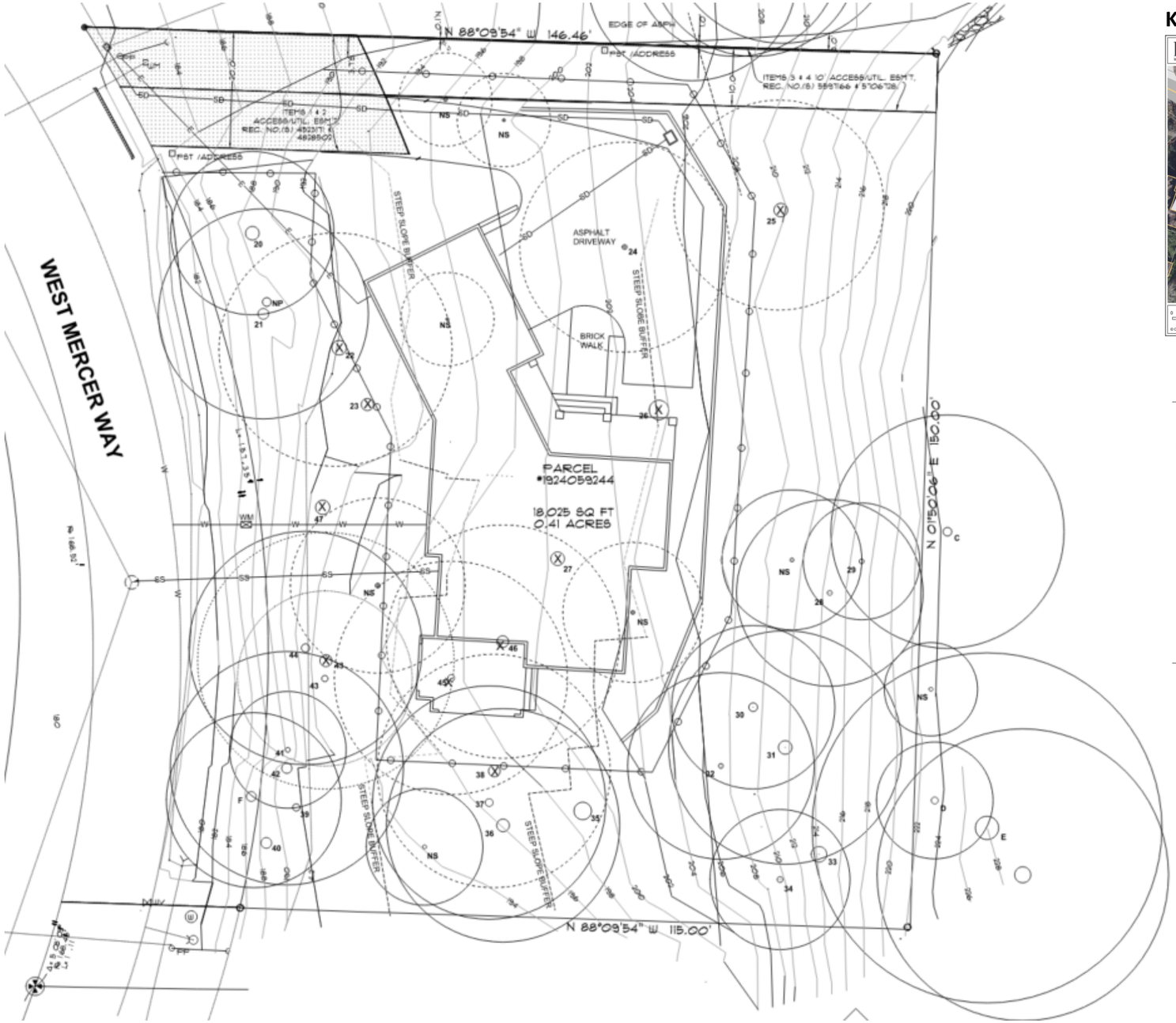
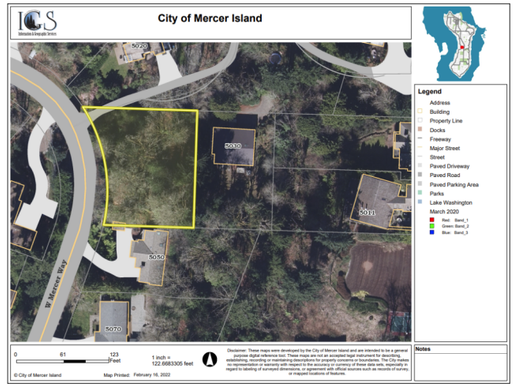


Key Map



Existing ecological functions:

- Habitat (bird, amphibian, small mammals)
- Soil stabilization (roots)
- Stormwater filtering, detention, infiltration (foliage and dense twigs)

NORTH

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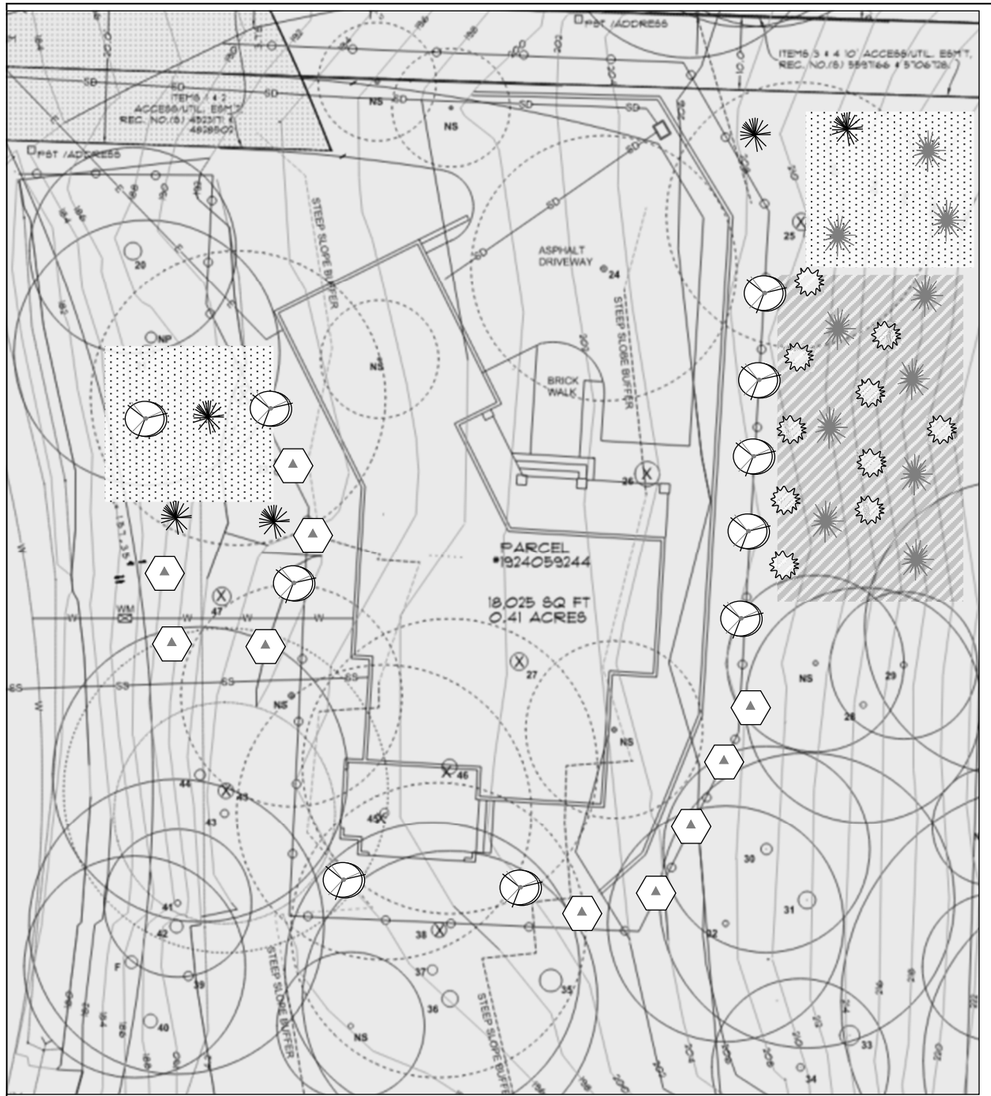
February 22, 2022

Existing Conditions

Sheet #

L-1



NORTH

SYM	QTY	NAME	SCIENTIFIC NAME	SIZE	SPACING
Trees / Shrubs					
	10	Mountain hemlock	*Tsuga mertensiana*	6 ft	10’ o.c.
	5	Douglas-fir	*Pseudotsuga menziesii*	6 ft	15’ o.c.
	10	Vine maple	*Acer circinatum*	1.5” cal.	10’ o.c.
	10	Ninebark	*Physocarpus opulifolius*	2 gal	6’ o.c.
	10	Snowberry	*Symphoricarpos albus*	2 gal	3’ o.c.
Groundcover					
	40	Oregon grape	*Mahonia nervosa*	1 gal	2’ o.c.
	40	Sword fern	*Polystichum munitum*	1 gal	2’ o.c.

NOTES:
60 Trees are required—**25 new trees** will be planted on site, 10 ninebark and 10 snowberry will be replaced after ivy is removed, proposing as **5 replacement trees**. Forty Oregon grape and 40 sword fern are proposed after removing ivy, proposing as **10 replacement trees**. Cumulatively, with restoration and replanting we are proposing this count as **40 replacement trees**.

The remaining 20 required replacement trees will be covered with the fee-in-lieu ($500), resulting in a total fee of $10,000

Plan must be consistent with standard tree and vegetation plan and BMP’s and conform to all Federal, State, and Local agency management requirements.

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Mitigation Plan

Sheet #

L-2

NOTES: Tree Removal and Planting

Tree Removals:

Trees # 22, 23, 25, 38, and 43 are proposed for removal outside of the building footprint due to grading. These should be left as 10-foot-tall wildlife habitat snags. The base of the trees shall be girdled to prevent sprouting.

All logs from tree removals shall be placed deliberately against the slope to remain as nurse logs. Wood must be in contact with the ground and lay perpendicular to the slope. Smaller twigs and branches can be intentionally left on site as coarse woody debris or used as wattles to decrease surface erosion and create planting pockets. All wood, leaf and twig litter that cannot be re-used and left in direct contact with the ground, must be cleaned off of the site.

Clearing and Grubbing Notes:

No grading activity should occur within the restoration area.

All native plants shall be left in-tact throughout the restoration area, except where noted.

Vegetation removal and planting shall be done by hand (no wheeled nor tracked equipment will be used to remove or replace vegetation). Where possible, non-invasive vegetative material shall be composted on site discreetly in one or more concentrated compost pile(s) or properly disposed of off site. Compost piles shall be not more than three feet high and shall not be within 15 feet of an existing retained tree.

Removal of invasive plants will be done using a combination of hand tools, hand-held power equipment, and chemical controls such as foliar herbicide spray and spot-treatments following stem cutting.

Specifically, Ivy (*Hedera* spp) and Himalayan blackberry (*Rubus bifrons*) will be cleared and grubbed by hand -digging out the roots. If instability of slope precludes this grubbing, plants shall be cut at the base and chemical treatment shall be applied when the plants are actively growing. Remove invasive plant material from the site for disposal, if this is not feasible compost on-site on top of woody debris piles so that plant material is not in contact with the ground; this will prevent vegetative propagation. Once plant material is completely dry, it can be spread throughout the site as mulch material.

English holly (*Ilex aquifolium*) and Cherry laurel (*Prunus laurocerasus*) shall be treated with herbicide pellets injected directly into their stems. Trees and shrubs smaller than three inches diameter will be cleared and grubbed. Vegetative matter shall properly disposed of off site.

All herbicide use shall be performed under the supervision of a licensed pesticide applicator with a Commercial Applicator's License per WAC 16-228-1231. All on-site transport, use, and clean-up of pesticides / herbicides shall conform to regulations set forth by WAC 16-228-1220. The applicator will follow King County's noxious weed regulatory guidelines and King County's best management practices for invasive species removal using herbicide.

Basic Planting Instructions
(Partially abridged from the Seattle Standard Mitigation Plan)

Plant between mid-October and mid-December. If that is not possible, plant between mid-December and mid-April. Do not plant during dry months. No slope work should occur during periods of extreme wet weather.

Before planting, set out the plants according to the planting plan. Remove invasive vegetation, including English ivy and Himalayan blackberry, from all areas on the property.

Spacing is approximate and listed as distance between plants 'on center' (o.c.), where existing conditions allow. Adjust locations of plants if the planting hole location per the planting plan requires damaging existing tree roots or native vegetation.

Dig bowl-shaped planting holes at least twice the width of the potted plant. The hole should be just slightly shallower than that of the planted plant.

Rough up the sides of the planting hole.

Remove the plant from its container and gently loosen bound roots on the outer inch of the soil and cut roots that encircle the root ball.

Set the plant in the hole so that the top of the soil remains level with the surrounding soil. Fill the surrounding space with loose native soil. Cover any exposed roots but do not pile dirt on the stem as it can kill some plants.

Firmly press the filled soil to collapse air pockets, but allow the soil to remain loose. Form a temporary water basin around each plant to encourage water collection.

Overplanting can assist in less maintenance disturbance over time by reducing number of times slope is accessed. Assuming that monitoring goals are met.

Water thoroughly.

Mulch with 4 inches of wood chips. If wood chips are not available, mulch with leaves or compost. Do not allow mulch to touch the base of the plant.

Install temporary irrigation (water bags, tree gators, drip tubing etc).Test temporary irrigation and **water plants thoroughly again**.

Maintenance:

Maintenance of the restoration site involves temporary irrigation over a **five year establishment period.** It also includes removal of invasive plant material twice annually during the dry season (July through September). Annual and perennial grasses that seed in shall not be removed during maintenance.

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Planting Specifications

Sheet #

L-3

Monitoring Requirements

Regular maintenance of this area is required for a minimum period of 5 years. This includes regular weeding, removal of invasive species, and supplemental irrigation.

Irrigation is intended to help young plants establish, and should be reduced in volume and frequency with each year so plants are self-sufficient at the end of the maintenance period and not shocked by lack of water when irrigation ceases.

Invasive plant species (specifically ivy) must be managed during the maintenance period. Management includes hand-grubbing, removal from site, and some chemical controls as specifically called out.

Annual inspections by a qualified professional should take place during the growing season. Inspectors should produce a memo with **photographic documentation**, and submit it to the city for review.

Criteria for determining the success of mitigation at the end of 5 years:

- **80% of new plants must be alive,** including all tree specimens.
- Invasive plants must not be present.
- 100% of ground must be covered by vegetation.
- Native plants that self seed will count towards the overall replacement plants.

Contingency actions if mitigation fails (including additional monitoring):

- When new plants die, they must be replaced. If (at any time during the 5 year monitoring period) trees die, or mortality exceeds 20%, the 5-year maintenance clock is restarted at the time of new planting. Re-planting should occur in the fall.
- If invasive plants are still present after 5 years, maintenance must continue until area is free of invasives for 3 consecutive years.

Ecological Function

Within these defined areas, the vegetation provides the following ecological functions:

Habitat (birds, amphibians, small mammals)
Soil stabilization (roots)
Stormwater filtering (foliage and twigs)

Trees Removed

10 trees (# 22, 24, 25, 26, 27, 38, 43, 45, 46, 47)

Tree Planting

25 trees
20 shrubs
80 understory plants

Restoration

Ivy, holly, and Himalayan blackberry removal

Existing ecological functions will be restored or improved in areas outside the house Footprint. In most of the areas Ivy is starting to climb canopies and lead to a decline in both growing conditions and ecological function of the site. Removal of invasive plants and restoration with native evergreen trees and understory plants will lead to a healthier longer term forest on the site. The fee-in-lieu will help replace the lost function of the trees removed in the area of the building footprint.

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Monitoring & Maintenance Plan

Sheet #

L-4

TIMELINE

	Year 1 (summer)	Year 1 (fall)	Year 2	Year 3	Year 4	Year 5
Remove invasive plants: (Ivy, holly, blackberry)	Clear and grub (where possible) from restoration area; systemic herbicide as needed. Cover area with coir fabric to prevent surface erosion until planting	—-	2 x remove or treat any regrowth or new seedlings (May, July). Test irrigation line and re-align in May the same time as first weeding.	1 x remove or treat any regrowth or new seedlings (May, July). Test irrigation line and re-align in May the same time as first weeding.	1 x remove or treat any regrowth or new seedlings (May, July). Test irrigation line and re-align in May the same time as first weeding.	
Existing Trees (Removed / Retained)	Cut ivy at the base and remove ivy from the base.	Pull out dead ivy from canopy if still present	Remove ivy as needed	Removed ivy as needed	--	
New trees, shrubs, groundcover	--	Install in fall with soaker hoses laid horizontally along the slope. Use flagging on new plants so they don't get weeded out.	Irrigation (soaker hose): May x 1 (test line) June x 2 July x 4 August x 4 September x 3	Irrigation: June x 2 July x 3 August x 3 September x 1	Irrigation: June x 2 July x 3 August x 3 September x 1	
Temporary Irrigation						
Temporary sediment control	Install coir blanket across slope where slope is void of vegetation. Small plants can be planted after coir fabric is laid. Blanket will deteriorate within 1 year. Establish temporary maintenance path to avoid excessive surface erosion during weeding/ planting	From pruning, keep 2-4" diameter pieces of wood (if any) for wattles and planting pockets	Reinstall coir logs or blankets as needed	--	--	
Monitoring	Annual inspection with photo-documentation.		Annual inspection with photo-documentation.	Annual inspection with photo-documentation.	Annual inspection with photo-documentation.	Annual inspection with photo-documentation.

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Monitoring & Maintenance Plan

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