 Phone: (503) 670-0800 Fax: (503) 670-0802

HCA Boundary Verification Map
 Kellogg Creek Subdivision - Milwaukie, Oregon

FIGURE
10

6-14-2017

Attachment B

Wetland Delineation Report



Wetland Delineation
for a Proposed Development Site
North of SE Kellogg Creek Drive
in Milwaukie, Clackamas County, Oregon
(Township 2 South, Range 2 East, Section 6AD,
TL 600 and Portions of 700, 900 and 901)

Prepared for
Brownstone Development, Inc.
Attn: Randy Myers
PO Box 2375
Lake Oswego, OR 97035

Prepared by
Caroline Rim, Craig Tumer
John van Staveren
Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, Oregon 97070
(503) 570-0800
(503) 570-0855 FAX

PHS Project Number: 5975

January 16, 2017

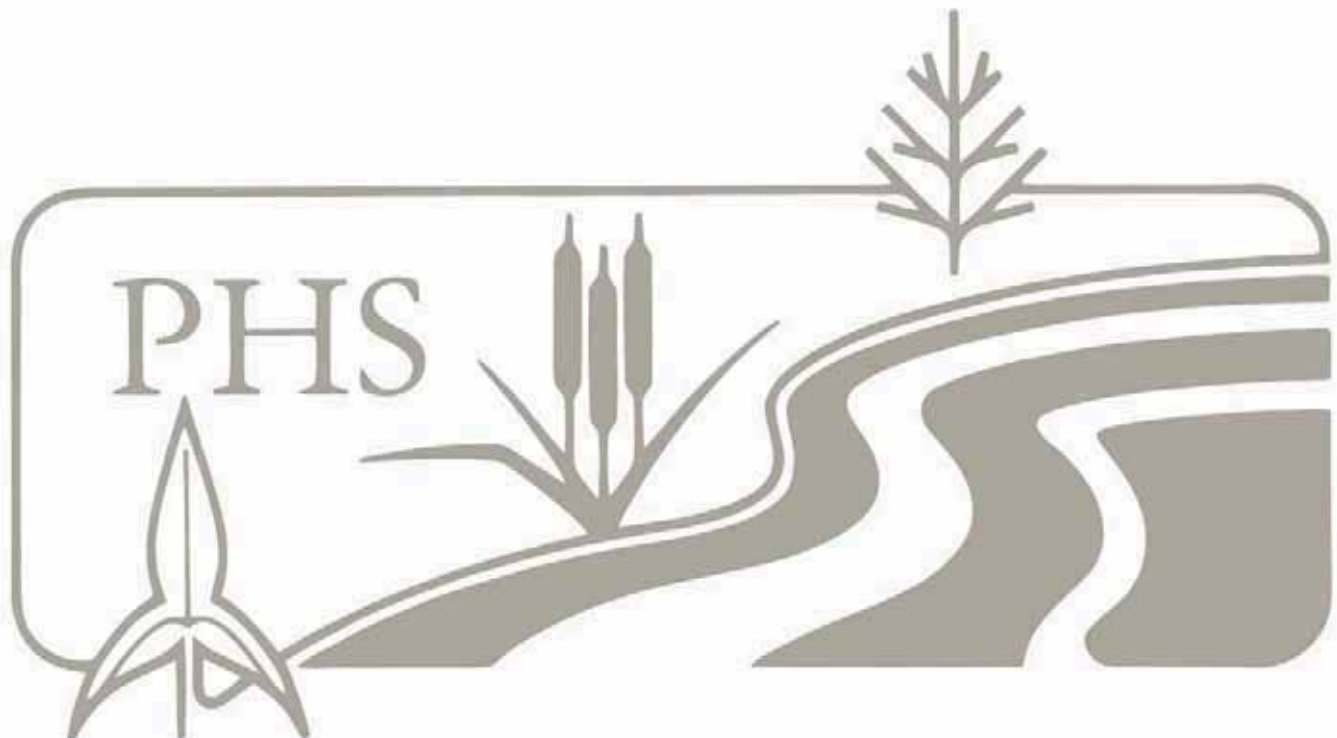


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I. INTRODUCTION

Pacific Habitat Services, Inc. (PHS) conducted a wetland delineation on a proposed development site located north of SE Kellogg Creek Drive in Milwaukie, Clackamas County, Oregon (Township 2 South, Range 2 East, Section 6AD, Tax Lot 600 and portions of Tax Lots 700, 900, 901). The study area consists of approximately 15.58 acres.

This report presents the results of PHS's field work. Figures, including a map depicting the location of wetlands within the study area, are located in Appendix A. Data sheets documenting on-site conditions are provided in Appendix B. Ground-level photos of the study area are in Appendix C. Historic aerial photographs are in Appendix D. The geotechnical evaluation report for the site is included in Appendix E. A discussion of the methodology is provided in Appendix F for the client.

II. RESULTS AND DISCUSSION

A. Landscape Setting and Land Use

The site is located southwest of Highway 224 (Pacific Highway); north of SE Kellogg Creek Drive, and north and west of SE Rusk Road. Mt. Scott Creek flows to the west along the northern edge of the study area, and the North Clackamas Park Milwaukie Center borders the western edge. The site is located within a residential area; undeveloped woodland is located immediately to the north and northwest of the study area, and the Turning Point Church is located in the southeast corner of the site at 13333 SE Rusk Road. The eastern half of the property, near the church, is relatively level; however, the western half descends abruptly to a lower woodland area. Site elevations range from approximately 80 feet National Geodetic Vertical Datum (NGVD) in the eastern half of the site, to approximately 66 feet NGVD in the lower reaches of the western half of the site.

B. Site Alterations

The site has not been subject to recent construction activities; however, it appears that the substrate throughout much of the central and eastern half of the site consists of fill material, likely associated with the construction of the church, over two decades ago.

C. Precipitation Data and Analysis

Table 1 compares the average monthly precipitation to the observed monthly precipitation at the Portland International Airport National Weather Service Station in the three months prior to PHS's wetland delineation field work. Table 1 also compares the observed precipitation to be within the normal precipitation range, as identified in the NRCS WETS table for the Oregon City station.

As shown in Table 1, observed precipitation was below normal and normal range in August. Observed precipitation was above normal but within normal range in September; however, in October observed precipitation was considerably above normal and normal range. It should be noted that the observed precipitation total for November in Table 1 is the amount of precipitation recorded in the first 20 days of the month, prior to the day of PHS's wetland delineation field work.

Table 1. Comparison of Average and Observed Precipitation for the Three Months Prior to the Wetland Delineation Field Work

Month	Average Precipitation ^a (in.)	30% Chance Will Have		Observed Precipitation ^b (in.)	Percent of Normal
		Less Than Average ^a	More Than Average ^a		
August	1.00	0.21	1.16	0.09	13
September	1.93	0.86	2.41	1.69	115
October	3.48	1.85	4.25	8.31	277
November	6.79	4.43	8.16	2.79 ^c	50 ^d

- Notes:
- a. Source: NRCS WETS Table for Oregon City WETS station
 - b. Observed precipitation is the precipitation recorded at the Portland International Airport weather station. Source: National Weather Service.
 - c. Observed precipitation is for the period November 1-20, 2016, prior to PHS’s November 21, 2016 field work.
 - d. The percent of normal precipitation is for the first twenty days in November prior to PHS’s November 21, 2016 field work. This estimate assumes that precipitation is spread evenly across the month and that the average precipitation in the first twenty days of November is 2.79 inches.

Precipitation in the months preceding PHS’s wetland delineation field work fluctuated widely. However, based on this and other observations of hydrologic conditions during the site visit, it is PHS’s opinion that the drier than normal conditions in August and the wetter than normal conditions in September and October did not affect the hydrological indicators observed at the time of PHS’s wetland delineation field work.

D. Methods

PHS conducted the wetland investigation and data collection on November 21, 2016. PHS identified jurisdictional wetlands in the study area based on the presence of wetland hydrology, hydric soils, and hydrophytic vegetation, in accordance with the Routine On-site Determination, as described in the *Corps of Engineers Wetland Delineation Manual, Wetlands Research Program Technical Report Y-87-1* (“The 1987 Manual”) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region*.

PHS delineated the limits of ordinary high water (OHW) along the south bank of Mt. Scott Creek based on an evaluation of observed physical characteristics, as described in the U.S. Army Corps of Engineers’ Regulatory Guidance Letter No. 05-05 (December 7, 2005). PHS flagged the limits of OHW with blue flags placed at the limits of the OHW, as indicated by the point below which woody vegetation is absent and at the break in the slope angle of the bank.

E. Description of All Wetlands and Other Non-Wetland Waters

PHS identified and delineated one potential wetland area (Wetland A) and Mt. Scott Creek (south bank only), as well as six potentially, artificially created wetland areas (Wetlands B through G). Brief descriptions of the on-site wetlands and non-wetland waters are provided below.

Mt. Scott Creek

Mt. Scott Creek, a tributary to Kellogg Creek and the Willamette River, is a perennial stream that generally flows to the west along the northern boundary of the study area. The stream banks are relatively well defined and near vertical at the location of the OHW line. The plant community of the riparian area along the creek includes a deciduous overstory of big-leaf maple (*Acer macrophyllum*, FACU), Oregon white oak (*Quercus garryana*, FACU), Oregon ash (*Fraxinus latifolia*, FACW), and red alder (*Alnus rubra*, FAC); and a shrub and herbaceous understory composed of species such as snowberry (*Symphoricarpos albus*, FACU), Pacific ninebark (*Physocarpus capitatus*, FACW), Scouler's willow (*Salix scouleriana*, FAC), English hawthorn (*Crataegus monogyna*, FAC), Fuller's teasel (*Dipsacus fullonum*, FAC), and spreading bentgrass (*Agrostis stolonifera*, FAC). The Cowardin Classification for Mt. Scott Creek is Riverine Upper Perennial Unconsolidated Bottom Permanently Flooded (R3UBH) and Riverine Unknown Perennial Unconsolidated Bottom Permanently Flooded (R5UBH). The Hydrogeomorphic (HGM) Classification is Riverine Flow-Through. Mt. Scott Creek continues outside the study area to the north, west and east.

Wetland A

Wetland A consists of approximately 30,386 square feet (0.70 acre) located in the western half of the site, south of Mt. Scott Creek. The plant community within Wetland A (characterized by Sample Points 3, 5, 7) is a combination of deciduous woodland bordered by open fields. Dominant species within the woodland include an overstory of Oregon ash and black cottonwood (*Populus balsamifera*, FAC), with a woody understory of Oregon ash, black cottonwood, red-osier dogwood (*Cornus alba*, FACW), snowberry, and Himalayan blackberry (*Rubus armeniacus*, FAC). The open fields include reed canarygrass (*Phalaris arundinacea*, FACW), creeping buttercup (*Ranunculus repens*, FAC), big leaf avens (*Geum macrophyllum*, FAC), slender rush (*Juncus tenuis*, FAC), rough bluegrass (*Poa trivialis*, FAC), bitter dock (*Rumex obtusifolius*, FAC), and common dandelion (*Taraxacum officinale*, FACU).

The adjacent upland areas (characterized by Sample Points 2, 6, 8) include Oregon ash, Himalayan blackberry, snowberry, English hawthorn, reed canarygrass, Fuller's teasel, large leaf avens, bull thistle (*Cirsium vulgare*, FACU), fringed willowherb (*Epilobium ciliatum*, FACW), Dewey sedge (*Carex deweyana*, FAC), common selfheal (*Prunella vulgaris*, FACU), Western swordfern (*Polystichum munitum*, FACU), lentil vetch (*Vicia tetrasperma*, NOL), creeping buttercup, spreading bentgrass, field horsetail (*Equisetum arvense*, FAC), narrow-leaf goosefoot (*Chenopodium leptophyllum*, FACU), spotted cat's ear (*Hypochaeris radicata*, FACU), European centaury (*Centaureum erythraea*, FAC), wild carrot (*Daucus carota*, FACU), tansy ragwort (*Senecio jacobaea*, FACU), and colonial bentgrass (*Agrostis capillaris*, FAC).

Hydrology within Wetland A is likely supported by a seasonally high groundwater table, surface runoff and precipitation. At the time of PHS's wetland delineation field work, the soils in Wetland A were typically saturated to the surface or within twelve inches of the surface, with free water observed at four inches below the soil surface or at the surface; inundation was also commonly present within Wetland A. The low-chroma matrix of the soil with contrasting redox concentrations meets the redox dark surface indicator for hydric soils. The Cowardin Classification for Wetland A is Palustrine Emergent, Persistent, Seasonally Flooded/Saturated (PEM1E). The HGM Classification is Slope. Wetland A continues outside the study area to the west.

Wetlands B – G (Artificially Created Wetlands)

Wetlands B through G generally consist of small, shallow, isolated depressions. Table 2 lists the area of each wetland.

Wetland	Area (square feet / acres)
B	905 / 0.02
C	176 / 0.004
D	172 / 0.004
E	998 / 0.02
F	301 / 0.007
G	666 / 0.02
Total	3,218 / 0.07

All six of these wetlands are similar in character, and therefore, a representative pair of wetland/upland sample points (9 and 10, respectively) were taken at Wetland E. These wetlands are located in the central portion of the site, west of the church and several feet above the lower woodland area further to the west. The plant communities in both the wetland and upland areas are primarily composed of weedy grasses and herbs; the wetland areas include reed canarygrass, spreading bentgrass, soft rush (*Juncus effusus*, FACW), spotted cat's ear, and oxeye daisy (*Chrysanthemum vulgare*, FACU), and the adjacent upland areas include wild carrot, curly dock (*Rumex crispus*, FAC), colonial bentgrass, bluegrass (*Poa sp.*, FAC), common velvet grass (*Holcus lanatus*, FAC), tall fescue (*Schedonorus arundinaceus*, FAC), yellow glandweed (*Parentucellia viscosa*, FAC), and English plantain (*Plantago lanceolata*, FACU).

Hydrology within Wetlands B through G primarily consists of surface runoff and precipitation. As discussed in the *Subsurface Conditions* section of the geotechnical evaluation report (Appendix E), fill material on the site ranges in thickness up to more than 12 feet, with approximately 10 feet in the central portion of the site, and groundwater was not encountered in the test pits in the vicinity of these wetlands. Therefore, it is reasonable to assume that these artificially created wetlands are not hydrologically connected to the water table. At the time of PHS's wetland delineation field work, the soils within these wetlands were typically saturated to the surface, with free water observed at or near the surface, and included some areas of inundation, which likely was perched on compacted substrate resulting in diminished permeability. The redox dark surface indicator for hydric soils was met with low-chroma matrix soils with contrasting redox concentrations. The Cowardin Classification for Wetlands B through G is Palustrine Emergent, Nonpersistent, Seasonally Flooded/Saturated (PEM2E). The HGM Classification is Slope.

As mentioned previously in Section B, *Site Alterations*, it appears that the substrate throughout much of the central and eastern half of the site consists of fill material, likely associated with the construction of the church. In addition, based on a review of historic aerial photographs (Appendix D), it appears that Wetlands B through G have been artificially created on compacted fill material resulting from activities associated with construction of the church and on-going activities associated with the church property over the years.

F. Deviation from LWI or NWI

With the exception of Mt. Scott Creek, which the US Fish and Wildlife Service’s National Wetlands Inventory (NWI) maps as Riverine Upper Perennial Unconsolidated Bottom Permanently Flooded (R3UBH) and Riverine Unknown Perennial Unconsolidated Bottom Permanently Flooded (R5UBH) wetland, it does not indicate the presence of any wetlands on the site. NWI maps are generated primarily through the interpretation of color infrared aerial photographs (scale of 1:58,000), with limited “ground truthing” to confirm the interpretations. The canopy cover over much of Wetland A, the small size of Wetlands B through G, and the scale of the aerial photographs used to prepare the NWI maps are likely reasons for the discrepancy between the wetlands mapping and the existing on-site conditions. In addition, as Wetlands B through G appear to be artificially created, their presence and absence over the years are likely to have been dependent upon the construction and various activities on the church property, which have varied over the period of time in which the aerial photographs were taken.

G. Mapping Method

PHS flagged the wetland boundaries and limits of OHW with blue flagging. Sample points were flagged with lime green surveyor’s tape. The wetland boundary and OHW flagging were survey-located by TerraCalc Land Surveying, Inc. Sample points were GPS-located by PHS, which subsequently transferred this information onto a base map provided by TerraCalc Land Surveying. The estimated survey accuracy is sub-centimeter and the sample point accuracy is approximately +/- 3 feet.

H. Additional Information

None

I. Results and Conclusions

Within the study area, PHS identified and delineated a total of approximately 0.70 acres of potentially jurisdictional wetland, approximately 0.07 acres of potentially artificially created wetland, and the OHW line along the south bank of Mt. Scott Creek, as detailed in Table 3.

Table 3: Summary of Potentially Jurisdictional and Artificially Created Wetland, and Other Waters within the Study Area

Resource	Area (square feet/acreage)	Cowardin Class	HGM Class
Wetland A	30,386 / 0.70	PEM1E	Slope
Wetland B (Artificially Created)	905 / 0.02	PEM2E	Slope
Wetland C (Artificially Created)	176 / 0.004	PEM2E	Slope
Wetland D (Artificially Created)	172 / 0.004	PEM2E	Slope

Resource	Area (square feet/acreage)	Cowardin Class	HGM Class
Wetland E (Artificially Created)	998 / 0.02	PEM2E	Slope
Wetland F (Artificially Created)	301 / 0.007	PEM2E	Slope
Wetland G (Artificially Created)	666 / 0.02	PEM2E	Slope
Mt. Scott Creek (OHW line south bank only)	-	R3UBH R5UBH	Riverine Flow-Through
Total (Potentially Jurisdictional Wetland)	30,386 (0.70 acres)		
Total (Potentially Artificially Created Wetland)	3,218 (0.07 acres)		

J. Required Disclaimer

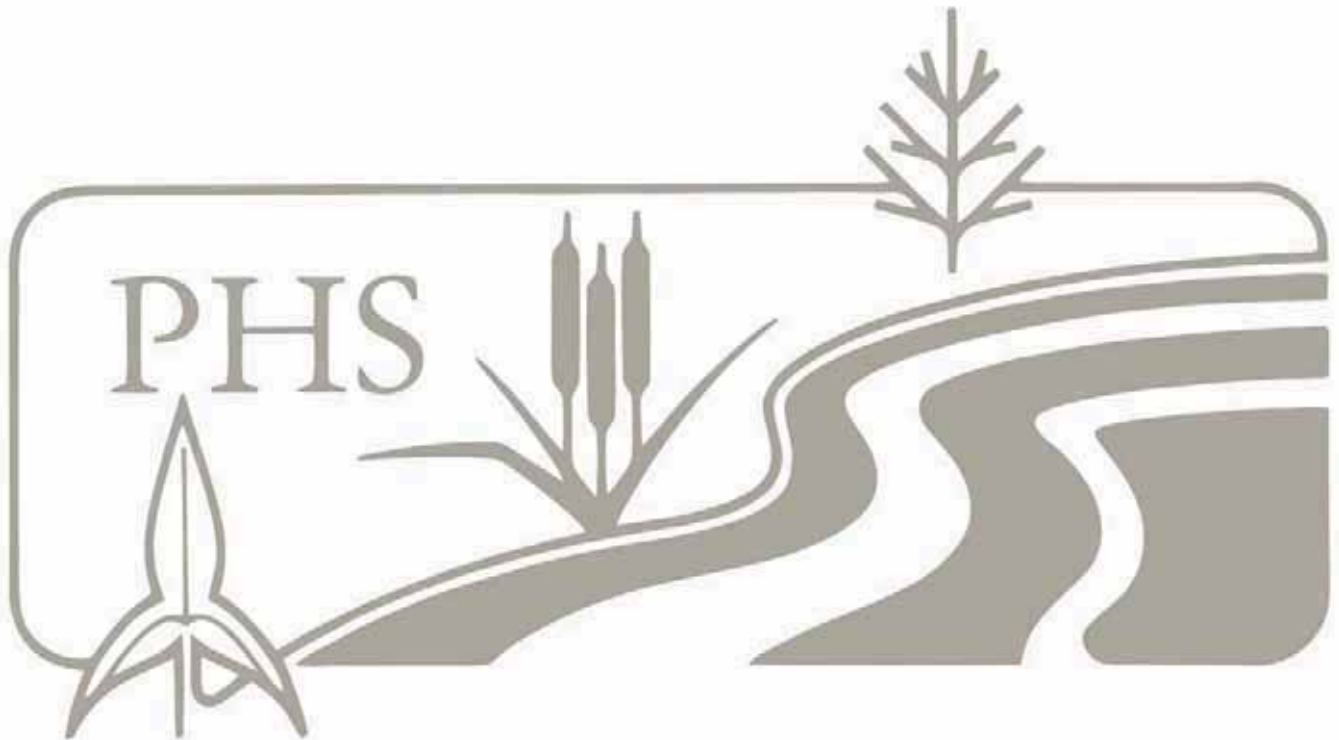
This report documents the investigation, best professional judgment and conclusions of the investigators. It is correct and complete to the best of our knowledge. It should be considered a Preliminary Jurisdictional Determination of wetlands and other waters and used at your own risk unless it has been reviewed and approved in writing by the Oregon Department of State Lands in accordance with OAR 141-090-0005 through 141-090-0055.

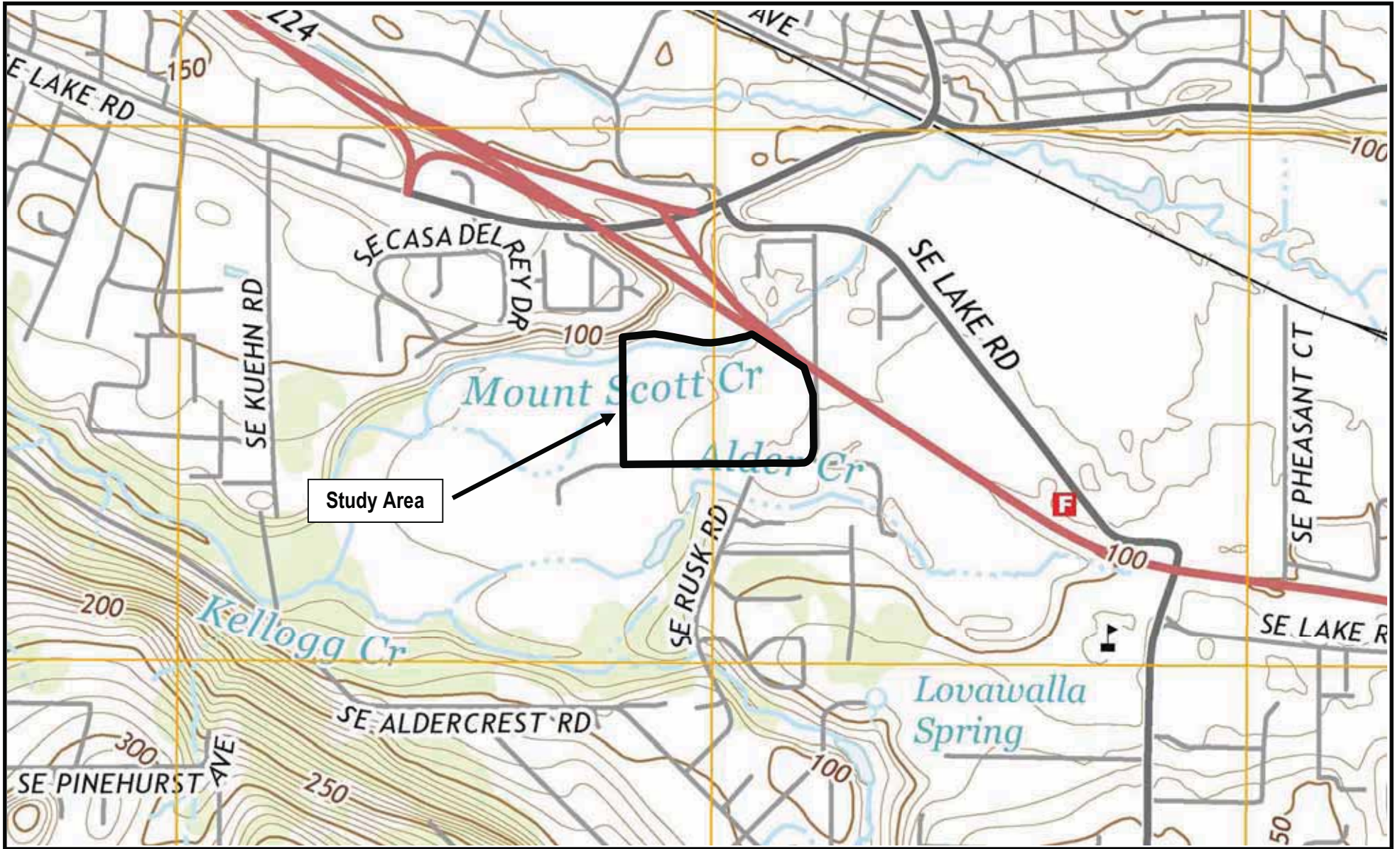
III. REFERENCES

- Adamus, P.R. and D. Field. 2001 *Guidebook for Hydrogeomorphic (HGM)-based Assessment of Oregon Wetland and Riparian Sites. Willamette Valley Ecoregion, Riverine Impounding and Slopes/Flats Subclasses*. Oregon Division of State Lands, Salem, OR.
- Hitchcock, CL and A. Cronquist. 1973. *Flora of the Pacific Northwest: An Illustrated manual*. University of Washington Press.
- Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. *State of Oregon 2016 Plant List. The National Wetland Plant List: 2016 Wetland Ratings*. Phytoneuron 2016-30: 1-17. Published 28 April 2016. ISSN 2153 733X.
http://rsgisias.crrel.usace.army.mil/nwpl_static/data/DOC/lists_2016/States/pdf/OR_2016v1.pdf
- Munsell Color, 2009. *Munsell Soil Color Charts*.
- Oregon Department of State Lands. September 2001. *Removal-Fill Law (ORS 196.800-196.990) and Removal and Filling in Scenic Waterways (ORS 390.805-390.925)*.
- ORMAP tax maps. <http://www.ormap.org/>
- US Army Corps of Engineers, Environmental Laboratory, 1987. *Corps of Engineers Wetland Delineation Manual. Technical Report Y-87-1*.
- US Army Corps of Engineers, Environmental Laboratory, 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region*
- USDA, Web Soil Survey, 2016. Online Mapping for Clackamas County, Oregon.
- U.S. Fish and Wildlife Services (USFWS). 2016. National Wetland Inventory, Wetland Mapper. <http://www.fws.gov/wetlands/Data/Mapper.html>
- US Geologic Survey, The National Map Viewer, 2016. *7.5-minute topographic map, Gladstone, Oregon quadrangle*. <http://viewer.nationalmap.gov/viewer/>

Appendix A

Figures





5975
1/16/2017



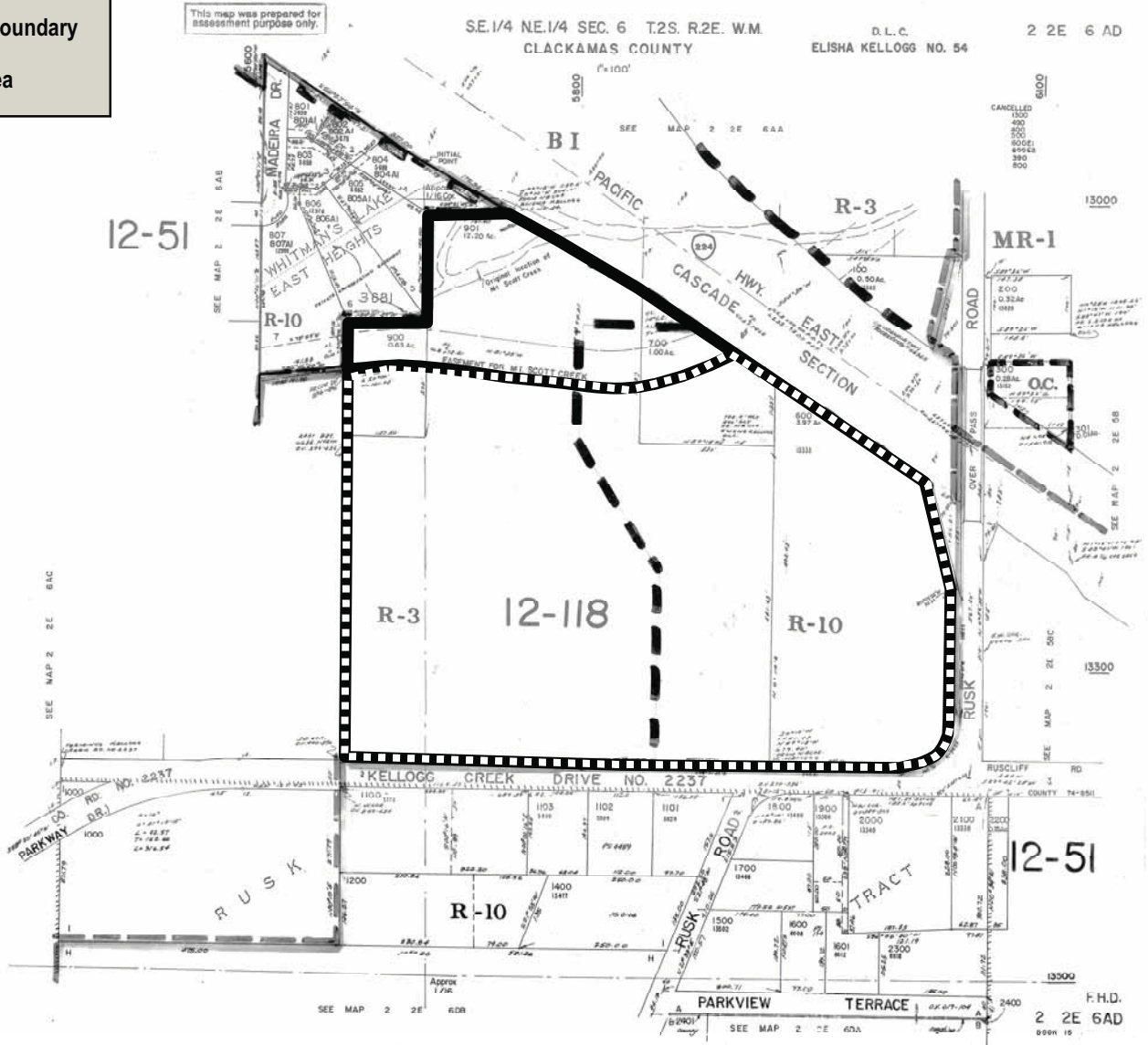
Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

General Location and Topography
SE Kellogg Creek Drive - Milwaukie, Oregon
United States Geological Survey (USGS), Gladstone, Oregon, 7.5 Quadrangle, 2014
(viewer/nationalmap.gov/basic)

FIGURE

1

Tax Lot Boundary
 Study Area



5975
12/21/2016

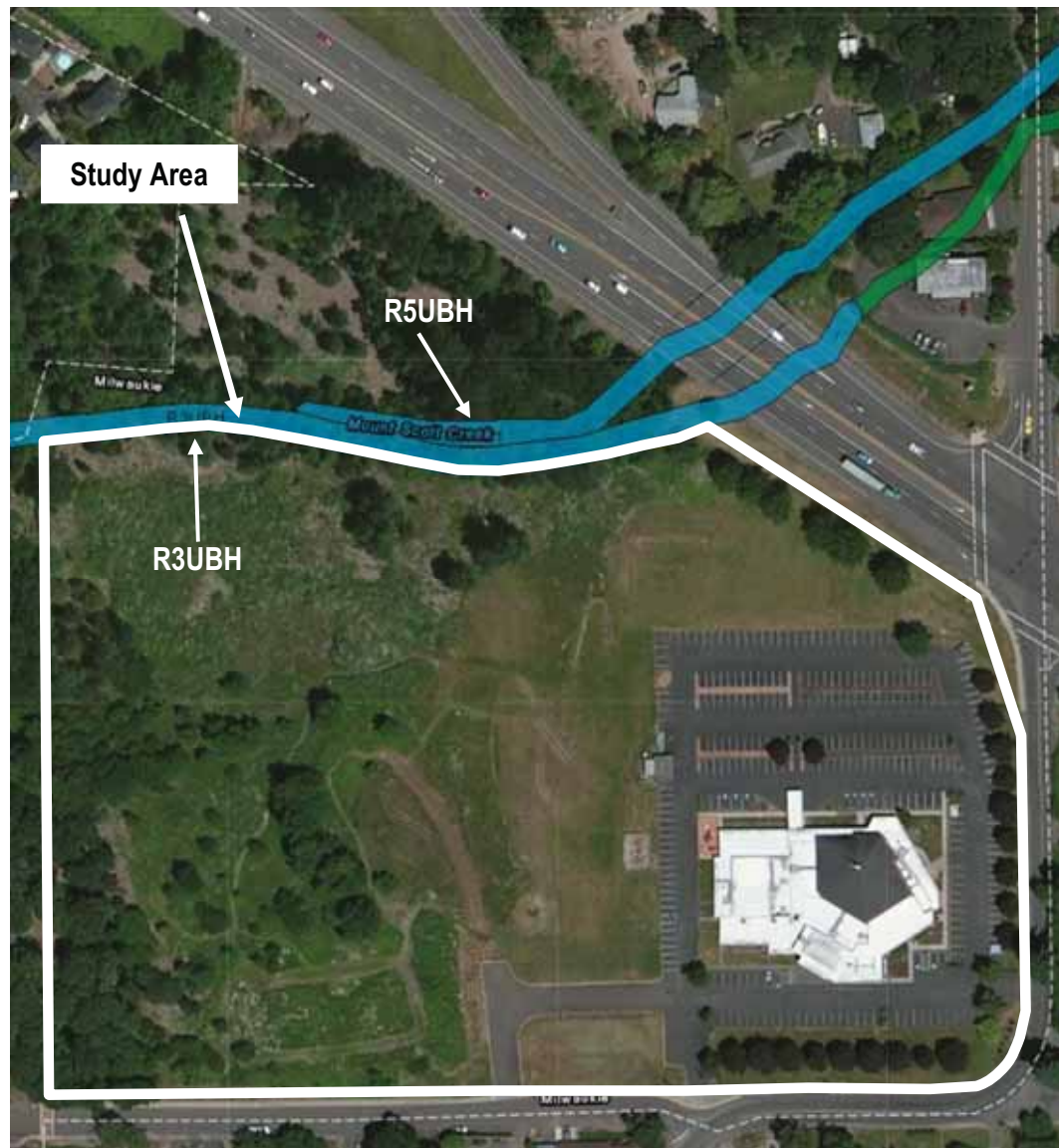


Pacific Habitat Services, Inc.
 9450 SW Commerce Circle, Suite 180
 Wilsonville, OR 97070

Tax Lot Map
 SE Kellogg Creek Drive - Milwaukie, Oregon
 The Oregon Map (ormap.net)

FIGURE
 2

+



LEGEND

Wetlands

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

R3UBH: Riverine Upper Perennial Unconsolidated Bottom Permanently Flooded

R5UBH: Riverine Unknown Perennial Unconsolidated Bottom Permanently Flooded

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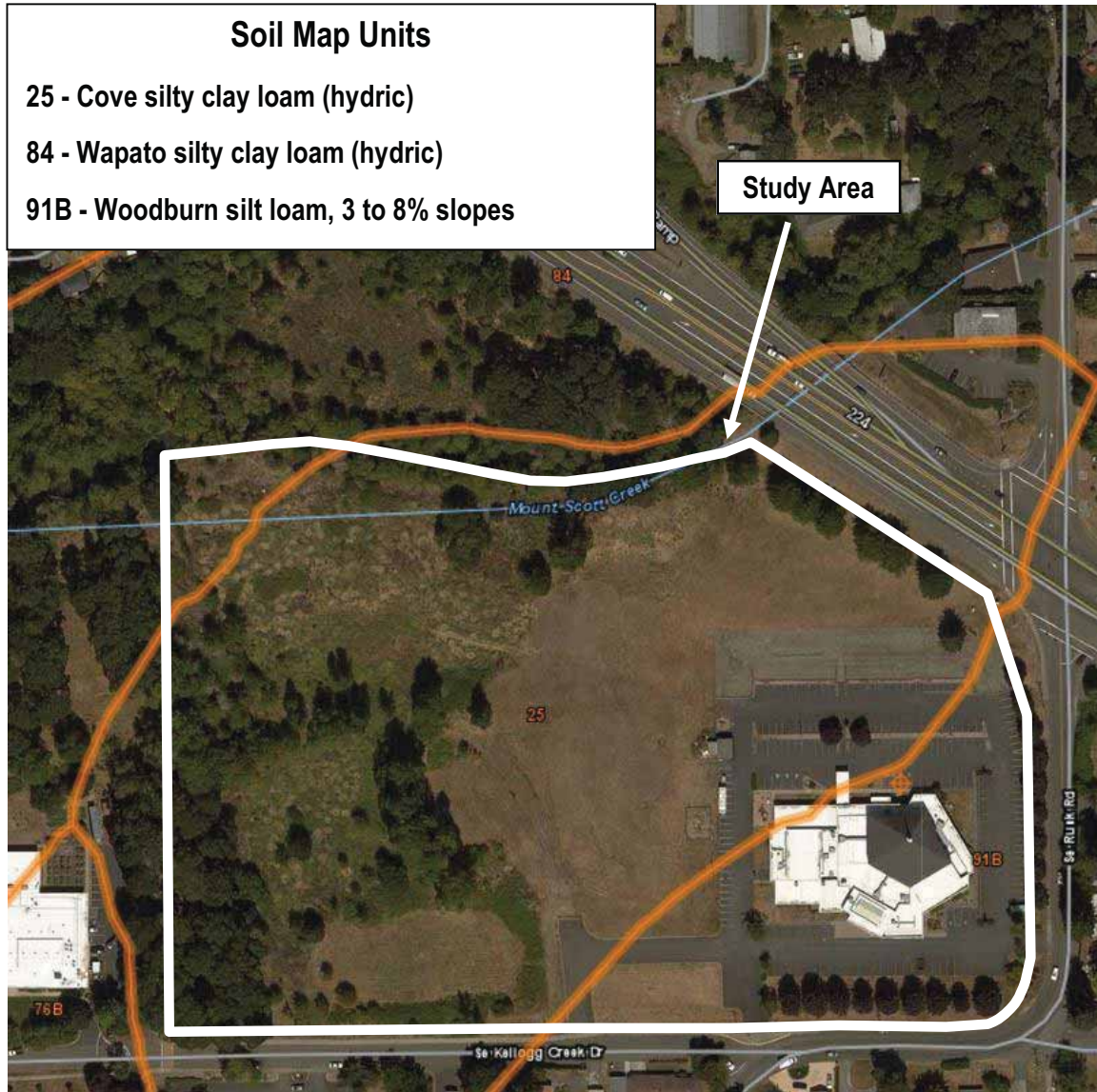
National Wetlands Inventory Map
SE Kellogg Creek Drive - Milwaukie, Oregon
U.S. Fish and Wildlife Service, Online Wetland Mapper V2, 2016

FIGURE

3

Soil Map Units

- 25 - Cove silty clay loam (hydric)
- 84 - Wapato silty clay loam (hydric)
- 91B - Woodburn silt loam, 3 to 8% slopes



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Soils Map
SE Kellogg Creek Drive - Milwaukie, Oregon
Natural Resources Conservation Services, Web Soil Survey, 2016

(websoilsurvey.sc.egov.usda.gov)

FIGURE

4



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12/21/2016

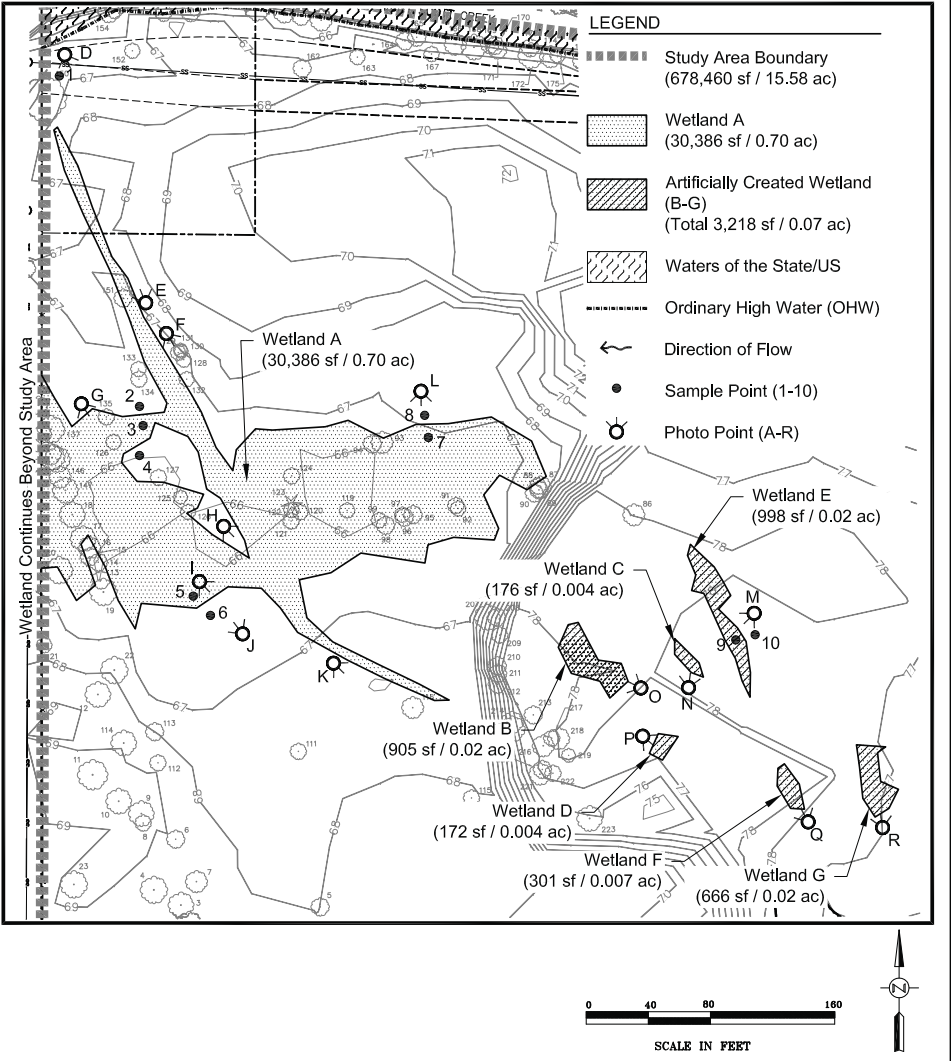
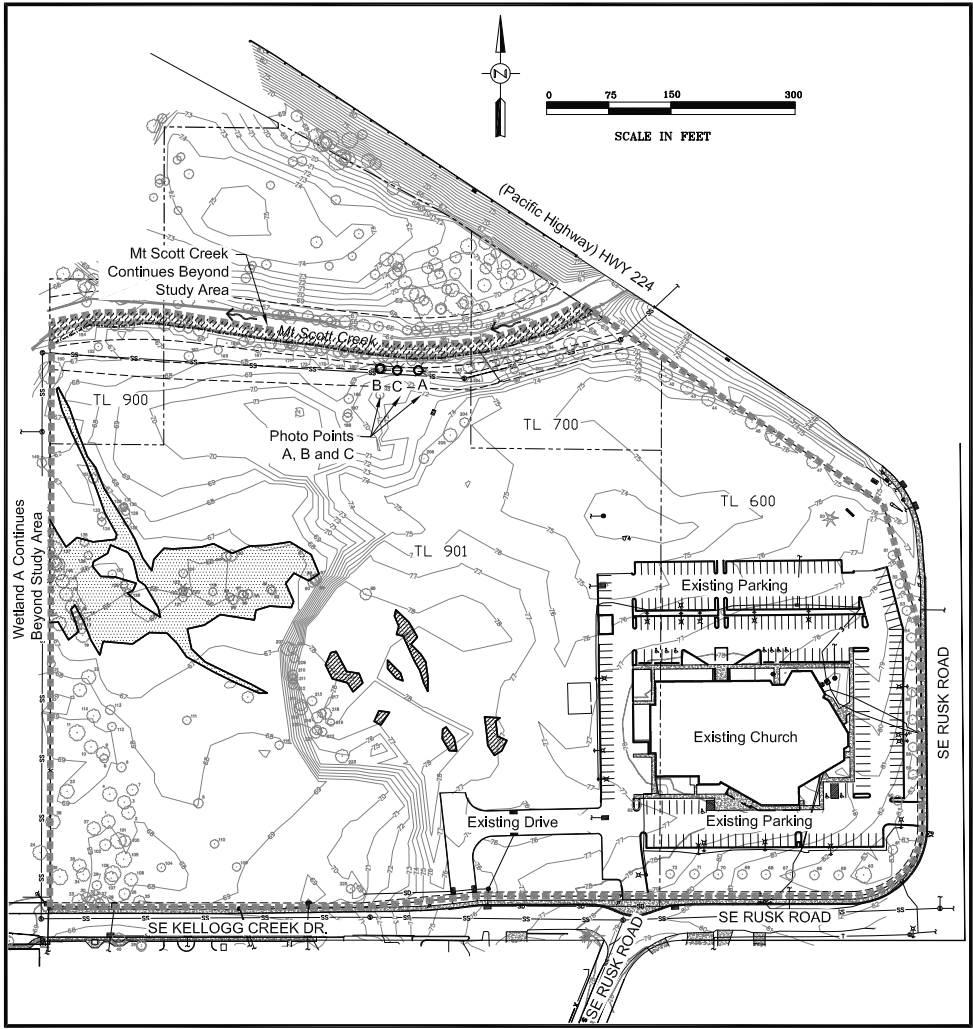


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Wilsonville, OR 97070

Aerial Photo
SE Kellogg Creek Drive - Milwaukie, Oregon
Google Earth, 2016

FIGURE

5



Survey provided by
 TerraCalc Land Surveying, Inc., 2016
 Survey accuracy is sub-centimeter and
 Sample Point accuracy is ± 3 feet.

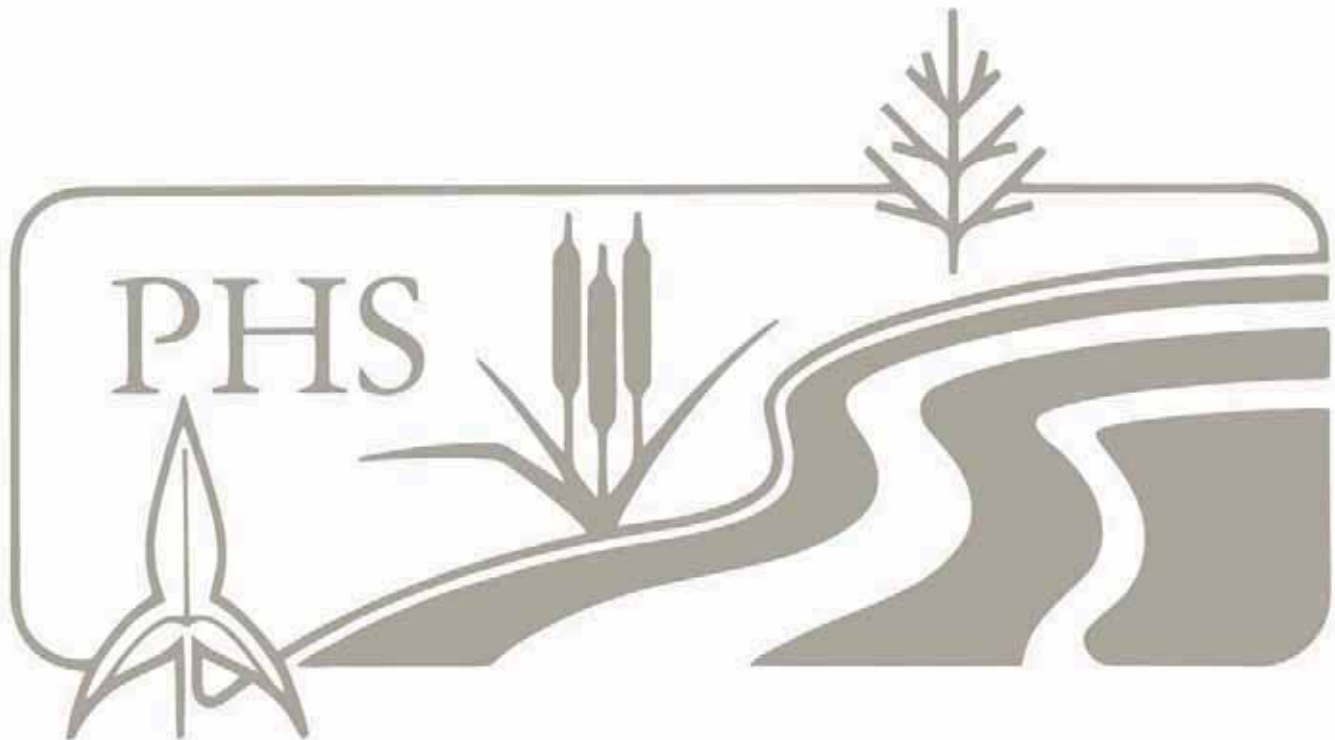
Wetland Delineation
 SE Kellogg Creek Drive - Milwaukie, Oregon

FIGURE
6

1-18-2017

Appendix B

Wetland Delineation Data Sheets



WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: SE Kellogg Creek Drive City/County: Milwaukie/Clackamas Sampling Date: 11/21/2016
 Applicant/Owner: Brownstone Development, Inc. State: OR Sampling Point: 1
 Investigator(s): Caroline R./Craig T. Section, Township, Range: Section 6AD, T 2S, R 2E
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): LRRRA Lat: 45.427379 Long: -122.603487 Datum: WGS 84
 Soil Map Unit Name: Wapato silty clay loam NWI Classification: None
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (if no, explain in Remarks)
 Are vegetation _____ Soil _____ or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y
 Are vegetation _____ Soil _____ or Hydrology _____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No _____	Is Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes <u>X</u> No _____	

Remarks:
Floodplain adjacent to Mt. Scott Creek.

VEGETATION - Use scientific names of plants.

Tree Stratum (plot size: <u>30</u>)	absolute % cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>67%</u> (A/B)
1 <u>Quercus garryana</u>	<u>30</u>	<u>X</u>	<u>FACU</u>	
2 _____	_____	_____	_____	
3 _____	_____	_____	_____	
4 _____	_____	_____	_____	
	<u>30</u>	= Total Cover		
Sapling/Shrub Stratum (plot size: <u>5</u>)	absolute % cover	Dominant Species?	Indicator Status	Prevalence Index Worksheet: Total % Cover of _____ Multiply by: OBL Species _____ x 1 = <u>0</u> FACW species _____ x 2 = <u>0</u> FAC Species _____ x 3 = <u>0</u> FACU Species _____ x 4 = <u>0</u> UPL Species _____ x 5 = <u>0</u> Column Totals <u>0</u> (A) <u>0</u> (B) Prevalence Index =B/A = <u>#DIV/0!</u>
1 <u>Salix sitchensis</u>	<u>15</u>	<u>X</u>	<u>FACW</u>	
2 <u>Fraxinus latifolia</u>	<u>5</u>	<u>X</u>	<u>FACW</u>	
3 <u>Rubus armeniacus</u>	<u>5</u>	<u>X</u>	<u>FAC</u>	
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
	<u>25</u>	= Total Cover		
Herb Stratum (plot size: <u>5</u>)	absolute % cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators: _____ 1- Rapid Test for Hydrophytic Vegetation <u>X</u> 2- Dominance Test is >50% _____ 3-Prevalence Index is ≤ 3.0 ¹ _____ 4-Morphological Adaptations ¹ (provide supporting data in Remarks or on a separate sheet) _____ 5- Wetland Non-Vascular Plants ¹ _____ Problematic Hydrophytic Vegetation ¹ (Explain)
1 <u>Rumex crispus</u>	<u>5</u>	_____	<u>FAC</u>	
2 <u>Carex deweyana</u>	<u>5</u>	_____	<u>FAC</u>	
3 <u>Taraxacum officinale</u>	<u>2</u>	_____	<u>FACU</u>	
4 <u>Dipsacus fullonum</u>	<u>6</u>	_____	<u>FAC</u>	
5 <u>Geum macrophyllum</u>	<u>3</u>	_____	<u>FAC</u>	
6 <u>Agrostis stolonifera</u>	<u>15</u>	<u>X</u>	<u>FAC</u>	
7 <u>Lapsana communis</u>	<u>10</u>	<u>X</u>	<u>FACU</u>	
8 <u>Leucanthemum vulgare</u>	<u>2</u>	_____	<u>FACU</u>	
	<u>48</u>	= Total Cover		
Woody Vine Stratum (plot size: _____)	absolute % cover	Dominant Species?	Indicator Status	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes <u>X</u> No _____
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>40</u>				

Remarks:

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Table with columns: Depth (Inches), Matrix (Color (moist), %), Redox Features (Color (moist), %, Type, Loc), Texture, Remarks. Row 1: 0-12, 10YR 3/2, 100, Sandy Loam.

1Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

2Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils3:

Table listing hydric soil indicators (Histosol, Histic Epipedon, etc.) and problematic hydric soil indicators (2 cm Muck, Red Parent Material, etc.) with checkboxes.

3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Compacted rock/gravel/cobble
Depth (inches): 12"

Hydric Soil Present? Yes No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (2 or more required)

Table listing primary and secondary wetland hydrology indicators (Surface Water, High Water Table, etc.) with checkboxes.

Field Observations:

Surface Water Present? Yes No X
Water Table Present? Yes No X
Saturation Present? Yes No X
Depth (inches): > 12

Wetland Hydrology Present? Yes X No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: SE Kellogg Creek Drive City/County: Milwaukie/Clackamas Sampling Date: 11/21/2016
 Applicant/Owner: Brownstone Development, Inc. State: OR Sampling Point: 2
 Investigator(s): Caroline R./Craig T. Section, Township, Range: Section 6AD, T 2S, R 2E
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): LRRRA Lat: 45.427379 Long: -122.603487 Datum: WGS 84
 Soil Map Unit Name: Cove silty clay loam NWI Classification: None
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (if no, explain in Remarks)
 Are vegetation _____ Soil _____ or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y
 Are vegetation _____ Soil _____ or Hydrology _____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No _____	Is Sampled Area within a Wetland?	Yes _____	No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>			
Wetland Hydrology Present?	Yes _____	No <u>X</u>			
Remarks:					

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
Tree Stratum (plot size: _____)				Number of Dominant Species	
1 <u>Fraxinus latifolia</u>	<u>10</u>	<u>X</u>	<u>FACW</u>	That are OBL, FACW, or FAC: <u>4</u> (A)	
2 _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>4</u> (B)	
3 _____	_____	_____	_____	Percent of Dominant Species	
4 _____	_____	_____	_____	That are OBL, FACW, or FAC: <u>100%</u> (A/B)	
	<u>10</u>	= Total Cover		Prevalence Index Worksheet:	
Sapling/Shrub Stratum (plot size: _____)				Total % Cover of _____ Multiply by: _____	
1 <u>Fraxinus latifolia</u>	<u>5</u>	<u>X</u>	<u>FACW</u>	OBL Species _____ x 1 = <u>0</u>	
2 <u>Prunus sp.</u>	<u>1</u>	_____	<u>(FAC)</u>	FACW species _____ x 2 = <u>0</u>	
3 <u>Rubus armeniacus</u>	<u>5</u>	<u>X</u>	<u>FAC</u>	FAC Species _____ x 3 = <u>0</u>	
4 _____	_____	_____	_____	FACU Species _____ x 4 = <u>0</u>	
5 _____	_____	_____	_____	UPL Species _____ x 5 = <u>0</u>	
	<u>11</u>	= Total Cover		Column Totals <u>0</u> (A) <u>0</u> (B)	
Herb Stratum (plot size: _____)				Prevalence Index = B/A = <u>#DIV/0!</u>	
1 <u>Phalaris arundinacea</u>	<u>70</u>	<u>X</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators:	
2 <u>Dipsacus fullonum</u>	<u>15</u>	_____	<u>FAC</u>	_____ 1- Rapid Test for Hydrophytic Vegetation	
3 <u>Geum macrophyllum</u>	<u>2</u>	_____	<u>FAC</u>	<u>X</u> 2- Dominance Test is >50%	
4 <u>Cirsium vulgare</u>	<u>1</u>	_____	<u>FACU</u>	_____ 3-Prevalence Index is ≤ 3.0 ¹	
5 <u>Epilobium ciliatum</u>	<u>1</u>	_____	<u>FACW</u>	_____ 4-Morphological Adaptations ¹ (provide supporting data in Remarks or on a separate sheet)	
6 _____	_____	_____	_____	_____ 5- Wetland Non-Vascular Plants ¹	
7 _____	_____	_____	_____	_____ Problematic Hydrophytic Vegetation ¹ (Explain)	
8 _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
	<u>89</u>	= Total Cover		Hydrophytic Vegetation Present? Yes <u>X</u> No _____	
Woody Vine Stratum (plot size: _____)					
1 _____	_____	_____	_____		
2 _____	_____	_____	_____		
	<u>0</u>	= Total Cover			
% Bare Ground in Herb Stratum _____					
Remarks:					

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Table with columns: Depth (Inches), Matrix (Color (moist), %), Redox Features (Color (moist), %, Type, Loc), Texture, Remarks. Row 1: 0-18, 10YR 3/2, 100, Silty Clay Loam.

1Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

2Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils3:

Table listing hydric soil indicators (Histosol, Histic Epipedon, etc.) and problematic hydric soil indicators (2 cm Muck, Red Parent Material, etc.) with checkboxes.

3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (2 or more required)

Table listing primary and secondary wetland hydrology indicators (Surface Water, High Water Table, etc.) with checkboxes.

Field Observations:

Surface Water Present? Yes _____ No X
Water Table Present? Yes _____ No X
Saturation Present? Yes _____ No X

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: SE Kellogg Creek Drive City/County: Milwaukie/Clackamas Sampling Date: 11/21/2016
 Applicant/Owner: Brownstone Development, Inc. State: OR Sampling Point: 3
 Investigator(s): Caroline R./Craig T. Section, Township, Range: Section 6AD, T 2S, R 2E
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): LRRRA Lat: 45.427379 Long: -122.603487 Datum: WGS 84
 Soil Map Unit Name: Cove silty clay loam NWI Classification: None
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (if no, explain in Remarks)
 Are vegetation _____ Soil _____ or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y
 Are vegetation _____ Soil _____ or Hydrology _____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No _____	Is Sampled Area within a Wetland?	Yes <u>X</u>	No _____
Hydric Soil Present? Yes <u>X</u> No _____		Yes <u>X</u>	No _____
Wetland Hydrology Present? Yes <u>X</u> No _____			
Remarks:			

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status	
Tree Stratum (plot size: _____)				Dominance Test worksheet:
1 <u>Fraxinus latifolia</u>	<u>5</u>	<u>X</u>	<u>FACW</u>	Number of Dominant Species That are OBL, FACW, or FAC: <u>5</u> (A)
2 _____				Total Number of Dominant Species Across All Strata: <u>5</u> (B)
3 _____				Percent of Dominant Species That are OBL, FACW, or FAC: <u>100%</u> (A/B)
4 _____				
	<u>5</u>	= Total Cover		
Sapling/Shrub Stratum (plot size: _____)				Prevalence Index Worksheet:
1 <u>Fraxinus latifolia</u>	<u>15</u>	<u>X</u>	<u>FACW</u>	Total % Cover of _____ Multiply by: _____
2 <u>Rubus armeniacus</u>	<u>5</u>	<u>X</u>	<u>FAC</u>	OBL Species _____ x 1 = <u>0</u>
3 _____				FACW species _____ x 2 = <u>0</u>
4 _____				FAC Species _____ x 3 = <u>0</u>
5 _____				FACU Species _____ x 4 = <u>0</u>
	<u>20</u>	= Total Cover		UPL Species _____ x 5 = <u>0</u>
				Column Totals <u>0</u> (A) <u>0</u> (B)
Herb Stratum (plot size: _____)				Prevalence Index =B/A = <u>#DIV/0!</u>
1 <u>Phalaris arundinacea</u>	<u>50</u>	<u>X</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: _____ 1- Rapid Test for Hydrophytic Vegetation <u>X</u> 2- Dominance Test is >50% _____ 3-Prevalence Index is ≤ 3.0 ¹ _____ 4-Morphological Adaptations ¹ (provide supporting data in Remarks or on a separate sheet) _____ 5- Wetland Non-Vascular Plants ¹ _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes <u>X</u> No _____
2 <u>Ranunculus repens</u>	<u>30</u>	<u>X</u>	<u>FAC</u>	
3 <u>Geum macrophyllum</u>	<u>1</u>		<u>FAC</u>	
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
	<u>81</u>	= Total Cover		
Woody Vine Stratum (plot size: _____)				
1 _____				
2 _____				
	<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum _____				
Remarks:				

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Table with columns: Depth (Inches), Matrix (Color (moist), %), Redox Features (Color (moist), %, Type, Loc), Texture, Remarks. Rows include 0-8 and 8-18 depth intervals with soil characteristics like 10YR 3/1, 100, Silty Clay Loam, 10YR 2/1, 98, 10YR 4/4, 2, C, M, Clay.

1Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

2Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils3:

Table listing hydric soil indicators (Histosol, Histic Epipedon, Black Histic, Hydrogen Sulfide, Depleted Below Dark Surface, Thick Dark Surface, Sandy Mucky Mineral, Sandy Gleyed Matrix) and problematic hydric soil indicators (Sandy Redox, Stripped Matrix, Loamy Mucky Mineral, Loamy Gleyed Matrix, Depleted Matrix, Redox Dark Surface, Depleted Dark Surface, Redox Depressions, 2 cm Muck, Red Parent Material, Very Shallow Dark Surface, Other).

3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes X No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (2 or more required)

Table listing primary indicators (Surface Water, High Water Table, Saturation, Water Marks, Sediment Deposits, Drift Deposits, Algal Mat or Crust, Iron Deposits, Surface Soil Cracks, Inundation Visible on Aerial Imagery, Sparsely Vegetated Concave Surface) and secondary indicators (Water stained Leaves, Drainage Patterns, Dry-Season Water Table, Saturation Visible on Aerial Imagery, Geomorphic Position, Shallow Aquitard, Fac-Neutral Test, Raised Ant Mounds, Frost-Heave Hummocks).

Field Observations:

Surface Water Present? Yes No X Depth (inches):
Water Table Present? Yes X No Depth (inches): 8
Saturation Present? Yes X No Depth (inches): 10

Wetland Hydrology Present? Yes X No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: SE Kellogg Creek Drive City/County: Milwaukie/Clackamas Sampling Date: 11/21/2016
 Applicant/Owner: Brownstone Development, Inc. State: OR Sampling Point: 4
 Investigator(s): Caroline R./Craig T. Section, Township, Range: Section 6AD, T 2S, R 2E
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): LRRRA Lat: 45.427379 Long: -122.603487 Datum: WGS 84
 Soil Map Unit Name: Cove silty clay loam NWI Classification: None
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (if no, explain in Remarks)
 Are vegetation _____ Soil _____ or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y
 Are vegetation _____ Soil _____ or Hydrology _____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No <u>X</u>	Is Sampled Area within a Wetland?	Yes _____	No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>			
Wetland Hydrology Present?	Yes _____	No <u>X</u>			
Remarks:					

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status	
Tree Stratum (plot size: <u>30</u>)				Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>43%</u> (A/B)
1	<u>3</u>		<u>FACW</u>	
2				
3				
4				
	<u>3</u>	= Total Cover		
Sapling/Shrub Stratum (plot size: <u>5</u>)				
1	<u>3</u>		<u>FACW</u>	
2	<u>20</u>	<u>X</u>	<u>FAC</u>	
3	<u>10</u>	<u>X</u>	<u>FAC</u>	
4	<u>15</u>	<u>X</u>	<u>FACU</u>	
5				
	<u>48</u>	= Total Cover		
Herb Stratum (plot size: <u>5</u>)				Prevalence Index Worksheet: Total % Cover of _____ Multiply by: OBL Species _____ x 1 = <u>0</u> FACW species _____ x 2 = <u>0</u> FAC Species _____ x 3 = <u>0</u> FACU Species _____ x 4 = <u>0</u> UPL Species _____ x 5 = <u>0</u> Column Totals <u>0</u> (A) <u>0</u> (B) Prevalence Index =B/A = <u>#DIV/0!</u>
1	<u>5</u>	<u>X</u>	<u>FAC</u>	
2	<u>10</u>	<u>X</u>	<u>FACU</u>	
3	<u>5</u>	<u>X</u>	<u>FACU</u>	
4				
5				
6				
7				
8				
	<u>20</u>	= Total Cover		
Woody Vine Stratum (plot size: _____)				
1	<u>60</u>	<u>X</u>	<u>FACU</u>	
2	<u>5</u>		<u>FAC</u>	
	<u>65</u>	= Total Cover		
% Bare Ground in Herb Stratum _____				
Remarks:				

- Hydrophytic Vegetation Indicators:**
- 1- Rapid Test for Hydrophytic Vegetation
 - 2- Dominance Test is >50%
 - 3-Prevalence Index is ≤ 3.0¹
 - 4-Morphological Adaptations¹ (provide supporting data in Remarks or on a separate sheet)
 - 5- Wetland Non-Vascular Plants¹
- Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Table with columns: Depth (Inches), Matrix (Color (moist), %), Redox Features (Color (moist), %, Type, Loc), Texture, Remarks. Row 1: 0-16, 10YR 3/2, 100, Sandy Loam.

1Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

2Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils3:

- Hydric Soil Indicators: Histosol (A1), Histic Epipedon (A2), Black Histic (A3), Hydrogen Sulfide (A4), Depleted Below Dark Surface (A11), Thick Dark Surface (A12), Sandy Mucky Mineral (S1), Sandy Gleyed Matrix (S4), Sandy Redox (S5), Stripped Matrix (S6), Loamy Mucky Mineral (F1), Loamy Gleyed Matrix (F2), Depleted Matrix (F3), Redox Dark Surface (F6), Depleted Dark Surface (F7), Redox Depressions (F8), 2 cm Muck (A10), Red Parent Material (TF2), Very Shallow Dark Surface (TF12), Other (explain in Remarks).

3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (2 or more required)

- Primary Indicators: Surface Water (A1), High Water Table (A2), Saturation (A3), Water Marks (B1), Sediment Deposits (B2), Drift Deposits (B3), Algal Mat or Crust (B4), Iron Deposits (B5), Surface Soil Cracks (B6), Inundation Visible on Aerial Imagery (B7), Sparsely Vegetated Concave Surface (B8).
Secondary Indicators: Water stained Leaves (B9), Drainage Patterns (B10), Dry-Season Water Table (C2), Saturation Visible on Aerial Imagery (C9), Geomorphic Position (D2), Shallow Aquitard (D3), Fac-Neutral Test (D5), Raised Ant Mounds (D6), Frost-Heave Hummocks (D7).

Field Observations:

Surface Water Present? Yes _____ No X
Water Table Present? Yes _____ No X
Saturation Present? Yes _____ No X
Depth (inches): > 16

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: SE Kellogg Creek Drive City/County: Milwaukie/Clackamas Sampling Date: 11/21/2016
 Applicant/Owner: Brownstone Development, Inc. State: OR Sampling Point: 5
 Investigator(s): Caroline R./Craig T. Section, Township, Range: Section 6AD, T 2S, R 2E
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): LRR A Lat: 45.427379 Long: -122.603487 Datum: WGS 84
 Soil Map Unit Name: Cove silty clay loam NWI Classification: None
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (if no, explain in Remarks)
 Are vegetation _____ Soil _____ or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y
 Are vegetation _____ Soil _____ or Hydrology _____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No _____	Is Sampled Area within a Wetland?	Yes <u>X</u>	No _____
Hydric Soil Present? Yes <u>X</u> No _____		Yes <u>X</u>	No _____
Wetland Hydrology Present? Yes <u>X</u> No _____			
Remarks:			

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status	
Tree Stratum (plot size: _____)				Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>100%</u> (A/B)
1 <u>Fraxinus latifolia</u>	<u>60</u>	<u>X</u>	<u>FACW</u>	
2 _____				
3 _____				
4 _____				
	<u>60</u>	= Total Cover		
Sapling/Shrub Stratum (plot size: _____)				
1 <u>Fraxinus latifolia</u>	<u>5</u>	<u>X</u>	<u>FACW</u>	
2 <u>Cornus alba</u>	<u>1</u>		<u>FACW</u>	
3 <u>Symphoricarpos albus</u>	<u>1</u>		<u>FACU</u>	
4 _____				
5 _____				
	<u>7</u>	= Total Cover		
Herb Stratum (plot size: _____)				
1 <u>Poa trivialis</u>	<u>30</u>	<u>X</u>	<u>FAC</u>	
2 <u>Juncus tenuis</u>	<u>2</u>		<u>FAC</u>	
3 <u>Rumex obtusifolius</u>	<u>1</u>		<u>FAC</u>	
4 <u>Geum macrophyllum</u>	<u>1</u>		<u>FAC</u>	
5 <u>Taraxacum officinale</u>	<u>1</u>		<u>FACU</u>	
6 _____				
7 _____				
8 _____				
	<u>35</u>	= Total Cover		
Woody Vine Stratum (plot size: _____)				
1 _____				
2 _____				
	<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum _____				
Prevalence Index Worksheet: Total % Cover of _____ Multiply by: _____ OBL Species _____ x 1 = <u>0</u> FACW species _____ x 2 = <u>0</u> FAC Species _____ x 3 = <u>0</u> FACU Species _____ x 4 = <u>0</u> UPL Species _____ x 5 = <u>0</u> Column Totals <u>0</u> (A) <u>0</u> (B) Prevalence Index =B/A = <u>#DIV/0!</u>				
Hydrophytic Vegetation Indicators: _____ 1- Rapid Test for Hydrophytic Vegetation <u>X</u> 2- Dominance Test is >50% _____ 3-Prevalence Index is ≤ 3.0 ¹ _____ 4-Morphological Adaptations ¹ (provide supporting data in Remarks or on a separate sheet) _____ 5- Wetland Non-Vascular Plants ¹ _____ Problematic Hydrophytic Vegetation ¹ (Explain)				
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <u>X</u> No _____				
Remarks:				

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
1-6	10YR 3/1	100					Silty Clay Loam	
6-8	10YR 2/1	95	10YR 4/4	5	C	M	Clay	
8-18	10YR 2/1	100					Clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)		
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)		³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)		

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: _____	

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water stained Leaves (B9) (Except MLRA 1, 2, 4A, and 4B)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Water stained Leaves (B9) (MLRA1, 2, 4A, and 4B)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Geomorphic Position (D2)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input type="checkbox"/> Fac-Neutral Test (D5)
	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
	<input type="checkbox"/> Frost-Heave Hummocks (D7)

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>4</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>9</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: _____

Remarks: _____

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: SE Kellogg Creek Drive City/County: Milwaukie/Clackamas Sampling Date: 11/21/2016
 Applicant/Owner: Brownstone Development, Inc. State: OR Sampling Point: 6
 Investigator(s): Caroline R./Craig T. Section, Township, Range: Section 6AD, T 2S, R 2E
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): LRR A Lat: 45.427379 Long: -122.603487 Datum: WGS 84
 Soil Map Unit Name: Cove silty clay loam NWI Classification: None
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (if no, explain in Remarks)
 Are vegetation _____ Soil _____ or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y
 Are vegetation _____ Soil _____ or Hydrology _____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No _____	Is Sampled Area within a Wetland?	Yes _____	No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>			
Wetland Hydrology Present?	Yes _____	No <u>X</u>			
Remarks:					

VEGETATION - Use scientific names of plants.

Tree Stratum (plot size: <u>30</u>)	absolute % cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1 <u>Fraxinus latifolia</u>	<u>50</u>	<u>X</u>	<u>FACW</u>	
2 _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>4</u> (B)
3 _____	_____	_____	_____	Percent of Dominant Species That are OBL, FACW, or FAC: <u>100%</u> (A/B)
4 _____	_____	_____	_____	Prevalence Index Worksheet:
5 _____	<u>50</u>	= Total Cover		
Sapling/Shrub Stratum (plot size: <u>5</u>)				OBL Species _____ x 1 = <u>0</u>
1 <u>Fraxinus latifolia</u>	<u>20</u>	<u>X</u>	<u>FACW</u>	FACW species _____ x 2 = <u>0</u>
2 <u>Symphoricarpos albus</u>	<u>5</u>	_____	<u>FACU</u>	FAC Species _____ x 3 = <u>0</u>
3 <u>Crataegus monogyna</u>	<u>15</u>	<u>X</u>	<u>FAC</u>	FACU Species _____ x 4 = <u>0</u>
4 <u>Rubus armeniacus</u>	<u>2</u>	_____	<u>FAC</u>	UPL Species _____ x 5 = <u>0</u>
5 _____	_____	_____	_____	Column Totals <u>0</u> (A) <u>0</u> (B)
Herb Stratum (plot size: <u>5</u>)				Prevalence Index =B/A = <u>#DIV/0!</u>
1 <u>Carex deweyana</u>	<u>70</u>	<u>X</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: _____ 1- Rapid Test for Hydrophytic Vegetation <u>X</u> 2- Dominance Test is >50% _____ 3-Prevalence Index is ≤ 3.0 ¹ _____ 4-Morphological Adaptations ¹ (provide supporting data in Remarks or on a separate sheet) _____ 5- Wetland Non-Vascular Plants ¹ _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes <u>X</u> No _____
2 <u>Prunella vulgaris</u>	<u>3</u>	_____	<u>FACU</u>	
3 <u>Polystichum munitum</u>	<u>3</u>	_____	<u>FACU</u>	
4 <u>Vicia tetrasperma</u>	<u>5</u>	_____	<u>(NOL)</u>	
5 <u>Ranunculus repens</u>	<u>10</u>	_____	<u>FAC</u>	
6 <u>Dipsacus fullonum</u>	<u>3</u>	_____	<u>FAC</u>	
7 <u>Agrostis stolonifera</u>	<u>10</u>	_____	<u>FAC</u>	
8 <u>Equisetum arvense</u>	<u>1</u>	_____	<u>FAC</u>	
Woody Vine Stratum (plot size: _____)				
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	
% Bare Ground in Herb Stratum _____				
Remarks:				

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	10YR 3/2	100					Sandy Loam	
6-16	10YR 3/2	60					Sandy Clay Loam	
	10YR 3/1	20					Sandy Clay Loam	
	10YR 4/3	20					Sandy Clay Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)		
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)		³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)		

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks: _____

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water stained Leaves (B9) (Except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water stained Leaves (B9) (MLRA1, 2, 4A, and 4B)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)	<input type="checkbox"/> Fac-Neutral Test (D5)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): > 16

Saturation Present? Yes _____ No X Depth (inches): > 16
(includes capillary fringe)

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: SE Kellogg Creek Drive City/County: Milwaukie/Clackamas Sampling Date: 11/21/2016
 Applicant/Owner: Brownstone Development, Inc. State: OR Sampling Point: 7
 Investigator(s): Caroline R./Craig T. Section, Township, Range: Section 6AD, T 2S, R 2E
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): LRR A Lat: 45.427379 Long: -122.603487 Datum: WGS 84
 Soil Map Unit Name: Cove silty clay loam NWI Classification: None
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (if no, explain in Remarks)
 Are vegetation _____ Soil _____ or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y
 Are vegetation _____ Soil _____ or Hydrology _____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No _____	Is Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	
Remarks: _____	

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status	
Tree Stratum (plot size: _____)				Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>100%</u> (A/B)
1	<u>10</u>	<u>X</u>	<u>FAC</u>	
2	_____	_____	_____	
3	_____	_____	_____	
4	_____	_____	_____	
	<u>10</u>	= Total Cover		
Sapling/Shrub Stratum (plot size: _____)				
1	<u>15</u>	<u>X</u>	<u>FAC</u>	
2	_____	_____	_____	
3	_____	_____	_____	
4	_____	_____	_____	
5	_____	_____	_____	
	<u>15</u>	= Total Cover		
Herb Stratum (plot size: _____)				Prevalence Index Worksheet: Total % Cover of _____ Multiply by: _____ OBL Species _____ x 1 = <u>0</u> FACW species _____ x 2 = <u>0</u> FAC Species _____ x 3 = <u>0</u> FACU Species _____ x 4 = <u>0</u> UPL Species _____ x 5 = <u>0</u> Column Totals <u>0</u> (A) <u>0</u> (B) Prevalence Index =B/A = <u>#DIV/0!</u>
1	<u>100</u>	<u>X</u>	<u>FACW</u>	
2	_____	_____	_____	
3	_____	_____	_____	
4	_____	_____	_____	
5	_____	_____	_____	
6	_____	_____	_____	
7	_____	_____	_____	
8	_____	_____	_____	
	<u>100</u>	= Total Cover		
Woody Vine Stratum (plot size: _____)				
1	_____	_____	_____	
2	_____	_____	_____	
	<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum _____				
Remarks: _____				

- Hydrophytic Vegetation Indicators:**
- _____ 1- Rapid Test for Hydrophytic Vegetation
 - X 2- Dominance Test is >50%
 - _____ 3-Prevalence Index is ≤ 3.0¹
 - _____ 4-Morphological Adaptations¹ (provide supporting data in Remarks or on a separate sheet)
 - _____ 5- Wetland Non-Vascular Plants¹
 - _____ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 3/2	100					Silty Clay Loam	
4-7	10YR 3/2	95	7.5YR 4/6	5	C	M	Silty Clay Loam	
7-18	10YR 2/2	98	10YR 3/4	2	C	M	Clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)		
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes No

Remarks: _____

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)	
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water stained Leaves (B9) (Except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water stained Leaves (B9) (MLRA1, 2, 4A, and 4B)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)	<input type="checkbox"/> Fac-Neutral Test (D5)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			

Field Observations:

Surface Water Present? Yes No Depth (inches): 2

Water Table Present? Yes No Depth (inches): 0

Saturation Present? Yes No Depth (inches): 0
(includes capillary fringe)

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Small ponded area in ~5% of plot

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: SE Kellogg Creek Drive City/County: Milwaukie/Clackamas Sampling Date: 11/21/2016
 Applicant/Owner: Brownstone Development, Inc. State: OR Sampling Point: 8
 Investigator(s): Caroline R./Craig T. Section, Township, Range: Section 6AD, T 2S, R 2E
 Landform (hillslope, terrace, etc.): Fill Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): LRR A Lat: 45.427379 Long: -122.603487 Datum: WGS 84
 Soil Map Unit Name: Cove silty clay loam NWI Classification: None
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (if no, explain in Remarks)
 Are vegetation _____ Soil _____ or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y
 Are vegetation _____ Soil _____ or Hydrology _____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No <u>X</u>	Is Sampled Area within a Wetland?	Yes _____	No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>			
Wetland Hydrology Present?	Yes _____	No <u>X</u>			

Remarks:

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
Tree Stratum (plot size: _____)				Number of Dominant Species	
1	_____	_____	_____	That are OBL, FACW, or FAC: <u>1</u> (A)	
2	_____	_____	_____	Total Number of Dominant	
3	_____	_____	_____	Species Across All Strata: <u>3</u> (B)	
4	_____	_____	_____	Percent of Dominant Species	
	<u>0</u>	= Total Cover		That are OBL, FACW, or FAC: <u>33%</u> (A/B)	
Sapling/Shrub Stratum (plot size: _____)				Prevalence Index Worksheet:	
1	_____	_____	_____	Total % Cover of _____ Multiply by: _____	
2	_____	_____	_____	OBL Species _____ x 1 = <u>0</u>	
3	_____	_____	_____	FACW species _____ x 2 = <u>0</u>	
4	_____	_____	_____	FAC Species _____ x 3 = <u>0</u>	
5	_____	_____	_____	FACU Species _____ x 4 = <u>0</u>	
	<u>0</u>	= Total Cover		UPL Species _____ x 5 = <u>0</u>	
Herb Stratum (plot size: <u>5</u>)				Column Totals <u>0</u> (A) <u>0</u> (B)	
1	<u>20</u>	<u>X</u>	<u>FACW</u>	Prevalence Index =B/A = <u>#DIV/0!</u>	
2	<u>25</u>	<u>X</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators:	
3	<u>10</u>	_____	<u>FAC</u>	_____ 1- Rapid Test for Hydrophytic Vegetation	
4	<u>5</u>	_____	<u>FAC</u>	_____ 2- Dominance Test is >50%	
5	<u>10</u>	_____	<u>FACU</u>	_____ 3-Prevalence Index is ≤ 3.0 ¹	
6	<u>5</u>	_____	<u>FAC</u>	_____ 4-Morphological Adaptations ¹ (provide supporting	
7	<u>15</u>	<u>X</u>	<u>FACU</u>	data in Remarks or on a separate sheet)	
8	<u>10</u>	_____	<u>FACU</u>	_____ 5- Wetland Non-Vascular Plants ¹	
	<u>105</u>	= Total Cover		_____ Problematic Hydrophytic Vegetation ¹ (Explain)	
Woody Vine Stratum (plot size: _____)				¹ Indicators of hydric soil and wetland hydrology must be present, unless	
1	_____	_____	_____	disturbed or problematic.	
2	_____	_____	_____	Hydrophytic	
	<u>0</u>	= Total Cover		Vegetation Yes _____ No <u>X</u>	
% Bare Ground in Herb Stratum _____				Present?	

Remarks:
Herb Stratum also contains: Agrostis capillaris (FAC) 5%

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Table with columns: Depth (Inches), Matrix (Color (moist), %), Redox Features (Color (moist), %, Type, Loc), Texture, Remarks. Rows include 0-4, 4-8, 8-16 inch depths with matrix and texture descriptions like 'Sandy Loam'.

1Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

2Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils3:

Table listing hydric soil indicators such as Histosol (A1), Sandy Redox (S5), and Indicators for Problematic Hydric Soils like 2 cm Muck (A10), Red Parent Material (TF2), etc.

3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:
0-16" - a jumble of mixed disturbed fill, rocks and gravel throughout

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (2 or more required)

Table listing primary and secondary wetland hydrology indicators such as Surface Water (A1), High Water Table (A2), Water Stained Leaves (B9), etc.

Field Observations:

Surface Water Present? Yes _____ No X
Water Table Present? Yes _____ No X
Saturation Present? Yes _____ No X

Wetland Hydrology Present?
Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: SE Kellogg Creek Drive City/County: Milwaukie/Clackamas Sampling Date: 11/21/2016
 Applicant/Owner: Brownstone Development, Inc. State: OR Sampling Point: 9
 Investigator(s): Caroline R./Craig T. Section, Township, Range: Section 6AD, T 2S, R 2E
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): LRR A Lat: 45.427379 Long: -122.603487 Datum: WGS 84
 Soil Map Unit Name: Cove silty clay loam NWI Classification: None
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (if no, explain in Remarks)
 Are vegetation _____ Soil _____ or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y
 Are vegetation _____ Soil _____ or Hydrology _____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No _____	Is Sampled Area within a Wetland?	Yes <u>X</u>	No _____
Hydric Soil Present?	Yes <u>X</u>	No _____			
Wetland Hydrology Present?	Yes <u>X</u>	No _____			
Remarks:					

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
Tree Stratum (plot size: _____)				Number of Dominant Species	
1	_____	_____	_____	That are OBL, FACW, or FAC: <u>2</u> (A)	
2	_____	_____	_____	Total Number of Dominant	
3	_____	_____	_____	Species Across All Strata: <u>2</u> (B)	
4	_____	_____	_____	Percent of Dominant Species	
	<u>0</u>	= Total Cover		That are OBL, FACW, or FAC: <u>100%</u> (A/B)	
Sapling/Shrub Stratum (plot size: _____)				Prevalence Index Worksheet:	
1	_____	_____	_____	Total % Cover of _____ Multiply by: _____	
2	_____	_____	_____	OBL Species _____ x 1 = <u>0</u>	
3	_____	_____	_____	FACW species _____ x 2 = <u>0</u>	
4	_____	_____	_____	FAC Species _____ x 3 = <u>0</u>	
5	_____	_____	_____	FACU Species _____ x 4 = <u>0</u>	
	<u>0</u>	= Total Cover		UPL Species _____ x 5 = <u>0</u>	
Herb Stratum (plot size: _____)				Column Totals <u>0</u> (A) <u>0</u> (B)	
1	<u>25</u>	<u>X</u>	<u>FACW</u>	Prevalence Index =B/A = <u>#DIV/0!</u>	
2	<u>40</u>	<u>X</u>	<u>FAC</u>		
3	<u>10</u>		<u>FACW</u>		
4	<u>10</u>		<u>FACU</u>		
5	<u>5</u>		<u>FACU</u>		
6	_____	_____	_____		
7	_____	_____	_____		
8	_____	_____	_____		
	<u>90</u>	= Total Cover			
Woody Vine Stratum (plot size: _____)				Hydrophytic Vegetation Indicators:	
1	_____	_____	_____	_____ 1- Rapid Test for Hydrophytic Vegetation	
2	_____	_____	_____	<u>X</u> 2- Dominance Test is >50%	
	<u>0</u>	= Total Cover		_____ 3-Prevalence Index is ≤ 3.0 ¹	
% Bare Ground in Herb Stratum _____				_____ 4-Morphological Adaptations ¹ (provide supporting data in Remarks or on a separate sheet)	
Remarks:				_____ 5- Wetland Non-Vascular Plants ¹	
				_____ Problematic Hydrophytic Vegetation ¹ (Explain)	
				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
				Hydrophytic Vegetation Present? Yes <u>X</u> No _____	

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Table with columns: Depth (Inches), Matrix (Color (moist), %), Redox Features (Color (moist), %, Type, Loc), Texture, Remarks. Rows include 0-6 and 6-14 depth intervals.

1Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

2Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils3:

Table listing hydric soil indicators (Histosol, Histic Epipedon, etc.) and problematic hydric soil indicators (2 cm Muck, Red Parent Material, etc.) with checkboxes.

3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes X No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (2 or more required)

Table listing primary and secondary wetland hydrology indicators (Surface Water, High Water Table, Saturation, etc.) with checkboxes.

Field Observations:

Surface Water Present? Yes X No Depth (inches): 2
Water Table Present? Yes X No Depth (inches): 0
Saturation Present? Yes X No Depth (inches): 0

Wetland Hydrology Present? Yes X No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: SE Kellogg Creek Drive City/County: Milwaukie/Clackamas Sampling Date: 11/21/2016
 Applicant/Owner: Brownstone Development, Inc. State: OR Sampling Point: 10
 Investigator(s): Caroline R./Craig T. Section, Township, Range: Section 6AD, T 2S, R 2E
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): LRR Lat: 45.427379 Long: -122.603487 Datum: WGS 84
 Soil Map Unit Name: Cove silty clay loam NWI Classification: None
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (if no, explain in Remarks)
 Are vegetation _____ Soil _____ or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y
 Are vegetation _____ Soil _____ or Hydrology _____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No <u>X</u>	Is Sampled Area within a Wetland?	Yes _____	No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>			
Wetland Hydrology Present?	Yes _____	No <u>X</u>			

Remarks: _____

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
Tree Stratum (plot size: _____)				Number of Dominant Species	
1	_____	_____	_____	That are OBL, FACW, or FAC: <u>2</u> (A)	
2	_____	_____	_____	Total Number of Dominant	
3	_____	_____	_____	Species Across All Strata: <u>4</u> (B)	
4	_____	_____	_____	Percent of Dominant Species	
	<u>0</u>	= Total Cover		That are OBL, FACW, or FAC: <u>50%</u> (A/B)	
Sapling/Shrub Stratum (plot size: _____)				Prevalence Index Worksheet:	
1	_____	_____	_____	Total % Cover of _____ Multiply by: _____	
2	_____	_____	_____	OBL Species _____ x 1 = <u>0</u>	
3	_____	_____	_____	FACW species _____ x 2 = <u>0</u>	
4	_____	_____	_____	FAC Species _____ x 3 = <u>0</u>	
5	_____	_____	_____	FACU Species _____ x 4 = <u>0</u>	
	<u>0</u>	= Total Cover		UPL Species _____ x 5 = <u>0</u>	
Herb Stratum (plot size: <u>5</u>)				Column Totals <u>0</u> (A) <u>0</u> (B)	
1	<u>25</u>	<u>X</u>	<u>FACU</u>	Prevalence Index =B/A = <u>#DIV/0!</u>	
2	<u>20</u>	<u>X</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators:	
3	<u>20</u>	<u>X</u>	<u>FAC</u>	_____ 1- Rapid Test for Hydrophytic Vegetation	
4	<u>15</u>	_____	<u>FACU</u>	_____ 2- Dominance Test is >50%	
5	<u>10</u>	_____	<u>FAC</u>	_____ 3-Prevalence Index is ≤ 3.0 ¹	
6	<u>20</u>	<u>X</u>	<u>(FAC)</u>	_____ 4-Morphological Adaptations ¹ (provide supporting	
7	<u>10</u>	_____	<u>FAC</u>	data in Remarks or on a separate sheet)	
8	<u>15</u>	_____	<u>FACU</u>	_____ 5- Wetland Non-Vascular Plants ¹	
	<u>160</u>	= Total Cover		_____ Problematic Hydrophytic Vegetation ¹ (Explain)	
Woody Vine Stratum (plot size: _____)				¹ Indicators of hydric soil and wetland hydrology must be present, unless	
1	_____	_____	_____	disturbed or problematic.	
2	_____	_____	_____	Hydrophytic	
	<u>0</u>	= Total Cover		Vegetation Yes _____ No <u>X</u>	
% Bare Ground in Herb Stratum _____				Present?	
Remarks: _____					
Herb Stratum also contains: Poa sp. (FAC) 10%, Rumex crispus (FAC) 5%, Cirsium arvense (FAC) 5%, Schedonorus arundinaceus, FAC 5%					

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Table with columns: Depth (Inches), Matrix (Color (moist), %), Redox Features (Color (moist), %, Type, Loc), Texture, Remarks. Rows include 0-3, 3-16 depths with matrix and texture descriptions like 'Sandy Loam'.

1Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

2Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils3:

Table listing hydric soil indicators such as Histosol (A1), Sandy Redox (S5), and indicators for problematic hydric soils like 2 cm Muck (A10) and Red Parent Material (TF2).

3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

0-16 - jumble of mixed/disturbed fill

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (2 or more required)

Table listing primary and secondary wetland hydrology indicators such as Surface Water (A1), High Water Table (A2), Water Stained Leaves (B9), and others.

Field Observations:

Surface Water Present? Yes _____ No X
Water Table Present? Yes _____ No X
Saturation Present? Yes _____ No X

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Appendix C

Site Photos

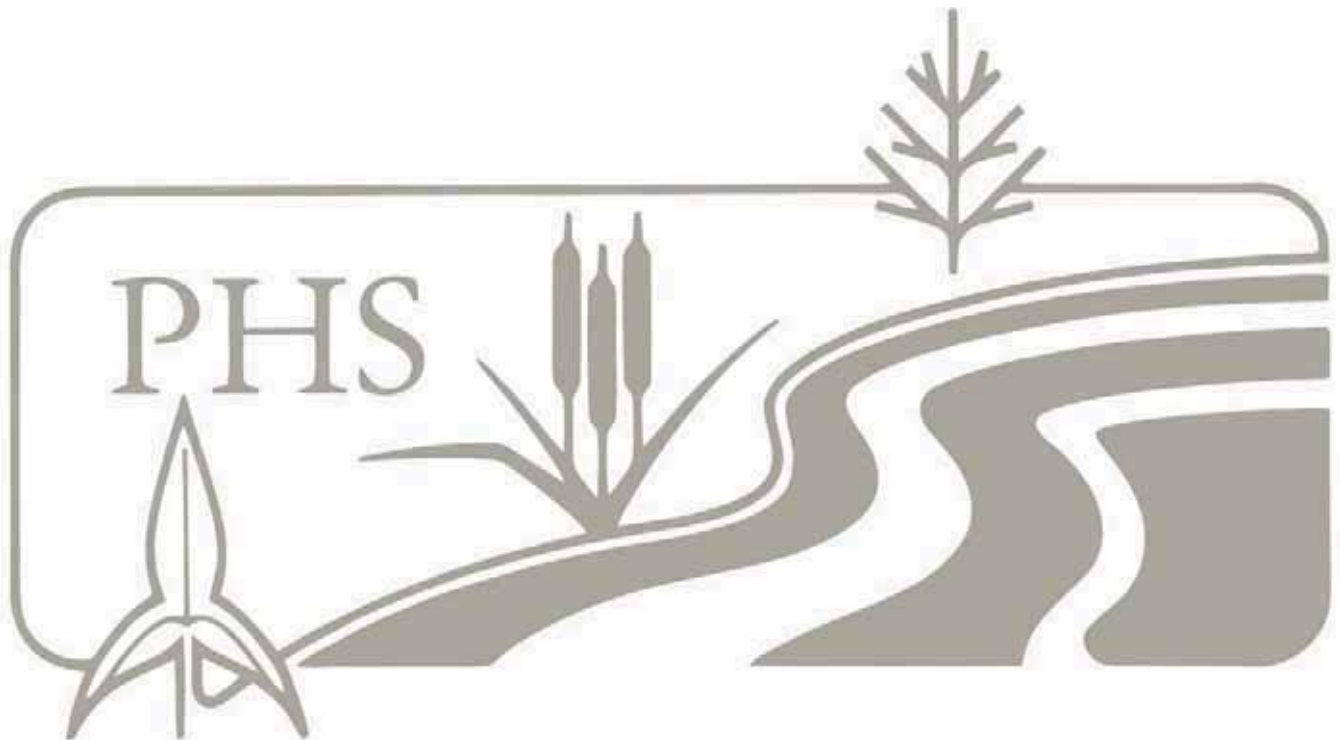




Photo A

Looking east along south bank of Mt. Scott Creek

Photo B

Looking west along south bank of Mt. Scott Creek



#5975
11/22/2016



Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Photodocumentation
SE Kellogg Creek Drive, Milwaukie, Oregon
Both photos taken on October 18, 2016

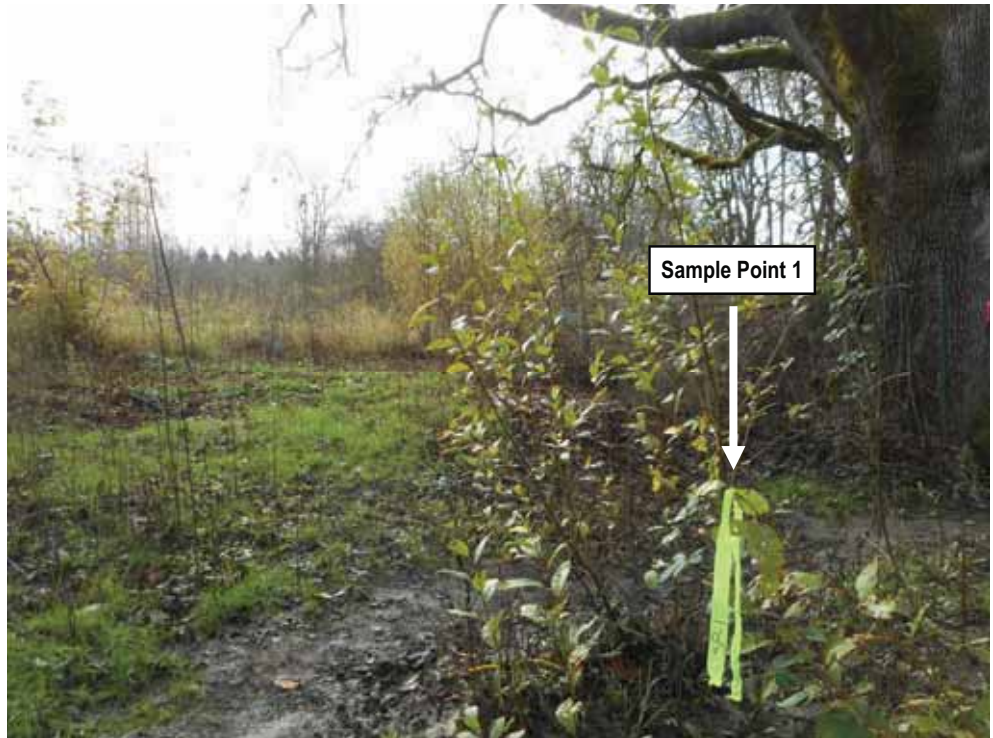


Photo C

Looking north across
Mt. Scott Creek

Photo D

Looking southeast toward
Wetland A



Sample Point 1

#57975
711/22/2016



Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Photodocumentation
SE Kellogg Creek Drive, Milwaukie, Oregon
Photo C taken on October 18, 2016, Photo D taken on November 21, 2016



Photo E

Looking northwest
toward north end of
Wetland A

Photo F

Looking southeast toward center
of Wetland A



#5975
11/22/2016



Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Photodocumentation
SE Kellogg Creek Drive, Milwaukie, Oregon
Both photos taken on November 17, 2016

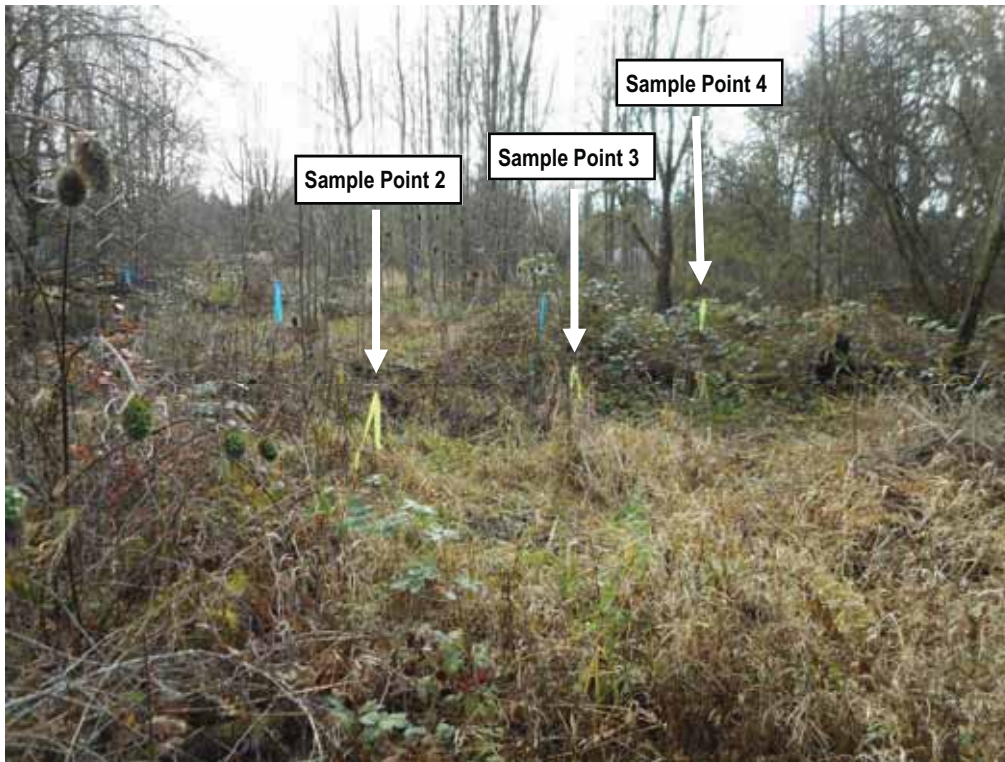


Photo G

Looking southeast toward upland island (Sample Point 4) and center of Wetland A

Photo H

Looking southeast toward southern portion of Wetland A from south end of upland island



#5975
11/22/2016



Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Photodocumentation
SE Kellogg Creek Drive, Milwaukie, Oregon
Both photos taken on November 21, 2016

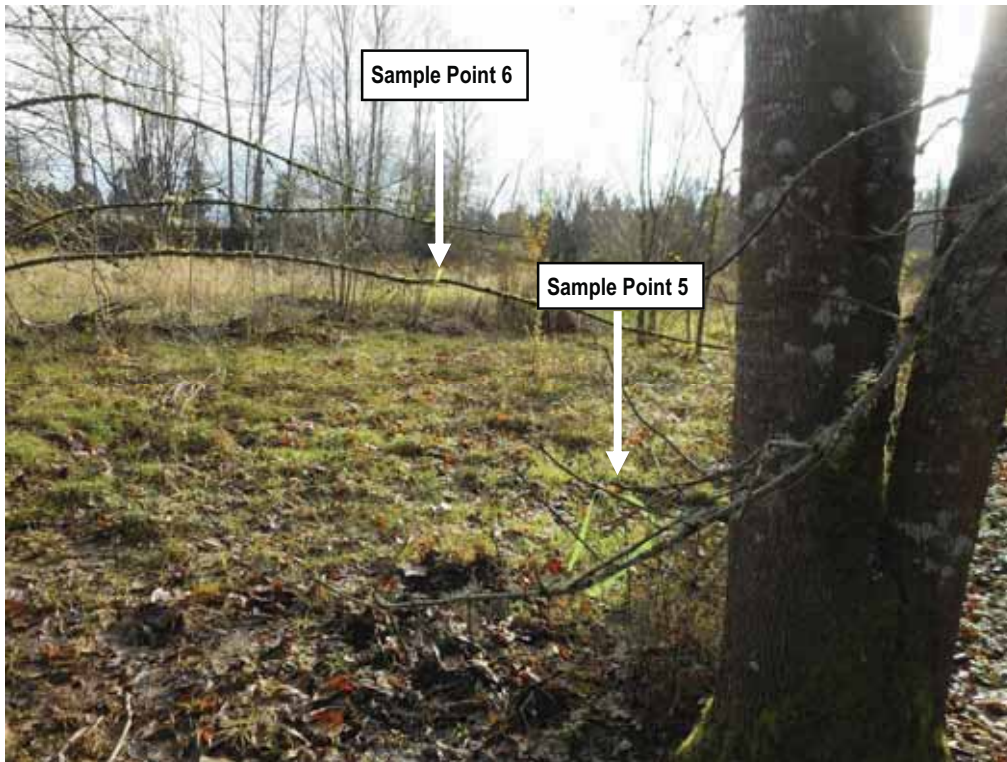
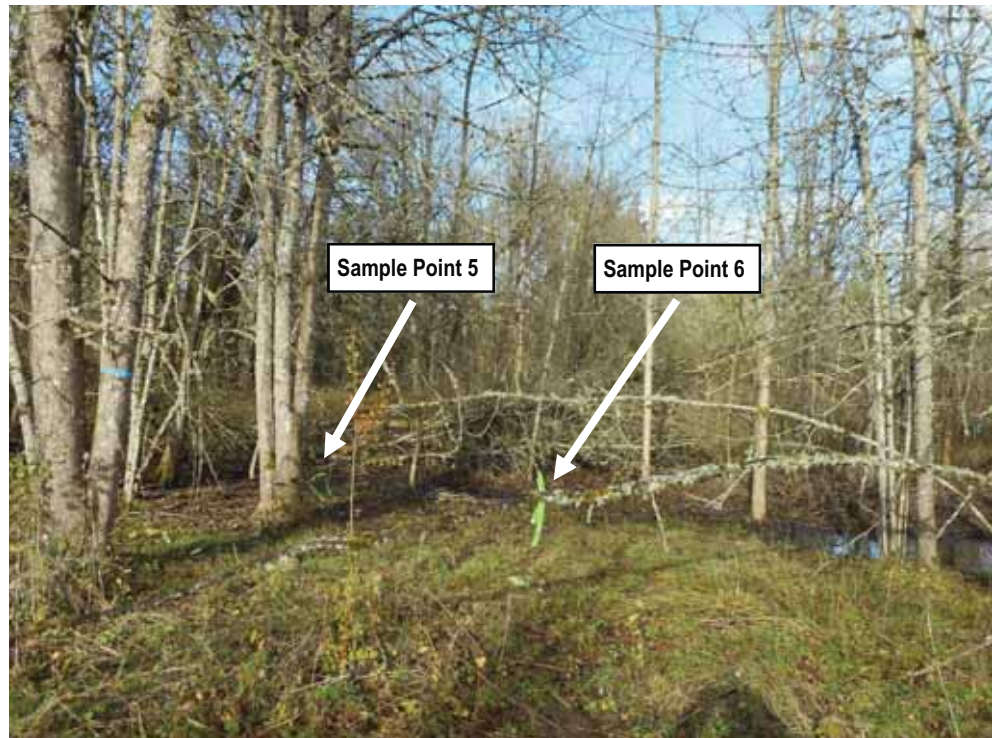


Photo I

Looking southeast toward southern boundary of Wetland A

Photo J

Looking toward the northwest portion of Wetland A from its southern boundary.



#5975
11/22/2016



Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Photodocumentation
SE Kellogg Creek Drive, Milwaukie, Oregon
Both photos taken on November 21, 2016

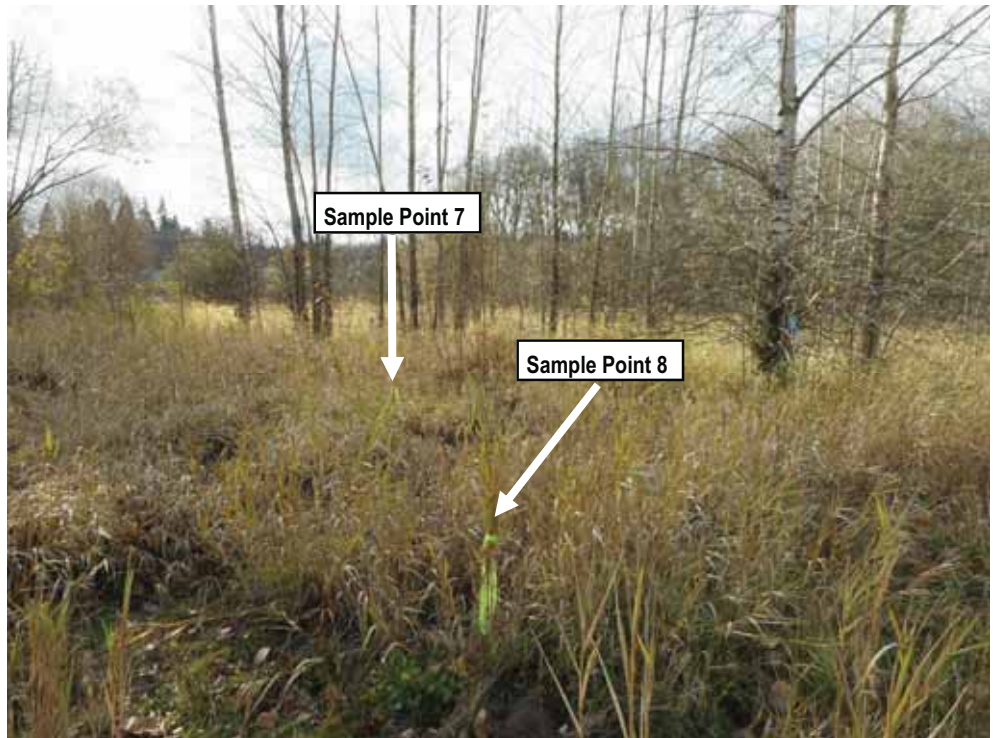


Photo K

Looking southeast at south end of Wetland A

Photo L

Looking south at eastern portion of Wetland A



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11/22/2016



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SE Kellogg Creek Drive, Milwaukie, Oregon
Both photos taken on November 21, 2016

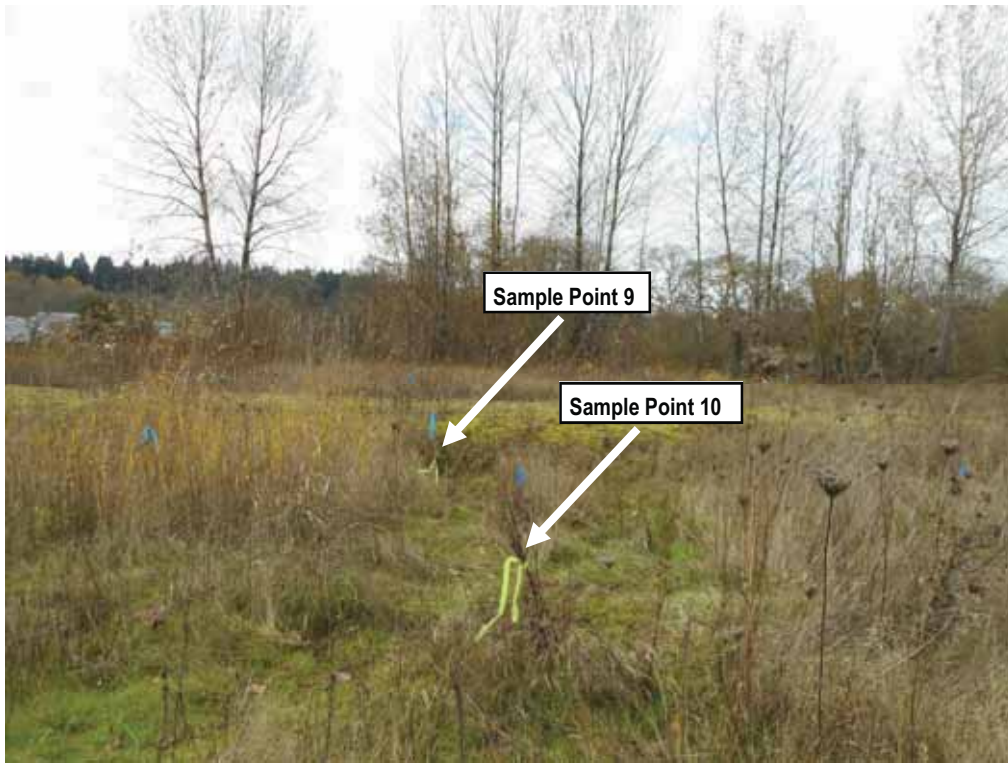


Photo M

Looking southwest
across Wetland E

Photo N

Looking north at Wetland C



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Both photos taken on November 21, 2016



Photo O

Looking northwest at
Wetland B

Photo P

Looking southeast at Wetland D



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Both photos taken on November 21, 2016



Photo Q

Looking northwest at
Wetland F

Photo R

Looking north at Wetland G



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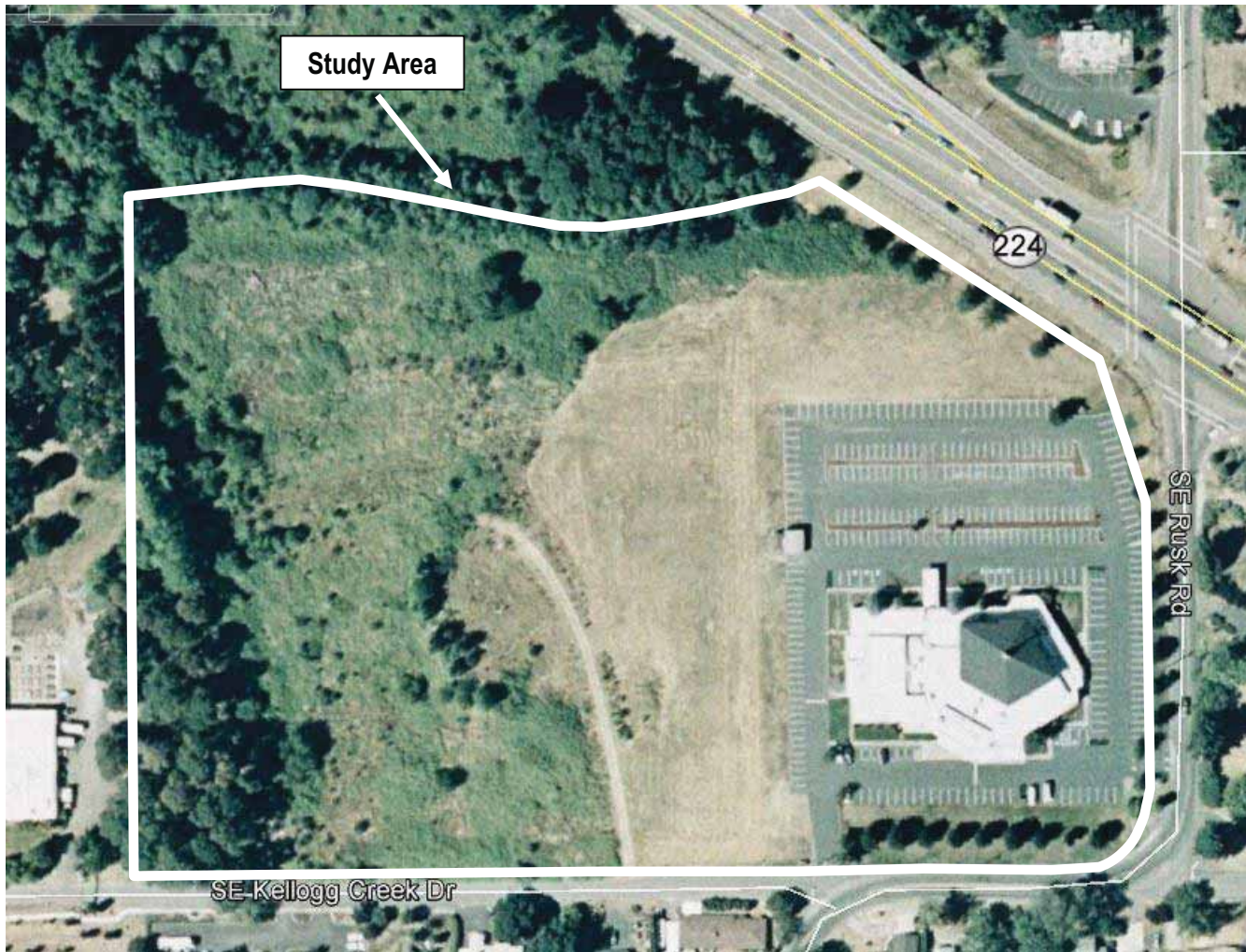
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Photodocumentation
SE Kellogg Creek Drive, Milwaukie, Oregon
Both photos taken on November 21, 2016

Appendix D

Historic Aerial Photographs



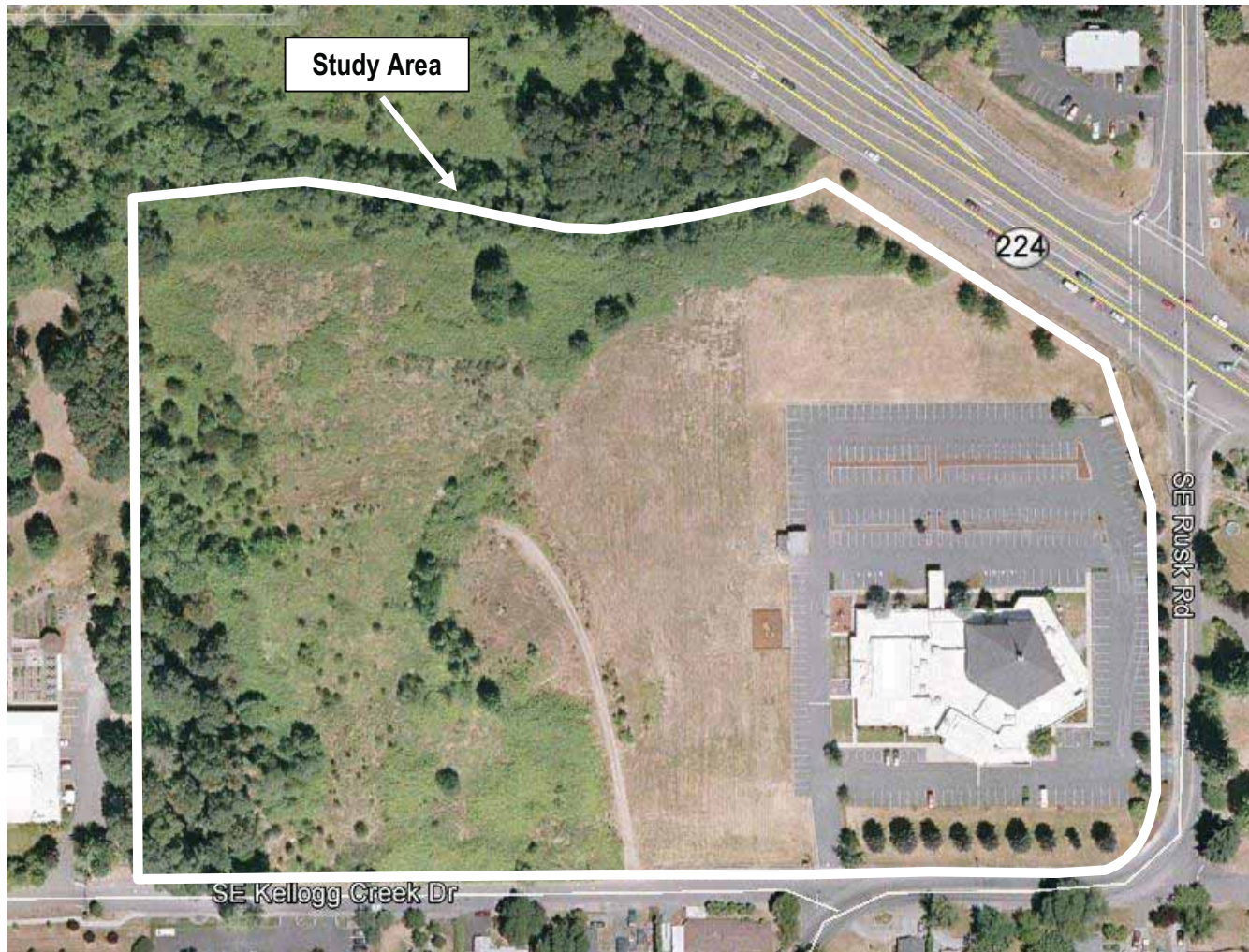


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Wilsonville, OR 97070

Historic Aerial Photo
SE Kellogg Creek Drive, Milwaukie, Oregon
Google Earth, August 14, 2002

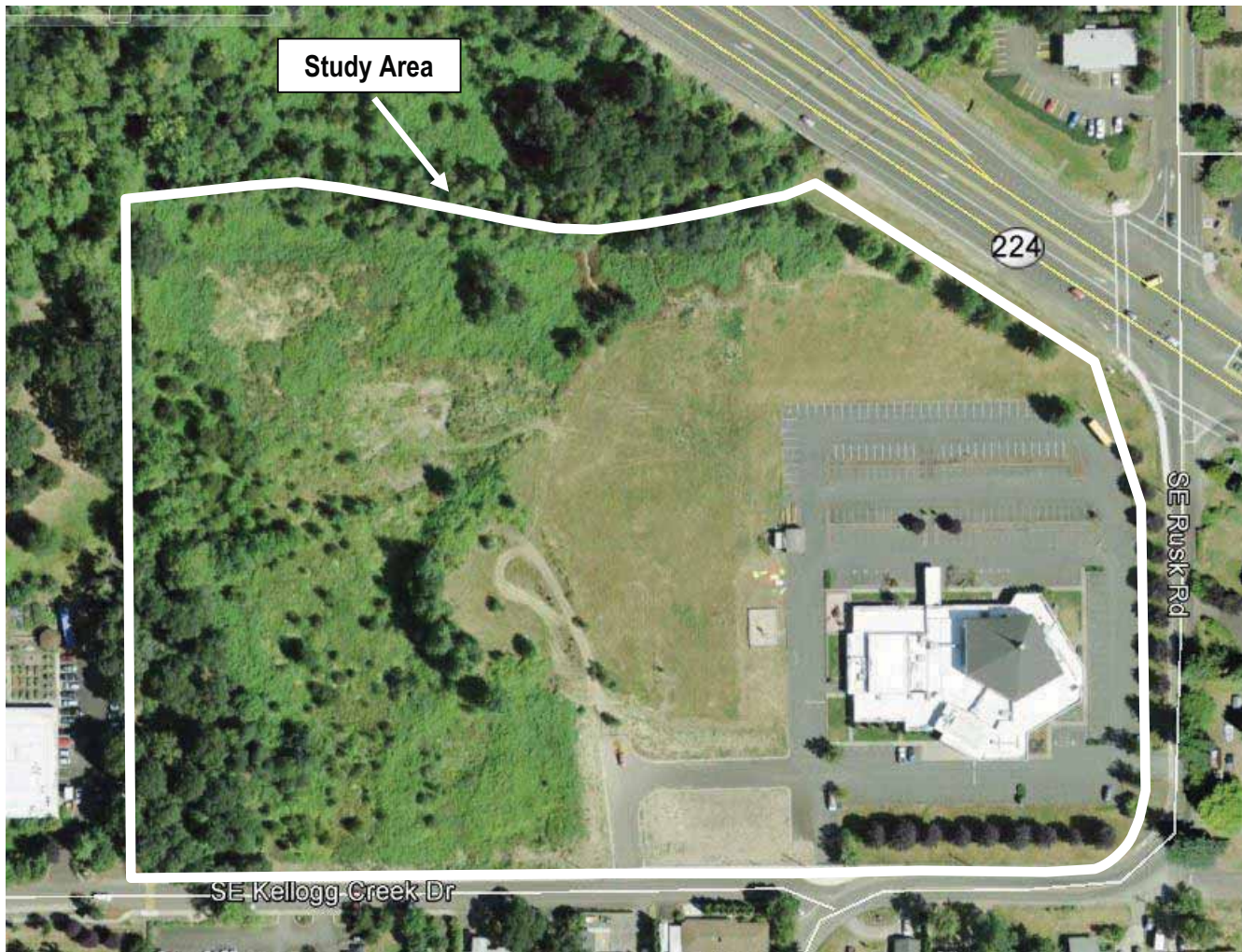


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Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Historic Aerial Photo
SE Kellogg Creek Drive, Milwaukie, Oregon
Google Earth, July 2003

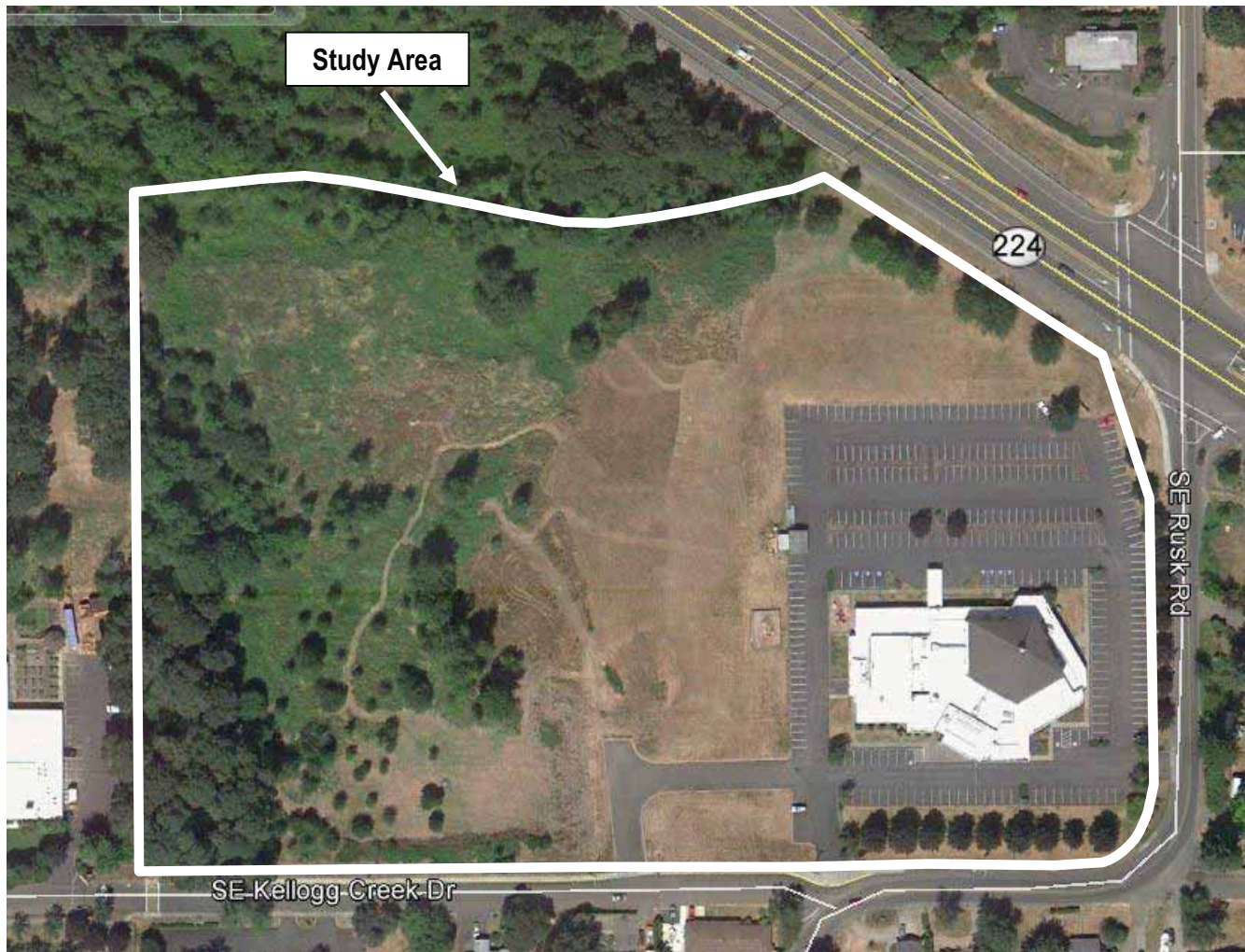


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Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Historic Aerial Photo
SE Kellogg Creek Drive, Milwaukie, Oregon
Google Earth, July 2007



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12/21/2016



Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Historic Aerial Photo
SE Kellogg Creek Drive, Milwaukie, Oregon
Google Earth, August 2010

Appendix E

Wetland Definitions, Methodology, and References



WATERS OF THE STATE AND WETLAND DEFINITION AND CRITERIA

Regulatory Jurisdiction

Wetlands and water resources in Oregon are regulated by the Oregon Department of State Lands (DSL) under the Removal-Fill Law (ORS 196.800-196.990) and by the U.S. Army Corps of Engineers (COE) through Section 404 of the Clean Water Act.

The primary source document for wetland delineations within Oregon is the *Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1* (Environmental Laboratory 1987) which is recognized by both DSL and COE.

Waters of the State and Wetland Definition

Waters of the State are defined as “natural waterways including all tidal and nontidal bays, intermittent streams, constantly flowing streams, lakes, wetlands and other bodies of water in this state, navigable and nonnavigable...”. “Natural waterways” is further defined as waterways created naturally by geological and hydrological processes, waterways that would be natural but for human-caused disturbances (e.g. channelized or culverted streams, impounded waters, partially drained wetlands or ponds created in wetlands)...”(DSL, 2001).

Wetlands are defined as “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (DSL, 2001).

Wetland Criteria

Based on the above definition, three major factors characterize a wetland: hydrology, substrate, and biota.

Wetland Hydrology

Wetland hydrology is related to duration of saturation, frequency of saturation, and critical depth of saturation. The 1987 manual defines wetland hydrology as inundation or saturation within a major portion of the root zone (usually above 12 inches), typically for at least 12.5% of the growing season. The wetland hydrology criterion can be met, however, if saturation within the major portion of the root zone is present for only 5% of the growing season, depending on other evidence.

The growing season is defined as the portion of the year when soil temperatures at 19.7 inches below the soil surface are higher than biological zero (41 degrees Fahrenheit, 5 degrees Celsius), but also allows approximation from frost free days, based on air temperature. The growing season for any given site or location is determined from US Natural Resources Conservation Service, (formerly Soil Conservation Service) data and information.

Wetland hydrologic indicators include the following: visual observation of inundation or saturation, watermarks, drift lines, sediment deposits, drainage pattern, and/or oxidized rhizospheres with living roots. Oxidized rhizospheres are defined as yellowish-red zones around the roots and rhizomes of some plants that grow in frequently saturated soils.

Wetland Substrate (Soils)

Most wetlands are characterized by hydric soils. Hydric soils are those that are ponded, flooded, or saturated for long enough during the growing season to develop anaerobic conditions. Periodic saturation of soils causes alternation of reduced and oxidized conditions, which leads to the formation of redoximorphic features (gleying and mottling). Mineral hydric soils will be either gleyed or will have bright mottles and/or low matrix chroma. The redoximorphic feature known as gley is a result of greatly reduced soil conditions, which result in a characteristic grayish, bluish or greenish soil color. The term mottling is used to describe areas of contrasting color within a soil matrix. The soil matrix is the portion of the soil layer that has the predominant color. Soils that have brightly colored mottles and a low matrix chroma are indicative of a fluctuating water table.

Hydric soil indicators include: organic content of greater than 50% by volume, sulfidic material or “rotten egg” odor, and/or presence of redoximorphic features and dark soil matrix, as determined by the use of a Munsell Soil Color Chart. This chart establishes the chroma, value and hue of soils based on comparison with color chips. Mineral hydric soils usually have a matrix chroma of 2 or less in mottled soils, or a matrix chroma of 1 or less in unmottled soils.

Wetland Biota (Vegetation)

Wetland biota is defined as hydrophytic vegetation. A hydrophyte is a plant species that is capable of growing in substrates that are periodically deficient in oxygen as a result of saturated soil conditions. The U.S. Fish and Wildlife Service, in the *National List of Plant Species that Occur in Wetlands*, has established five basic groups of vegetation based on their frequency of occurrence in wetlands. These categories, referred to as the "wetland indicator status", are as follows: obligate wetland plants (OBL), facultative wetland (FACW), facultative (FAC), facultative upland (FACU), and obligate upland (UPL). Table 1 gives a definition of the plant indicator codes.

Table 1. Description of Wetland Plant Indicator Status Codes

Indicator Code	Status
OBL	Obligate wetland. Estimated to occur almost exclusively in wetlands (>99%)
FACW	Facultative wetland. Estimated to occur 67-99% of the time in wetlands.
FAC	Facultative. Occur equally in wetlands and non-wetlands (34-66%).
FACU	Facultative upland. Usually occur in non-wetlands (67-99%).
UPL	Obligate upland. Estimated to occur almost exclusively in non-wetlands (>99%). If a species is not assigned to one of the four groups described above it is assumed to be obligate upland.
NI	Has not yet received a wetland indicator status, but is probably not obligate upland.

Observations of hydrology, soils, and vegetation, were made using the "Routine On-site" delineation method as defined in the 1987 manual for areas that were not currently in agricultural production. One-foot diameter soil pits were excavated to 16 inches and soil profiles were examined for hydric soil and wetland hydrology field indicators. In addition, a visual percent-

cover estimate of the dominant species of the plant community was performed using soil pit locations as a center of reference. Dominant plant species are based on estimates of percent cover for herbaceous, woody vine, and shrub species within a 5 foot radius of the sample point, and basal area cover for tree species within a 30 foot radius of the sample point. Plant species in each vegetative layer, which are estimated at less than 20%, are not considered to be dominant. The wetland indicator status is then used to determine if there is an overall dominance (greater than 50%) of wetland or upland plant species.

During data collection, the soil profiles were examined for hydric soil and wetland hydrology field indicators. Plant species and cover were recorded. Data was recorded on standard data sheets which contain the information specified in the 1987 Corps manual.

Attachment C

DSL Concurrence Letter





Oregon

Kate Brown, Governor

Department of State Lands

775 Summer Street NE, Suite 100

Salem, OR 97301-1279

(503) 986-5200

FAX (503) 378-4844

www.oregon.gov/dsl

State Land Board

Kate Brown

Governor

Dennis Richardson

Secretary of State

Tobias Read

State Treasurer

May 2, 2017

Brownstone Development, Inc.

Attn: Randy Myers

P.O. Box 2375

Lake Oswego, OR 97035

Re: WD # 2017-0054 Wetland Delineation Report for the
Proposed Kellogg Creek Subdivision
Clackamas County; T2S R2E Sec. 6AD, Tax lot 600 and
Portions of Tax Lots 700, 900 and 901
App. # 60166

Dear Mr. Myers:

The Department of State Lands has reviewed the wetland delineation report prepared by Pacific Habitat Services for the site referenced above. Please note that the study area includes only a portion of the tax lots described above (see the attached maps). Based upon the information presented in the report, we concur with the wetland and waterway boundaries as mapped in Figure 6 of the report. Within the study area, seven wetlands and a segment of Mt. Scott Creek were identified.

One of the seven wetlands (Wetland A, totaling approximately 0.7 acres) and the creek are subject to the permit requirements of the state Removal-Fill Law. The remaining six wetlands (Wetlands B through G) are exempt per OAR 141-085-0515 (6); therefore, they are not subject to these permit requirements. In addition, normally a state permit is required for cumulative fill or annual excavation of 50 cubic yards or more in wetlands or below the ordinary high water line (OHWL) of a waterway (or the 2 year recurrence interval flood elevation if OHWL cannot be determined). However, Mt. Scott Creek is an essential salmonid stream; therefore, fill or removal of any amount of material below its OHWL or within hydrologically-connected wetlands (Wetland A) may require a state permit.

This concurrence is for purposes of the state Removal-Fill Law only. Federal or local permit requirements may apply as well. This concurrence is based on information provided to the agency. The jurisdictional determination is valid for five years from the date of this letter unless new information necessitates a revision. Circumstances under which the Department may change a determination are found in OAR 141-090-0045 (available on our web site or upon request). In addition, laws enacted by the legislature and/or rules adopted by the Department may result in a change in jurisdiction; individuals and applicants are subject to the regulations that are in effect at the time of the removal-fill activity or complete permit application. The applicant, landowner, or

agent may submit a request for reconsideration of this determination in writing within six months of the date of this letter.

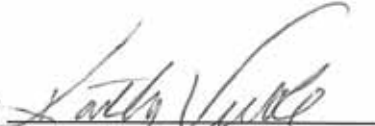
Thank you for having the site evaluated. Please phone me at 503-986-5232 if you have any questions.

Sincerely,



Peter Ryan, PWS
Jurisdiction Coordinator

Approved by

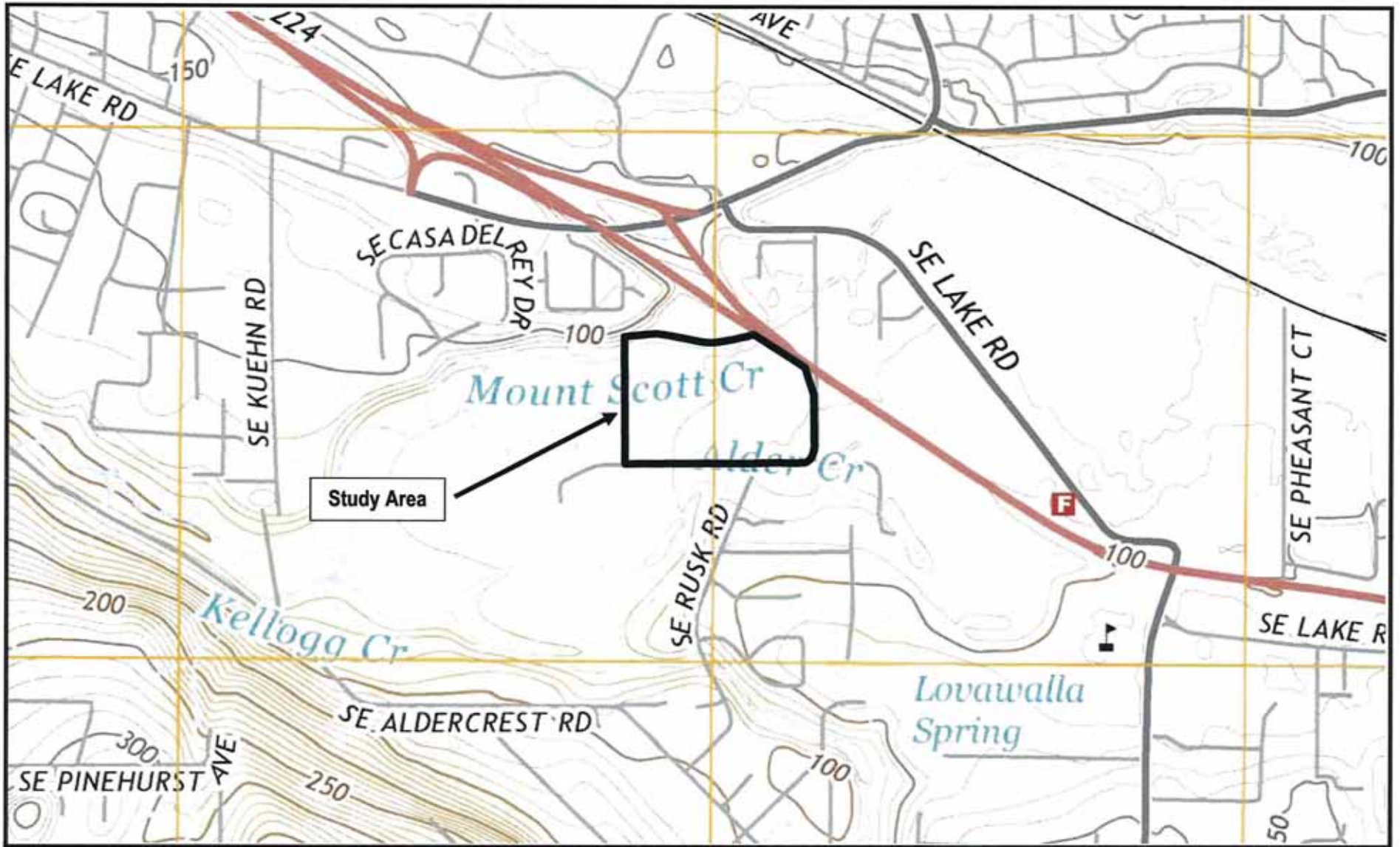


Kathy Verble, CPSS
Aquatic Resource Specialist

Enclosures

ec: Caroline Rim, Pacific Habitat Services
Clackamas County Planning Department
Dominic Yballe, Corps of Engineers
Melinda Butterfield, DSL

W02017-0054





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1/16/2017

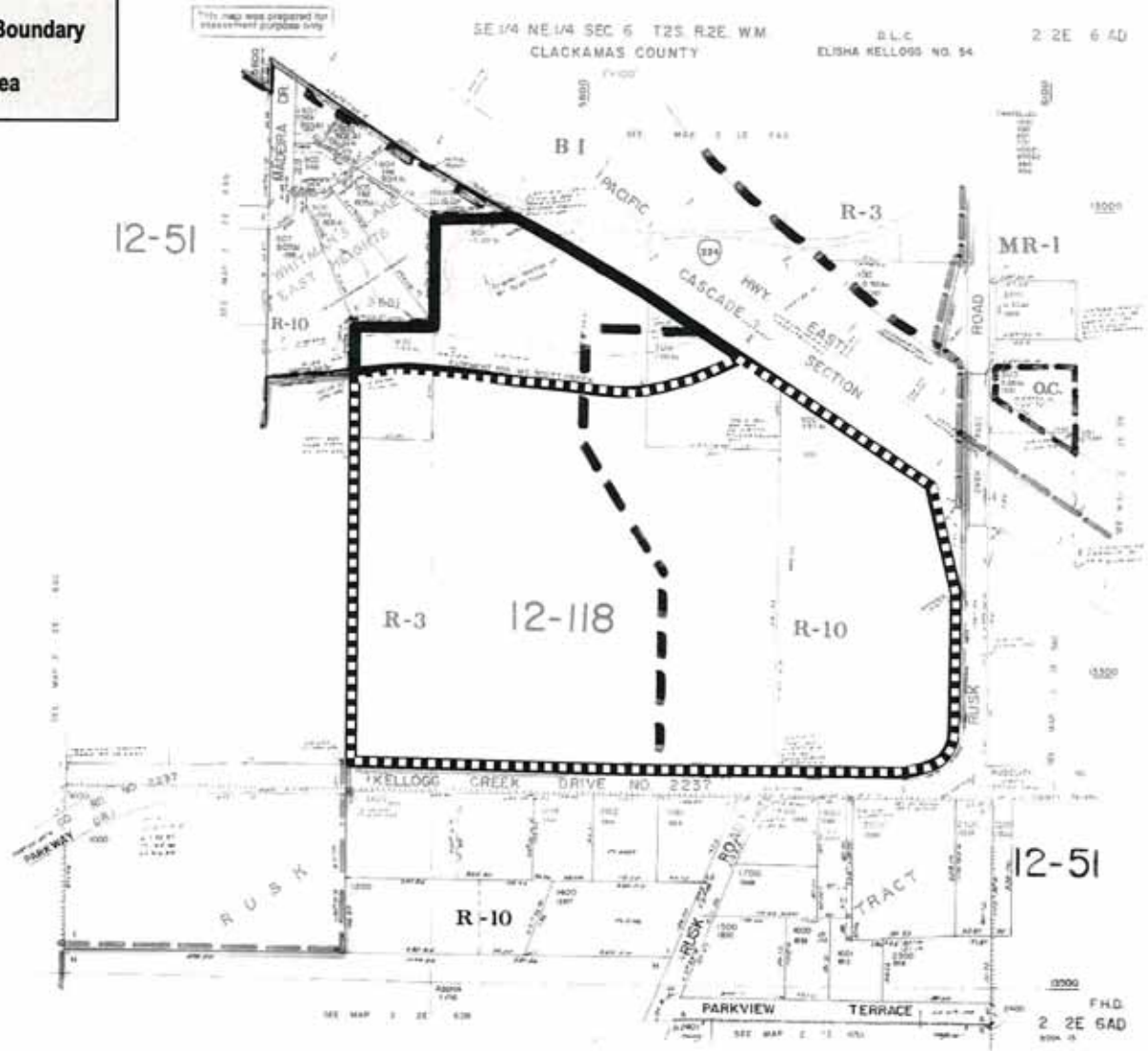
Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

General Location and Topography
SE Kellogg Creek Drive - Milwaukie, Oregon
United States Geological Survey (USGS), Gladstone, Oregon, 7.5 Quadrangle, 2014
(viewer/nationalmap.gov/basic)

FIGURE
1

W02017-0057

 Tax Lot Boundary
 Study Area



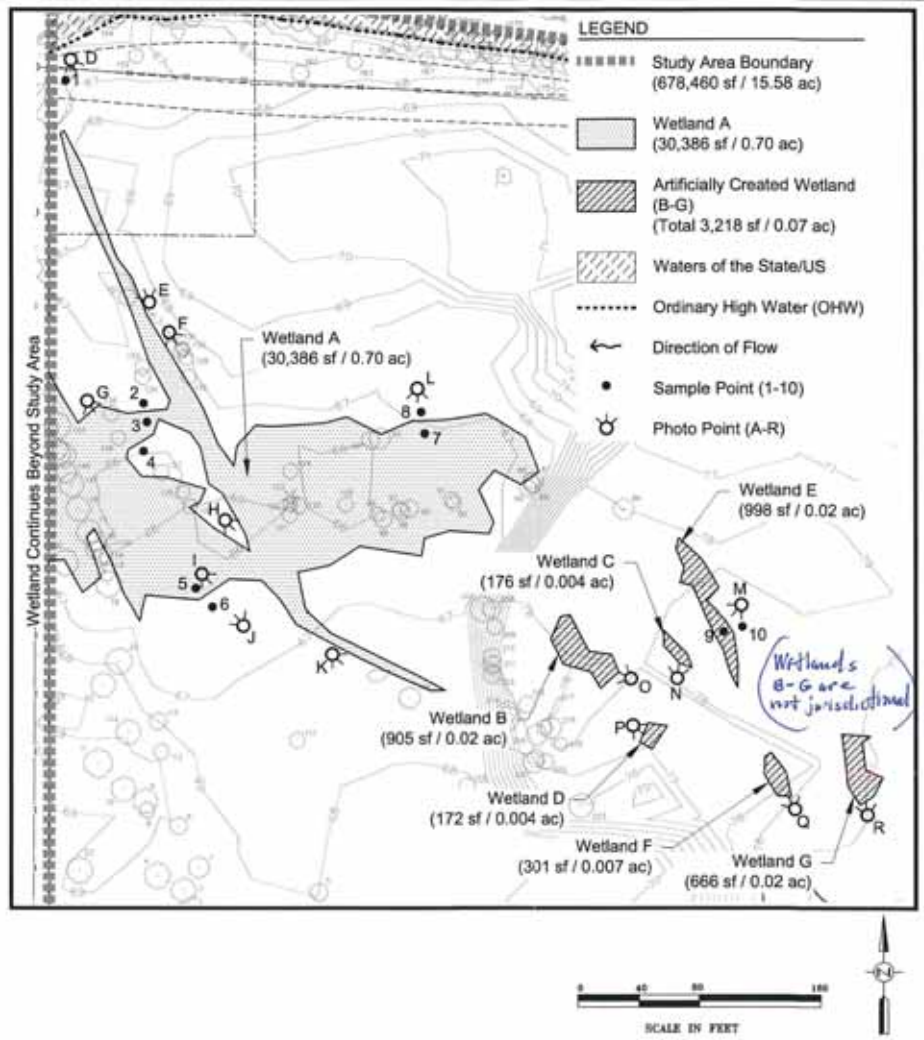
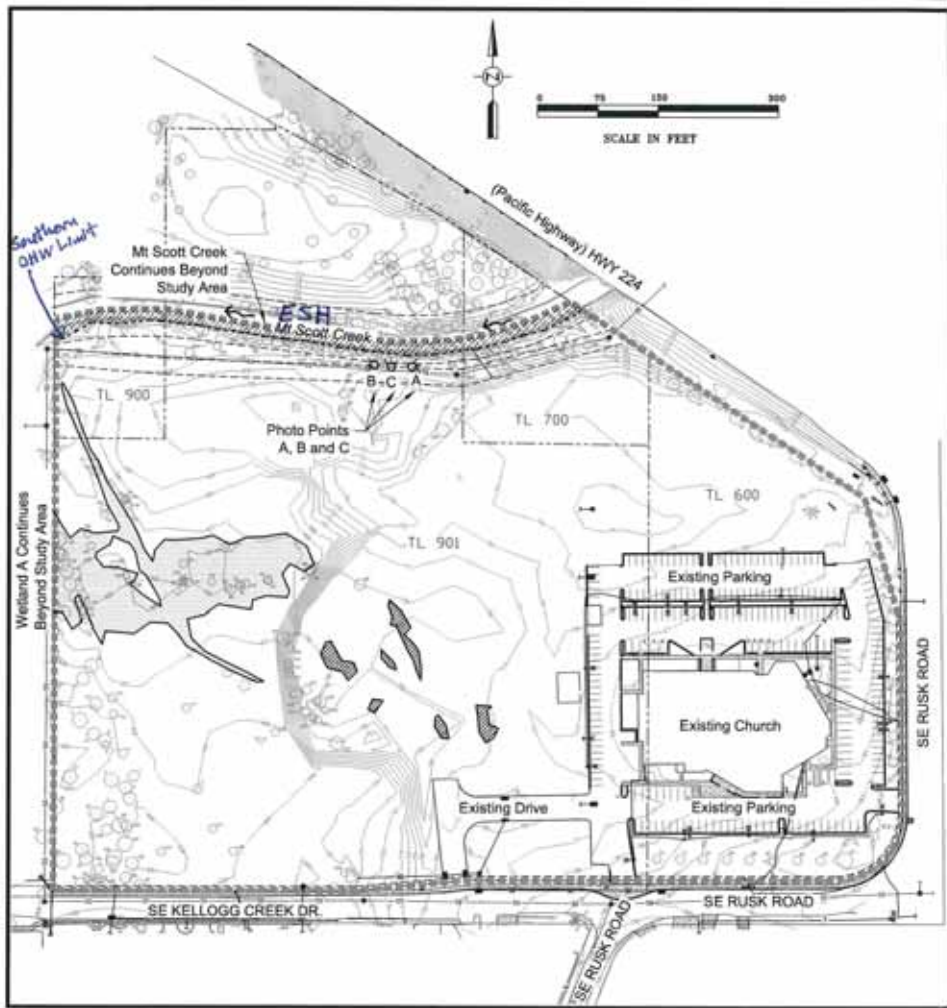
5975
12/21/2016



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9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Tax Lot Map
SE Kellogg Creek Drive - Milwaukie, Oregon
The Oregon Map (ormap.net)

FIGURE
2



Survey provided by
TerraCalc Land Surveying, Inc., 2016
Survey accuracy is sub-centimeter and
Sample Point accuracy is ± 3 feet.

DSL WD # 2017-0054
Approval Issued 5/2/2017
Approval Expires 5/2/2022

Wetland Delineation
SE Kellogg Creek Drive - Milwaukie, Oregon

FIGURE
6

1-18-2017