



OPEN SPACE CONSERVANCY TRUST SPECIAL VIDEO MEETING

Thursday, January 19th, 2023 at 5:00 PM

BOARD MEMBERS:

Chair Carol Lynn Berseth
Vice Chair Geraldine Poor
Secretary Hillary Ethe
Board Members: Lisa Anderl, Marie Bender,
Thomas Hildebrandnt, and Craig Olson

LOCATION & CONTACT

Mercer Island City Hall – Zoom Meeting
9611 SE 36th Street | Mercer Island, WA 98040
Phone: 206.275.7706 | www.mercerisland.gov

We strive to create an inclusive and accessible experience. Those requiring accommodation for meetings should notify the Staff Liaison's Office 3 days prior to the meeting at 206.275.7874 or by emailing sam.harb@mercerisland.gov

Registering to Speak: Individuals wishing to speak live during Appearances will need to register their request with staff at 206.275.7874 or email sam.harb@mercerisland.gov and leave a message before 4 PM on the day of the meeting. Please reference "Appearances" on your correspondence. Each speaker will be allowed three (3) minutes to speak.

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CALL TO ORDER & ROLL CALL, 5 PM

PUBLIC APPEARANCES

REGULAR BUSINESS

1. Approval of Minutes for the October 20, 2022 Meeting
Recommended Action: Approve the October 20, 2022 minutes
2. Draft 2022 Annual Report & 2023 Work Plan
Recommended Action: Discuss draft 2022 Annual Report and 2023 Work Plan
3. Mercer Island Parks Levy update
Recommended Action: Receive presentation
4. Herbicide Use Protocol amendments
Recommended Action: Approve Herbicide Use Protocol amendments

OTHER BUSINESS

5. [Department Update](#)
6. [Quadrant](#) Reports
7. Topics for Future Discussion
8. [Next](#) Scheduled Meeting – April 20, 2023

ADJOURNMENT



OPEN SPACE CONSERVANCY TRUST BOARD MEETING MINUTES October 20th, 2022

CALL TO ORDER AND ROLL CALL

Vice Chair Poor called the meeting to order at 5:05 PM

Vice Chair Geraldine Poor, Secretary Hillary Ethe, and Trustees Tom Hildebrandt, Marie Bender and Craig Olson participated remotely using a video teleconferencing platform by Zoom.

Chair Berseth was absent.

Staff participating remotely included: Deputy Public Works Director Alaine Sommargren. Parks Operations Manager Sam Harb, and Natural Resources Project Manager Lizzy Stone

PUBLIC APPEARANCES:

No public appearances

REGULAR BUSINESS:

1. Approve Minutes of the July 21st, 2022 Meetings

Corrections: Two scrivener's errors were corrected.

Motion by Poor; moved by Olson, seconded by Hildebrandt to:
Approve the Minutes of the July 21st meeting.
PASSED: 6-0

2. Annual Herbicide Application Report

Lizzy Stone, Natural Resources Project Manager presented on the annual herbicide application report.

3. Herbicide Use Protocol Amendments

Lizzy Stone, Natural Resources Project Manager, presented on the proposed Herbicide Use Protocol amendments. The Trust requested additional background information from staff, to be presented at the January 2023 meeting, at which time the Trust will revisit the approval of the amendments.

4. 84th Ave Parking Decommission Project Update

Lizzy Stone, Natural Resources Project Manager, gave an update on the staff's work installing parking barriers along 84th Ave SE, and installing and incorporating mulch. The next step will be for the City crew to finish installing permanent reflective barriers and install native plants in the area.

5. Special Events Policy Revisions

Sam Harb, Parks Operations Manager, brought back the Special Events Policy for Engstrom and Pioneer Park. The Trust discussed the proposed changes, including specifying off trail use, updating staff job titles, increasing staff hourly rates, and removing language related to 2013 restoration costs.

Motion by Hildebrandt, seconded by Anderl to:
Increase the fees by 1.5% in the fee table
FAILED: 2-4

Motion by Bender, seconded by Olson to:
Approve the changes to the Special Events Policy
PASSED 6-0

6. Bike Rack location

Sam Harb, Park Operations Manager, brought forward the topic for discussion. The Trust gave guidance to staff to place a bike rack either by the portable toilets or the picnic table in the Northwest quadrant, with the final location left to the staff's discretion.

7. Engstrom Title Transfer Update

Alaine Sommargren, Deputy Public Works Director, gave an update on the Engstrom Open Space property title transfer process. The City Council approved the title transfer at their September 20, 2022 meeting. City staff will finalize the transfer in early 2023.

8. 2023 Work plan draft

Sam Harb presented the draft of the 2023 OSCT Work Plan. The plan will be finalized at the January 2023 meeting.

OTHER BUSINESS

Department Report

Sam Harb, Parks Operations Manager gave an update on staffing changes as well as volunteer numbers from 2022.

Quadrant Reports

Northwest quadrant – Tree roots are marked for visibility. Paths have been leveled out.

Northeast quadrant – Some of the plantings by the bridge have not survived the dry weather. Pavement cuts on asphalt trail awaiting completion. New paving on 68th is quite nice, reflective coatings on stop signs and crosswalk signs. Ivy work impressive, Ravine Trail in good shape despite downed trees.

Southeast quadrant – A lot of cleanup and piles of brush

Topics for future discussion

Off leash dog feedback can be brought back in later meeting.

Next Meeting

The next meeting is scheduled for January 19th, 2023, at 5:00 PM.

ADJOURNMENT

There being no further business to come before the Open Space Conservancy Trust, the meeting

was adjourned at 7:19 PM

Carol Lynn Berseth, OSCT Chair

Attest:

Andrea Larson, City Clerk



OPEN SPACE CONSERVANCY TRUST STAFF REPORT

Item 2
January 19, 2023
Regular Business

AGENDA ITEM INFORMATION

TITLE:	Draft 2022 Annual Report & 2023 Work Plan	<input checked="" type="checkbox"/> Discussion Only <input type="checkbox"/> Action Needed: <input type="checkbox"/> Motion <input type="checkbox"/> Ordinance <input type="checkbox"/> Resolution
RECOMMENDED ACTION:	Discuss draft 2022 Annual Report and 2023 Work Plan.	

STAFF:	Lizzy Stone, Natural Resources Project Manager Sam Harb, Parks Operations Manager
COUNCIL LIAISON:	Lisa Anderl
EXHIBITS:	1. Draft Open Space Conservancy Trust 2022 Annual Report 2. 2023 Work Plan

SUMMARY

BACKGROUND

The ordinance that established the Open Space Conservancy Trust requires that the Trust report to City Council each year on its activities of the past year and the condition of the Trust properties.

PROCESS

Natural Resources staff have drafted a report based on the 2022 OSCT meeting minutes, Natural Resources work accomplishments, and progress on the 2008 Forest Health Plan. The Trustees may discuss the report and suggest changes at the January meeting. Staff will finalize the report in conjunction with the Chair. The report will be presented to the City Council on the Consent Agenda at the March 7th, 2023 meeting. The report will also include the Open Space Conservancy Trust’s 2023 Work Plan.

RECOMMENDATION

Discuss draft 2022 Annual Report and 2023 Work Plan.



TRUSTEE APPOINTMENTS AND ELECTIONS

In 2022, the Open Space Conservancy Trust held meetings in January, April, July, and October. Meetings were held online via Zoom in order to minimize risk of COVID-19 exposure. The annual election of officers took place at the July meeting. Trustee Carol Lynn Berseth was elected as Chair, Trustee Geraldine Poor was elected Vice Chair, and Trustee Hillary Ethe was elected Secretary.

MERCER ISLAND PARKS AND RECREATION, NATURAL RESOURCES PROGRAM

The Natural Resources program is tasked with managing forest restoration, tree risk mitigation, and trail construction and maintenance on Trust properties. In 2022, the Natural Resources team shifted staffing from two three-quarter time positions to two full-time positions, a Natural Resources Project Manager and an Urban Forestry Project Manager. Both positions are supervised by the Parks Operations Manager.

In 2022, the team piloted a seasonal volunteer coordinator position to lead restoration and trails related volunteer events throughout the City’s parks and open spaces, including many events on Trust Properties. Additionally, the program hired a seasonal trails and restoration crew, consisting of three staff for 6 months. At the end of 2022, program staff included:

- Sam Harb, Parks Operations Manager
- Lizzy Stone, Natural Resources Project Manager
- Andrew Prince, Urban Forestry Project Manager

FOREST HEALTH AND MANAGEMENT

Background

Forest management on Trust properties is directed by the Open Space Vegetation Management Plan 10-Year Evaluation and Update, the Pioneer Park Forest Management Plan adopted in 2003, and recommendations outlined in the 2008 Pioneer Park Forest Health Survey. These plans emphasize the importance of protecting existing tree canopy and maintaining a resilient forest ecosystem by controlling invasive species and planting native species. Activities outlined in the plans include invasive tree treatment, ivy ring creation, ground ivy and herbaceous weed management, targeted maintenance around newly installed plants, and planting native trees and shrubs.

2022 Accomplishments

In 2022, restoration tasks were performed on 21 acres of Trust properties. Work was performed by professional contractors, seasonal field staff, and volunteers. The following is a summary of 2022 accomplishments:

Professional contractors

Restoration Task	Pioneer Park	Engstrom Open Space
Planting maintenance and watering	(335 trees/ 165 shrubs)	n/a
Invasive tree treatment maintenance	8.3 acres	n/a
Ivy rings maintenance	8.3 acres	n/a
Ground ivy and herbaceous weed removal	8.3 acres	n/a

Volunteers

In 2022, the City piloted a seasonal volunteer coordinator position on the Natural Resources team, with the goal of providing regular engagement, education, and volunteer opportunities for the Mercer Island community. With the help of the volunteer coordinator, the City hosted 11 events on Trust properties, working with 179 volunteers for over 425 total volunteer hours. Volunteers removed ivy from trees and the forest floor, planted trees and shrubs, and repaired trails in the southeast and northwest quadrants. The volunteer coordinator role received very positive feedback from the community and the position will be expanded in the next year.

Seasonal Trails and Restoration Crew

In 2022, the seasonal Trails and Restoration Crew consisted of three crewmembers from April through September. The crew conducted planting maintenance on 5 acres in Pioneer Park, maintained ivy rings in 3 acres of Pioneer Park and Engstrom Open Space, managed invasive weeds along trails, and conducted noxious weed monitoring, mapping, and treatments throughout Trust properties.

In addition to their restoration and trail work , the seasonal Trails and Restoration Crew worked with the Parks Maintenance crew to complete a project to limit off-street along 84th Ave SE, near the intersection with SE 66th St. To aid in native plant establishment and habitat restoration, compacted gravel was broken up and mixed with wood chips several months before installing native trees and shrubs along the park edge. Semi-permanent parking delineators were also installed to clarify park boundaries.

Forest Health Plan Progress

The Natural Resources program implements the management recommendations and benchmarks outlined in the Forest Health Plan. The benchmarks serve as a guide to managing forest health on Trust Properties. Between 2009 and 2014, the Natural Resources program was able to get ahead of schedule due to a favorable bidding climate and lower contracting costs. Beginning in 2015, the regional demand for qualified restoration contractors increased and restoration costs increased significantly. Implementation of the Forest Health Plan has slowed during the last two biennia, but Natural Resources staff continue to advance restoration priorities while addressing challenges and making effective use of available resources. The Forest Health Plan proposed starting comprehensive invasive species removal work in 2021 and enrolling 15.5 acres each year. Due to contracting costs and limited contractor availability, the first round of comprehensive removal was started on 8.8 acres of Pioneer Park in 2022.

The following outlines actual progress made to date compared with proposed benchmarks outlined in the 2008 Forest Health Plan:

Table 1. Forest Health Plan Cumulative Progress in Pioneer Park, 2009-2022

Restoration Task	Proposed (acres)	Actual (acres)
Invasive tree treatment and maintenance*	217	209
Ivy ring creation and maintenance*	223	130
Tree planting	93	75
Plant maintenance (1 year post-planting + additional depending on site conditions)	93	90
Ground ivy and herbaceous invasive weed management	31	9

* Invasive tree treatment and ivy rings require a first round of treatment, followed by additional maintenance treatments as weeds grow back. Acreage listed shows both first and second round treatments combined.

LETTERBOXING PROGRAM

The Letterboxing Program is a collaborative effort between Parks and Recreation staff, OSCT Board Members, and community volunteers. Due to delays caused by COVID-19 and staffing changes, the program has been on hold since 2020. The Natural Resources team plans to restart the program in 2023.

LEASH POLICY EDUCATION EFFORTS

Leash policy education efforts were restarted in 2022 with educational posts on the City's website and social media channels, as well as distribution of educational brochures. In 2022 there were no law enforcement issues related to off-leash dogs in Pioneer Park or Engstrom Open Space.

TRAILS

In 2022, the Natural Resources team continued to maintain trails by conducting stair tread repairs and regular trail brushing. In addition to regular maintenance, the Trails and Restoration crew replaced water bars to redirect water flow on the Salal, Fir, and Perimeter trails in the SE quadrant.

In June, the Mercer Island Mountain Bike Alliance hosted a volunteer event to re-gravel and fill potholes on trails in the NW quadrant in partnership with City staff.

ENGSTROM OPEN SPACE TITLE TRANSFER

On September 20th, 2022, the City Council passed a resolution to direct the City to transfer the title of Engstrom Open Space to the Open Space Conservancy Trust. The title transfer will be completed in early 2023.

SPECIAL EVENTS POLICY

In 2022, staff suggested several updates to the Pioneer Park and Engstrom Open Space Special Events Policy for the Trust's consideration. Staff worked with the Trust to update several outdated items in the policy, including fees, staff costs, and accepted conduct on Trust lands.

URBAN FORESTRY

Tree risk mitigation continues to be a primary focus of urban forestry efforts in Pioneer Park. Certified staff arborists make recommendations each year to remove dead, dying, or structurally defective trees to reduce the risk of trees failing and causing injury, property damage, or interference with utility lines or roadways. Trees are retained through corrective pruning or as wildlife snags when possible, but tree removals are occasionally necessary. In the case of whole tree removals, the wood from the tree is left to decompose on site as habitat and to improve soil conditions. Dead and dying trees continue to make up the majority of tree removal work. In 2022, seven trees were removed from Trust properties to reduce risk of failure. Staff continued to monitor park boundaries regularly for trees in need of pruning or removal.



Mercer Island Open Space Conservancy Trust

2023 Work Plan - **DRAFT**

Meeting Date	Agenda Item
January 19	Annual Report to Council: The Trust is required in its bylaws to report to City Council each year on the status of Trust properties.
	OSCT Work Plan: The Trust develops a list of topics that it intends to address during the year (this document). This work plan is submitted to City Council with the Annual Report as a courtesy.
	Parks Levy Update: Staff will update the Trust on the recent Parks Levy and impact to Pioneer Park and Engstrom Open Space
	Herbicide protocol amendments: Staff proposes changes to the current herbicide use protocol
	Quadrant Reports (ongoing item): Trustees will report on the condition of certain quadrants at Trust board meetings.
April 20	Trail Work Plan: City staff report to the Trust its intended maintenance activities in the spring of each year, and recap work completed in the previous year. This report includes status of recently decommissioned social trails on Trust properties.
	Letterboxing program: The Trust will reach out to letterboxing volunteers about the potential to launch the program.
	Restoration Work Plan: City staff report to the Trust its planned restoration activities, and recap work completed in the previous year.
	Herbicide application report: City staff will report on the use of herbicides on Trust properties each year, in accordance with the Herbicide Use Protocol.
July 20	Election of Officers: The Trust is required by its bylaws to elect officers at its July meeting each year.
	Off-leash dogs: The Trust will evaluate success of education measures over the past year and discuss possible changes.
	Engstrom title transfer: Staff will provide an update on successes
October 19	Eagle Project recognition: The Trust will recognize Eagle projects that have benefitted Trust Properties.

Note: The listing of an item under a particular month indicates that the item will be introduced at that meeting. There may be follow-up discussions and decisions at subsequent meetings, as directed by the Chair.



OPEN SPACE CONSERVANCY TRUST STAFF REPORT

Item 3
January 19, 2023
Regular Business

AGENDA ITEM INFORMATION

TITLE:	Proposition No. 1 Parks Levy Impacts on Pioneer Park and Engstrom Open Space	<input checked="" type="checkbox"/> Discussion Only <input type="checkbox"/> Action Needed: <input type="checkbox"/> Motion <input type="checkbox"/> Ordinance <input type="checkbox"/> Resolution
	RECOMMENDED ACTION:	

STAFF:	Sam Harb, Parks Operations Manager Alaine Sommargren, Deputy Public Works Director Lizzy Stone, Natural Resources Project Manager
COUNCIL LIAISON:	Lisa Anderl
EXHIBITS:	1. Prop 1 Levy presentation

SUMMARY

On November 29th, 2022, King County Elections officially certified the passage of Proposition 1 with a result of 64.27% of Mercer Island voters in favor. The City Council approved the updated 2023-2024 biennial budget, with the inclusion of these additional funds, on December 6th, 2022. This is a renewal of a 15-year levy that will continue funding for parks and open spaces, as well as increase funding for ecological restoration in Pioneer Park and Engstrom Open Space and playground replacements throughout the park system. Funding from the levy has increased the budget for Pioneer Park and Engstrom Open Space from \$191,200 in 2022 to \$416,824 in 2023, with a focus on implementing much of the remaining work identified in the Pioneer Park Forest Management Plan.

In June of 2022, staff presented a detailed explanation of the Pioneer Park Forest Management Plan as well as levy outcomes. This video can be viewed here: <https://letstalk.mercergov.org/parks-levy-renewal/widgets/50264/videos/3708>

RECOMMENDED ACTION

Receive presentation.



Prop 1 Impacts to Pioneer Park and Engstrom Open Space



Background

- Renewal of 15-year levy set to expire in 2023
 - Ended current levy one year early, shifted to 16 years
- Continued implementation of 2008 Forest Health Survey and Forest Management Plan (2009)
 - Rising costs in contracted work, need for additional funding
- Continued funding of Open Space, Luther Burbank Park budgets, increases in playground replacement funds

Pioneer Park & Engstrom Open Space Item 3.

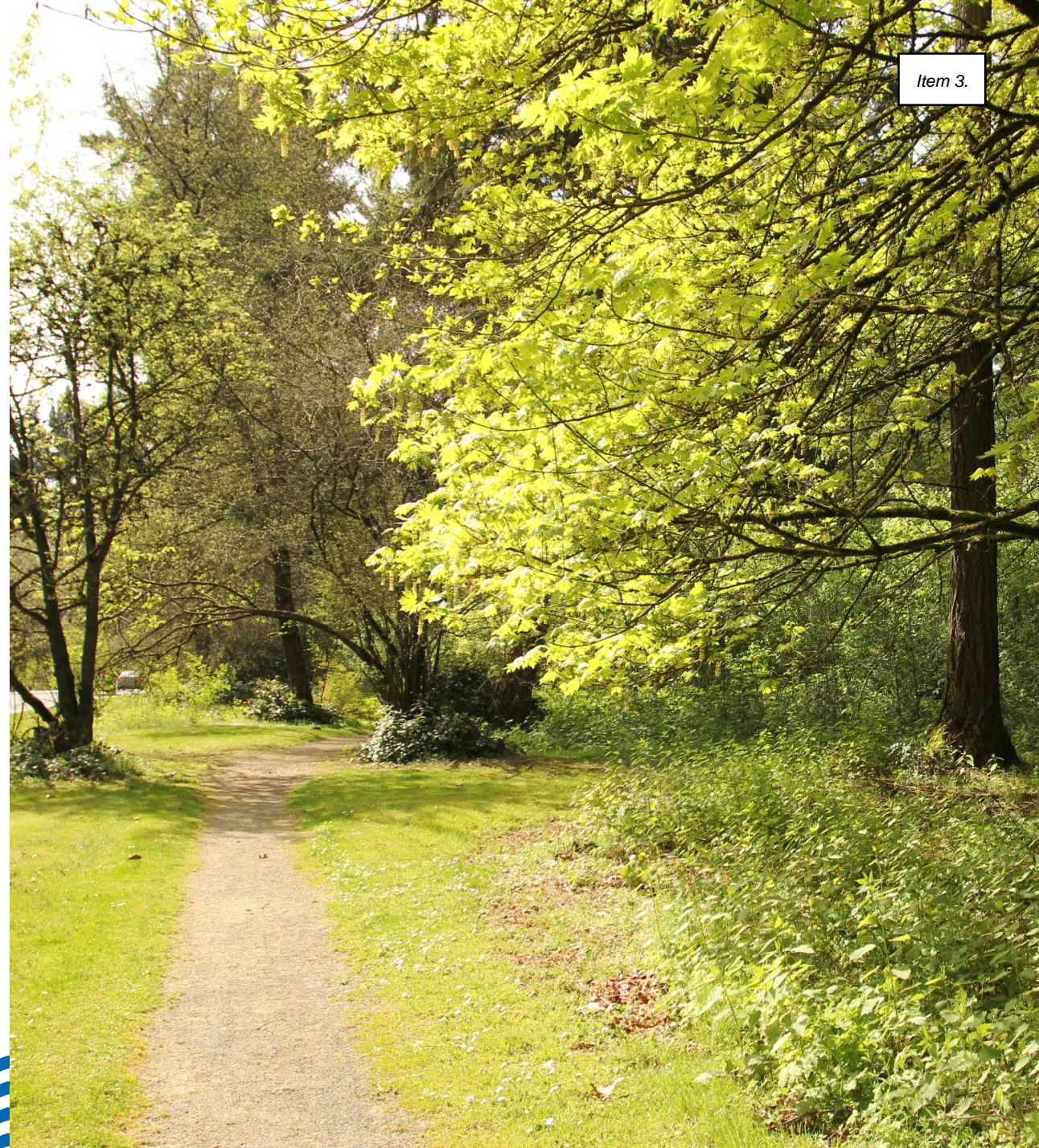
Over the next biennium:

- Comprehensive multi-year weed removal.
- Enroll 6.5 new acres each year.
- Continued annual follow-up treatment of 10 acres (2022).
- Plant 900 trees and shrubs.



Budget Impacts

- Increase in budget from \$191,200 in 2022 to \$416,824 in 2023 with ongoing incremental increases





Staff impacts:

- Increase in contracted work, project management by staff
- Continued volunteer management Spring 2023
- Continued seasonal crew activities





OPEN SPACE CONSERVANCY TRUST STAFF REPORT

Item 4
January 19, 2023
Regular Business

AGENDA ITEM INFORMATION

TITLE:	Herbicide Use Protocol Amendment	<input type="checkbox"/> Discussion Only <input checked="" type="checkbox"/> Action Needed: <input checked="" type="checkbox"/> Motion <input type="checkbox"/> Ordinance <input type="checkbox"/> Resolution
RECOMMENDED ACTION:	Approve Herbicide Use Protocol amendments	

STAFF:	Lizzy Stone, Natural Resources Project Manager
COUNCIL LIAISON:	Lisa Anderl
EXHIBITS:	1. Herbicide Use Protocol Draft Changes

SUMMARY

At the October 20, 2022 Open Space Conservancy Trust meeting, Trustees received a staff presentation and discussed proposed updates to the OSCT Herbicide Use Protocol. The staff report for that agenda item can be found here: [03 Staff Report- Herbicide Use Protocol Amendment](#) . The proposed Herbicide Use Protocol amendments include the use of triclopyr and imazapyr for specific noxious weed treatments on Trust properties, as well as several other minor updates. Including options for imazapyr and triclopyr treatments will provide more effective treatment of persistent noxious weed species, allowing for less herbicide to be used over time, in addition to decreasing reliance on glyphosate (eg. RoundUp) products. All proposed amendments are in alignment with the King County Noxious Weed Control Program’s recommended best management practices.

In the October 2022 discussion, Trustees requested more information about the category system used to describe the effects of herbicides on the environment, the biological mechanisms behind the herbicides’ function, and a summary of herbicide practices in nearby municipalities. The motion to approve the Herbicide Use Protocol amendments was tabled until the January 2023 meeting to allow for more discussion and a presentation of the requested information.

Ecotoxicity Categories

The EPA compiles and evaluates extensive research on each approved herbicide’s toxicity for a spectrum of organisms and ecosystems. One measure of toxicity is the ecotoxicity category, ranging from Practically Nontoxic (the lowest toxicity measure on the scale) to Very Highly Toxic. The ecotoxicity category describes how toxic a pesticide is to different organisms at varying levels of pesticide exposure. Very Highly Toxic pesticides are lethal at very low doses, while Practically Nontoxic pesticides are only lethal at extremely high doses. The aquatic formulations of glyphosate have been determined to be Practically Nontoxic to fish, invertebrates, birds and mammals. Triclopyr has been determined to range from Practically Nontoxic to Slightly Toxic to birds and estuarine/marine invertebrates and to be Practically Nontoxic to fish and freshwater invertebrates. Imazapyr has been determined to be Practically Nontoxic to fish, invertebrates, birds, or mammals. Evidence suggests

that glyphosate, triclopyr and imazapyr are minimally toxic to amphibians though an official classification has not been published.

Mode of Action

The mode of action is the way in which an herbicide controls susceptible plants. Mode of action usually describes a biological mechanism or enzyme in the plant that the herbicide disrupts, impacting plant growth and health. Diversifying the mode of action when choosing herbicides is important to reduce the risk of weeds building resistance to any one chemical.

Imazapyr, triclopyr, and glyphosate, the three herbicides that would be approved for select use with the proposed Herbicide Use Protocol amendments, each have a different mode of action. Imazapyr inhibits the formation of acetolactate synthase, an amino acid that is required for shoot and root growth. Triclopyr interrupts auxin absorption in plants, leading to misshapen growth and eventual death in broadleaf plants. Glyphosate interrupts the formation of an amino acid referred to as EPSP, which quickly impacts plant growth and leads to treated plants dying within days to weeks.

Herbicide Use Strategies in Nearby Municipalities

Like Mercer Island, many municipalities in the Pacific Northwest region strive to minimize the use of synthetic herbicides on City properties. Many of the region's cities and agencies have adopted herbicide use policies or integrated pest management plans. Cities such as Seattle, Bothell, Tacoma, and Kirkland have made efforts to significantly reduce herbicide use in their landscapes.

In 2019, the City of Seattle restricted the use of glyphosate products unless an exception is approved by special process. In its place, manual and cultural weed management approaches are used wherever possible, while imazapyr, triclopyr and several other synthetic herbicides are used to treat noxious weeds such as holly, laurel, blackberry, knotweed, and others.

The City of Bothell eliminated the use of synthetic herbicides and pesticides except to address public safety hazards and control noxious weeds. Glyphosate is used only to treat noxious weeds such as knotweed.

The City of Portland published an updated integrated pest management plan in 2019, which emphasizes planning, design, cultural practices, and manual removal as first choices for weed management. The City of Portland permits herbicide use in specific, previously defined cases, including glyphosate and triclopyr treatment for invasive weeds in natural areas.

The City of Kirkland aims to minimize herbicide and pesticide use wherever possible, while still allowing for King County, Department of Ecology, and Department of Agriculture best management practices to be followed for noxious weed management in natural areas. Glyphosate, imazapyr, and triclopyr are still selectively used to control invasive weeds in parks.

RECOMMENDATION

Approve Herbicide Use Protocol amendments.



HERBICIDE USE PROTOCOL 2022/2023 UPDATES

OPEN SPACE CONSERVANCY TRUST
JANUARY 19, 2023



Overview

- Summary of protocol changes
- Ecotoxicity categories
- Mode of Action
- Nearby municipality herbicide policies



Summary of Herbicide Use Protocol changes

- Allow alternative herbicides- triclopyr and imazapyr
- Limit herbicide treatment of English ivy to steep slopes
- Add cut and treat herbicide on blackberry stems
- Add treatment of targeted herbaceous weeds

Takeaway points

- Decrease reliance on RoundUp products
- More effective treatment methods= less herbicide used over time

- Recommendations are consistent with King County Noxious Weeds best management practices and other municipalities

EPA Ecotoxicity Categories: How toxic a pesticide is to different organisms at different concentrations.

Ecotoxicity Categories for Terrestrial and Aquatic Organisms

Toxicity Category	Avian: Acute Oral Concentration (mg/kg-bw)	Avian: Dietary Concentration (mg/kg-diet)	Aquatic Organisms: Acute Concentration (mg/L)	Wild Mammals: Acute Oral Concentration (mg/kg-bw)	Non-Target Insects: Acute Concentration (µg/bee)
very highly toxic	<10	<50	<0.1	<10	
highly toxic	10-50	50-500	0.1 - 1	10 - 50	<2
moderately toxic	51-500	501-1000	>1 - 10	51 - 500	2 - 11
slightly toxic	501-2000	1001-5000	>10 - 100	501 - 2000	
practically nontoxic	>2000	>5000	>100	>2000	>11

Table shows median lethal dose concentrations. Chemicals classified as more toxic are lethal at smaller doses.

Mode of Action: describes the biological process or enzyme in the plant that the herbicide interrupts.

- Herbicides interrupt biochemical processes in plants
- Grouped by biological mechanism
- Over-reliance on a single Mode of Action can lead to herbicide resistance

Imazapyr

2 | ALS INHIBITORS
(acetolactate synthase)

Triclopyr

4 | SYNTHETIC AUXINS
(TIR1, AFB5 and unknown auxin receptors)

Glyphosate

9 | EPSP SYNTHASE INHIBITOR
(5-enolpyruvyl-shikimate-3-phosphate)

Nearby municipalities

City of Seattle	Dramatically reduced RoundUp use. Utilize manual removal, imazapyr, triclopyr.
City of Bothell	Herbicide only permitted for public safety or to treat noxious weeds.
City of Portland	IPM strategy in place- in natural areas glyphosate, triclopyr, among others approved. Imazapyr approved in specific cases.
City of Kirkland	Seasonally limited synthetic herbicide use in high-use parks; King County Noxious Weeds BMPs followed in natural areas