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Gary Shepherd, Senior Assistant Attorney

April 22, 2022

Kevin Cook, Senior Planner
Multnomah County
Land Use Planning Division
1600 SE 190th Avenue
Portland, OR 97233

RE: Metro's North Tualatin Mountains
Case #T4-2017-9166 – Comprehensive Plan Text Amendment
Case #T3-2017-9165 – Use Application
Response to Request for Additional Information

Dear Mr. Cook:

This letter and attached exhibits constitute Metro's response to the County's request for additional information, dated February 26, 2021. Below is a response to each item identified in the County's email.

Exhibit 1 – PGE utility line plan sheet
Exhibit 2 – Wetland delineation/determination form and report and ordinary high water mark/line delineation report
Exhibit 3 – Preliminary erosion control and sediment protection plan
Exhibit 4 – Revised site plan depicting the request traffic direction markings
Exhibit 5 – Site Plan for vision clearance (monument sign)
Exhibit 6 – Mitigation plan

Issue #1. *I am looking for more specifics on the amount of tree clearing needed for trails so that I can provide this information within staff findings to approval criteria related to this topic. The application mentions 0.05 acres of clearing for parking areas. For trails there is an indication that trails will be aligned to go around trees. The geotech report provides descriptions of new trail segments, which list the trail lengths and in most cases the trail widths. In trying to use those numbers to guess at a possible amount of clearing I come up with possibly a few acres of clearing – but I don't have a clear picture how many trees would be either preserved or removed for the new trails.*

Similarly, it appears I have found a discrepancy in the overall length of new trails proposed. The narrative indicates the addition of 6 miles of new trail while the geotech report new trail lengths add up to over 12 miles. It appears that the geotech report may provide a more specific calculation of trail lengths that account for the 'twist and turns' as opposed to more generalized straight line distances.

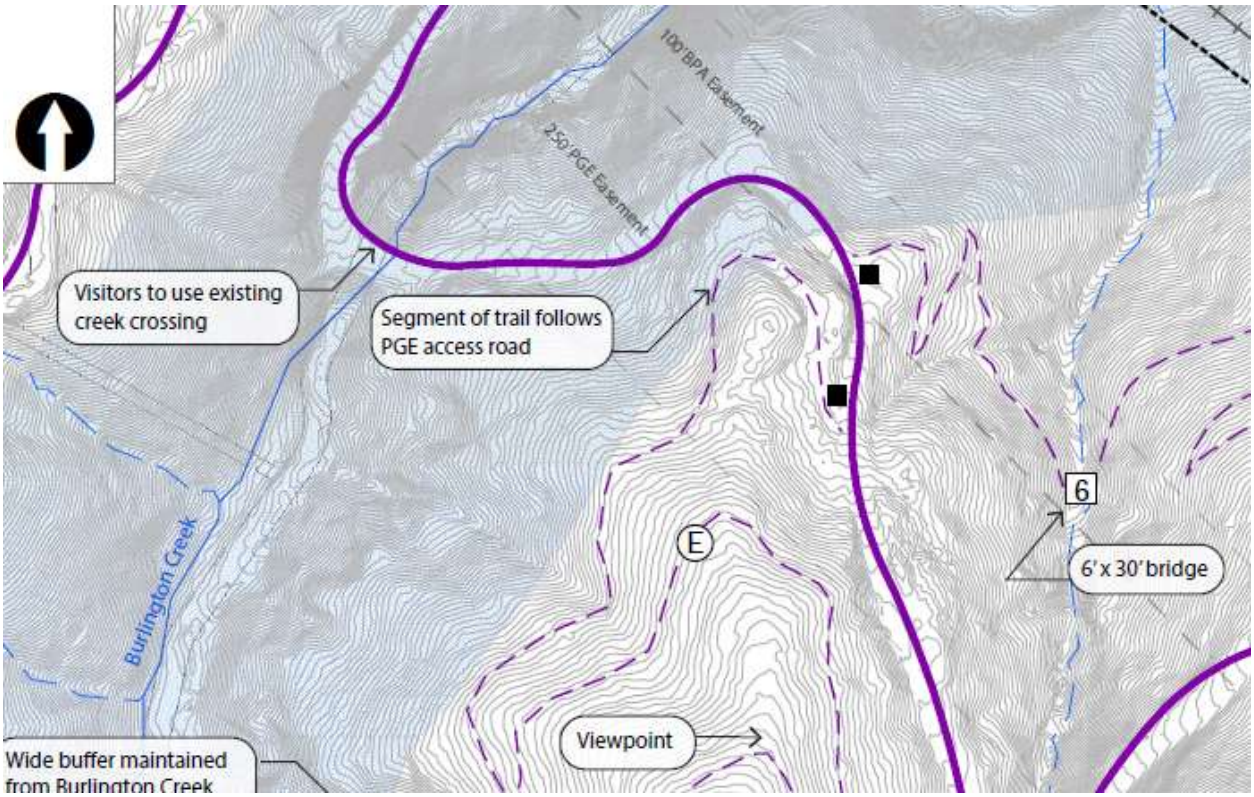
Can you clarify the amount of clearing needed for the trails as well as the length and width of all proposed trails?

Exhibit A.26

RESPONSE: First, addressing the ambiguity/confusion over trail lengths proposed; the total length of proposed *new* trails is currently 5.6 miles based on GIS alignments. The GIS trail files also include the line work for 2.3 miles of *existing* forest practice roads, which will remain open to visitors to walk and ride their bike or horse (for a total of approximately 8 trail miles). With respect to the tree clearing aspect of the question, applicant assumes this question relates to the SEC mitigation/revegetation ratio. The subject property includes SEC-h (wildlife habitat) and SEC-s (streams) overlays, which unless exempt from SEC permit standards, require a level of mitigation to offset proposed disturbances.

While the property is classified generally as SEC-h (wildlife habitat), there is only one code regulated SEC "protected stream" on the subject use application property, Burlington Creek. No new bridges or trails are proposed to cross Burlington Creek. The SEC-s "stream conservation area" includes a 300' buffer from Burlington Creek's centerline. One short segment of approximately 125 feet of new trail located on the ridge approximately 134 feet in elevation above the creek skirts along the edge of the overlay buffer, and when measured along the ground and down the slope (not by the way the crow flies), it is planned to be outside the buffer. Furthermore, this section of trail alignment follows an existing PGE maintenance access route and thus does not impact habitat area.

30% Trail Alignment and SEC-s Buffer



The SEC buffer in the graphic above is drawn at 328' from Burlington Creek as measured along the slope. There is no impact to the SEC-s resource requiring mitigation.

As provided for in Metro's application and also discussed in a response to a request for additional clarifications dated August 27, 2018, applicant approaches the response to SEC permit criteria in two alternative ways.

First, applicant demonstrates that recreational improvements, and at a minimum the trails (including bridge crossings), are exempt from the SEC permit and mitigation standards. Please see the application narrative submission for a response to *§ 33.4515 Exceptions*. Section 33.4515(A) provides that activities to protect, conserve, enhance, and maintain public recreation and natural uses on public lands are exempt from SEC permits. Public recreational uses already occur on the site. The proposal is to develop formal access improvements and new trails to enhance and maintain public recreational and natural area uses, as well as to control and direct user access to protect and conserve the natural resources; thereby meeting the exemption standard.

Please note, in support of the exemption analysis, applicant offers the following: SEC-h permit and Wildlife Conservation Plan standards limit newly cleared area disturbance associated with development to 1 acre. § 33.4570(A)(3)(b) and (5)(b). Generally speaking, recreational and natural area improvements in a forested setting, particularly when initially being constructed, would often exceed 1 acre of cleared areas. Depending on the level of clearing proposed, if recreational and natural area improvements are not determined to be exempt, the County would be prohibiting public recreational projects from being constructed in a forested setting. For example, that conclusion would have prohibited Oxbow Regional Park, whose lawful and legal existence was recently reconfirmed in T3-2015-3903, from being developed.

If applicant's proposed use is not exempt from the SEC standards, alternatively, applicant demonstrates compliance with SEC permit standards through the required Wildlife Conservation Plan worksheets and proposed revegetation of existing cleared areas on the property at a 2:1 ratio (to mitigate for "clearing" – areas which go from a "forested area" to a "non-forested area").

Tree removal for proposed recreational and natural area improvements, specifically the number of trees proposed for removal, is not a relevant issue for two reasons. 1) Tree removal for recreational and natural area improvements is exempt from SEC standards, and 2) Tree removal and the number of trees removed is only considered when the activity is not exempt and an applicant is proposing to mitigate for disturbances pursuant to SEC, Wildlife Conservation Plan standards subsection (C)(4) or (C)(5), instead of (C)(3). Although applicant is of the opinion that the proposed use is exempt from SEC permit standards and mitigation requirements, in the alternative, applicant provides a Conservation Plan and mitigation plan that satisfies the standards of (C)(3).

The total length of proposed *new* trails is currently 5.6 miles based on GIS alignments. The GIS trail files also include the linework for 2.3 miles of *existing* forest practice roads which

will remain open to visitors to walk and ride their bike or horse (for a total of approximately 8 trail miles). No changes to the road are anticipated. During trail construction, the new trail mileage may increase by 10% to account for meander as needed to avoid natural obstacles, such as trees. Metro expects the final *new* trail length to be approximately six miles. Proposed trail lengths, widths and impact area are as follows:

30% Design Trail Impact Calculations

Trail	Trail Width (inches)	Trail length (lf)	Trail impact area (sf)	Trail length (mi)
A	42	5,082	17,787	1.0
B	30	1,162	2,905	0.2
C	24	679	1,358	0.1
D	36	4,845	14,535	0.9
E	30	6,073	15,183	1.2
F	30	2,597	6,493	0.5
G	30	6,081	15,203	1.2
H	24	3,015	6,030	0.6
		29,534	**79,493**	**5.6**
			1.8	**Total acres of trail impact**

For the recreational and natural area improvements, Metro is proposing ground disturbances totaling 1.86 acres: constituting 0.05 acres for the parking area (parking area is proposed in an already cleared area where 12 trees are proposed to be removed); 1.8 acres for trails; and 400 sf of bridge abutments. Only the disturbance adjacent to the parking area meets the definition of "clearing," requiring mitigation.

The activity of "clearing" (going from a "forested area" to a "non-forest area" as defined in § 33.4570(A) for example) is regulated by SEC permit standards, and requires mitigation at a 2:1 ratio. Ground disturbances per se, do not always equate with or meet the definition of "clearing." For example, when a trail is constructed (as is proposed), the area is not cleared of trees, but rather remains a "forest area" as defined in § 33.4570(A)(1). Trail construction consists of ground grubbing and surface preparation with trails going around existing trees, unless impracticable. The number of trees that may be removed along a length of trail depends on the density of the forest and desired trail design parameters, including desired slope and width. The timber plantation at Burlington Creek Forest has been thinned to resemble a natural forest density. Such a scenario minimizes the amount of trees potentially needing to be removed for trail construction. Forest edges, such as near the existing road, may have greater tree and shrub density due to light availability. At each trail road intersection, the removal of up to two small trees may be assumed. Larger trees found on site, carry greater ecological value, and would be prioritized to be left in place.

Although applicant's proposal is exempt from SEC mitigation requirements, applicant's mitigation planting plan depicts the required level of planting to mitigate for the parking area disturbance. The remainder of applicant's activities is not converting a forested area into a non-forested area, and thus does not constitute "clearing" requiring mitigation.

Please note, applicant's final plans submitted for review and approval will depict the precise square feet of disturbance and, if required, the resulting 2:1 revegetation area to mitigate for disturbances. Applicant has presented preliminary plans for land use review. Following the decision, those preliminary plans will be further defined and developed into final construction plans, which will be substantially consistent with that which is preliminarily proposed. As is normal and customary, those final designs will result in more certainty, including final calculations for disturbance areas that may require mitigation. At that time, applicant's required final mitigation plan will reflect those numbers.

Although applicant has established that the proposed use is exempt from SEC standards, if the County determines applicant's proposed use is not exempt from the SEC standards, applicant requests a condition of approval to ensure compliance with the 2:1 revegetation standard, with the County determining and delineating the areas of "clearing" that require mitigation. Applicant's final construction plans, including the final mitigation plan, would then address and comply with that condition, thereby satisfying the standard.

Issue #2. *At page 72 of your T3 application narrative you indicate no proposed cuts or fills for the trails. However, the Geotech report at Section 5.11 advises on how cuts and fills for trails should be handled. Please clarify if cuts or fills will be required for the trails, and please provide any information you might have as to where these activities might occur. Also, will cuts and fills for trails will be done by hand or with mechanized equipment?*

RESPONSE:

Pages 72 and 73 of the application narrative states there are four areas that will require fills or grading. Applicant has not located the reference that there will be no proposed cuts or fills for the trails. Any statement or suggestion as such would have been a clerical error.

Full bench construction is anticipated for the trails at Burlington Creek Forest. While this process requires some soil excavation and dispersal, no import or export of material is anticipated. Excavation is limited to that required to establish the trail. All excavated material will be broadcast locally on site as is customary in trail construction. Trail construction is expected to utilize small mechanized equipment as well as hand tools. The geotechnical report at section 4.2.2 confirms that the proposed trails will include minimal cutting to achieve finished grades.

The design presented implements the recommendations of independent geotechnical experts to ensure the proposed improvements are compatible with site conditions. As indicated in the geotechnical report, existing vegetation, soils, etc. will be removed from within and for approximately a 5-foot margin around proposed building, pavement, and

bridge abutments. Where needed, for example around the bridge abutments, sediment control fencing, construction fencing, and staging areas will be utilized to control and direct activities and prevent adverse impacts. Standard construction management best practices will be employed and documented in erosion control and sediment protection plans and notes.

Applicant is not requesting a grading and erosion control permit at this time. As such, pursuant to MCC 33.5520, applicant requests conditions of approval be imposed to ensure that a grading and erosion control permit is obtained and the design meets the applicable standards prior to ground disturbing activities.

Issue #3. *Metro has indicated that the entry gate will be motorized, but has also indicated no electricity is proposed for the sight. Can you confirm the power source for the gate? You have already indicated the security light would be solar power, is this also true for the entry gate and the restroom light?*

RESPONSE:

Since the original application submission, solar was not found to be an adequate power source for the automated gate. Thus, power lines will be brought to the site. Attached plans from Portland General Electric indicate power will be brought to the site from NW Wapato Avenue. Lines will run underground, including under the rail line. Exhibit 1. PGE will coordinate the utility easement within the right-of-way. Lighting will be connected to the same power source. Appropriate and needed right of way permits will be obtained to support utility installation. The need to obtain said permits can be made a condition of approval to ensure compliance.

Issue #4. *Because stream crossings are proposed, a mitigation plan, as referenced below in subsection 2, is required. Please submit this mitigation plan as soon as possible, and let me know if you have any questions as you review the mitigation plan requirements.*

MCC 33.5520 (A) (2)

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

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

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

equivalent surface water quality standards as those established for the Tualatin River Drainage Basin in OAR 340;

RESPONSE:

Since the original submission, applicant's professional consultant performed a wetland delineation/determination and identified the ordinary high water marks associated with the proposed bridge crossings. Attached as Exhibit 2 is their Wetland Delineation/Determination Report form submitted to the Oregon Department of State Lands as well as their Ordinary High Water Mark/Line Delineation Report. This information will be used to ensure that all abutment disturbances are located above and outside of the ordinary high water mark.

The above issue references Erosion and Grading Control standards for hillside development, specifically, when entering into a waterbodies buffer. The mitigation plan required above is distinct and different from required mitigation (and the mitigation plan) required under SEC permit standards. Unlike the SEC permit standards, the Erosion and Grading Control "mitigation plan" standards do not require a specific ratio of plantings in existing cleared areas to offset the disturbance with the buffer. Rather, the standards required a grading and erosion control plan, to the extent applicable, to "utilize erosion and stormwater control features designed to perform as effectively as those prescribed in the currently adopted edition of the "Erosion Prevention & Sediment Control Plans Technical Guidance Handbook (1994)" and the "City of Portland Stormwater Quality Facilities, A Design Guidance Manual (1995)" and which is consistent with attaining equivalent surface water quality standards as those established for the Tualatin River Drainage Basin in OAR 340." Those are construction management best practices standards which are reflected in erosion and grading control plans, to the extent the standards are applicable. Implementing those best practices is the mitigation required.

Applicant provided preliminary grading and erosion control plans depicting information required for the access and parking area. As requested by the County, attached as Exhibit 3 are additional preliminary construction management plans, erosion control best practices that will be utilized for all bridge abutments and trail construction within the buffer.

As per normal County protocol and process, applicant is not requesting a grading and erosion control permit at this time. Applicant has required a condition of approval be imposed to ensure that a grading and erosion control permit is obtained and the design meets the applicable standards prior to ground disturbing activities.

Issue #5. *Is Metro proposing to mark the traffic directions for the driveway and parking area? If so, can you add those details to a site plan?*

RESPONSE:

Attached as Exhibit 4 is a revised site plan depicting the requested traffic direction markings. This amends Exhibit 20, sheet 4 of the original submission. The parking area is served by and takes access to and from NW McNamee Road, an improved public street. The proposed access drive is not less than 20 feet in width and allows for two way traffic. Additionally, this standard can be made a condition of approval to ensure compliance.

Issue #6. *Metro has requested a condition of approval to allow the applicant to seek permission to use gravel in the parking area – see MCC 33.4180 (A). I need your help addressing the standards in MCC 33.4180 (2) if you would like to request that the county impose a condition of approval allowing Metro to decide later between full pavement or some combination of pavement and gravel. In other words I think we can recommend the condition as long as you have satisfied MCC 33.4180 (A) (1) and alternatively (A) (2).*

RESPONSE:

Metro apologizes for the confusion created by its responses to subsections (A)(1) and (2). Currently, the plans represent a paved surface for the access road and parking area, thereby satisfying the surface requirement of (A)(1). However, the standards also permit an applicant to request a deviation from a paved surface, namely gravel. While at this time applicant is not intending to use gravel for the access drive and parking area, when the project is finally designed for construction permitting purposes and final county review, applicant would like the opportunity/the option to employ gravel over a portion of the access drive and parking area. Please note, if gravel was proposed in final plans, applicant understands that a paved apron approach would be required for a portion of the access drive. As suggested above, a condition of approval that applicant comply with the surfacing standards in subsection (A)(1) or alternatively (A)(2) would ensure compliance.

Issue #7. *In addressing MCC 33.4210 (Minimum Required Off-Street Loading Space) I want to make sure I am capturing Metro's intent with respect to loading spaces. As I understand it the proposed trails and restroom building do not require a loading space and when on site, Metro vehicles will likely either use an available open parking space or will park as needed on the existing logging road trail by way of accessing the proposed gate at separating the parking area from the trailhead. Do I have that right? Also, can you provide any information about the anticipated frequency of Metro vehicles and/or contractors needing to use the parking area?*

RESPONSE:

You are correct. Metro staff visiting the site as part of standard operations or for land management needs would use any open parking space or park along the forest practices road. Metro staff will be visiting the site as operational demands dictate, which is

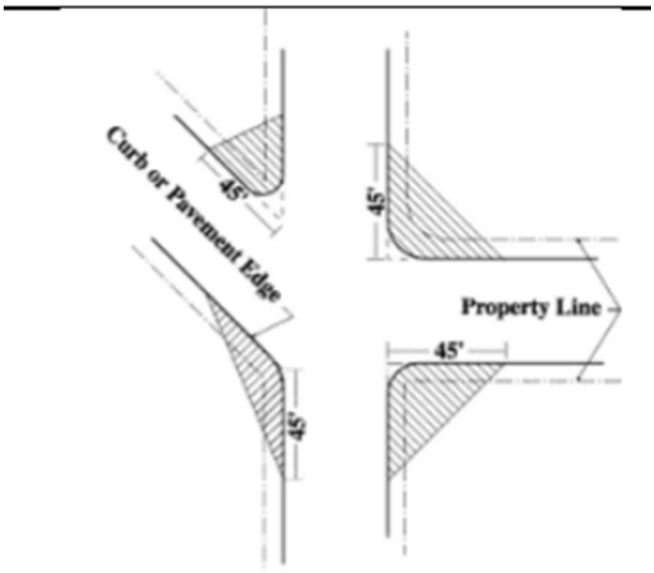
anticipated to be a couple of times per week during high use season, and less during the winter months. Metro will also be accessing the site periodically as land and forest management needs arise, as it does currently.

No loading/unloading within the parking area is needed to support or serve the proposed use.

Item #8. *Regarding 33.7465 (Sign Placement), I believe that the monument sign at the entry may actually be proposed in the vision clearance area (a prohibited area), though the twisty shape of the driveway and the curve of the road make a somewhat difficult to measure. Can you provide a sight plan showing how the monument sign will be located outside the vision clearance area?*

RESPONSE:

Metro does not propose or intend to locate the monument sign within the vision clearance area. Any representation of such in the preliminary plans is in error. We understand the clear vision area you are concerned about is the distance the sign is set back from the road surface edges to allow clear vision in both directions, as required by Figure 2 below.



33.7505 Figure 2 - Visibility Triangle
Visibility Triangle Areas at Typical Intersections

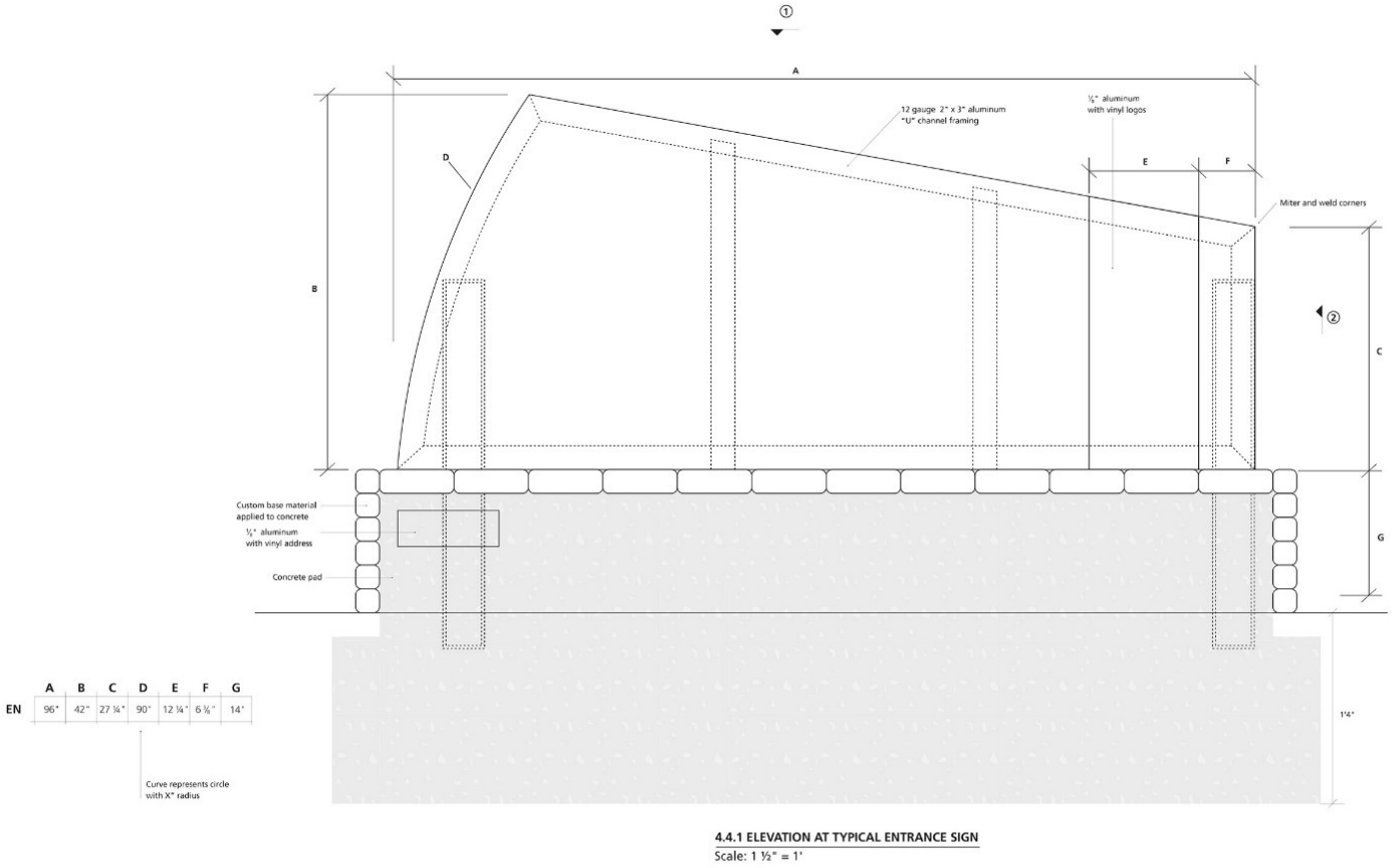
Attached as Exhibit 5 is a site plan depicting the proposed sign with reference to the vision clearance area triangle required by 33.7465 (C). Applicant requests that the standard of 33.7465(C) be made a condition of approval to ensure compliance.

Issue #9. *Can you also provide more detail on the sign face measurements? I need to verify that the sign face will not exceed 40 square feet.*

RESPONSE:

Exhibit 1 at page 5 of applicant's response (dated June 8, 2018) to the County's request for additional information includes the proposed monument measurements. The sign panel is supported by a concrete footing, and attached thereto. As shown in the figure below, the sign panel is 96" long with a maximum height of 42" on one side sloping down to 27.25" on the other side and therefore has a face of approximately 23 square feet or less than 40 square feet as required.

30% Design Entry Monument Sign Dimensions



	A	B	C	D	E	F	G
EN	96"	42"	27 ¼"	90°	12 ¼"	6 ⅛"	14"

4.4.1 ELEVATION AT TYPICAL ENTRANCE SIGN
Scale: 1 ½" = 1'

Additionally, a condition of approval can be adopted, requiring the monument sign to be less than 40 square feet, to ensure compliance. This sign is a typical Metro monument sign that is also utilized (and was County approved) at Oxbow Regional Park, among other places.

Issue #10. *You have indicated that Metro, "may erect parking area/entrance/and exit signs in association with the entry/access improvements." Because these signs are allowed "in accordance with the provisions specified in each district." we need to know if Metro is going to propose these signs so we can evaluate them under the requirements of the base zone.*

RESPONSE:

In response to sign standard § 33.4190, applicant indicates that new signs proposed include a monument sign, parking lot signage (such as ADA parking signs), and information signs associated with the natural area and trails (such as rules signs, trail signs, wayfinding information, etc.). Although represented as proposed, directional signs will not be installed. Instead, applicant will include directional arrows on the access driveway as required by § 33.4170(A).

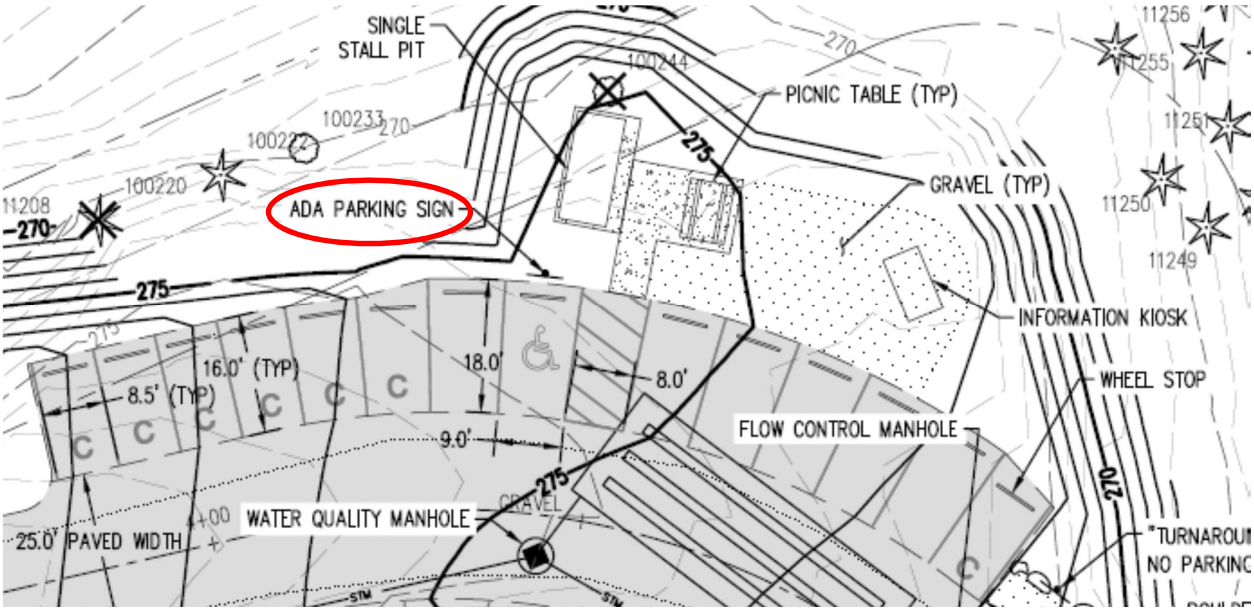
Item #11. *Regarding MCC 33.7465 (D) – The ADA parking sign appears to be proposed affixed to the restroom building, but that is unclear. If the sign is free standing or there are any other free standing signs in pedestrian areas can you provide detail indicating that those signs meet subsection (D) – such as meeting the 8.5 foot standard.*

RESPONSE:

§ 33.7465 SIGN PLACEMENT regulates the placement of signs, Subsection (D) referenced above regulates signs that extend over travel or parking areas, requiring them to be at least 14 feet above the ground to allow for vehicles to travel underneath them. Metro is not proposing any signs that vehicles pass under. The only reference to 8.5 feet is in subsection (E), which similarly regulates pedestrian area sign clearances. The bottom edge of the accessible parking space sign shall be mounted on a post at a minimum of 8.5 feet above finish grade.

An ADA parking sign is located in front of the accessible parking space on a free-standing post as shown below and on sheet 4 of the Burlington parking preliminary site plan.

30% Design Accessible Sign Location



ADA parking signs, height, location, and size are strictly regulated by federal law and state building code. ADA signs associated with the ADA parking space are designed to comply with those standards.

Issue #12. *Regarding MCC 33.0570 (Dark Sky Lighting Standards) - Specifically (C) (2), the lighting must be contained within the boundaries of the Lot of Record on which it is located. To satisfy this standard, shielding in addition to the shielding required in paragraph (C)(1) of this section may be required and because the security light will be on a pole we may need a lighting engineer to provide light contours on the site plan showing how the light will remain on the Lot of Record. Similarly, the requirement that the security light and restroom building light be shielded with the light directed only where needed should also be addressed. It will also be necessary to provide specifics regarding the light fixture design and their respective heights above grade.*

RESPONSE:

At this time, the only lighting proposed is on the vault toilet. No other lighting is proposed. Please disregard the reference to an additional light located on a pole in applicant's narrative response to § 33.4185.

Applicant provided additional detail concerning this standard in a response (dated June 8, 2018) to a request for additional clarifications dated April 2, 2018. In that response, item 8, applicant provided an additional orientation site plan for the vault toilet light.

Lighting will be mounted on the south/southwest side of the vault toilet structure and will not be visible from any location off site or downslope. The light will be approximately 7

feet off the ground. The vault toilet is located in an area that can be described as a hollow, 25 feet lower in elevation than the entrance grade on NW McNamee, and is not visible. The light is dark sky compliant. The light is directed downward, hooded and shielded.

The requirement to shield or otherwise direct light downward can be made a condition of approval to ensure compliance.

Item #13. *Can you verify the maximum height of each bridge above grade? I want to be sure I have accurately addressed MCC 33.2050 – building height.*

RESPONSE:

§ 33.2050 is a building height standard. It does not regulate or limit how high a bridge may be from the streambed it is crossing. Stated otherwise, the air space in between the streambed and the bridge does not count toward measuring building or structure height.

Despite that, bridges and a boardwalk will extend a maximum of 2 feet to 6 feet from top of decking to bottom of drainage grade. Bridge deck heights above the lowest point of each drainage for each crossing structure are provided in the table below.

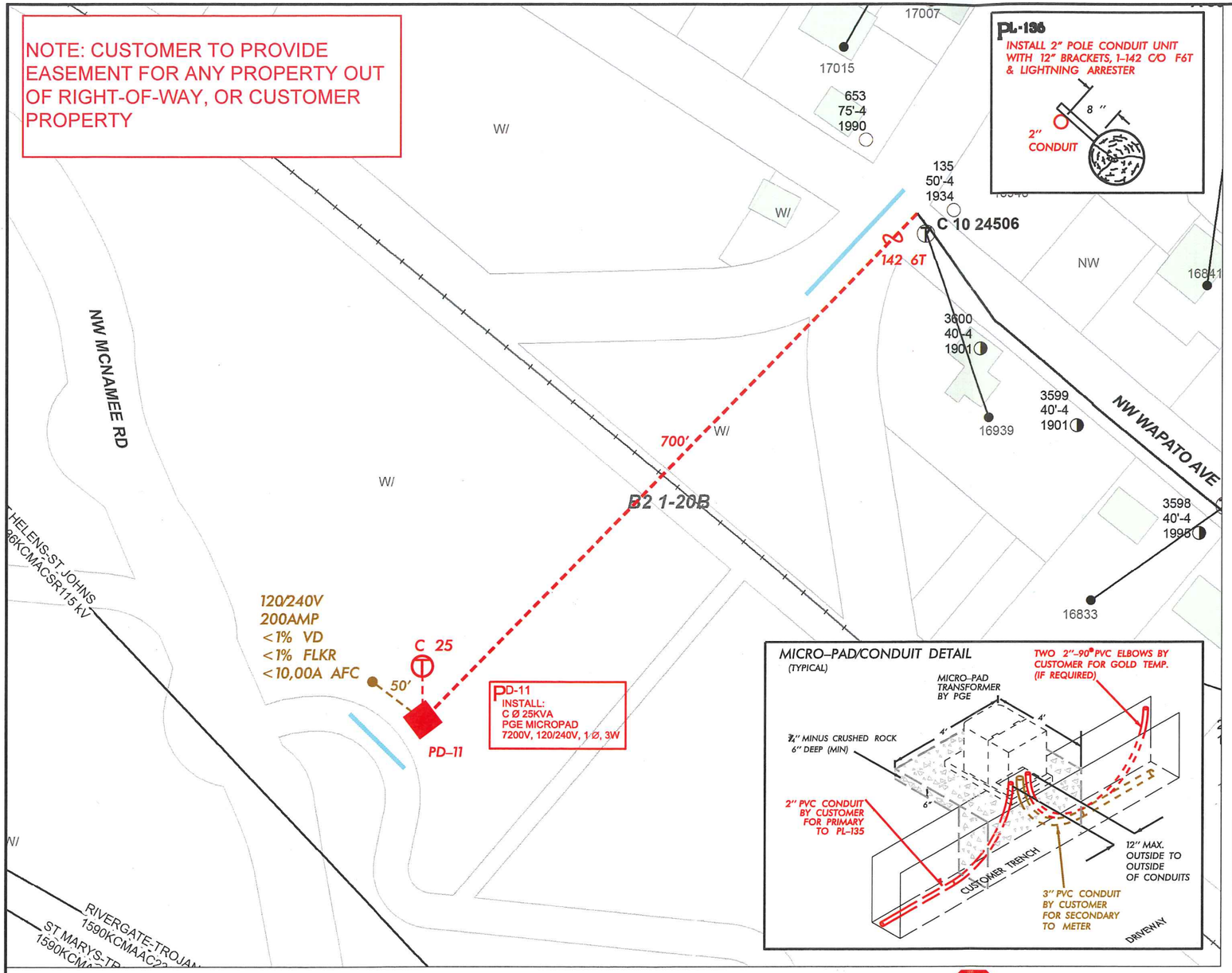
30% Design Crossing Structure Heights

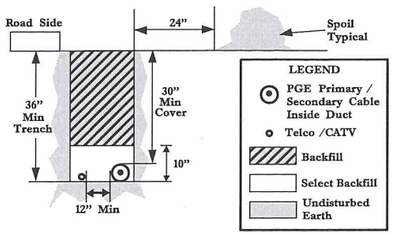
Crossing	Bridge Width (feet)	Bridge Length (feet)	Distance b/t OHWLs (feet)	**Max bridge height above drainage bed (feet)**
1	6	15	5	**3.5**
2	6	20	2	**6**
3	6	20	3	**3**
4	4	20	2	**3**
5	6	40	3	**6**
6	6	25	3	**5**
7	6	30	3	**5**
8	4	15	3	**2**

Respectfully submitted,

Gary Shepherd
Office of Metro Attorney

NOTE: CUSTOMER TO PROVIDE EASEMENT FOR ANY PROPERTY OUT OF RIGHT-OF-WAY, OR CUSTOMER PROPERTY





Joint Use Trench W/O Gas

NEW PGE FACILITIES TO BE INSTALLED

(UNLESS OTHERWISE SPECIFIED)

- PGE MICRO PAD PROVIDED AND INSTALLED BY PGE, GRAVEL BASE PROVIDED & INSTALLED BY CUSTOMER
- INSTALL 1-#2 AL-EPR JKT PRIMARY IN 2" PVC CONDUIT PROVIDED & INSTALLED BY CUSTOMER
- INSTALL 1-4/0 AL-TX SECONDARY IN 3" PVC CONDUIT PROVIDED & INSTALLED BY CUSTOMER
- INSTALL CUTOUT SIZE FUSING AS NOTED

RIGHT-OF-WAY PERMIT NOTICE:
A PERMIT FROM THE LOCAL JURISDICTION IS REQUIRED BEFORE ANY WORK IN THE RIGHT-OF-WAY MAY BE PERFORMED. ONLY PGE APPROVED CONTRACTORS AND CONTRACTORS WHO HAVE MADE OTHER SPECIAL AGREEMENTS WITH PGE WILL BE ALLOWED TO WORK UNDER PGE'S PERMIT. THE CONTRACTOR MUST NOTIFY THE LOCAL JURISDICTION 48 HOURS BEFORE WORK IS TO BEGIN. A COPY OF THE PERMIT MUST BE ON SITE.

CONSTRUCTION NOTES: CMDEV

1. CUSTOMER IS RESPONSIBLE FOR ALL TRENCH, CONDUIT, VAULTS, PADS AND ROAD CROSSINGS.
2. A PGE STANDBY CREW IS REQUIRED FOR OPENING ALL ENERGIZED PGE VAULTS, JUNCTION BOXES, AND EQUIPMENT/FACILITIES, INCLUDING CONNECTION OR INSTALLATION OF CONDUITS AND PULL STRINGS. CALL SERVICE COORDINATION AT 503-323-6700 TO SCHEDULE A PGE STANDBY CREW.
3. ALL CONDUIT TO BE INSTALLED WITH 30 INCHES (MIN) COVER AT TOP OF CONDUIT FROM FINAL GRADE.
4. ALL PGE CONDUCTORS TO BE INSTALLED IN GRAY, SCHEDULE 40, ELECTRICAL GRADE, PVC CONDUIT WITH NYLON PULL STRINGS (MIN. 500 LBS. TEST) . PGE TO DETERMINE THE SIZE AND NUMBER OF CONDUITS REQUIRED. MAINTAIN 12 VERTICAL INCHES AND 24 HORIZONTAL INCHES CLEARANCE BETWEEN GAS AND OTHER UTILITIES. ALL ELBOWS 4 INCH & SMALLER TO BE 36 INCH RADIUS. ALL BENDS MUST BE FACTORY MADE. ALL ELBOWS LARGER THAN 4 INCH TO BE 60 INCH RADIUS. RIGID STEEL OR PGE APPROVED. FIBERGLASS BENDS ARE REQUIRED FOR RUNS OF 151 FEET OR LONGER, OR FOR ANY LENGTH RUN WITH MORE THAN 180 DEGREES IN BENDS. PVC SCHEDULE 40 BENDS ARE ACCEPTABLE FOR RUNS OF 150 FEET OR LESS. THE MAXIMUM TOTAL BENDS IN ANY CONDUIT RUN IS 270 DEGREES.
5. DIRECTIONAL BORING REQUIREMENTS: BLACK HDPE (HIGH DENSITY POLYETHYLENE) DUCT OR SCHEDULE 40 PVC WITH A MECHANICAL CONNECTION (CERTA-LOK OR LIKE MECHANICAL CONNECTION PRODUCT) AS AN ALTERNATIVE TO HDPE DUCT. HDPE SHALL MEET THE REQUIREMENTS OF PGE SPECIFICATION LC20515 (AVAILABLE ON REQUEST FROM PGE PROJECT MANAGER) . FOR SAFETY REASONS THE DUCT SHALL BE BLACK WITH THREE EQUALLY SPACE EXTRUDED RED STRIPES (WHICH IS A SPECIFICATION REQUIREMENT) . MANDREL TEST OF HDPE PIPE IS REQUIRED AFTER INSTALLATION WITH PGE INSPECTOR PRESENT.
6. ALL PGE TRANSFORMERS TO BE INSTALLED 8 FEET (MIN) FROM ANY COMBUSTIBLE BUILDING, WALL OR OVERHANG AND 4 FEET (MIN) FROM ANY FIRE HYDRANT. PGE TRANSFORMERS MUST BE WITHIN 15 FEET OF A DRIVEABLE AREA. ALWAYS MAINTAIN 10 FEET CLEARANCE IN FRONT OF ALL TRANSFORMERS.
7. TRANSFORMER PADS ARE TO BE SET SO THAT THE TOP IS 2 INCHES ABOVE FINAL GRADE. CONDUIT IS TO BE INSTALLED IN PAD AS INDICATED IN DETAIL AND TO EXTEND 1 INCH ABOVE THE PAD.
8. STEEL BARRIER POSTS ARE REQUIRED AROUND TRANSFORMERS THAT ARE EXPOSED TO VEHICLES.
9. ALL SWITCH VAULTS TO BE SET AT FINAL GRADE WITH 6 INCH GRAVEL BASE AND CONDUITS ALIGNED TO ENTER THE VAULT END LOWER KNOCKOUTS (TERM-A-DUCTS) . (SEE DETAILS ON SKETCH)
10. PGE TO BE NOTIFIED AND INSPECT ALL CONDUIT, VAULT AND PAD INSTALLATIONS BEFORE BACKFILL. ALL NEW VAULT & PAD LOCATIONS TO BE FIELD VERIFIED WITH PGE AND CUSTOMER REPRESENTATIVE.
11. REFER TO PGE ELECTRICAL SERVICE REQUIREMENTS BOOK FOR FURTHER DETAILS & SPECIFIC REQUIREMENTS. LINK TO WWW.PORTLANDGENERAL.COM/REQBOOK
12. DESIGN IS BASED ON STANDARD UNDERGROUND EQUIPMENT. NON-STANDARD UNDERGROUND EQUIPMENT MAY BE AN OPTION AT AN ADDITIONAL COST TO THE CUSTOMER.
13. THE POINT OF DELIVERY AND DIVISION OF OWNERSHIP BETWEEN THE CUSTOMER AND PGE WILL BE AT THE LINE SIDE OF THE NEW CUSTOMER PROVIDED SWITCH GEAR.

THINK SAFETY FIRST!

CONTACT SERVICE COORDINATOR
FOR TRENCH AND CONDUIT INSPECTION PRIOR TO BACKFILL PGE WILL NOT INSTALL WIRE UNTIL TRENCH IS 100% BACKFILLED.
SERVICE COORDINATOR
503-323-6700 OR 800-542-8818(SALEM)

ANY DEVIATION FROM THIS DESIGN MUST BE APPROVED BY PGE PROJECT MANAGER

CALL 811 BEFORE YOU DIG

ATTENTION:
OREGON LAW REQUIRES YOU TO FOLLOW RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH 952-001-0090. YOU MAY OBTAIN COPIES OF THE RULES BY CALLING THE OREGON UTILITY NOTIFICATION CENTER ADMINISTRATION @ (503-232-1987)

TO REQUEST UTILITY LOCATES CALL THE OREGON UTILITY NOTIFICATION CENTER, 811 AT LEAST 2 BUSINESS DAYS PRIOR TO EXCAVATION.

811 Know what's below. Call before you dig.

PGE FACILITIES NOT DRAWN TO SCALE

THIS DRAWING IS A GRAPHICAL REPRESENTATION OF PORTLAND GENERAL ELECTRIC FACILITIES IN THE FIELD. THIS MAP ILLUSTRATES ELECTRICAL CONNECTIVITY, TYPES AND NUMBERS OF CONDUCTORS AND PLACEMENT OF EQUIPMENT WITHIN THE DISTRIBUTION SYSTEM. IT IS RECOMMENDED THAT THE USER NOT RELY ON THIS DIAGRAM FOR GEOGRAPHICAL LOCATIONS

PGE CONSTRUCTION DRAWING

AS-BUILT VERIFICATION & NESC VIOLATIONS CORRECTED

This document accurately represents FIELD Construction.

Foreman: _____ Date: _____

General Foreman: _____ Date: _____

(Signature only required for field construction changes.)

SDPMVENG REVIEW: | ASBUILT BY DESIGNER:

DATE: 10/26/18	SCALE: NTS	ACCOUNT: 1070001	AWO: 1000004599	JOB NO. M2428848

PGE

BEAVERTON LINE CREW CENTER
2213 SW 153RD DR
BEAVERTON, OR 97006

TITLE: BURLINGTON CREEK FOREST

CIRCUIT: HARBORTON-BURLINGTON | SIZE: 11x17

LOCATION: ABT 16448 NW MCNAMEE RD, PORTLAND

DESCRIPTION: PROVIDE 1PH 120/240V 200A OH SVC TO ELECTRIC GATE, WATER PUMP, AND LIGHTING

COUNTY	SECTION(S)	WORK WITH	SHEET
MULTNOMAH	B21-20B		1 OF 1

DESIGN BY	PHONE (503)	DRAWN BY
CHRIS ANDERSON	672-5491	CESAR DEL ROSARIO

Exhibit A.26.1

WETLAND DELINEATION / DETERMINATION REPORT COVER FORM

Fully completed and signed report cover forms and applicable fees are required before report review timelines are initiated by the Department of State Lands. Make checks payable to the Oregon Department of State Lands. To pay fees by credit card, go online at: https://apps.oregon.gov/DSL/EPS/program?key=4. Call 503-986-5200 with questions.

Attach this completed and signed form to the front of an unbound report or include a hard copy with a digital version (single PDF file of the report cover form and report, minimum 300 dpi resolution) and submit to: **Oregon Department of State Lands, 775 Summer Street NE, Suite 100, Salem, OR 97301-1279.** A single PDF of the completed cover from and report may be e-mailed to: **Wetland_Delineation@dsl.state.or.us**. For submittal of PDF files larger than 10 MB, e-mail DSL instructions on how to access the file from your ftp or other file sharing website.

Contact and Authorization Information.

☒ Applicant ☐ Owner Name, Firm and Address: **Metro** **c/o Karen Vitkay** **600 NE Grand Avenue** **Portland, OR 97232-2736**	Business phone # (503) 797-1700 Mobile phone # (503) 758-4878 E-mail: Karen.Vitkay@oregonmetro.gov
☐ Authorized Legal Agent, Name and Address:	Business phone # Mobile phone # E-mail:

I either own the property described below or I have legal authority to allow access to the property. I authorize the Department to access the property for the purpose of confirming the information in the report, after prior notification to the primary contact.

Typed/Printed Name: **Karen Vitkay** Signature: Karen R Vitkay

Date: Special instructions regarding site access: **Contact consultant.**

Project and Site Information (using decimal degree for lat/long.,enter centroid of site or start & end points of linear project)

Project Name: **Burlington Creek Forest OHWM/L Delineation**	Latitude: 45.6400905 Longitude: −122.8414413 Tax Map No. 2N 1W 20; Tax Lot: 400 (partial) Tax Map No. 2N 1W 20B; Tax Lots: 300, 500 (all partial) Tax Map No. 2N 1W 20C; Tax Lots: ROW, 300, 500 (all partial) Tax Map No. 2N 1W 20BC; Tax Lots: ROW, 1000, 1100, and 1200 (all partial)
Project Street Address (or other descriptive location): East of SW McNamee Road	Township 2N Range 1 W Section 20 QQ: SWNW, SENW, NESW, NWSW, SESW, SESW
Burlington Creek Forest, southwest of unincorporated Burlington, Oregon City: Portland County: Multnomah	Use separate sheet for additional tax and location info. Waterway: N/A River Mile: N/A

Wetland Delineation Information

Wetland Consultant Name, Firm and Address: **Chris Moller** **SWCA Environmental Consultants** 1800 NW Upshur Street, Suite 100 Portland, OR 97209	Phone # (503) 224-0333 Mobile phone # (503) 853-6589 E-mail: chris.moller@swca.com

The information and conclusions on this form and in the attached report are true and correct to the best of my knowledge.

Consultant Signature: Date: 10/29/2021

Primary Contact for report review and site access is ☒ Consultant ☐ Applicant/Owner ☐ Authorized Agent

Wetland/Waters Present? ☒ Yes ☐ No | Study Area(s) size:**1.44 ac**. Total Wetland Acreage: **0.0** Waters: **0.061**

Check Applicable Boxes Below

☐ R-F permit application submitted	☐ Fee payment submitted **$500 to be paid**
☐ Mitigation bank site	☐ Resubmittal of rejected report ($100)
☐ EFSC/ODOE Proj. Mgr:	☐ Request for Reissuance. See eligibility criteria. (no fee) DSL # Expiration date
☐ Wetland restoration/enhancement project (not mitigation)	
☐ Previous delineation/application on parcel If known, previous DSL #	☐ LWI shows wetland or waters on parcel Wetland ID code

For Office Use Only

DSL Reviewer: _____ Fee Paid Date: ____ / ____ / ____ DSL WD # _____

Date Delineation Received: ___ / ___ / ___ Scanned: ☐ Electronic: ☐ DSL App. # _____

Exhibit A.26.2

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Burlington Creek Forest Ordinary High Water Mark/Line Delineation Report

OCTOBER 2021

PREPARED FOR

Metro

PREPARED BY

SWCA Environmental Consultants

BURLINGTON CREEK FOREST
ORDINARY HIGH WATER MARK/LINE
DELINEATION REPORT
TOWNSHIP 2 NORTH, RANGE 1 WEST, SECTION 20, MULTIPLE TAX LOTS, MULTNOMAH COUNTY, OREGON

Prepared for

Metro
600 NE Grand Avenue
Portland, Oregon 97232-2736

Prepared by

SWCA Environmental Consultants
1800 NW Upshur Street, Suite 100
Portland, Oregon 97209
(503) 224-0333
www.swca.com

October 2021

SWCA Project No. 44592.04

CONTENTS

Figures

Tables

Appendices

1 INTRODUCTION

SWCA Environmental Consultants (SWCA) conducted a delineation of non-wetland waters on the subject site located in Burlington Creek Forest, southwest of unincorporated Burlington, Oregon (Figure 1). The subject study areas are located on portions of Tax Lot 400 (partial) on Tax Map 2N 1W 20; Tax Lots 300 and 500 (both partial) on Tax Map 2N 1W 20B; Tax Lots 1000, 1100 and 1200 (all partial) on Tax Map 2N 1W 20BC; and Tax Lots 300 and 500 (all partial) on Tax Map 2N 1W 20C (Figures 2, 3, and 3.1–3.3). All tax maps and tax lots are located within Multnomah County, Oregon.

This report focuses on eight proposed recreational trail crossing (study areas) locations, where the property owner (Metro) proposes creating trail crossings (bridges) over intermittent waters. SWCA evaluated these study areas on August 29, 2021; September 4, 2001; and September 15, 2021. The ordinary high water mark/line (OHWM/L) was delineated at each study area. No wetlands were found within the study areas. Wetland determination forms are included in Appendix A.

2 LANDSCAPE SETTING AND LAND USE

The Metro site is located on the lower slopes of the Tualatin Mountains, southwest of U.S. Highway 30 (U.S. 30), east of NW McNamee Road and south of a residential neighborhood in unincorporated Burlington (11.5 miles northwest of downtown Portland, Oregon). Burlington Bottoms wetlands are located across U.S. 30 to the north. The elevations within the study areas range from 154 feet to 510 feet above mean sea level. The generally northeast-facing forested hillsides are vegetated with Douglas-Fir (*Pseudotsuga menziesii*), Big-Leaf Maple (*Acer macrophyllum*), Western Red Cedar (*Thuja plicata*), and Red Alder (*Alnus rubra*).

3 SITE ALTERATIONS

Two powerlines and their managed vegetation corridors exist on-site. A service road, water tower and associate water lines also exist within the Metro property boundaries close to the study areas. Historical aerial photographs appear to indicate the site was logged between 1994 and 1995. The slopes are covered in downed woody debris (slash) from logging activities. Some of the debris has made it into the lower portions of the ravines surrounding delineated OHWM/L. Representative ground-level site photographs are included in Appendix B.

4 PRECIPITATION DATA AND ANALYSIS

The Natural Resources Conservation Service (NRCS) Climate Analysis for Wetlands (WETS) station and observed precipitation data for the subject site were obtained from the Portland International Airport station located in Portland, Oregon (U.S. Department of Agriculture 2021). According to the WETS table for the station, average annual rainfall is 36.91 inches. Table 1 shows the monthly precipitation averages according to the WETS station and observed precipitation according to the National Oceanic and Atmospheric Administration (NOAA) for the 3 months prior to SWCA's site visits on August 29 through September 15, 2021.

Table 1. Precipitation Data – Select Monthly Averages Based on the Climate Period 1991–2020

Month	Average (inches)	30% Chance Will Have (inches)		Observed Precipitation (inches)	Within Normal Range?
		Less Than	More Than		
August	0.54	0.18	0.61	0.05	Below normal (8%)
July	0.50	0.21	0.57	0.00	Below normal (0%)
June	1.63	0.99	1.97	1.25	Normal (77%)
May	2.51	1.36	3.05	0.58	Below normal (23%)

Sources: U.S. Department of Agriculture (2021), NOAA (2021).

Table 2 shows precipitation on the day of the field visits, 2 weeks prior, water year to date (WYTD), calendar year to date (CYTD), and normal values, based on the Portland International Airport station.

Table 2. Precipitation Summary

Field Visit Date	Observed Precipitation (inches)				WYTD Normal Value (Percentage of Normal)	CYTD Normal Value (Percentage of Normal)
	Day of	Two Weeks Prior	WYTD	CYTD		
August 29, 2021	0.00	0.02	26.46	14.58	35.31 (75%)	20.67 (71%)
September 4, 2021	0.00	0.00	26.46	14.58	35.49 (75%)	20.87 (70%)
September 15, 2021	0.00	0.00	26.46	14.58	35.93 (74%)	21.29 (69%)

Source: NOAA (2021).

Using the standard template for antecedent rainfall (Appendix C), these data show that the rainfall over the preceding 4 months was drier than normal. Due to the summer (late season) field visit and below-normal precipitation, a lack of primary indicators of hydrology alone was not considered sufficient to determine presence of hydrology.

5 METHODS

The OHWM/L was delineated according to the *Regulatory Guidance Letter No. 05-05* (U.S. Army Corps of Engineers [USACE] 2005) and Oregon Administrative Rules (Oregon Department of State Lands [DSL] 2013). OHWM/L determinations were based on vegetation and substrate changes, presence of bed and banks, rock shelving, rock scour, wracking, drift deposit lines, and transition from upland to wetland/aquatic vegetation.

The methodology used for determining the presence of wetlands was in accordance with the USACE *Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)* (USACE 2010), used by both the DSL and the USACE. *The National Wetland Plant List 2018* (USACE 2018) was used to identify the region's wetland indicator status for observed species (Appendix D).

Soils, vegetation, and wetland hydrology indicators were recorded at eight sample plot locations on standardized wetland determination data forms (see Appendix A) to document site conditions.

The NRCS Web Soil Survey (NRCS 2021a) maps Goble silt loam, 30 to 60 percent slopes on the slopes adjacent to the mapped waters (Figure 4); Goble is a well-drained, non-hydric soil. A recent aerial photograph is shown in Figure 6.

6 DESCRIPTION OF NON-WETLAND WATERS

6.1 Non-wetland Waters

The study areas are located within the Burlington Creek Forest. U.S. 30 and forested slopes northwest of the highway separate the area from the Burlington Bottoms wetlands. Six unnamed tributaries were documented within the Burlington Creek Forest study areas. The banks of all the unnamed tributaries were composed of silt loam. Some of the lower tributaries had rock and cobble streambeds whereas higher elevation tributaries had sand and silt bottoms. The National Wetlands Inventory (NWI) (see Figure 5) (U.S. Fish and Wildlife Service 2021) mapped an unnamed tributary of Burlington Creek (labeled number 5 in our study) as riverine intermittent streambed with a seasonally flooded water regime (R4SBC) using the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979). The summary of OHWM/L indicators associated with each tributary are represented in Table 3.

Table 3. OHWM/L Indicators Observed at Each Location

OHWM/L Field Indicators	Observed Within Study Area?					
	Unnamed Tributary 1	Unnamed Tributary 2	Unnamed Tributary 3	Unnamed Tributary 4	Unnamed Tributary 5*	Unnamed Tributary 6
Natural line impressed on the bank			X		X	
Shelving			X		X	
Changes in the character of soil	X	X	X	X	X	X
Destruction of terrestrial vegetation	X	X	X	X	X	X
Presence of litter and debris	X	X	X		X	
Wracking		X		X	X	
Vegetation absent (No matted down or bent vegetation present)	X	X	X	X	X	X
Sediment sorting		X	X		X	
Leaf litter disturbed or washed away	X	X	X	X	X	X
Scour	X	X	X	X	X	X
Deposition	X	X	X	X	X	X
Multiple observed flow events						

OHWM/L Field Indicators	Observed Within Study Area?					
	Unnamed Tributary 1	Unnamed Tributary 2	Unnamed Tributary 3	Unnamed Tributary 4	Unnamed Tributary 5*	Unnamed Tributary 6
Bed and banks					X	
Water staining			X	X	X	
Change in plant community	X	X	X	X	X	X

* It is interesting to note that the only tributary mapped by the NWI (5) is the only tributary that displayed all field indicators (except direct observation of flow events).

The OHWM/L was delineated using DSL and USACE methods. An overview of the delineation maps in relation to study area tax lots is provided in Figure 7. The individual delineation maps are provided in Figures 7.1 through 7.8.

6.2 Uplands

The forested slopes surrounding the tributaries were dominated by facultative and facultative upland species. The transition from OHWM/L to upland plants included Himalayan Blackberry (*Rubus armeniacus*), California Dewberry (*Rubus ursinus*), Salmonberry (*Rubus spectabilis*), Pineland or Western Swordfern (*Polystichum munitum*), and other species noted in Appendix D. Hydrology indicators above OHWM/L within uplands were lacking. Soils above OHWM/L at all sample plot locations lacked primary and secondary indicators of hydric soils.

6.3 Deviation from Local Wetlands Inventory or National Wetlands Inventory

The NWI (see Figure 5) shows Burlington Creek and unnamed tributaries in the same general area and same general configurations observed within the study areas. Five of the six unnamed ephemeral tributaries (Unnamed Tributaries 1–4 and 6) identified in this report were not mapped. Unnamed Tributary 5 is mapped as a riverine intermittent streambed, seasonally flooded (R4SBC). The unnamed tributaries would be best classified as riverine using the *Guidebook for Hydrogeomorphic (HGM)–based Assessment of Oregon Wetland and Riparian Sites: Statewide Classification and Profiles* (Adamus 2001).

There is no Local Wetlands Inventory for the subject site.

7 MAPPING METHOD

SWCA surveyed the OWHWM/L boundaries, sample plot locations, and ground-level photographs locations using a Juniper Geode Global Navigation Satellite System receiver paired with a Samsung computer tablet using Collector for ArcGIS software. Horizontal map accuracy is less than 1 m.

8 ADDITIONAL INFORMATION

No waters are mapped as Essential Salmonid Habitat within the study areas (DSL 2021).

9 RESULTS AND CONCLUSION

The OHWM/L of the eight separate study areas are summarized in Table 4.

Table 4. OHWM/L Acreage within Study Areas

Tributary/Crossing	OHWM/L Acreage (within study areas)
Unnamed Tributary 1	0.012
Unnamed Tributary 2	0.004
Unnamed Tributary 3/Crossing 1	0.013
Unnamed Tributary 3/Crossing 2	0.007
Unnamed Tributary 4	0.005
Unnamed Tributary 5/Crossing 1	0.007
Unnamed Tributary 5/Crossing 2	0.007
Unnamed Tributary 6	0.006
Total Non-wetland Waters	**0.061**

No wetlands were found within any of the eight study areas.

All the unnamed tributaries discussed in this report have a surface water connection to tidally influenced, navigable waterways and/or wetlands adjacent to tidally influenced navigable waterways. Only one of the six tributaries (Unnamed Tributary 5) appears to have support intermittent flows and five of the six tributaries appear ephemeral. Unnamed Tributary 5 is likely to be determined to be jurisdictional by the DSL and the US Army Corps of Engineers. The ephemeral tributaries (Unnamed Tributaries 1–4 and 6) may not be considered jurisdictional by either the US Army Corps of Engineers or DSL. Jurisdictional determination is the responsibility of the regulatory agencies.

10 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 DSL in accordance with Oregon Administrative Rules 141-090-0005 through 141-090-0055.

11 LIST OF PREPARERS

Report prepared by:

Chris Moller
Wetland Scientist

Report reviewed by:

C. Mirth Walker, SPWS
Senior Wetland Scientist

12 LITERATURE CITED AND REVIEWED

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U.S. Department of Agriculture (USDA). 2021. WETS Climate Data Portland International Airport, Oregon. Available at: http://agacis.rcc-acis.org/?fips=41051, instructions at: https://www.nrcs.usda.gov/wps/portal/wcc/home/climateSupport/agAcisClimateData/. Accessed October 18, 2021.

U.S. Fish and Wildlife Services. 2021. National Wetlands Inventory. Available at: https://fws.gov/wetlands/. Accessed October 18, 2021.

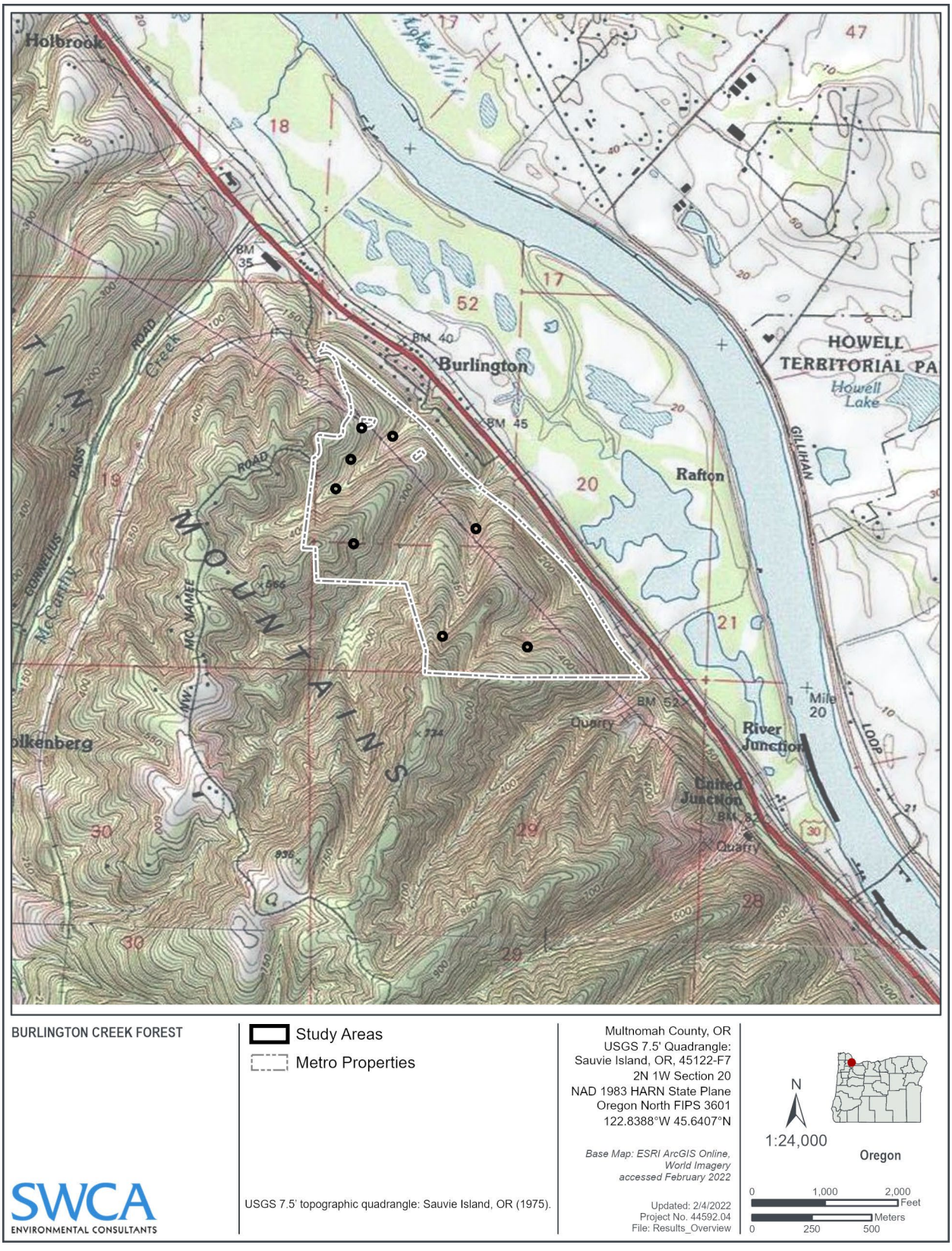


Figure 1. Site location map.

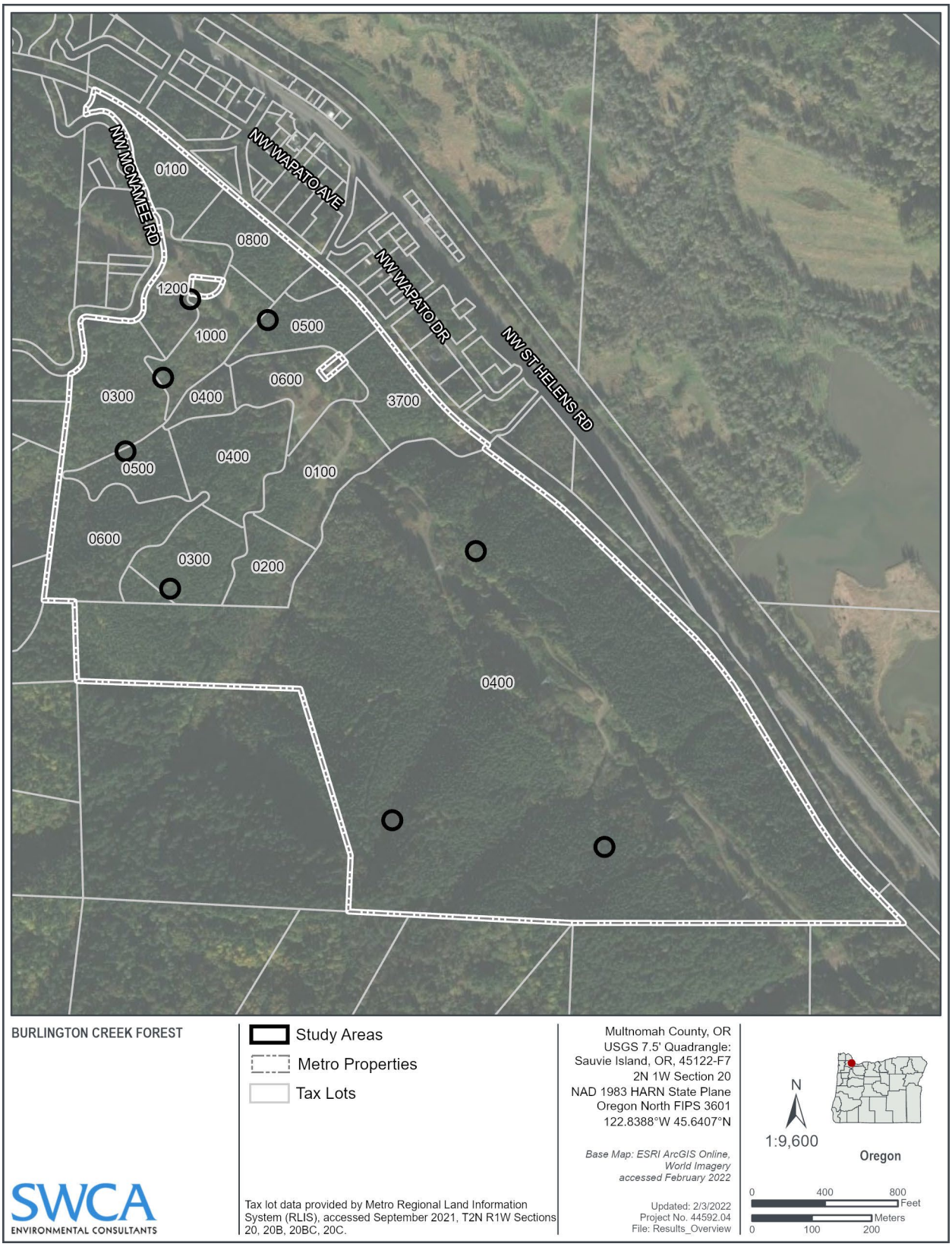


Figure 2. Tax lot map with aerial photograph.

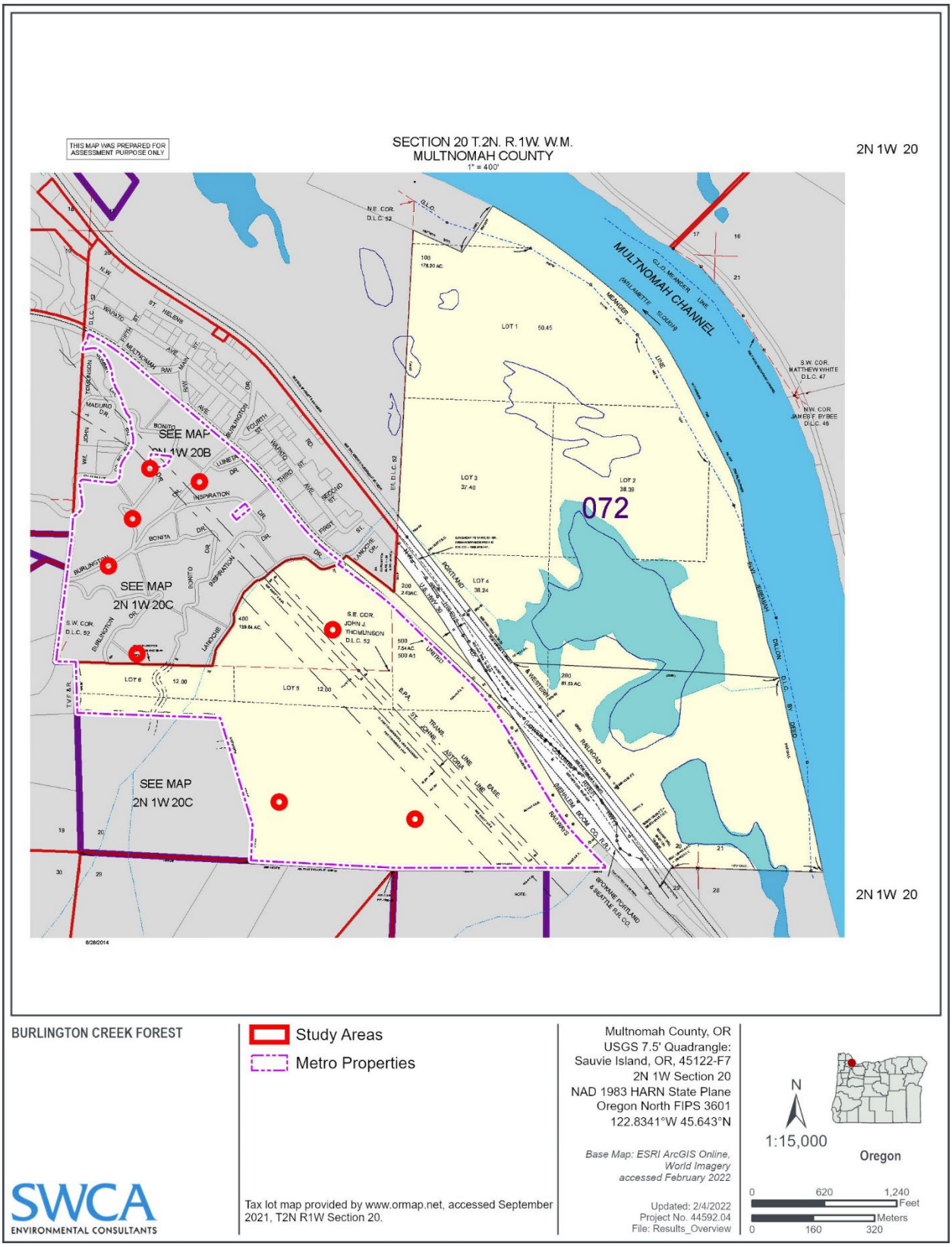


Figure 3. Tax lot map 2N1W20 (paper base). Note: Certain platted roadways depicted in this map were vacated, and of record as document no. 2021-015254 (Res. 2020-097).

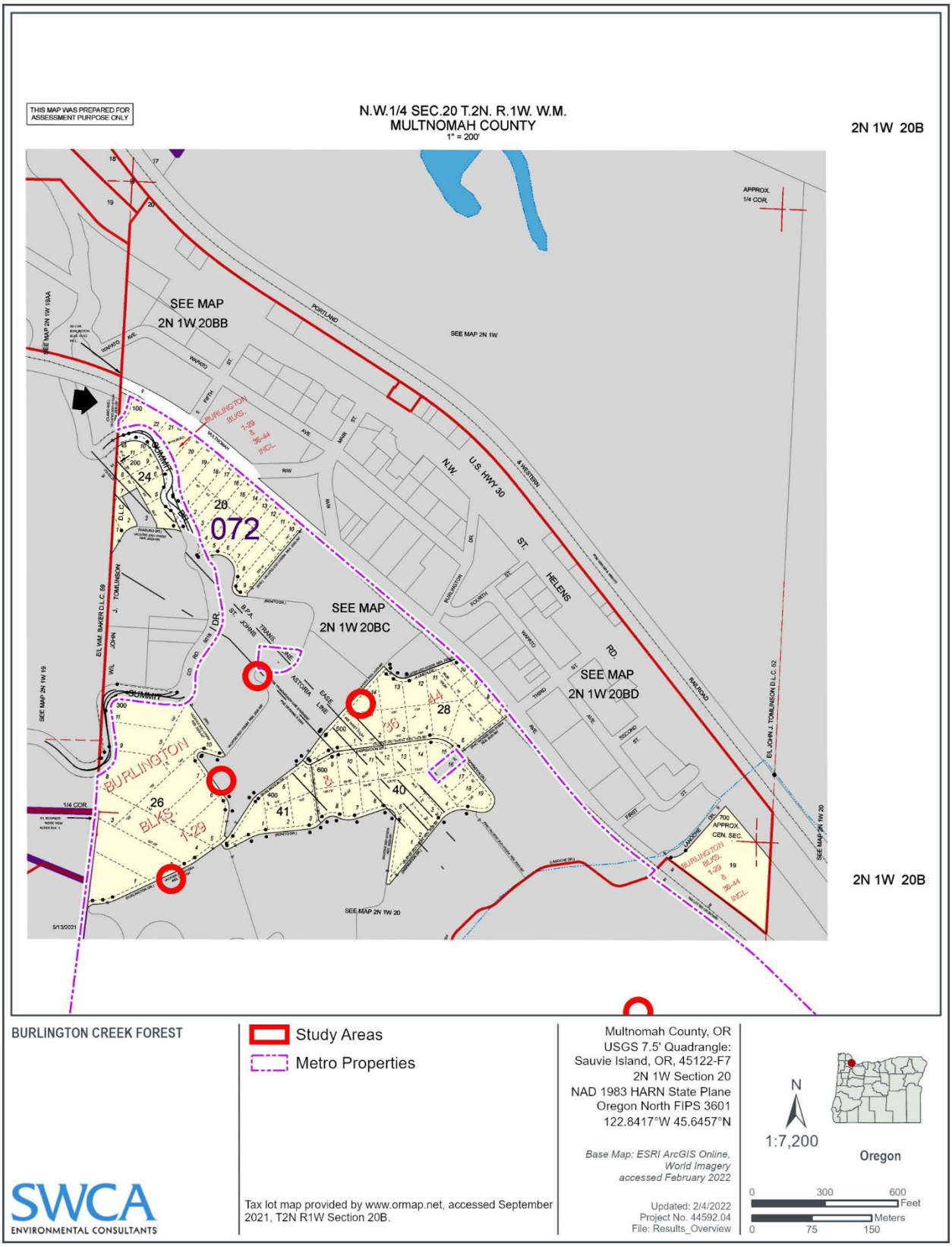


Figure 3.1. Tax lot map 2N1W20B (paper base). Note: Certain platted roadways depicted in this map were vacated, and of record as document no. 2021-015254 (Res. 2020-097).

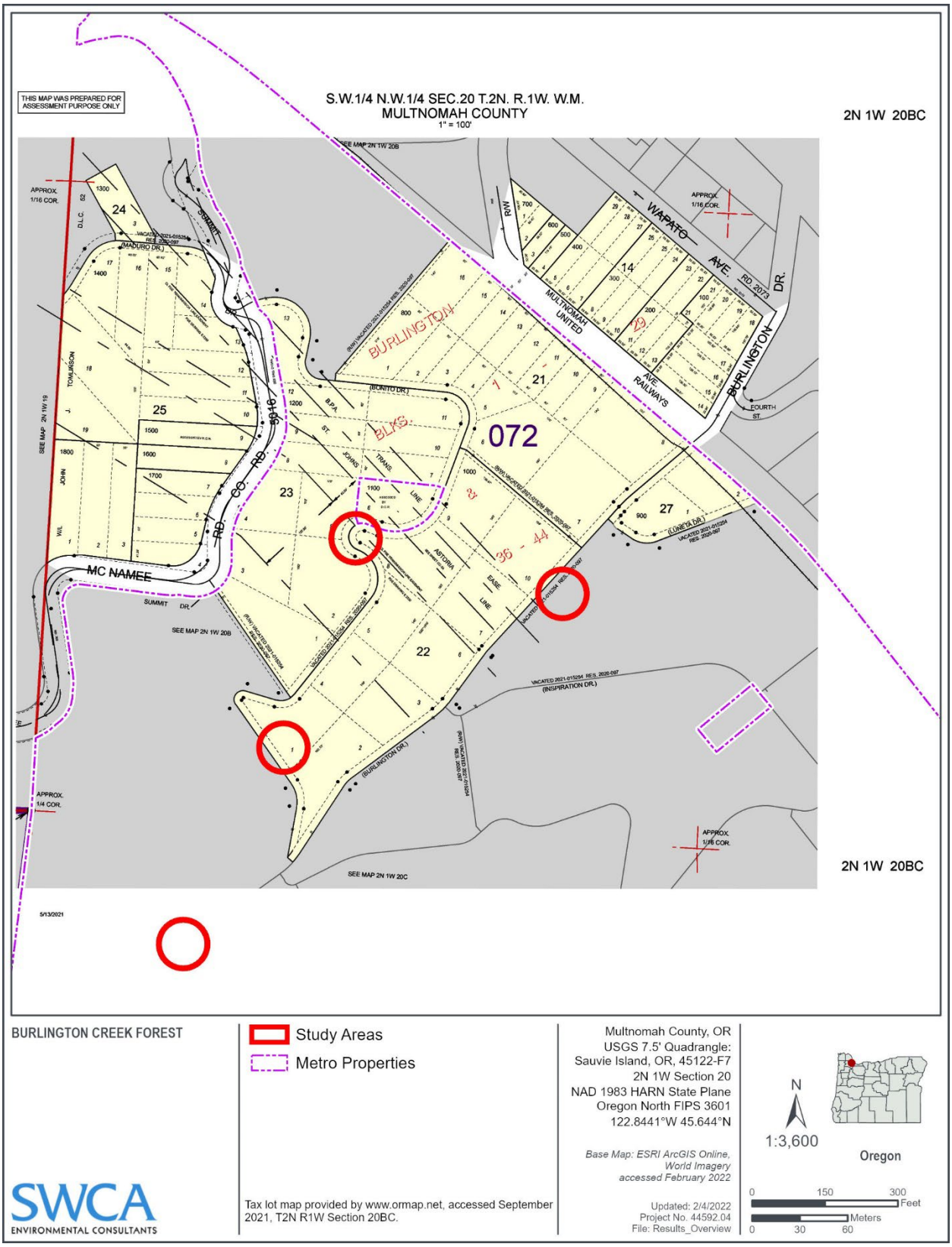


Figure 3.2. Tax lot map 2N1W20BC (paper base). Note: Certain platted roadways depicted in this map were vacated, and of record as document no. 2021-015254 (Res. 2020-097).

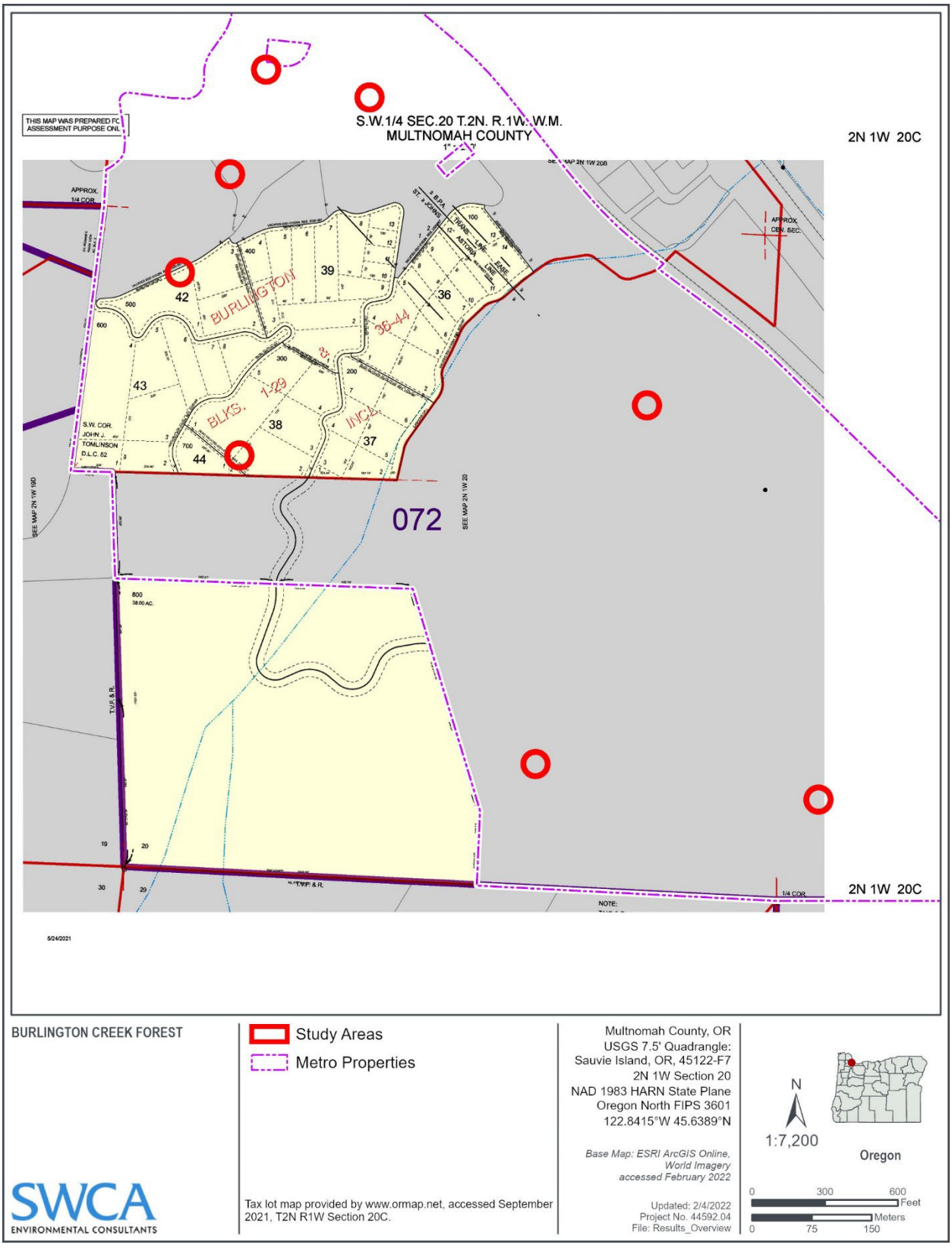


Figure 3.3. Tax lot map 2N1W20C (paper base). Note: Certain platted roadways depicted in this map were vacated, and of record as document no. 2021-015254 (Res. 2020-097).

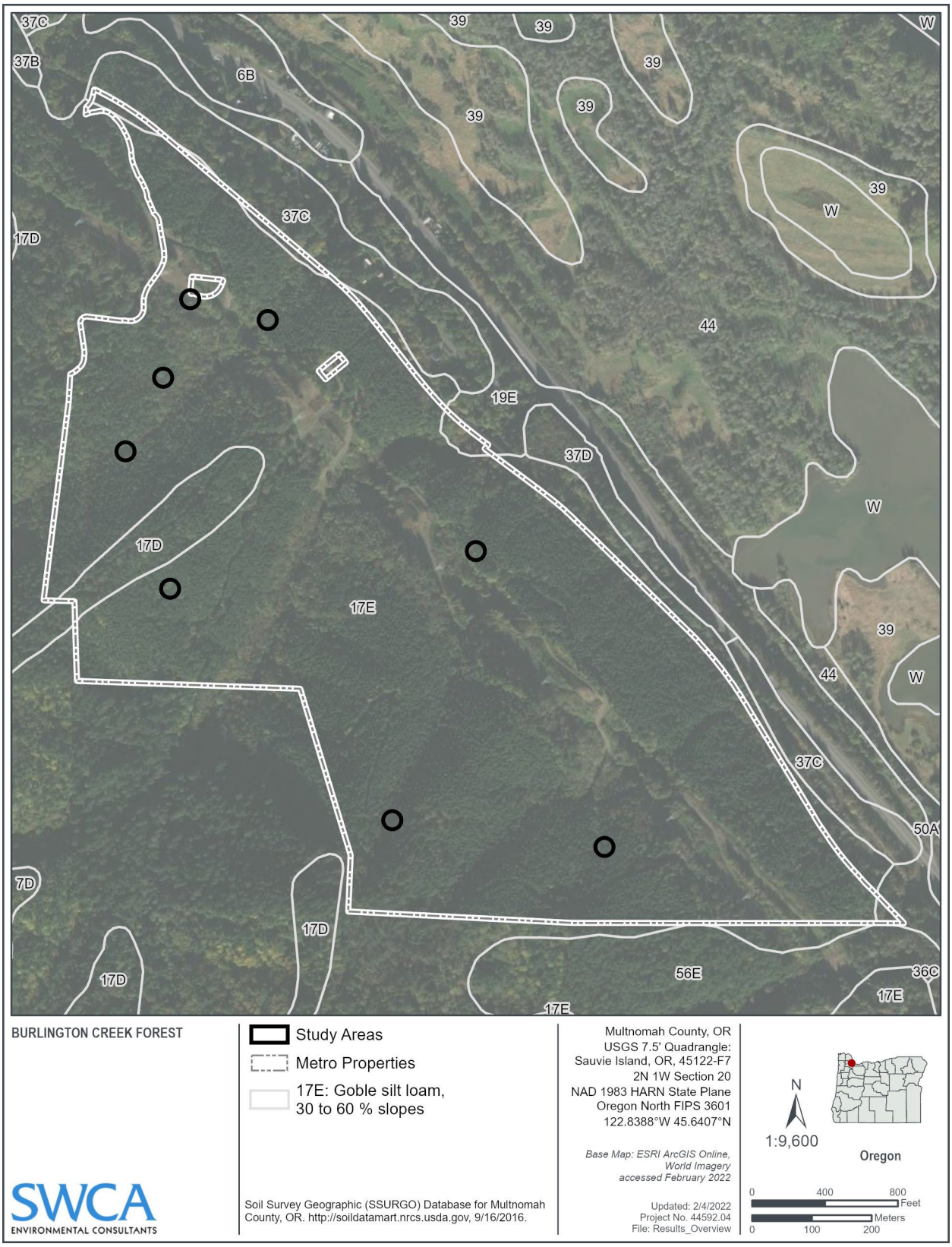


Figure 4. County soil survey map.

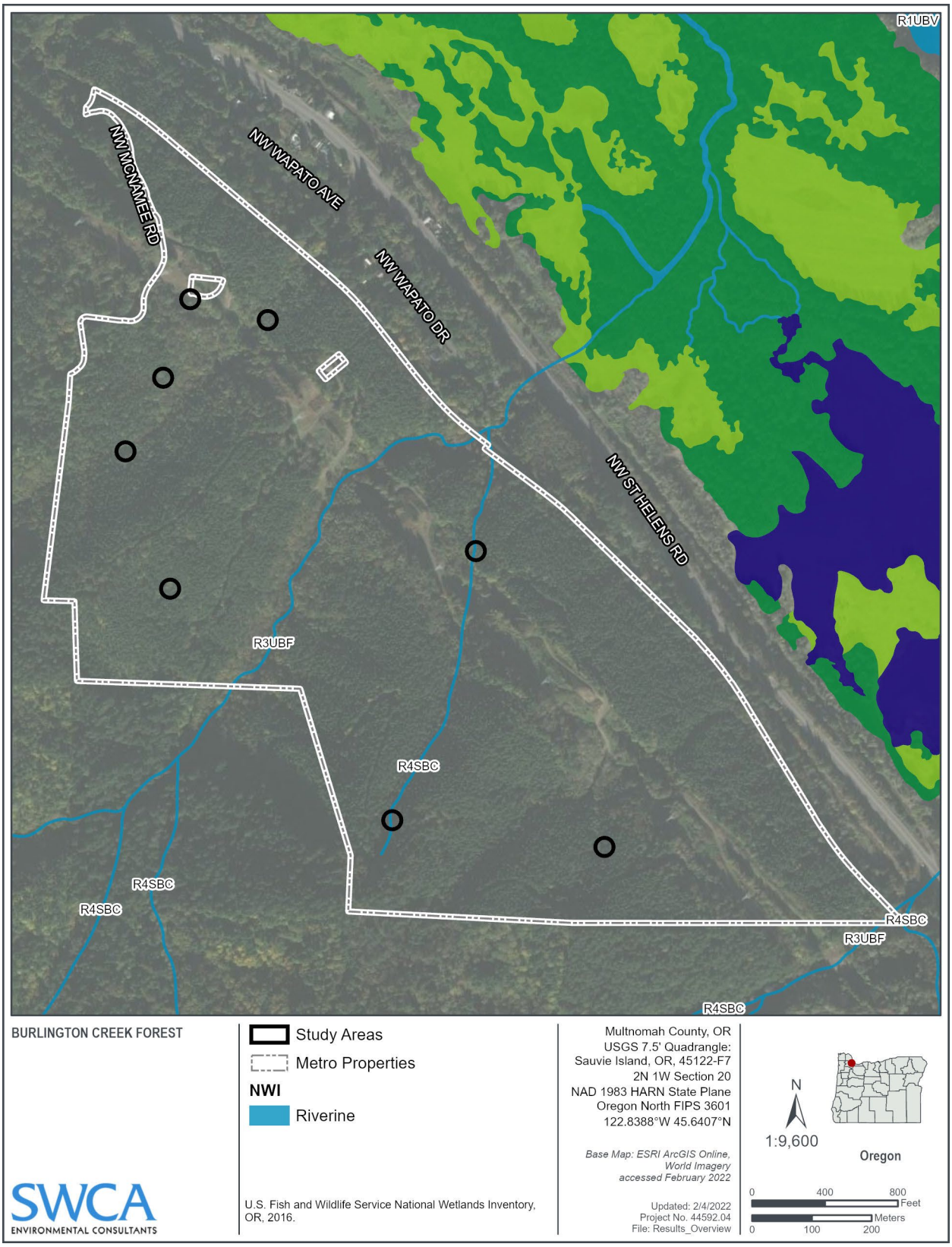


Figure 5. NWI map.

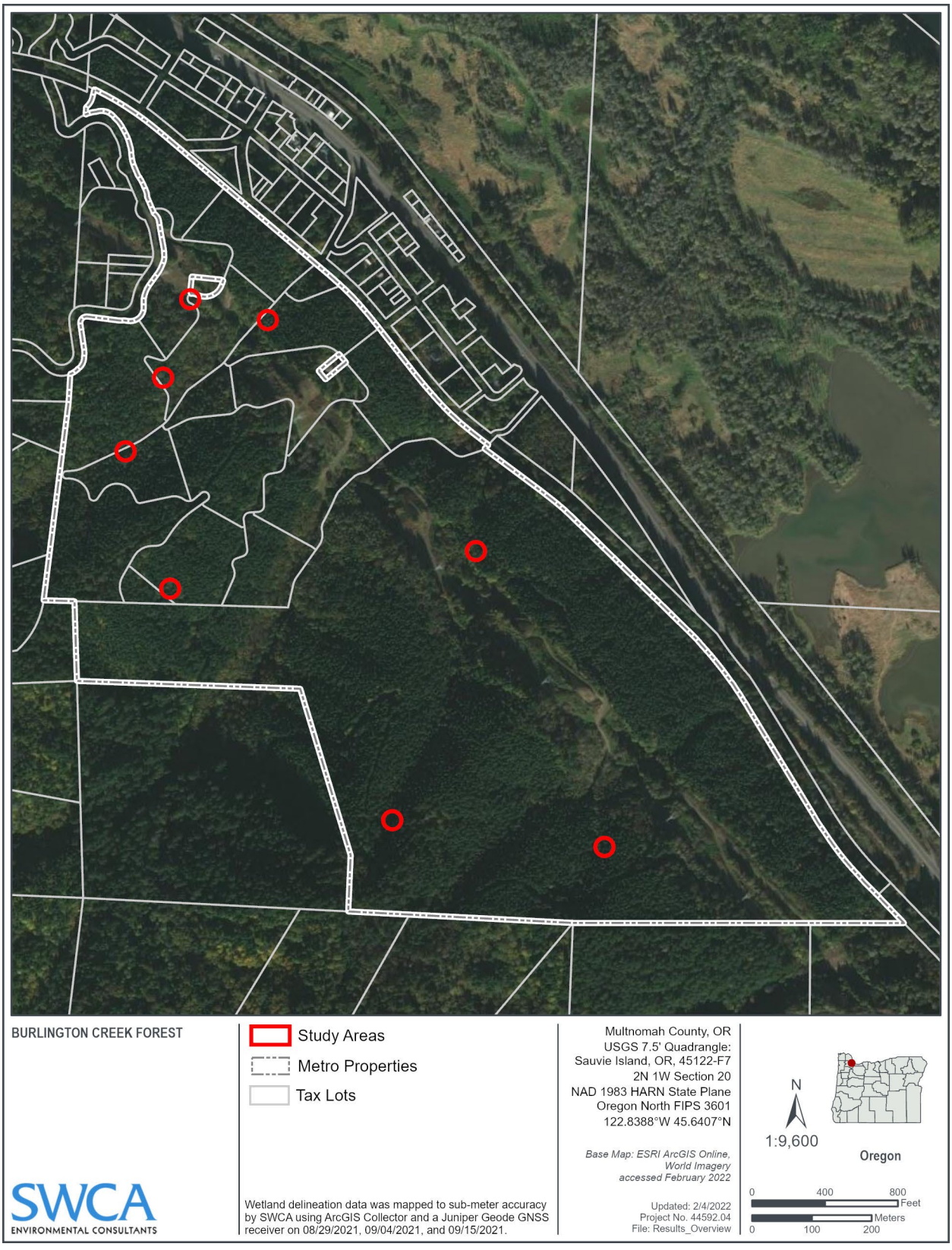


Figure 6. Aerial photograph map.

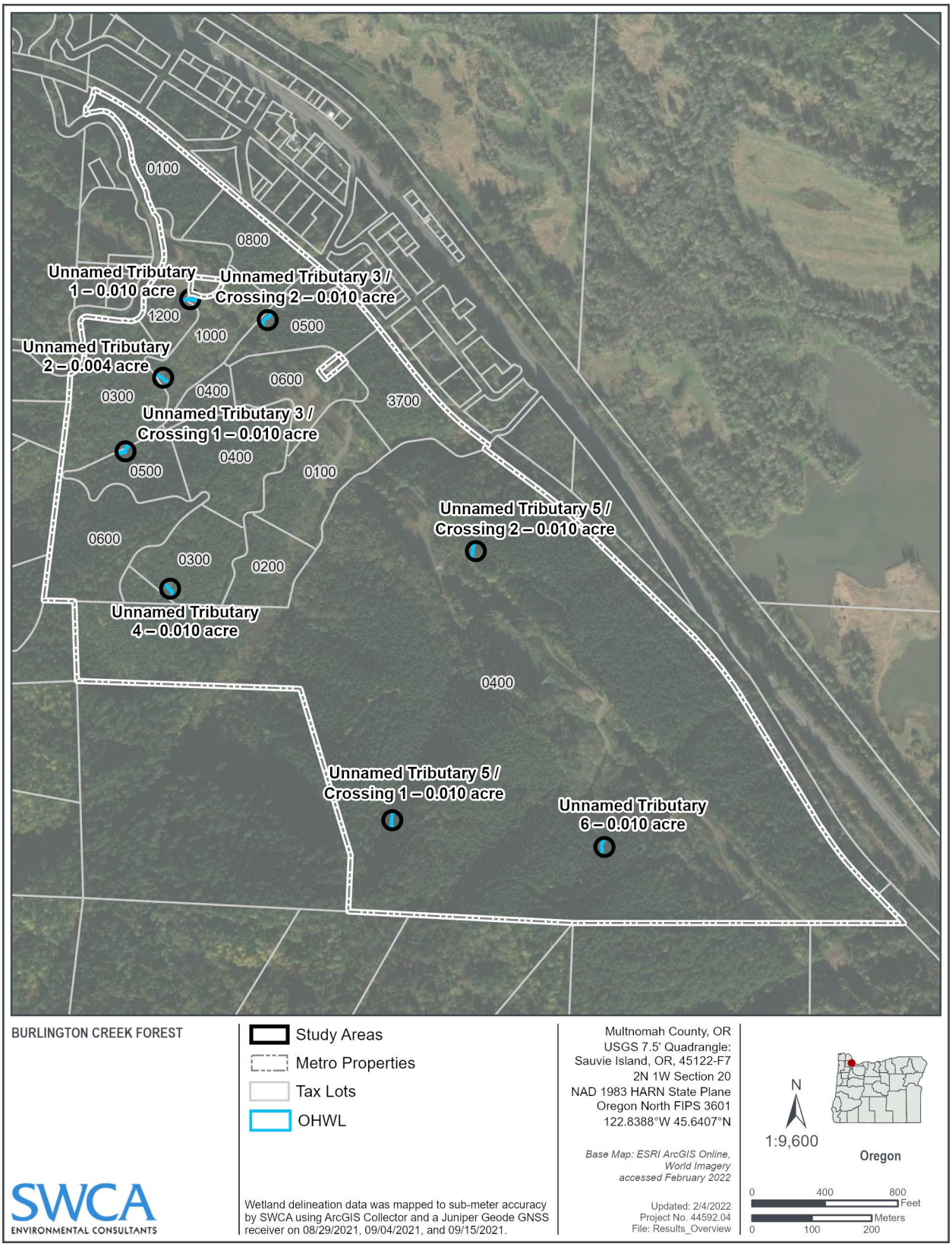


Figure 7. OHWM/L study areas in relation to entire site.

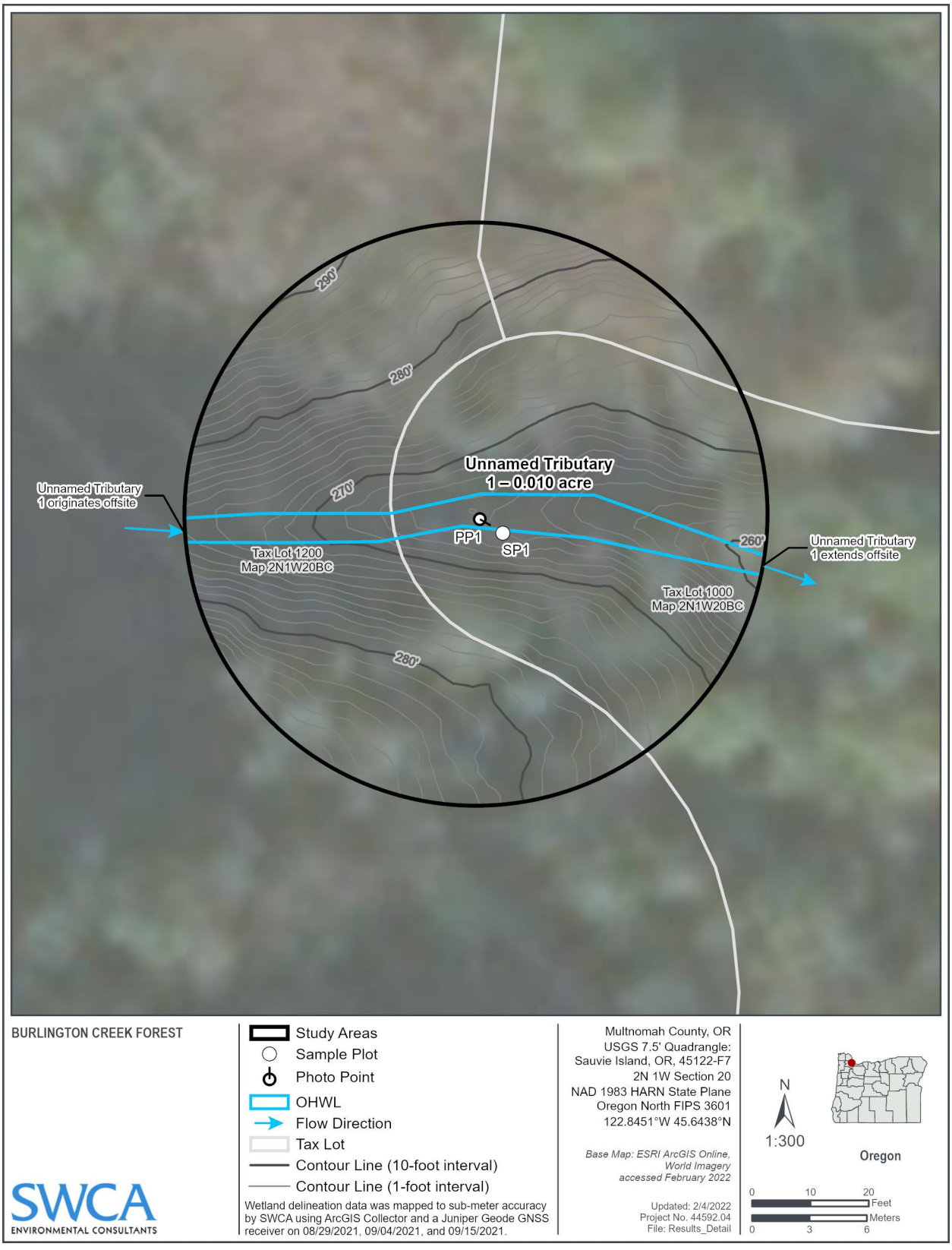


Figure 7.1. OHWM/L delineation map – enlargement of Unnamed Tributary 1.

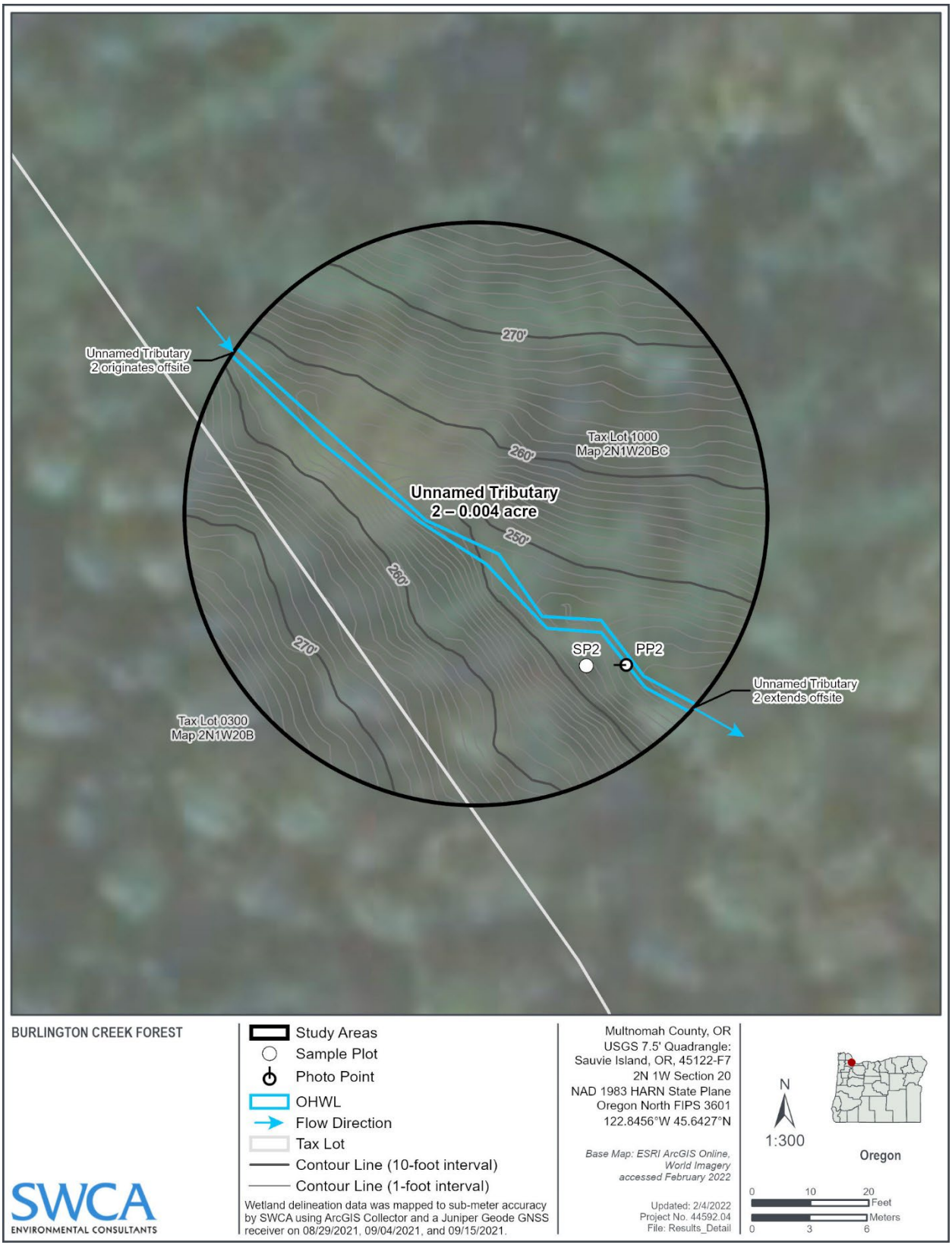


Figure 7.2. OHWM/L delineation map – enlargement of Unnamed Tributary 2.

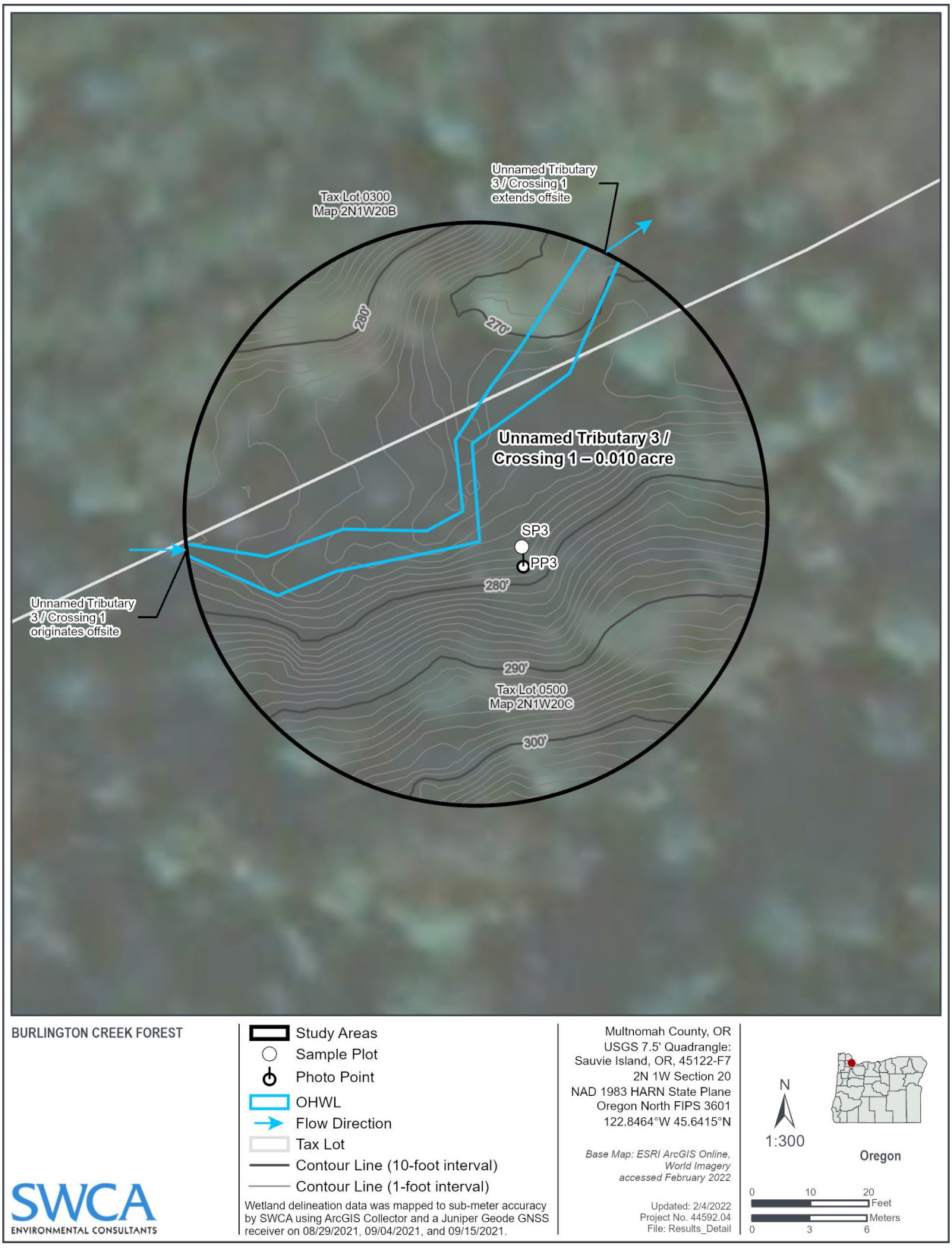


Figure 7.3. OHWM/L delineation map – enlargement of Unnamed Tributary 3, Crossing 1.

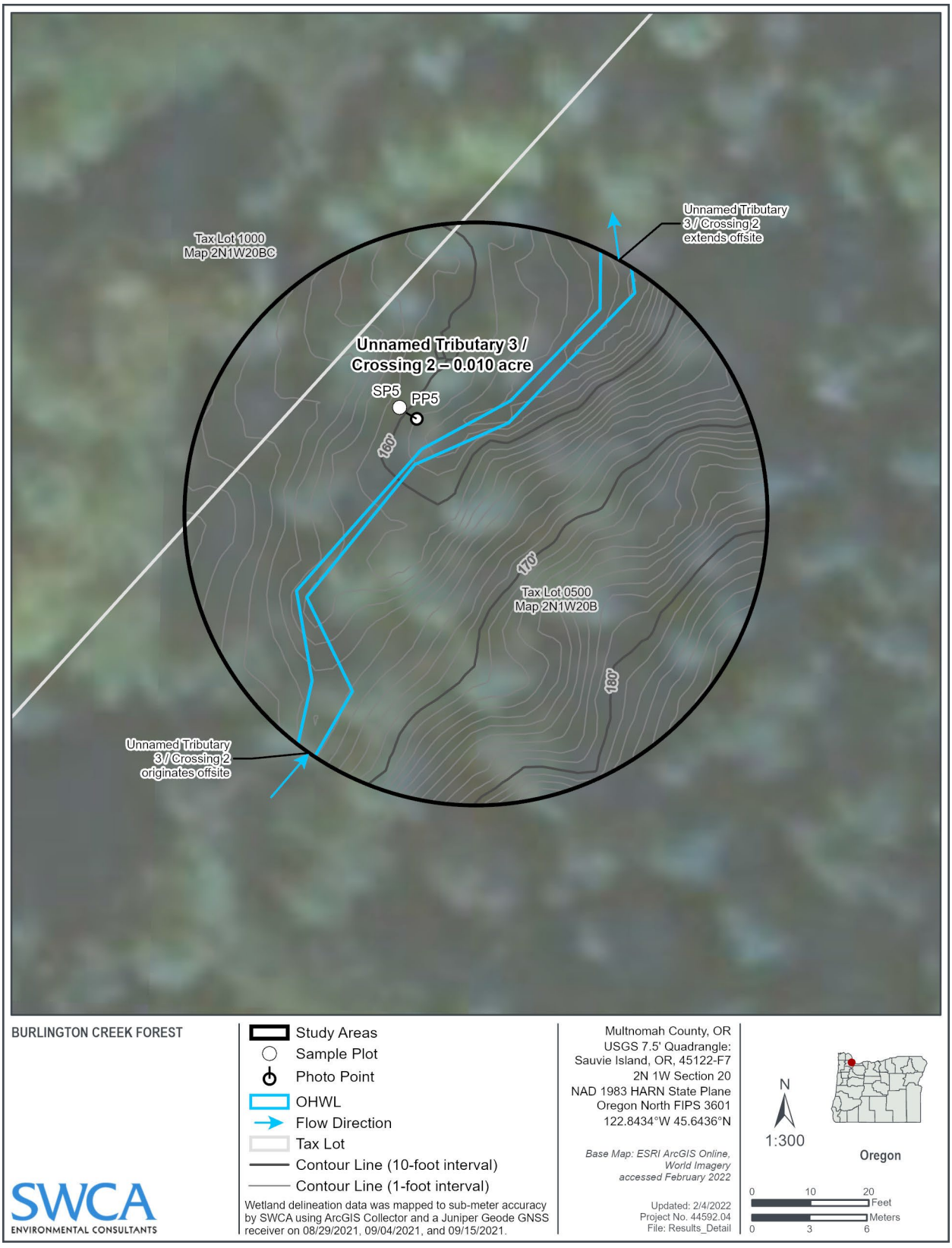


Figure 7.4. OHWM/L delineation map – enlargement of Unnamed Tributary 3, Crossing 2.

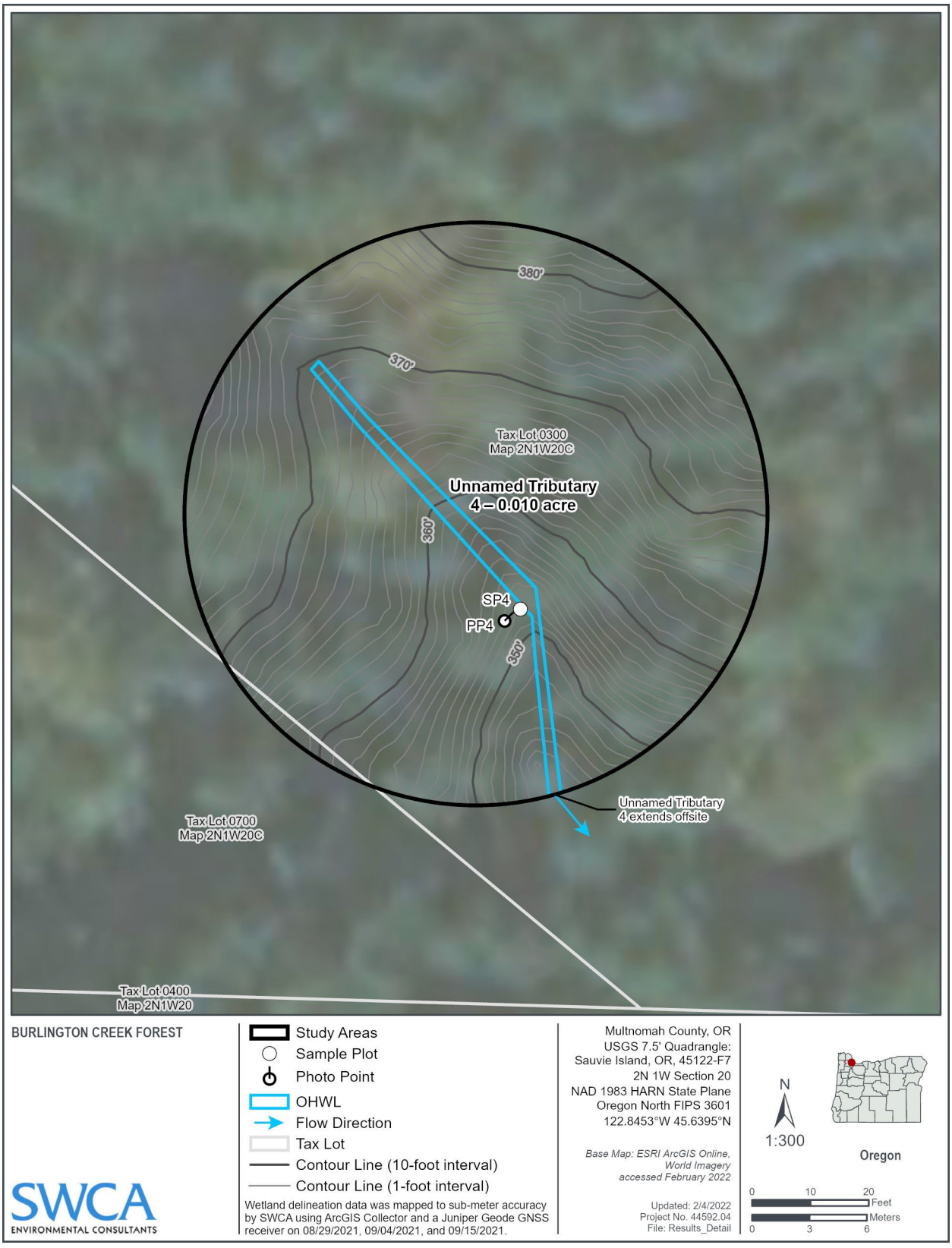


Figure 7.5. OHWM/L delineation map – enlargement of Unnamed Tributary 4.

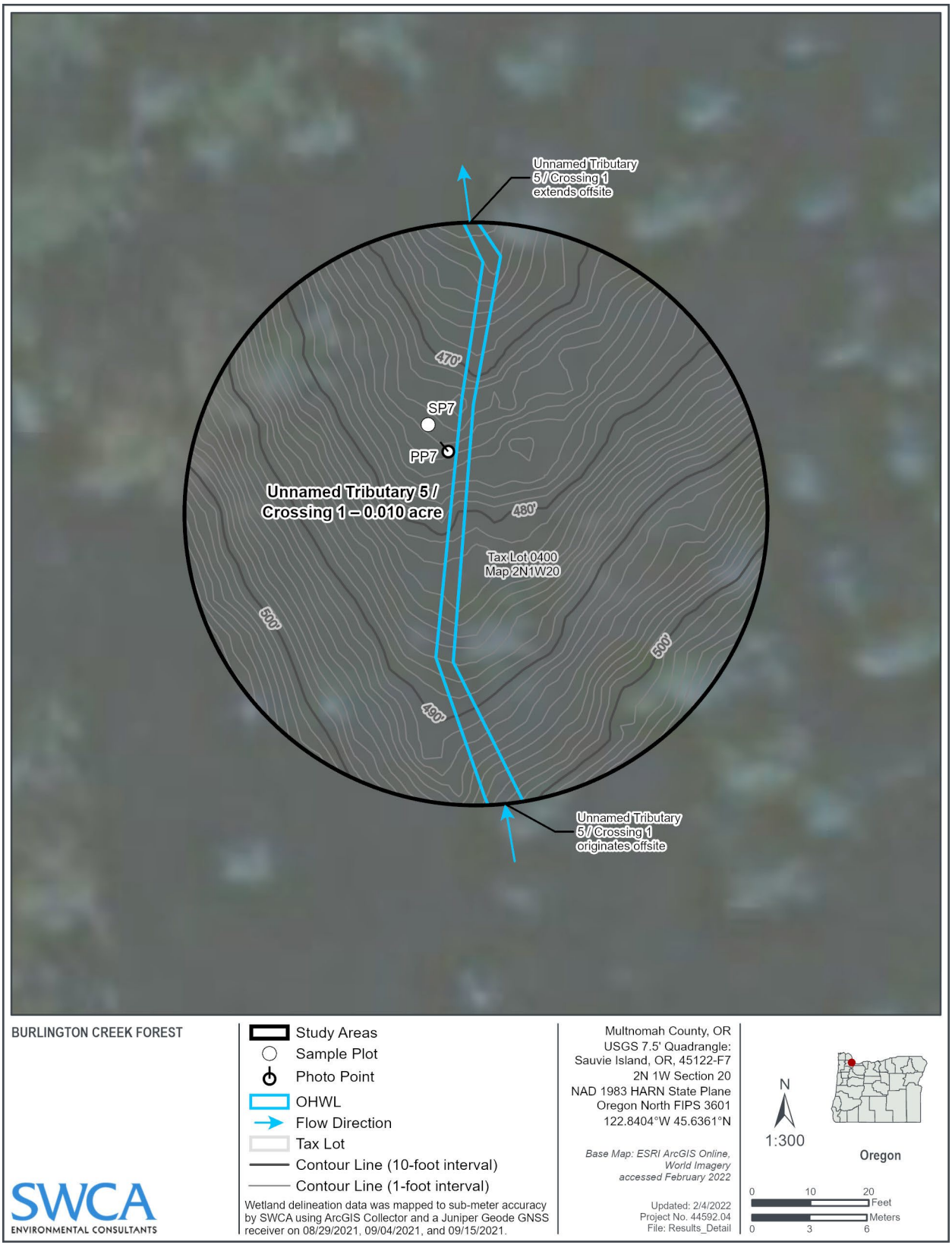


Figure 7.6. OHWM/L delineation map – enlargement of Unnamed Tributary 5, Crossing 1.

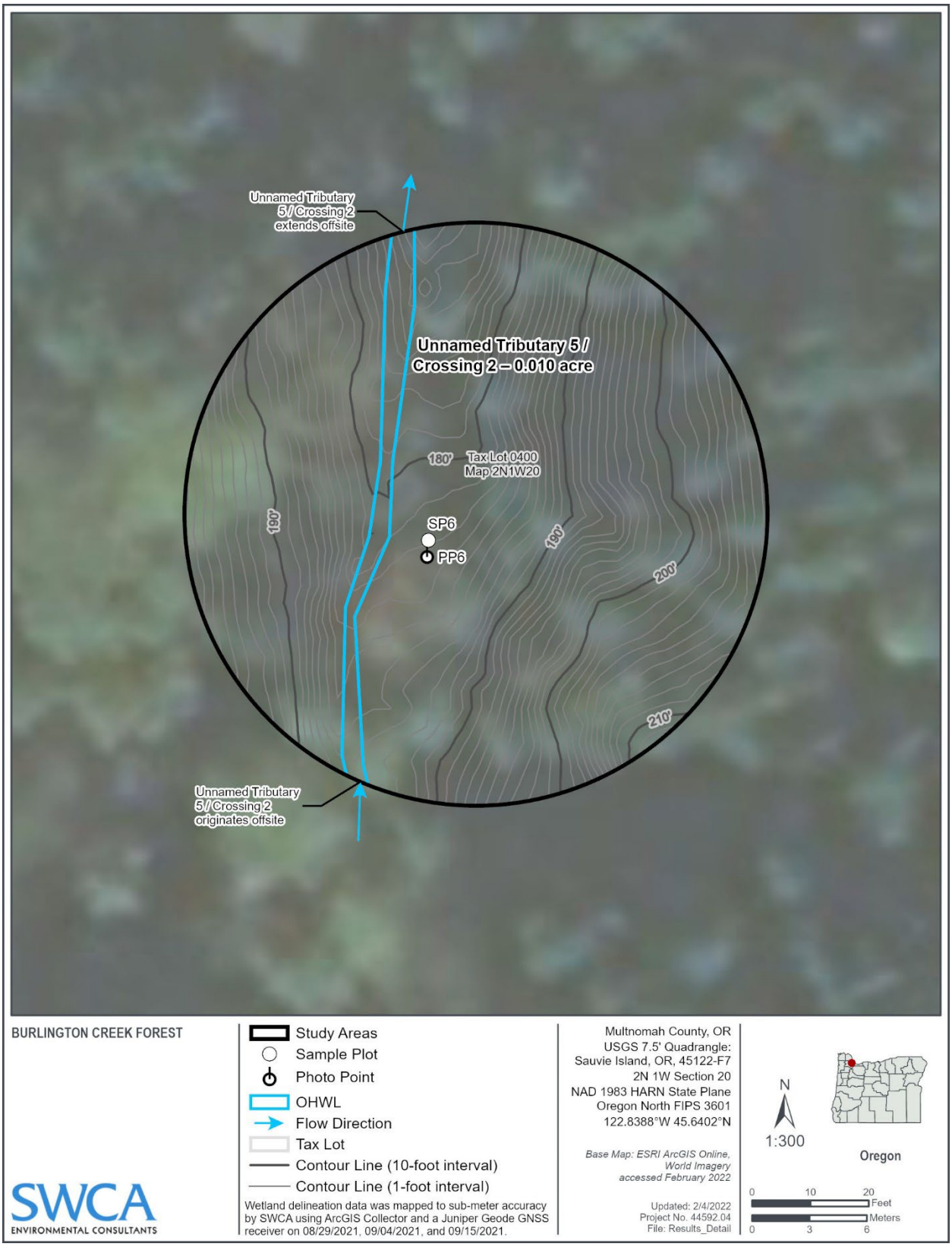


Figure 7.7. OHWM/L delineation map – enlargement of Unnamed Tributary 5, Crossing 2.

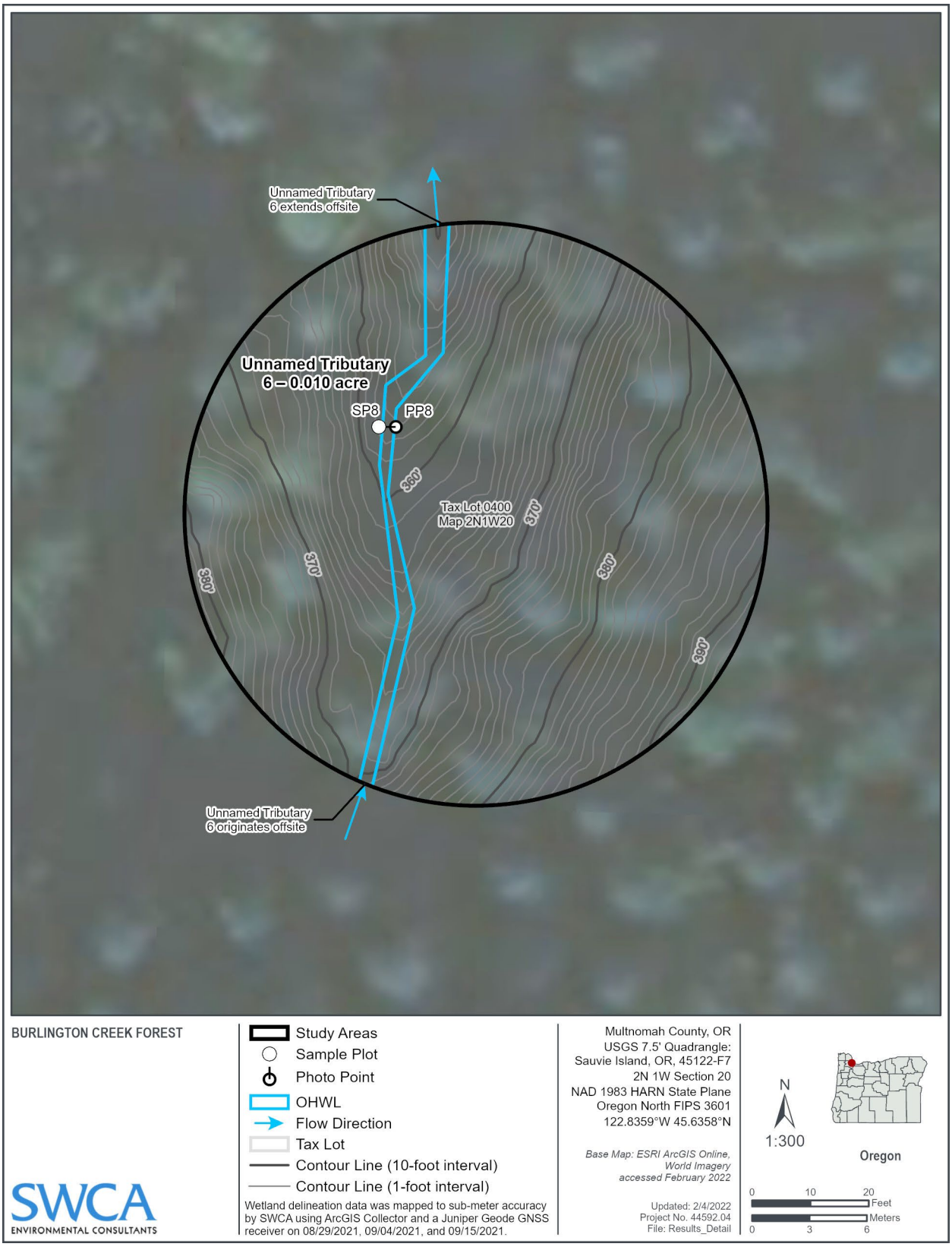


Figure 7.8. OHWM/L delineation map – enlargement of Unnamed Tributary 6.

APPENDIX A

Wetland Determination Forms

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

Project/Site: Burlington Creek Forest OHW Delineation City/County: Portland / Multnomah Sampling Date: 8/29/2021

Applicant/Owner: Metro State: OR Sampling Point: **SP1**

Investigator(s): C. Moller Section, Township, Range: Sec. 20, T. 2N, R. 1W

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 50

Subregion (LRR): A, Northwest Forests and Coast Lat: 45.643834 Long: -122.845076 Datum: WGS 1984

Soil Map Unit Name: 17E: Goble silt loam, 30 to 60 percent slopes NWI classification:

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? Yes X No

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 **X**	No	**Is the Sampled Area within a Wetland?**	Yes No **X**
Hydric Soil Present?	Yes	No **X**		
Wetland Hydrology Present?	Yes	No **X**		

Precipitation prior to fieldwork: None

Remarks:

VEGETATION

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer circinatum*	45%	Yes	FAC
2. *Thuja plicata*	15%	Yes	FAC
3.			
4.			
	60% = Total Cover		
Sapling/Shrub Stratum (Plot size: 10' r)			
1. *Rubus armeniacus*	20%	Yes	FAC
2.			
3.			
4.			
5.			
	20% = Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Polystichum munitum*	30%	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	30% = Total Cover		
Woody Vine Stratum (Plot size: 10' r)			
1. *Hedera helix*	25%	Yes	FACU
2.			
	25% = Total Cover		

% Bare Ground in Herb Stratum 70%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 0	x 1 =	0
FACW species 0	x 2 =	0
FAC species 80	x 3 =	240
FACU species 55	x 4 =	220
UPL species 0	x 5 =	0
Column Totals: 135 (A)		460 (B)
Prevalence Index = B/A =		3.41

Hydrophytic Vegetation Indicators:

- 1 - Rapid Test for Hydrophytic Vegetation
- X 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.

Hydrophytic Vegetation Present? Yes **X** No

Remarks: Entered by: clm QC by: cmw

SOIL

Sampling Point: **SP1**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/4	100					SiL	dry
4-9	10YR 3/4	95	10YR 4/6	5	C	M	SiL	dry
9-20+	10YR 4/3	100					SiL	dry

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

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

- ___ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators 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: S = sand; Si = SiLt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ 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)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ 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) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	_____	No	X	Depth (inches): _____
Water Table Present?	Yes	_____	No	X	Depth (inches): >20
Saturation Present? (includes capillary fringe)	Yes	_____	No	X	Depth (inches): >20

Wetland Hydrology Present? **Yes** _____ **No** X

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

Remarks:

Entered by: clm QC by: cmw

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

Project/Site: Burlington Creek Forest OHW Delineation City/County: Portland / Multnomah Sampling Date: 8/29/2021

Applicant/Owner: Metro State: OR Sampling Point: **SP2**

Investigator(s): C. Moller Section, Township, Range: Sec. 20, T. 2N, R. 1W

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 50

Subregion (LRR): A, Northwest Forests and Coast Lat: 45.642581 Long: -122.845550 Datum: WGS 1984

Soil Map Unit Name: 17E: Goble silt loam, 30 to 60 percent slopes NWI classification:

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? Yes X No

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 **X**
Hydric Soil Present?	Yes	No **X**
Wetland Hydrology Present?	Yes	No **X**

Is the Sampled Area within a Wetland? **Yes** **No X**

Precipitation prior to fieldwork: None

Remarks:

VEGETATION

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer macrophyllum*	60%	Yes	FACU
2. *Alnus rubra*	10%	No	FAC
3.			
4.			
	70% = Total Cover		
Sapling/Shrub Stratum (Plot size: 10' r)			
1. *Acer circinatum*	20%	Yes	FAC
2. *Rubus spectabilis*	20%	Yes	FAC
3.			
4.			
5.			
	40% = Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Polystichum munitum*	25%	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	25% = Total Cover		
Woody Vine Stratum (Plot size: 10' r)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 75%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 0	x 1 =	0
FACW species 0	x 2 =	0
FAC species 50	x 3 =	150
FACU species 85	x 4 =	340
UPL species 0	x 5 =	0
Column Totals: 135 (A)		490 (B)

Prevalence Index = B/A = 3.63

Hydrophytic Vegetation Indicators:

- 1 - Rapid Test for Hydrophytic Vegetation
- 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.

Hydrophytic Vegetation Present? **Yes** **No X**

Remarks:

Entered by: clm QC by: cmw

SOIL

Sampling Point: **SP2**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 3/3	100					SiCL	dry
9-20+	10YR 5/3	100					SiL	dry

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

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

- ___ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators 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: S = sand; Si = SiLt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ 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)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ 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) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	_____	No	X	Depth (inches): _____
Water Table Present?	Yes	_____	No	X	Depth (inches): >20
Saturation Present? (includes capillary fringe)	Yes	_____	No	X	Depth (inches): >20

Wetland Hydrology Present? **Yes** _____ **No** X

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

Remarks:

Entered by: clm QC by: cmw

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

Project/Site: Burlington Creek Forest OHW Delineation City/County: Portland / Multnomah Sampling Date: 8/29/2021

Applicant/Owner: Metro State: OR Sampling Point: **SP3**

Investigator(s): C. Moller Section, Township, Range: Sec. 20, T. 2N, R. 1W

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 60

Subregion (LRR): A, Northwest Forests and Coast Lat: 45.641511 Long: -122.846356 Datum: WGS 1984

Soil Map Unit Name: 17E: Goble silt loam, 30 to 60 percent slopes NWI classification:

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? Yes X No

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	X
Hydric Soil Present?	Yes		No	X
Wetland Hydrology Present?	Yes		No	X

Is the Sampled Area within a Wetland? Yes No X

Precipitation prior to fieldwork: None

Remarks:

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30' r)			
1. *Acer macrophyllum*	85%	Yes	FACU
2.			
3.			
4.			
	85% = Total Cover		
Sapling/Shrub Stratum (Plot size: 10' r)			
1. *Acer circinatum*	25%	Yes	FAC
2. *Rubus spectabilis*	25%	Yes	FAC
3.			
4.			
5.			
	50% = Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Tellima grandiflora*	25%	Yes	FACU
2. *Polystichum munitum*	15%	Yes	FACU
3. *Blechnum spicant*	5%	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	45% = Total Cover		
Woody Vine Stratum (Plot size: 10' r)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 55%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	55	x 3 =	165
FACU species	125	x 4 =	500
UPL species	0	x 5 =	0
Column Totals:	180 (A)		665 (B)

Prevalence Index = B/A = 3.69

Hydrophytic Vegetation Indicators:

- 1 - Rapid Test for Hydrophytic Vegetation
- 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.

Hydrophytic Vegetation Present? Yes No X

Remarks: Entered by: clm QC by: cmw

SOIL

Sampling Point: **SP3**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/4	100					SiL	dry
3-12	10YR 3/4	95	10YR 3/6	5	C	M	SiL	dry

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

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

- ___ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators 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: S = sand; Si = SiLt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)
Rock refusal at 12 inches.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ 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)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ 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) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

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

Wetland Hydrology Present? **Yes** ___ **No** X

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

Remarks:

Entered by: clm QC by: cmw

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

Project/Site: Burlington Creek Forest OHW Delineation City/County: Portland / Multnomah Sampling Date: 8/29/2021

Applicant/Owner: Metro State: OR Sampling Point: **SP4**

Investigator(s): C. Moller Section, Township, Range: Sec. 20, T. 2N, R. 1W

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 50

Subregion (LRR): A, Northwest Forests and Coast Lat: 45.639436 Long: -122.845313 Datum: WGS 1984

Soil Map Unit Name: 17E: Goble silt loam, 30 to 60 percent slopes NWI classification:

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? Yes X No

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 **X**
Hydric Soil Present?	Yes	No **X**
Wetland Hydrology Present?	Yes	No **X**

Is the Sampled Area within a Wetland? **Yes** **No X**

Precipitation prior to fieldwork: None

Remarks:

VEGETATION

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer macrophyllum*	30%	Yes	FACU
2. *Pseudotsuga menziesii*	30%	Yes	FACU
3.			
4.			
	60% = Total Cover		
Sapling/Shrub Stratum (Plot size: 10' r)			
1. *Rubus armeniacus*	15%	Yes	FAC
2. *Rubus spectabilis*	15%	Yes	FAC
3.			
4.			
5.			
	30% = Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Polystichum munitum*	5%	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	5% = Total Cover		
Woody Vine Stratum (Plot size: 10' r)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 95%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	30	x 3 =	90
FACU species	65	x 4 =	260
UPL species	0	x 5 =	0
Column Totals:	95 (A)		350 (B)

Prevalence Index = B/A = 3.68

Hydrophytic Vegetation Indicators:

- 1 - Rapid Test for Hydrophytic Vegetation
- 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.

Hydrophytic Vegetation Present? **Yes** **No X**

Remarks:

Entered by: clm QC by: cmw

SOIL

Sampling Point: **SP4**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 4/3	100					vf SiL	dry
8-20+	10YR 5/3	100					SiL	dry

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

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

- ___ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators 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: S = sand; Si = SiLt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ 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)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ 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) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches):	
Water Table Present?	Yes _____	No X	Depth (inches):	>20
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches):	>20

Wetland Hydrology Present? **Yes** _____ **No** X

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

Remarks:

Entered by: clm QC by: cmw

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

Project/Site: Burlington Creek Forest OHW Delineation City/County: Portland / Multnomah Sampling Date: 8/29/2021

Applicant/Owner: Metro State: OR Sampling Point: **SP5**

Investigator(s): C. Moller Section, Township, Range: Sec. 20, T. 2N, R. 1W

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 15

Subregion (LRR): A, Northwest Forests and Coast Lat: 45.643612 Long: -122.843471 Datum: WGS 1984

Soil Map Unit Name: 17E: Goble silt loam, 30 to 60 percent slopes NWI classification:

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? Yes X No

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 **X**	No	**Is the Sampled Area within a Wetland?**	**Yes** **No X**
Hydric Soil Present?	Yes	No **X**		
Wetland Hydrology Present?	Yes	No **X**		

Precipitation prior to fieldwork: None

Remarks:

VEGETATION

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Thuja plicata*	60%	Yes	FAC
2. *Alnus rubra*	20%	Yes	FAC
3.			
4.			
	80% = Total Cover		
Sapling/Shrub Stratum (Plot size: 10' r)			
1. *Rubus spectabilis*	20%	Yes	FAC
2. *Euonymus occidentalis*	5%	Yes	FAC
3.			
4.			
5.			
	25% = Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Urtica dioica*	30%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	30% = Total Cover		
Woody Vine Stratum (Plot size: 10' r)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 70%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	135	x 3 =	405
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	135 (A)		405 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

- 1 - Rapid Test for Hydrophytic Vegetation
- X 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.

Hydrophytic Vegetation Present? **Yes X No**

Remarks: Entered by: clm QC by: cmw

SOIL

Sampling Point: **SP5**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/3	100					SiL	dry
6-13	10YR 3/4	100					SiL	dry
13-20+	10YR 3/3	98	10YR 4/6	2	C	M	SiL	dry

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

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

- ___ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators 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: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ 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)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ 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) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches):	___
Water Table Present?	Yes ___	No X	Depth (inches):	>20
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches):	>20

Wetland Hydrology Present? Yes ___ **No** X

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

Remarks:

Entered by: clm QC by: cmw

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

Project/Site: Burlington Creek Forest OHW Delineation City/County: Portland / Multnomah Sampling Date: 9/4/2021

Applicant/Owner: Metro State: OR Sampling Point: **SP6**

Investigator(s): C. Moller Section, Township, Range: Sec. 20, T. 2N, R. 1W

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 50

Subregion (LRR): A, Northwest Forests and Coast Lat: 45.640166 Long: -122.838842 Datum: WGS 1984

Soil Map Unit Name: 17E: Goble silt loam, 30 to 60 percent slopes NWI classification:

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? Yes X No

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	X
Hydric Soil Present?	Yes		No	X
Wetland Hydrology Present?	Yes		No	X

Is the Sampled Area within a Wetland? Yes No X

Precipitation prior to fieldwork: None

Remarks:

VEGETATION

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer macrophyllum*	40%	Yes	FACU
2. *Alnus rubra*	40%	Yes	FAC
3.			
4.			
	80% = Total Cover		
Sapling/Shrub Stratum (Plot size: 10' r)			
1. *Rubus armeniacus*	20%	Yes	FAC
2.			
3.			
4.			
5.			
	20% = Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Polystichum munitum*	5%	Yes	FACU
2. *Athyrium cyclosorum*	5%	Yes	FAC
3. *Tellima grandiflora*	5%	Yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	15% = Total Cover		
Woody Vine Stratum (Plot size: 10' r)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 85%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	65	x 3 =	195
FACU species	50	x 4 =	200
UPL species	0	x 5 =	0
Column Totals:	115 (A)		395 (B)

Prevalence Index = B/A = 3.43

Hydrophytic Vegetation Indicators:

- 1 - Rapid Test for Hydrophytic Vegetation
- 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.

Hydrophytic Vegetation Present? Yes No X

Remarks: Entered by: clm QC by: cmw

SOIL

Sampling Point: **SP6**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/3	50					SiL	dry
	10YR 4/8	50						
6-13	10YR 4/3	100					SiL	dry
13-20+	10YR 3/4	90	5YR 4/6	10			SiL	dry

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

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

- ___ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators 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: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ 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)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ 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) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches):	
Water Table Present?	Yes _____	No X	Depth (inches):	>20
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches):	>20

Wetland Hydrology Present? **Yes** _____ **No** X

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

Remarks:

Entered by: clm QC by: cmw

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

Project/Site: Burlington Creek Forest OHW Delineation City/County: Portland / Multnomah Sampling Date: 9/4/2021

Applicant/Owner: Metro State: OR Sampling Point: **SP7**

Investigator(s): C. Moller Section, Township, Range: Sec. 20, T. 2N, R. 1W

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 50

Subregion (LRR): A, Northwest Forests and Coast Lat: 45.636136 Long: -122.840471 Datum: WGS 1984

Soil Map Unit Name: 17E: Goble silt loam, 30 to 60 percent slopes NWI classification:

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? Yes X No

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	X
Hydric Soil Present?	Yes		No	X
Wetland Hydrology Present?	Yes		No	X

Is the Sampled Area within a Wetland? Yes No X

Precipitation prior to fieldwork: None

Remarks:

VEGETATION

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer macrophyllum*	70%	Yes	FACU
2. *Thuja plicata*	5%	No	FAC
3.			
4.			
	75% = Total Cover		
Sapling/Shrub Stratum (Plot size: 10' r)			
1. *Rubus armeniacus*	25%	Yes	FAC
2. *Rubus ursinus*	25%	Yes	FACU
3. *Rubus spectabilis*	15%	Yes	FAC
4.			
5.			
	65% = Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Polystichum munitum*	15%	Yes	FACU
2. *Tellima grandiflora*	10%	Yes	FACU
3. *Cirsium arvense*	5%	No	FAC
4. *Galium aparine*	5%	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	35% = Total Cover		
Woody Vine Stratum (Plot size: 10' r)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 65%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	50	x 3 =	150
FACU species	125	x 4 =	500
UPL species	0	x 5 =	0
Column Totals:	175 (A)		650 (B)

Prevalence Index = B/A = 3.71

Hydrophytic Vegetation Indicators:

- 1 - Rapid Test for Hydrophytic Vegetation
- 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.

Hydrophytic Vegetation Present? Yes No X

Remarks: Entered by: clm QC by: cmw

SOIL

Sampling Point: **SP7**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 3/4	100					SiL	dry

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

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

- ___ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators 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: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)
Rock refusal at 14 inches.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ 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)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ 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) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	_____	No	X	Depth (inches): _____
Water Table Present?	Yes	_____	No	X	Depth (inches): >14
Saturation Present? (includes capillary fringe)	Yes	_____	No	X	Depth (inches): >14

Wetland Hydrology Present? **Yes** _____ **No** **X**

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

Remarks:

Entered by: clm QC by: cmw

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

Project/Site: Burlington Creek Forest OHW Delineation City/County: Portland / Multnomah Sampling Date: 9/15/2021

Applicant/Owner: Metro State: OR Sampling Point: **SP8**

Investigator(s): C. Moller, J. Spears Section, Township, Range: Sec. 20, T. 2N, R. 1W

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 30

Subregion (LRR): A, Northwest Forests and Coast Lat: 45.635825 Long: -122.835936 Datum: WGS 1984

Soil Map Unit Name: 17E: Goble silt loam, 30 to 60 percent slopes NWI classification:

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? Yes X No

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	X	No	
Hydric Soil Present?	Yes		No	X
Wetland Hydrology Present?	Yes		No	X

Is the Sampled Area within a Wetland? Yes No X

Precipitation prior to fieldwork: None

Remarks:

VEGETATION

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Alnus rubra*	60%	Yes	FAC
2.			
3.			
4.			
	60% = Total Cover		
Sapling/Shrub Stratum (Plot size: 10' r)			
1. *Rubus armeniacus*	30%	Yes	FAC
2. *Acer circinatum*	10%	Yes	FAC
3. *Sambucus racemosa*	10%	Yes	FACU
4.			
5.			
	50% = Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Polystichum munitum*	20%	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20% = Total Cover		
Woody Vine Stratum (Plot size: 10' r)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 80%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 0	x 1 =	0
FACW species 0	x 2 =	0
FAC species 100	x 3 =	300
FACU species 30	x 4 =	120
UPL species 0	x 5 =	0
Column Totals: 130 (A)		420 (B)

Prevalence Index = B/A = 3.23

Hydrophytic Vegetation Indicators:

- 1 - Rapid Test for Hydrophytic Vegetation
- X 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.

Hydrophytic Vegetation Present? Yes X No

Remarks: Entered by: clm QC by: cmw

SOIL

Sampling Point: **SP8**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2	100					SiL	dry
6-20+	10YR 4/3	100					SiL	dry

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

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

- ___ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators 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: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ 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)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ 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) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	___	No	X	Depth (inches): ___
Water Table Present?	Yes	___	No	X	Depth (inches): >20
Saturation Present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): >20

Wetland Hydrology Present? **Yes** _____ **No** **X**

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

Remarks:

Entered by: clm QC by: cmw

APPENDIX B

Ground-Level Site Photographs

Photo Point 1. Sample Plot (SP) 1 above OHWM/L.

Photo Point 2. SP2 above OHWM/L.

Photo Point 3. SP3 above OHWM/L.

Photo Point 4. SP4 above OHWM/L.

Photo Point 5. SP5 above OHWM/L.

Photo Point 6. SP6 above OHWM/L.

Photo Point 7. SP7 above OHWM/L.

Photo Point 8. SP8. above OHWM/L.

APPENDIX C

Precipitation Data

Climatological Data for Portland Area, OR (ThreadEx) - September 2021

Date	Temperature				HDD	CDD	Precipitation	New Snow	Snow Depth
	Maximum	Minimum	Average	Departure					
2021-09-01	79	51	65.0	-3.7	0	0	0.00	0.0	0
2021-09-02	86	53	69.5	1.0	0	5	0.00	0.0	0
2021-09-03	83	53	68.0	-0.3	0	3	0.00	0.0	0
2021-09-04	88	55	71.5	3.3	0	7	0.00	0.0	0
2021-09-05	86	60	73.0	5.0	0	8	0.00	0.0	0
2021-09-06	84	62	73.0	5.2	0	8	0.00	0.0	0
2021-09-07	**89**	59	74.0	6.4	0	9	0.00	0.0	0
2021-09-08	88	61	74.5	7.1	0	10	T	0.0	0
2021-09-09	86	60	73.0	5.8	0	8	0.00	0.0	0
2021-09-10	70	61	65.5	-1.5	0	1	0.00	0.0	0
2021-09-11	81	54	67.5	0.7	0	3	0.00	0.0	0
2021-09-12	76	60	68.0	1.5	0	3	T	0.0	0
2021-09-13	75	51	63.0	-3.3	2	0	0.00	0.0	0
2021-09-14	84	53	68.5	2.4	0	4	0.00	0.0	0
2021-09-15	72	54	63.0	-2.8	2	0	0.00	0.0	0
2021-09-16	78	**45**	61.5	-4.1	3	0	0.00	0.0	0
2021-09-17	78	56	67.0	1.7	0	2	0.07	0.0	0
2021-09-18	69	56	62.5	-2.5	2	0	**1.31**	0.0	0
2021-09-19	67	53	60.0	-4.7	5	0	1.14	0.0	0
2021-09-20	73	50	61.5	-2.9	3	0	0.00	0.0	0
2021-09-21	86	52	69.0	4.9	0	4	0.00	0.0	0
2021-09-22	71	57	64.0	0.2	1	0	T	0.0	0
2021-09-23	75	58	66.5	3.0	0	2	0.00	0.0	0
2021-09-24	**89**	56	72.5	9.3	0	8	0.00	0.0	M
2021-09-25	85	56	70.5	7.6	0	6	0.00	0.0	0
2021-09-26	75	58	66.5	4.0	0	2	0.09	0.0	0
2021-09-27	65	55	60.0	-2.2	5	0	0.87	0.0	0
2021-09-28	61	53	57.0	-4.9	8	0	0.18	0.0	0
2021-09-29	68	50	59.0	-2.5	6	0	T	0.0	0
2021-09-30	63	51	57.0	-4.2	8	0	0.10	0.0	0
Sum	2330	1653	-	-	45	93	3.76	0.0	-
Average	77.7	55.1	66.4	1.0	-	-	-	-	0.0
Normal	76.7	54.1	65.4	-	61	73	1.52	M	-

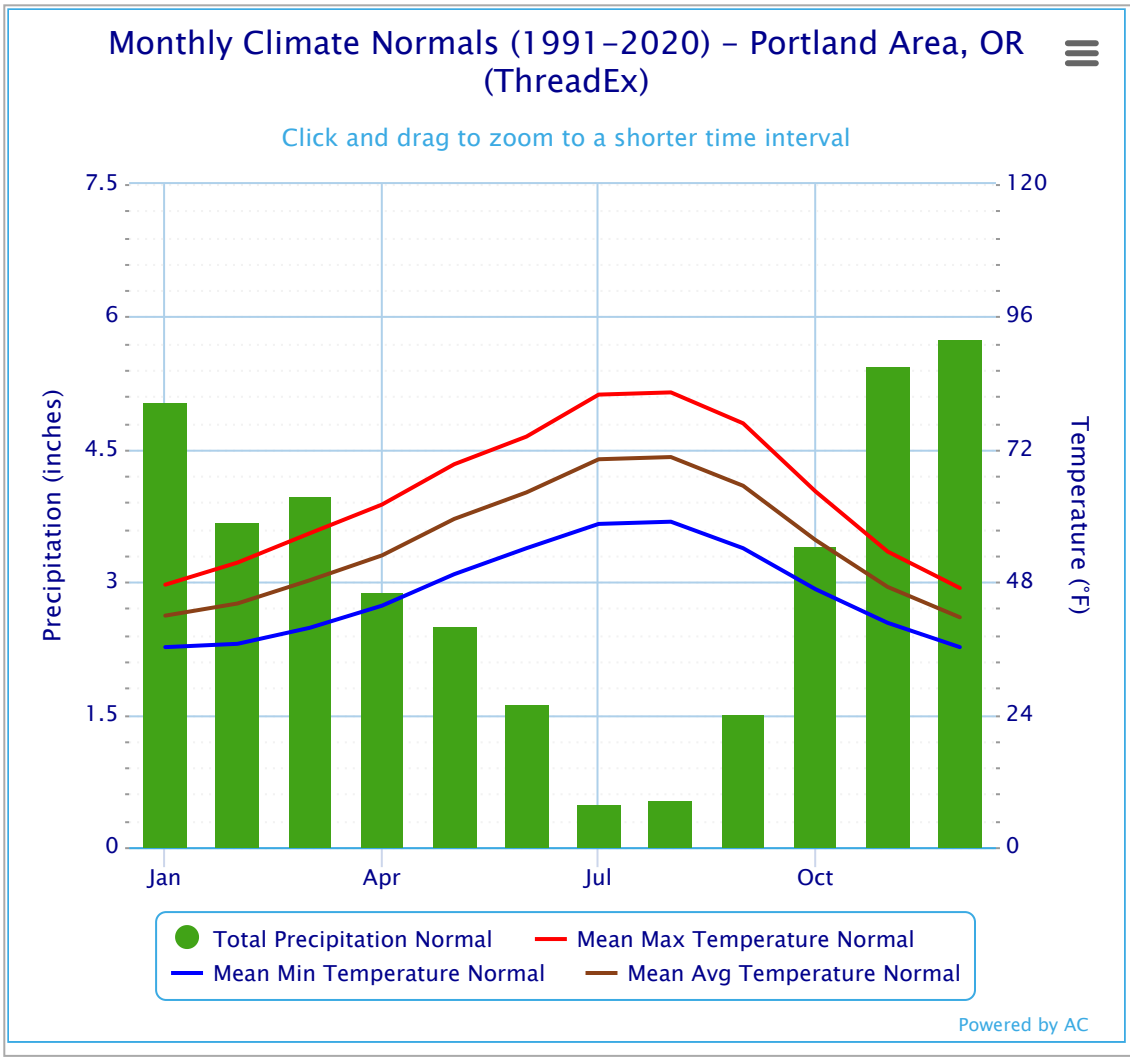
Observations for each day cover the 24 hours ending at the time given below (Local Standard Time).
Max Temperature : midnight
Min Temperature : midnight
Precipitation : midnight
Snowfall : midnight
Snow Depth : 4am

Climatological Data for PORTLAND INTL AIRPORT, OR - August 2021

Date	Max Temperature	Min Temperature	Avg Temperature	GDD Base 40	GDD Base 50	Precipitation	Snowfall	Snow Depth
2021-08-01	89	63	76.0	36	26	0.00	0.0	0
2021-08-02	91	61	76.0	36	26	T	0.0	0
2021-08-03	90	64	77.0	37	27	0.00	0.0	0
2021-08-04	96	62	79.0	39	29	0.00	0.0	0
2021-08-05	84	66	75.0	35	25	0.00	0.0	0
2021-08-06	83	65	74.0	34	24	0.03	0.0	0
2021-08-07	81	61	71.0	31	21	0.00	0.0	0
2021-08-08	78	59	68.5	29	19	0.00	0.0	0
2021-08-09	86	59	72.5	33	23	0.00	0.0	0
2021-08-10	93	66	79.5	40	30	0.00	0.0	0
2021-08-11	102	69	85.5	46	36	0.00	0.0	0
2021-08-12	103	70	86.5	47	37	0.00	0.0	0
2021-08-13	96	71	83.5	44	34	0.00	0.0	0
2021-08-14	93	68	80.5	41	31	0.00	0.0	0
2021-08-15	94	66	80.0	40	30	0.00	0.0	0
2021-08-16	85	62	73.5	34	24	0.00	0.0	0
2021-08-17	72	60	66.0	26	16	T	0.0	0
2021-08-18	82	59	70.5	31	21	0.00	0.0	0
2021-08-19	83	60	71.5	32	22	0.00	0.0	0
2021-08-20	73	60	66.5	27	17	T	0.0	0
2021-08-21	71	61	66.0	26	16	T	0.0	0
2021-08-22	70	57	63.5	24	14	0.02	0.0	0
2021-08-23	75	48	61.5	22	12	0.00	0.0	0
2021-08-24	86	54	70.0	30	20	0.00	0.0	0
2021-08-25	81	56	68.5	29	19	0.00	0.0	0
2021-08-26	77	62	69.5	30	20	T	0.0	0
2021-08-27	74	60	67.0	27	17	0.00	0.0	0
2021-08-28	87	54	70.5	31	21	0.00	0.0	0
2021-08-29	87	59	73.0	33	23	0.00	0.0	0
2021-08-30	71	54	62.5	23	13	0.00	0.0	M
2021-08-31	70	54	62.0	22	12	0.00	0.0	0
Average|Sum	84.0	61.0	72.5	1015	705	0.05	0.0	0.0

Monthly Total Precipitation for PORTLAND INTL AIRPORT, OR

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2019	2.79	4.10	1.54	2.98	1.51	0.45	0.80	1.23	3.85	1.51	1.52	4.39	26.67
2020	7.58	1.55	2.43	0.79	2.21	3.51	0.05	0.38	2.06	1.51	5.28	5.09	32.44
2021	7.03	3.73	1.55	0.39	0.58	1.25	T	0.05	3.76	M	M	M	M
Mean	5.80	3.13	1.84	1.39	1.43	1.74	0.28	0.55	3.22	1.51	3.40	4.74	29.56



Month	Total Precipitation Normal (inches)	Mean Max Temperature Normal (°F)	Mean Min Temperature Normal (°F)	Mean Avg Temperature Normal (°F)
January	5.03	47.5	36.2	41.9
February	3.68	51.5	36.8	44.1
March	3.97	56.8	39.7	48.3
April	2.89	62.0	43.7	52.8
May	2.51	69.3	49.4	59.4
June	1.63	74.3	54.1	64.2
July	0.50	81.9	58.5	70.2
August	0.54	82.3	58.9	70.6
September	1.52	76.7	54.1	65.4
October	3.42	64.4	46.7	55.6
November	5.45	53.5	40.6	47.1
December	5.77	46.9	36.2	41.6
Annual	36.91	63.9	46.2	55.1

WETS Table

WETS Station: PORTLAND INTL AIRPORT, OR								
Requested years: 1991 - 2020								
Month	Avg Max Temp	Avg Min Temp	Avg Mean Temp	Avg Precip	30% chance precip less than	30% chance precip more than	Avg number days precip 0.10 or more	Avg Snowfall
Jan	47.5	36.2	41.9	5.03	3.71	5.89	12	-
Feb	51.5	36.8	44.2	3.68	2.28	4.45	9	-
Mar	56.8	39.7	48.3	3.97	2.88	4.68	11	-
Apr	62.0	43.7	52.9	2.89	2.10	3.39	9	-
May	69.3	49.4	59.4	2.51	1.36	3.05	7	-
Jun	74.3	54.1	64.2	1.63	0.99	1.97	5	-
Jul	81.9	58.5	70.2	0.50	0.21	0.57	2	-
Aug	82.3	58.9	70.6	0.54	0.18	0.61	2	-
Sep	76.7	54.1	65.4	1.52	0.66	1.81	4	-
Oct	64.4	46.7	55.6	3.42	2.21	4.10	8	-
Nov	53.5	40.6	47.1	5.45	3.72	6.51	12	-
Dec	46.9	36.2	41.6	5.77	4.16	6.81	13	-
Annual:					32.27	40.63		
Average	63.9	46.2	55.1	-	-	-	-	-
Total	-	-	-	36.91			93	-

GROWING SEASON DATES			
Years with missing data:	24 deg = 0	28 deg = 0	32 deg = 0
Years with no occurrence:	24 deg = 11	28 deg = 0	32 deg = 0
Data years used:	24 deg = 30	28 deg = 30	32 deg = 30
Probability	24 F or higher	28 F or higher	32 F or higher
50 percent *	1/8 to 1/7: 364 days	2/7 to 12/5: 301 days	3/18 to 11/16: 243 days
70 percent *	No occurrence	1/29 to 12/14: 319 days	3/13 to 11/22: 254 days
* Percent chance of the growing season occurring between the Beginning and Ending dates.			

STATS TABLE - total precipitation (inches)													
Yr	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annl
1938				2.10	0.57	0.34	0.17	0.49	1.18	2.58	4.26	4.78	16.47
1939	5.47	5.49	2.36	0.27	1.09	1.42	0.78	1.62	0.55	2.14	1.73	9.22	32.14
1940	2.56	11.41	4.95	3.29	1.60	0.02	0.80	0.06	3.54	4.13	4.53	4.85	41.74
1941	5.27	1.59	1.74	1.66	4.27	0.81	0.03	1.45	3.58	2.18	5.04	9.11	36.73
1942	3.63	M3.53	1.63	2.38	2.84	1.94	1.40	0.17	0.06	3.49	11.57	9.37	42.01
1943	5.50	3.27	5.54	2.21	1.42	2.80	0.32	1.39	0.06	5.59	M2.20	2.70	33.00
1944	2.81	3.11	1.93	2.28	1.07	0.81	0.06	0.03	2.73	1.64	5.00	1.90	23.37
1945	4.10	4.36	5.30	2.42	4.57	0.07	0.51	0.37	3.96	2.11	8.58	5.61	41.96

1946	5.12	4.99	4.23	0.78	1.24	1.91	1.08	0.18	1.15	4.81	7.57	5.47	38.53
1947	3.72	2.77	4.11	1.81	0.66	2.93	0.94	0.29	1.06	8.04	4.08	4.64	35.05
1948	5.87	5.02	4.24	3.41	3.76	1.42	0.32	1.55	3.28	2.39	6.89	8.06	46.21
1949	1.02	9.46	2.78	0.72	2.12	0.68	0.91	0.24	1.66	2.35	5.56	4.86	32.36
1950	10.10	5.77	4.76	2.74	0.57	2.50	0.50	0.72	1.45	7.00	8.67	6.31	51.09
1951	7.71	5.02	3.86	1.14	1.75	0.03	0.28	0.02	2.55	6.81	5.31	5.06	39.54
1952	4.40	3.59	3.82	1.45	0.78	2.23	T	0.18	0.33	0.72	1.44	6.76	25.70
1953	12.83	3.71	3.82	1.89	3.45	2.04	0.03	1.79	1.16	3.56	6.46	7.85	48.59
1954	8.95	4.57	2.55	2.54	1.83	3.58	1.24	1.92	0.85	3.40	5.09	5.01	41.53
1955	2.30	3.37	3.06	4.72	1.24	1.83	0.89	T	2.86	6.69	7.34	10.14	44.44
1956	11.66	2.04	4.30	0.53	2.50	2.03	0.01	2.56	1.12	5.10	1.47	3.64	36.96
1957	2.23	4.14	7.52	1.84	1.97	0.73	0.19	0.69	0.49	3.53	3.07	6.15	32.55
1958	6.56	5.13	2.20	3.33	1.35	3.04	T	0.02	1.05	1.49	6.39	5.06	35.62
1959	7.57	4.18	3.22	0.92	2.89	2.38	0.56	0.09	2.81	3.51	3.30	3.08	34.51
1960	3.93	4.00	4.77	3.33	3.37	0.52	T	1.00	1.37	2.39	8.63	2.61	35.92
1961	4.50	8.92	6.04	3.59	2.80	0.47	0.42	1.07	0.64	2.89	4.67	5.94	41.95
1962	1.58	3.43	4.25	3.15	2.56	0.78	0.06	1.49	1.66	3.31	9.32	2.59	34.18
1963	2.27	3.48	4.69	3.78	2.74	1.71	1.17	0.87	0.75	3.04	5.64	3.60	33.74
1964	9.51	0.78	2.28	1.56	1.04	1.96	0.68	0.90	1.61	0.84	6.78	9.92	37.86
1965	7.44	2.22	1.10	2.20	1.31	0.83	0.44	0.73	0.01	2.03	5.64	7.34	31.29
1966	5.74	1.70	4.71	0.85	0.91	1.02	1.19	0.59	1.70	3.06	5.50	6.89	33.86
1967	6.21	2.02	4.31	2.17	1.02	1.01	0.00	T	0.76	4.72	2.27	4.75	29.24
1968	4.58	6.64	2.68	1.91	3.63	2.20	0.14	4.53	2.20	5.03	6.23	11.12	50.89
1969	7.60	3.14	1.13	2.28	1.61	2.99	0.14	0.04	3.86	3.02	3.18	8.12	37.11
1970	11.81	4.77	2.58	2.94	1.55	0.49	0.05	T	1.10	2.85	5.72	7.49	41.35
1971	7.09	3.36	4.87	2.72	1.00	1.76	0.26	0.95	3.53	2.37	5.76	8.05	41.72
1972	5.71	4.08	5.41	2.98	2.23	0.68	0.56	0.67	3.06	0.87	3.78	8.79	38.82
1973	3.69	1.94	2.45	1.33	1.43	1.45	0.06	1.41	3.29	3.14	11.55	9.93	41.67
1974	8.51	4.61	5.65	1.76	1.74	0.80	2.01	0.07	0.21	2.14	6.73	6.05	40.28
1975	8.43	4.75	3.45	1.88	1.35	1.13	0.43	2.10	T	4.76	4.10	6.68	39.06
1976	5.14	4.92	2.93	2.34	2.29	0.78	0.66	3.29	0.73	1.48	0.77	1.38	26.71
1977	1.07	2.49	3.50	1.04	4.30	0.83	0.39	3.26	3.33	2.28	5.56	8.98	37.03
1978	4.85	3.28	1.49	3.96	3.17	1.69	1.36	2.05	2.07	0.36	3.83	2.51	30.62
1979	2.55	6.53	2.51	2.47	2.41	0.64	0.25	1.18	1.75	4.85	3.38	7.23	35.75

1980	8.51	4.01	3.11	2.58	2.19	2.50	0.19	0.39	1.56	1.18	6.47	9.72	42.41
1981	1.47	3.86	2.33	1.79	2.25	3.23	0.24	0.15	1.86	4.12	4.62	8.37	34.29
1982	6.31	5.98	2.38	3.56	0.46	1.66	0.94	1.66	3.98	4.44	3.51	8.16	43.04
1983	6.23	7.78	6.80	1.87	1.30	1.95	2.68	2.29	0.39	1.95	8.65	5.30	47.19
1984	2.01	3.93	3.19	3.20	3.41	4.06	T	0.09	1.46	3.85	9.74	2.56	37.50
1985	0.06	1.79	3.08	1.07	1.52	2.34	0.55	0.48	2.76	2.75	3.89	2.19	22.48
1986	4.65	5.31	2.60	1.91	2.19	0.23	1.20	0.10	4.30	1.99	6.26	4.30	35.04
1987	6.93	2.45	4.91	1.94	1.63	0.14	1.03	0.35	0.30	0.27	1.96	8.00	29.91
1988	4.95	1.17	3.13	4.57	2.53	2.34	0.69	0.10	1.76	0.19	7.92	2.37	31.72
1989	3.30	2.84	6.73	2.08	2.87	0.78	0.91	1.07	1.48	1.73	3.18	3.08	30.05
1990	7.95	3.43	2.52	2.31	2.37	1.94	0.32	0.95	0.34	4.65	3.68	2.40	32.86
1991	2.56	3.65	4.64	4.05	3.34	2.31	0.07	0.70	0.02	1.51	6.36	4.34	33.55
1992	4.31	4.12	1.87	3.82	0.10	0.60	0.67	0.49	1.12	2.87	4.55	4.98	29.50
1993	3.06	0.72	4.39	5.26	4.36	1.69	2.41	0.37	T	1.59	1.50	5.01	30.36
1994	3.56	4.92	1.84	1.91	0.56	1.67	0.07	0.13	1.13	8.41	5.91	4.85	34.96
1995	5.56	3.19	3.82	3.49	1.65	2.62	1.23	0.81	1.31	3.15	10.74	5.91	43.48
1996	7.15	10.03	3.24	5.12	4.88	0.44	0.73	0.25	3.05	5.38	9.58	13.35	63.20
1997	7.32	1.63	7.14	3.73	3.63	2.83	0.52	1.58	1.98	6.40	4.02	3.03	43.81
1998	6.77	5.27	4.06	1.04	5.55	1.73	0.59	T	1.09	2.16	11.02	6.74	46.02
1999	6.63	8.73	4.03	1.56	1.97	1.73	0.51	0.75	0.10	2.44	6.81	3.62	38.88
2000	5.66	4.50	3.21	1.82	2.70	1.19	0.15	0.12	1.67	3.25	2.46	3.47	30.20
2001	1.47	1.29	3.11	2.85	0.91	1.79	0.95	0.74	0.70	3.12	6.89	6.62	30.44
2002	6.22	3.55	3.40	2.34	1.86	1.57	0.19	0.04	1.54	0.63	1.91	8.00	31.25
2003	7.64	2.37	5.75	4.37	1.49	0.31	T	0.19	0.85	3.01	4.09	7.45	37.52
2004	4.86	3.95	1.53	1.01	1.78	1.12	0.04	2.68	1.03	3.36	2.38	3.91	27.65
2005	1.94	1.30	3.77	3.49	4.34	2.21	0.41	1.05	1.70	3.39	4.98	7.52	36.10
2006	10.92	2.15	2.96	2.46	3.00	0.92	0.47	0.10	0.86	1.39	11.92	5.85	43.00
2007	2.72	3.47	3.20	2.01	1.45	1.08	0.55	0.46	2.04	3.26	4.25	7.57	32.06
2008	4.71	2.19	3.71	2.08	2.02	1.00	0.29	1.23	0.48	1.74	4.15	3.52	27.12
2009	4.50	1.36	3.36	2.31	3.26	1.30	0.34	0.76	1.40	3.02	5.13	3.76	30.50
2010	4.94	2.76	3.58	2.92	4.68	4.27	0.59	0.23	3.36	3.87	6.63	8.35	46.18
2011	4.73	4.28	6.43	5.04	2.92	0.73	0.96	0.17	0.62	2.14	6.57	2.51	37.10
2012	6.82	2.83	7.89	3.25	3.37	4.10	0.21	T	0.04	6.14	8.23	7.56	50.44
2013	3.49	1.26	1.46	2.19	4.75	1.35	T	0.78	5.62	1.15	3.05	1.62	26.72

2014	2.70	5.12	7.52	3.03	2.39	2.33	1.05	0.01	0.98	5.94	2.99	6.05	40.11
2015	3.33	3.71	4.71	1.75	0.59	0.40	0.57	0.66	1.26	3.69	4.49	15.24	40.40
2016	7.23	4.10	4.73	1.96	1.72	1.42	0.66	0.09	1.69	8.31	6.83	4.61	43.35
2017	4.13	10.36	7.26	4.51	1.92	1.08	T	0.06	2.38	4.57	6.44	3.09	45.80
2018	5.36	1.86	2.50	3.34	0.17	1.03	0.02	0.06	1.59	3.43	2.86	5.08	27.30
2019	2.79	4.10	1.54	2.98	1.51	0.45	0.80	1.23	3.85	1.51	1.52	4.39	26.67
2020	7.58	1.55	2.43	0.79	2.21	3.51	0.05	0.38	2.06	1.51	5.28	5.09	32.44
2021	7.03	3.73	1.55	0.39	0.58	1.25	T	0.05	3.76	M3.25			21.59
Notes: Data missing in any month have an "M" flag. A "T" indicates a trace of precipitation.													
Data missing for all days in a month or year is blank.													
Creation date: 2021-10-28													

APPENDIX D

Vegetation List

Burlington Creek Forest Ordinary High Water Mark / Line Delineation Dominant Vegetation List August 29 and September 4 and 15, 2021			
Common Name	**Scientific Name**	**Wetland Indicator Status**	**Native and Invasive, Noxious**
vine maple	*Acer circinatum*	FAC	native
big-leaf maple	*Acer macrophyllum*	FACU	native
red alder	*Alnus rubra*	FAC	native
western lady fern	*Athyrium cyclosorum*	FAC	native
English ivy	*Hedera helix*	FACU	invasive, noxious
western or pineland sword fern	*Polystichum munitum*	FACU	native
Douglas-fir	*Pseudotsuga menziesii*	FACU	native
Himalayan blackberry	*Rubus armeniacus*	FAC	invasive, noxious
salmon raspberry, salmonberry	*Rubus spectabilis*	FAC	native
California dewberry or trailing blackberry	*Rubus ursinus*	FACU	native
red elderberry	*Sambucus racemosa*	FACU	native
fragrant fringecup	*Tellima grandiflora*	FACU	native
western arborvitae (western red cedar)	*Thuja plicata*	FAC	native
stinging nettle	*Urtica dioica*	FAC	-

Wetland Indicator Status and taxonomy for the Western Mountains, Valleys, and Coast Region per the National Wetland Plant List 2018 v3.4. Accessed May 18, 2020. http://wetland-plants.usace.army.mil/nwpl_static/v34/home/home.html

Native per Hitchcock & Cronquist 2018 and PLANTS http://plants.usda.gov/

Invasive per Clean Water Services 2020 http://cleanwaterservices.org/permits-development/design-construction-standards/

Noxious per ODA 2021:
https://www.oregon.gov/ODA/programs/Weeds/OregonNoxiousWeeds/Pages/AboutOregonWeeds.aspx

WETLAND INDICATOR STATUS (WIS)	
OBL	**Obligate Wetland** Plant – Almost always occurs in wetlands (hydrophyte), rarely in uplands
FACW	**Facultative Wetland** Plant - Usually occur in wetlands (hydrophyte), but may occur found in non-wetlands
FAC	**Facultative** Plant – Occurs in wetlands (hydrophyte) and uplands (nonhydrophyte)
FACU	**Facultative Upland** Plant - Usually occur in non-wetlands (non-hydrophyte), but may occur in wetlands
UPL	**Upland** Plant - Almost always occurs in uplands (non-hydrophyte), almost never occurs in wetlands. UPL plants have a WIS in other regions
NOL	**Not Listed** - Plants that are not on the National Wetland Plant List are assumed to be UPL and have no WIS in any region

EXHIBIT 3

OWNER CONTACT
METRO - PARKS AND NATURE
KAREN VITKAY, PLA
KAREN.VITKAY@OREGONMETRO.GOV
503.797.1545

GENERAL NOTES

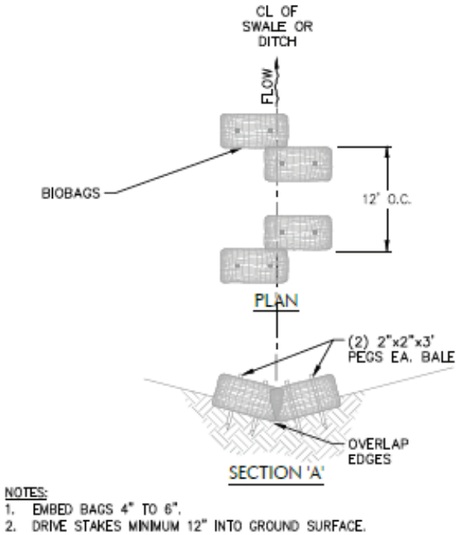
1. Completed trails and features shall reflect professional workmanship in appearance, quality, and attention to detail. Trails and features shall be well integrated into site, aesthetically pleasing, and well-shaped, crafted, and finished according to commonly accepted best practices for high quality and sustainable natural surface trails. Work shall be completed to the Owner's satisfaction.
2. Should the contractor discover discrepancies in the contract documents, specifications, plans and/or bid form, the matter shall be immediately brought to the attention of the owner's representative, and the discrepancies corrected by written approval before proceeding.
3. Trail contractor shall leave trails and the adjacent area in a finished and natural-looking condition and minimize disturbance to natural resources to the extent possible. Construction shall leave no scars greater than three inches in diameter on live parts of native plants. Any created slash shall be dispersed away from the trail with with one surface in contact with the ground. Slash heights shall be less than 24".
4. All excavated material generated during trail construction must be used in the trail, sidecast or dispersed and blended into surrounding terrain to a height no greater than 4 inches depth.
5. The trail contractor shall be responsible for fine grading and providing positive drainage away from all trails and trail features. No impoundments nor ponding of surface water on the trail bed shall be allowed.

EROSION CONTROL

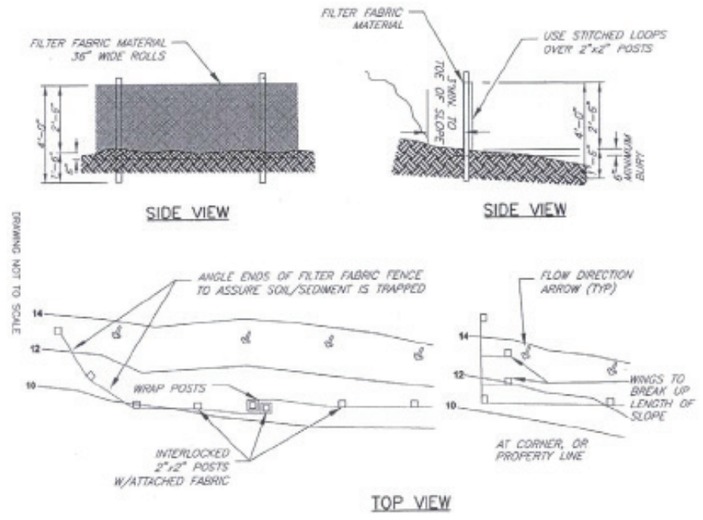
a. Inspection logs must be kept in accordance with DEC and County permit requirements.
b. Install erosion control BMPs prior to any land disturbance.
c. Clearing and grading to be phased to the maximum extent practical to prevent exposed inactive areas from becoming a source of erosion. Construction activities must avoid or minimize excavation and creation of bare ground from October 1 through May 31 each year.
d. Construction activities must avoid or minimize excavation and bare ground activities during wet weather.
e. Preserve existing vegetation when practical. Run-off to be managed by existing forest vegetation.
f. Temporarily stabilize soils and stockpiles at the end of the shift before holidays and weekends, if needed. The Contractor is responsible for ensuring that soils are stable during rain events at all time of the year.
g. No sediment is allowed to leave the site. Significant sediment that has left the construction site must be remediated within 24 hours. Investigate the cause of the sediment release and implement steps to prevent a reoccurrence of the discharge within the same 24 hours.
h. Sediment must not be intentionally washed into storm sewers, drainage ways, or water bodies.
i. Sediment fence: Remove traffed sediment before it reaches one third of the above ground fence height and before fence removal.
j. The contractor must properly manage hazardous wastes, used oils, contaminated soils, concrete waste, sanitary waste, liquid waste, or other toxic substances discovered or generated during construction.
k. No disturbance is permitted beyond the construction limits established in these plans.
l. Do not remove temporary sediment control practices until permanent vegetation or other cover of exposed areas is established. Once construction is complete and the site is stabilized, all temporary erosion controls must be removed and disposed of properly.
m. The ESC measures shown on this plan are the minimum requirements for anticipated site conditions. During the construction period, these measures shall be upgraded as needed to maintain compliance with all regulations.

CONSTRUCTION LIMITS

a. The contractor is limited to a linear construction corridor. Contractor shall coordinate construction access and staging with owner's representative prior to mobilization. Do not stage equipment in sensitive areas.
b. The construction limits along the trail corridor shall not exceed 24" beyond the edge of new trails including space required backslopes. Construction shall not disturb beyond the minimum footprint required to install the work.
c. Contractor to minimize any unnecessary construction activity in stream and buffer areas. Contractor shall only enter these areas if shown in the design or with permission from the owner or owner's representative.
d. Limits of disturbance beyond what is approved will require written permission from Metro.



1 CHECK DAM



2 SEDIMENT FENCE

Metro
600 NE Grand Ave.
Portland, OR 97232-2736

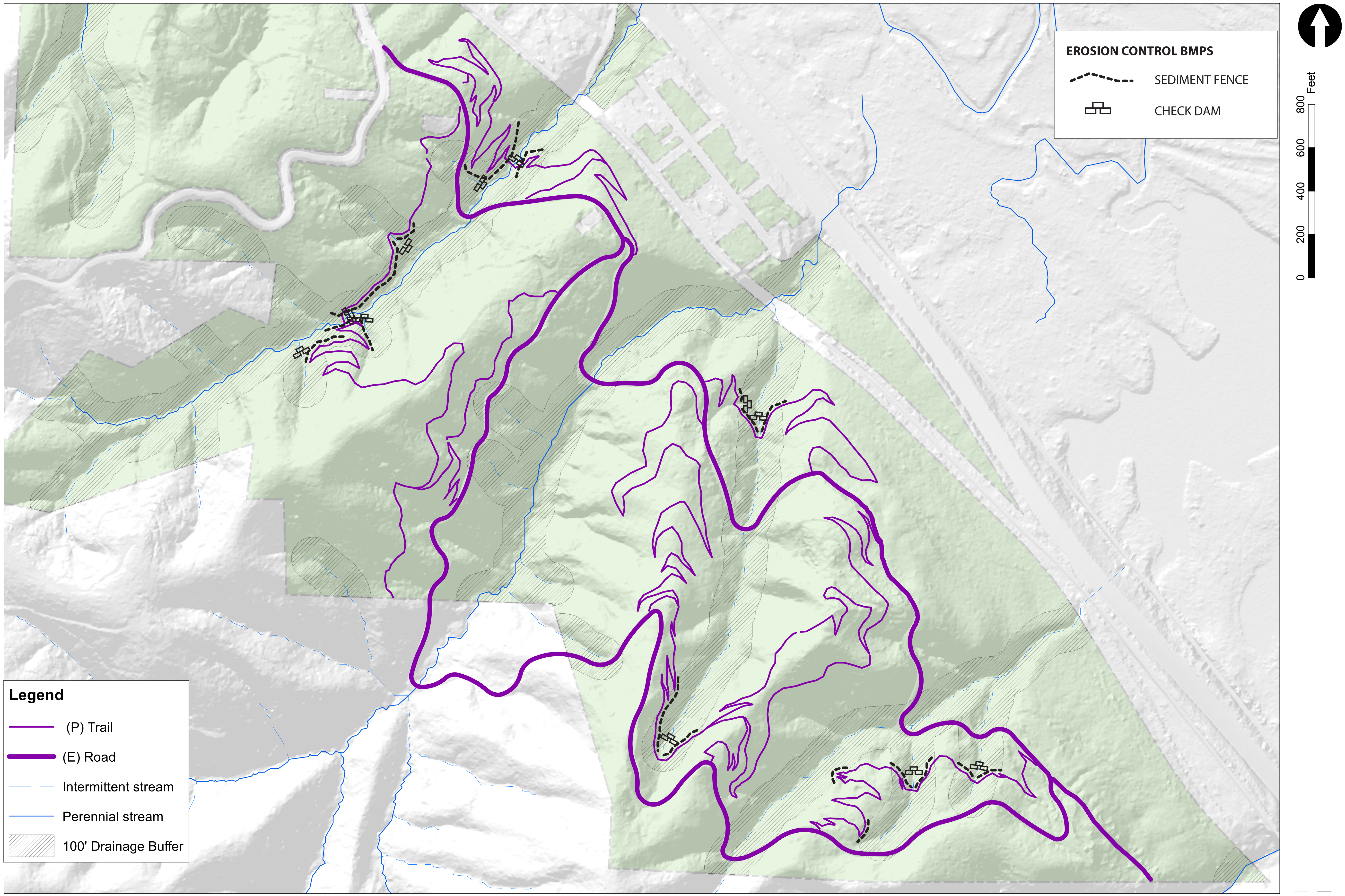
BURLINGTON CREEK FOREST
EROSION CONTROL AND SEDIMENT
PROTECTION PLAN
Mcnamee Road, Multnomah County

SUBMITTAL:
30%
Multnomah County

DATE:
APRIL 15 2022

E1

Exhibit A.26.3



Metro
600 NE Grand Ave.
Portland, OR 97232-2736

BURLINGTON CREEK FOREST
EROSION CONTROL AND SEDIMENT PROTECTION PLAN
Mcnamee Road, Multnomah County

SUBMITTAL:
30% Design

Multnomah County

DATE:
APRIL 15, 2022

E1

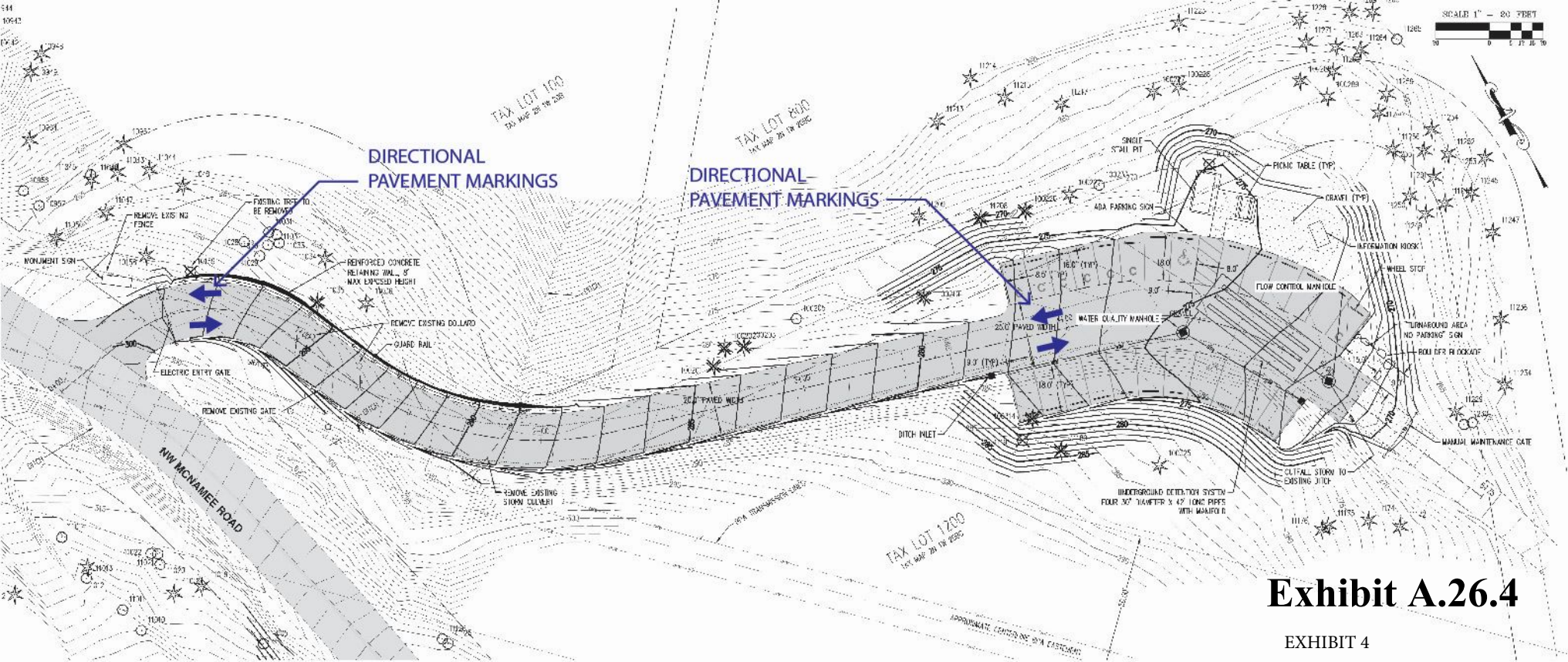


Exhibit A.26.4

EXHIBIT 4

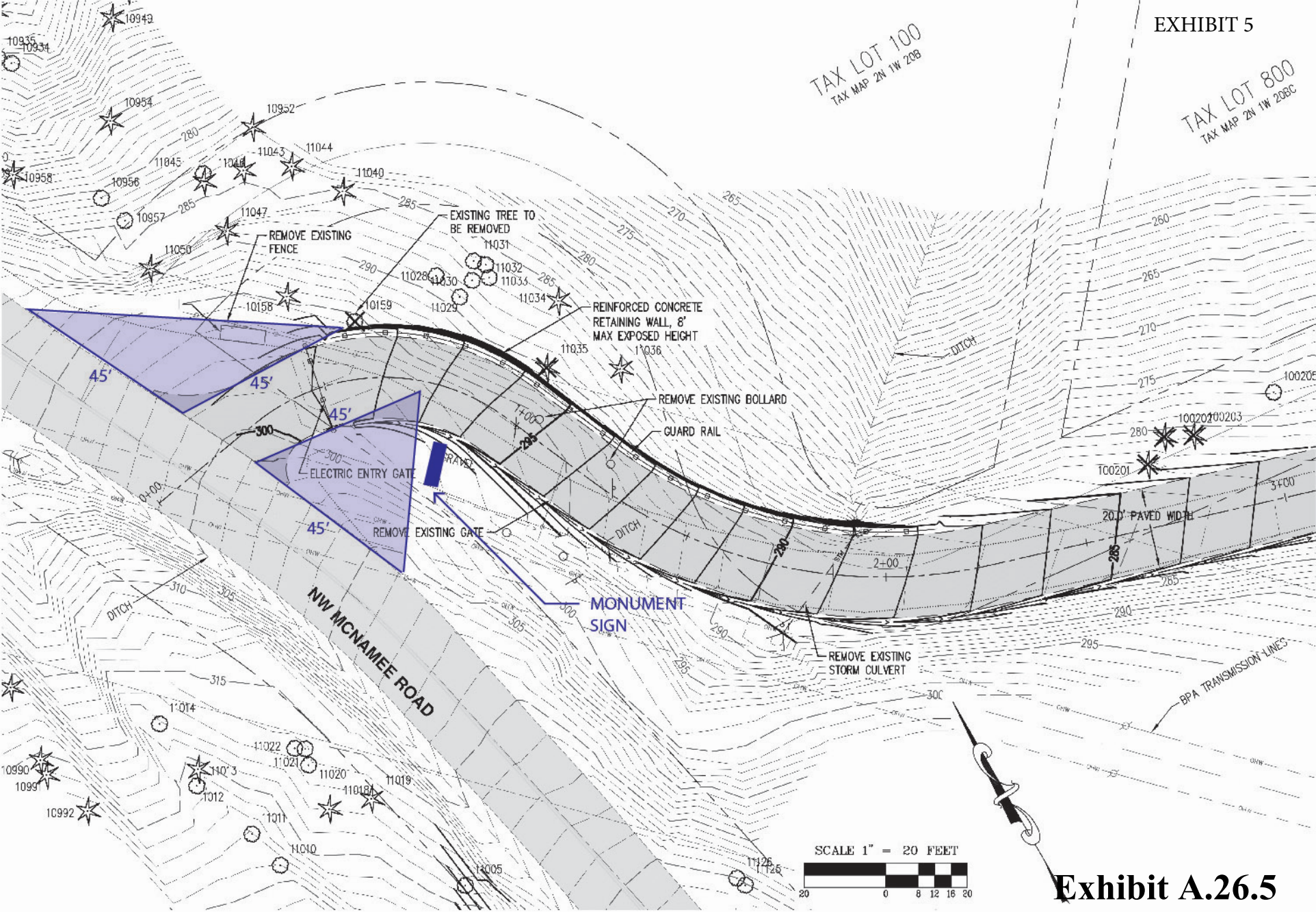
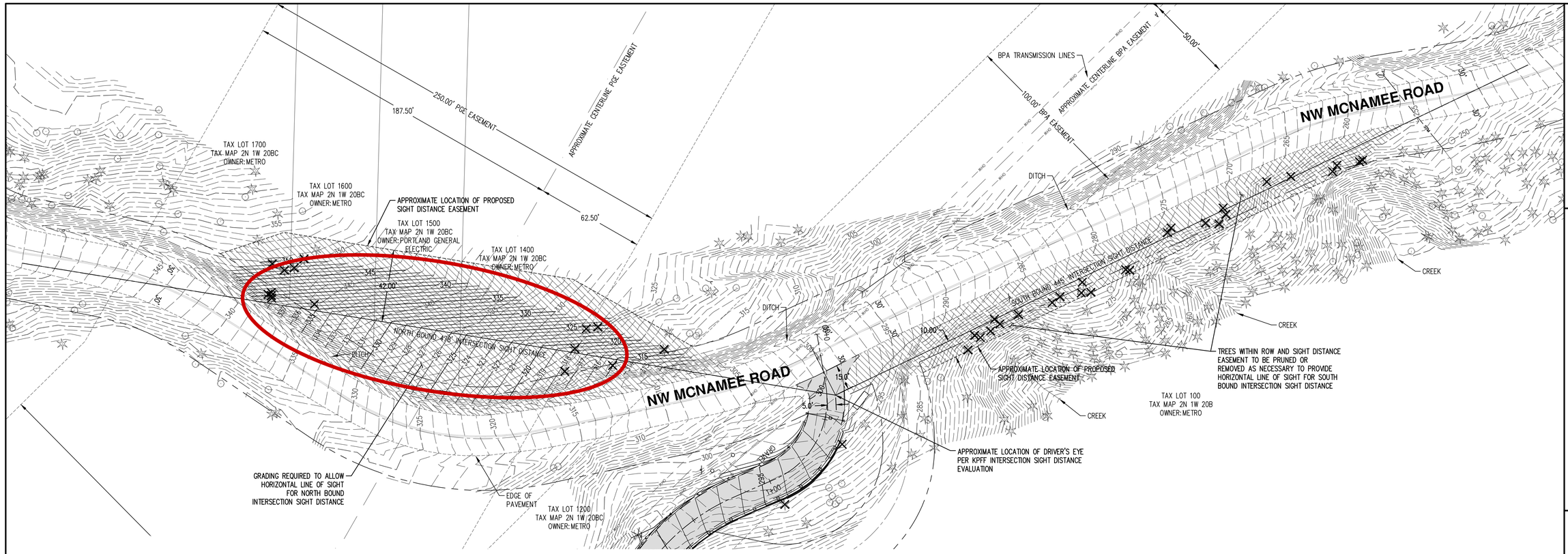


Exhibit A.26.5



SCALE 1" = 30 FEET

30 0 12 18 24 30

NOTES

1. Mitigation area to be planted with low-growing native pollinator plants, subject to PGE approval.
2. Species may include: Prunella vulgaris ssp. Laceolate, Camassia quamash, Sidealcea campestris, Holodiscus discolor, Mahonia aquifolium, Oemleria cerasiformis, Physcocarpus capitatus, Ribes sanguineum, Rosa nutkana, and Rubus parviflorus.

LEGEND:

SIGHT DISTANCE CLEARING AREA

TREE REMOVAL/PRUNING ×

APPROXIMATELY 10,800 SF OF MITIGATION AREA AVAILABLE

TOTAL SF OF IMPACT WITHIN 100' OF OHWL

Trail	Trail Width (inches)	Trail Impact in SEC (sf)	Abutment Impact (sf)	Total Impact within 100' buffer (sf)
A	42	1572	168	1740
B	30	0	0	0
C	24	0	0	0
D	36	873	32	905
E	30	547	56	603
F	30	402	56	458
G	30	0	0	0
H	24	829	32	861
				4,567

BURLINGTON CREEK MITIGATION PLAN

MULTNOMAH COUNTY OREGON

TAX MAP 2N 1W 20BC

TAX LOT 1200

EXHIBIT 6

Exhibit A.26.6

M1