

Planned Implementation Schedule

Table 1. General Schedule for Implementation of Restoration 2019-2023

Task	Timeline	Comment
Geotech Review	Winter 2019	Preliminary report and findings.
Understory and Canopy Restoration Treatments	Winter 2019- Spring 2019	Removal of small fallen tree material to allow access. Larger material to stay until establishment of plants per the GeoTech recommendations. Individual trees will be reviewed for crown pruning to reduce future tree failures. This will be done at the guidance of a Consulting Master Arborist.
Invasive Weed Treatment	Spring 2019- Fall 2023	Initial treatments will allow for further site planting in Winter 2020. Continual maintenance after initial treatment of invasive weed species until site conditions improve. Weed treatments will be done bi-annually unless direction provided for more or less treatments.
Seeding	As needed	After initial invasive weed treatments, the site will be evaluated for the need for site seeding of native herbaceous species.
Shrub and Tree Planting	Winter 2019- Fall 2021	Site planting plan will be developed as the project moves forward and areas of concern are identified, and invasive weed species are under control.

Results from GeoTech Report 2018 (Areas 1 and 3)

- “Generally, our review of aerial imagery did not show significant indications of instability within the area(s) of interest. However, we did observe indications of anthropogenic modification and vegetation clearing within the area and some areas of bare soils.” – HartCrowser 2018
- “While we did not observe broad shallow or deeper instability associated with the areas of extensive tree removal, shallow soil failures can be sensitive to changes in slope drainage or overall soil moisture conditions and further modification of slopes in the area may negatively impact slope stability, especially given the observed shallow instability during our reconnaissance. Removal of trees reduces rooting strength, generally increases pore water pressure in shallow soils, and enhances risk for surface erosion through reduced canopy cover.” – Hart Crowser 2018
- “Tree canopy coverage over the affected slopes should be re-established. We understand that the City is considering replacing existing trees with a species of trees that can provide canopy without as much height to preserve views. We recommend that the new trees be planted and well-established before final removal of existing topped trees is completed.” -Hart Crowser

Area 1

Table 2. Area 1 5-year restoration plan

Task	Timeline	Comment
Understory and Canopy Restoration Treatments	Winter 2019- Spring 2019	Removal of small fallen tree material to allow access. Larger material to stay until establishment of plants per the GeoTech recommendations. Individual trees will be reviewed for crown pruning to reduce future tree failures. This will be done at the guidance of a Consulting Master Arborist.
Invasive Weed Treatment	Spring 2019- Fall 2023	Initial treatments will allow for further site planting in Winter 2020. Continual maintenance after initial treatment of invasive weed species until site conditions improve. Weed treatments will be done bi-annually unless direction provided for more or less treatments.
Seeding	As needed	After initial invasive weed treatments, the site will be evaluated for the need for site seeding of native herbaceous species.
Shrub and Tree Planting	Winter 2019- Fall 2023	Site planting plan will be developed as the project moves forward and areas of concern are identified, and invasive weed species are under control.

Table 3. Area 1 planting Prescription

Planting Area	Plant Type	Plant Species/Seed Mix	Number	Spacing	Size	Comment
Planting Area 1	Tree	Pacific yew	25	variable	Container	
		Oregon ash	50	variable	Bareroot	
		Western red cedar	50	variable	Bareroot	
		Grand fir	50	variable	Container	
		Cascara	50	variable	Bareroot	
		Big leaf maple	50	variable	Bareroot	
	Shrubs	Beaked hazelnut	50	variable	Bareroot	
		Oceanspray	50	variable	Bareroot	
		Indian Plum	50	variable	Bareroot	
		Red elderberry	50	variable	Bareroot	
		Mock Orange	50	variable	Bareroot	
		Nootka Rose	50	variable	Bareroot	
		Salmonberry	50	variable	Bareroot	
	Grass	Sunmark Upland Native Erosion Control Mix	Per label		seed	Apply in areas as needed for site stabilization.

Area 2

Table 4. Area 2 5-year restoration plan

Task	Timeline	Comment
Invasive Weed Treatment	Spring 2019- Fall 2023	Initial treatments will allow for further site planting in Winter 2020. Continual maintenance after initial treatment of invasive weed species until site conditions improve. Weed treatments will be done bi-annually unless direction provided for more or less treatments.
Seeding	As needed	After initial invasive weed treatments, the site will be evaluated for the need for site seeding of native herbaceous species.
Shrub and Tree Planting	Winter 2019- 2020	Site planting plan will be developed as the project moves forward and areas of concern are identified, and invasive weed species are under control.

Table 5. Area 2 Planting Prescription

Planting Area	Plant Type	Plant Species/Seed Mix	Number	Spacing	Size	Comment
Planting Area 2	Tree	Pacific yew	50	variable	Container	
		Oregon ash	50	variable	Bareroot	
		Western red cedar	50	variable	Bareroot	
		Grand fir	50	variable	Container	
		Cascara	50	variable	Bareroot	
		Beaked hazelnut	50	variable	Bareroot	
	Shrubs	Oceanspray	50	variable	Bareroot	
		Indian Plum	50	variable	Bareroot	
		Red elderberry	50	variable	Bareroot	
		Blue elderberry	50	variable	Bareroot	
					variable	
	Grass	Sunmark Upland Native Erosion Control Mix	Per label		seed	Apply in areas as needed for site stabilization.

Area 3

Table 6. Area 3 5-year restoration plan

Task	Timeline	Comment
Seeding	As needed	After initial invasive weed treatments, the site will be evaluated for the need for site seeding of native herbaceous species.
Shrub Planting	Winter 2019-2020	Area along the road will be planted with beaked hazelnut. Replace dead shrubs as necessary.
Cut Tree Treatment	Spring 2021-2022	Treat the stumps of the big leaf maple after beaked hazelnut establishment. Other invasives will also be treated as needed.

Table 7. Area 3 Planting Prescription

Planting Area	Plant Type	Plant Species/Seed Mix	Number	Spacing	Size	Comment
Planting Area 3	Shrubs	Beaked hazelnut	20	variable	Bareroot	Apply in areas as needed for site stabilization.
	Grass	Sunmark Upland Native Erosion Control Mix	Per label		seed	

Implementation Phase (ongoing)

Restoration work started in the Winter of 2019 and has continued since that date. Actions are recorded for each area that has been treated to date. An initial allotment of Pacific Yew was planted in the treatment area. Due to prolific herbivory/browsing, additional browse protection measures will be provided to Pacific Yew seedlings that will continue to be integrated throughout the treatment area to gain additional slope support. Winter 2020 we will again plant yews on the site but will provide additional measures to protect them.

Area 1

- Winter 2019 planted area with 200 trees (all evergreen species) – light planting done to allow for spring/fall spraying efforts.
- Spring 2019 – Sprayed area for Himalayan blackberry, rosettes, and ivy.
- Fall 2019 – Spray effort completed on the same species. Review of trees in the area indicate most are healthy and do not require selective pruning.
 - The Southern parcel in Area 1 appears to have recovered and will only require invasive species removal over the next few years. Area is dense in shrub vegetation.
- Winter 2020 – Planting effort will include 200 shrubs in areas treated. Another 200 trees will be planted.

Area 2

- Winter 2019 planted area with 600 trees (all evergreen species) – light planting done to allow for spring/fall spraying efforts.
- Spring 2019 – Sprayed area for Himalayan blackberry, rosettes, and ivy.
- Summer 2019 – Area Himalayan blackberry cut in preparation of spraying.
- Fall 2019 – Spray effort completed on the same species.
 - Area in general in very good shape, it just lacks the next generation of trees needed once the current deciduous forest starts dying.
- Winter 2020 – a total of 700 trees and shrubs to be installed in the riparian area of Miller Creek.

Area 3

- Winter 2019 -- planted with 50 hazelnuts along Lovhar where public trees were cut. The maple trees now exhibit a sub-optimal regrowth pattern that staff will monitor and address with corrective pruning actions as guided by the City's on-call Master Consulting Arborist.
- Summer 2019 – Area next to Miller Creek was selectively weed whacked to remove blackberry.
- Fall 2019 – Spray effort completed on Himalayan blackberry and other invasives.
- Winter 2020 – Area sprayed will be planted lightly with 100 trees to allow for future blackberry treatment.