

City of Lakewood Street Ends Water Access Concept Designs

Technical Memo

**City of Lakewood –
Parks, Recreation and Community
Services**

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To:	<u>Coordinator</u>	Date:	<u>11-22-2022</u>
From:	<u>J. A. Brennan Associates, PLLC</u>	Project:	<u>City of Lakewood Street Ends Water Access Concept Designs</u>

Street Ends Water Access Concept Designs Technical Memo

Introduction

The City of Lakewood contracted with Landscape Architecture firm JA Brennan Associates to complete an inventory of street ends as public access sites in an effort to explore the potential to enhance and better connect the community to water-access within the City. Street ends are designated public right-of-way (ROW) and border four lakes within the City including American Lake, Gravelly Lake, Lake Louise, and Lake Steilacoom. Following field assessment for each site, research has been conducted to review policy relating to the development of each site, and a design program was developed to guide schematic-level development. Using field observation, City GIS data, and following equity and environmental goals outlined in regional and City planning documents; concept site plans and cost estimates have been developed for each location.

These sites were previously selected and assessed in 2009 with Parks and Recreation Advisory Board (PRAB) review and recommendation as shown in Appendix A on page 33. During the previous assessment and report, 14 total sites were selected to measure potential for public access and gauge community support of future potential development.

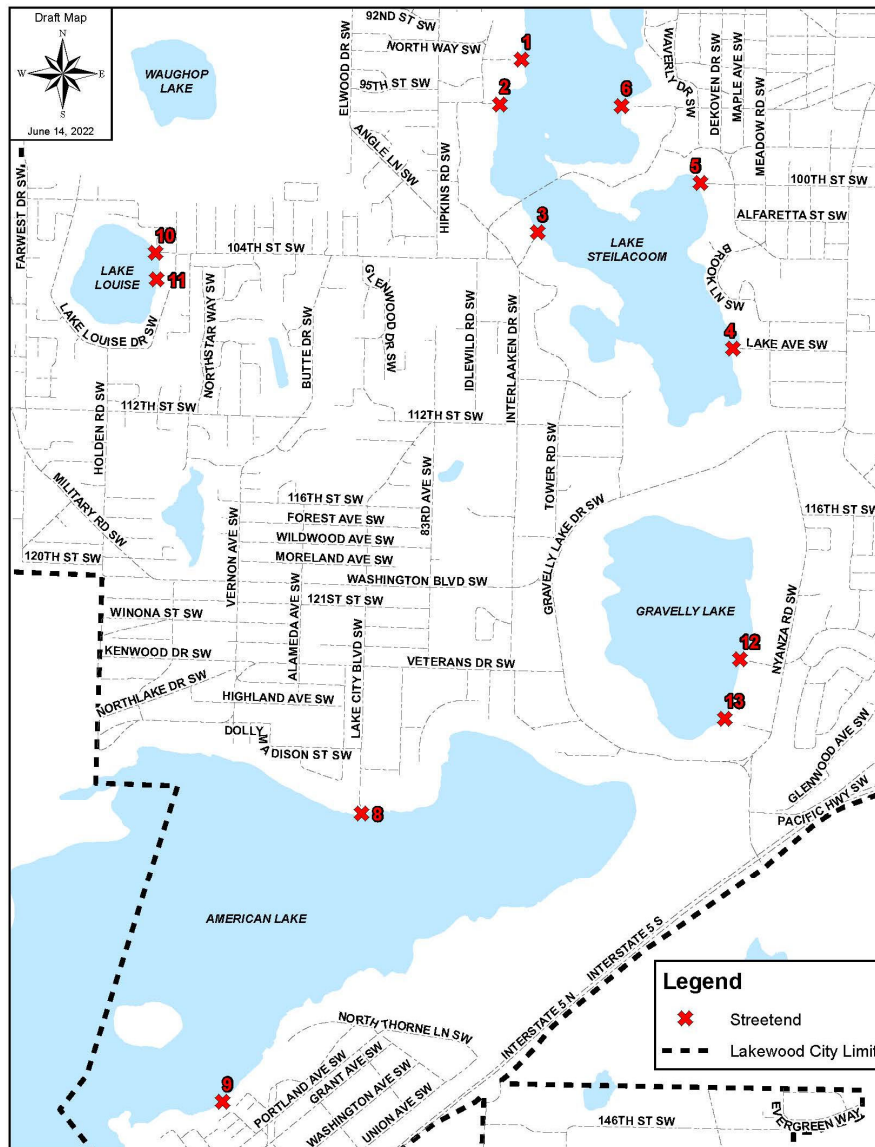
As outlined in the following memo and proposed concept site plans, the potential for improved waterfront access will enhance and expand recreational opportunities for the community and meet the needs of comprehensive and recreational policy plans by improving access to water, improving and increasing recreational opportunities while providing thoughtful environmental management. The scale of opportunity for access improvements is varied as each site is unique in size, terrain, vegetation and existing capacity for use. Due to current site access challenges including dense vegetation and impassable terrain encountered during field assessment, two of the 12 total sites were not included in the site plan proposed development designs (Hilltop Ln on Gravelly Lake and Holly Hedge Ln on Lake Steilacoom).

The project site numbering follows the numbering system developed as part of the 2009 Lakefront Street Ends Summary Table as shown in Fig 1. and by map in Fig 2.

Figure 1: Street Ends

Street End Site	Lake
1. Westlake Ave	Steilacoom
2. Mt Tacoma Dr	Steilacoom
3. Beach Lane	Steilacoom
4. Lake Avenue	Steilacoom
5. 100th Street	Steilacoom
6. Holly Hedge Ln.	Steilacoom
8. Lake City Blvd	American
9. Wadsworth St	American
10. 104th St/ Melody Ln	Louise
11. Holden St	Louise
12. Hilltop Ln	Gravelly
13. Linwood Ln	Gravelly

Figure 2: Street End locator map developed in 2009



Design Considerations

- One of the four lakes within the City currently has no developed public access to the water- Gravelly Lake
- Current public access to water within Lakewood is limited and capacity issues at certain sites such as American Lake Park has experienced safety issues in recent years.
- Creating equitable access to the water throughout the City is desired
- Inquiries from the public regarding access to the water via street ends at all of lakes continue to be made with emphasis on seasonal peaks in demand during the summer months

Preliminary Project Goals

1. Improve utilization of public land for all people
2. Improve sense of place at designated street ends
3. Provide community and neighborhood water access
4. Improve the livability of Lakewood
5. Improve the diversity of recreational activities
6. Improve and promote environmental stewardship
7. Provide ADA access (at a minimum of one site per lake)**
8. Enhance views
9. Consider impacts on and to neighbors
10. Improve community walkability
11. Enhance visibility via CPTED practices to improve site safety
12. Improve wayfinding to and at each site
13. Create equitable lake access and recreation on public lands

**ADA Access: Harry Todd Park, on the south side of American Lake in the Tillicum community was recently improved in 2021 to provide ADA access and planning & future construction are currently underway to provide ADA access to the lake at American Lake Park (slated to be completed by 2024).

Criteria for Proposed Improvement of Sites for Design

- Sites previously identified and assessed as outlined in City of Lakewood Legacy PROS Plan
- The site can support a diversity of recreation and includes easy access to the lake's waterfront.
- Unused or under-utilized City ROW has the opportunity for improved public access to the lakefront.

Supporting Plans and Policies

- State SCORP Plan
- City of Lakewood Legacy PROS Plan
- City of Lakewood Shoreline Management Program
- Lakefront Street Ends Summary Book Report August 15, 2008
- Relevant Code to consider as development occurs:
 - LMC Chapter 14.02 Environmental Rules and Procedures
 - LMC Chapter 18A.70 Community Design, Landscaping, and Tree preservation

Other Related Plans and Documents

- Pierce County Bike Map Plan

Property Ownership Considerations

- Some sites appear to have encroachment by neighbors, which will need to be formally identified through future site surveys and legally addressed before finalizing any implementation strategy.

Site Inventory & Analysis

For this inventory, JA Brennan Associates completed a site visit with City staff and completed a photographic inventory. Using City GIS data and field observations, a base map for each site has been prepared in coordination with City staff. The inventory includes site soils, topography, limited wind and wave impacts analysis, views, surrounding land use, existing and proposed access, and vegetative communities. Following is a summary of the findings and observations of the access sites.

Site Soils Summary:

Soils investigation was based on a limited review of the Natural Resource Conservation Service (NRCS) data. For the most part, the soils are consistently the same. During the next stage of design, a geotechnical investigation is recommended to verify soil for the sites if structures are proposed, as required. Several sites have nothing more than paths and landscaping and will not need geotechnical work.

The site soil appears suitable for site development. The NRCS classification notes include:

- Pierce County Area, Washington
41A—Spanaway gravelly sandy loam

"The Spanaway series consists of very deep, somewhat excessively drained soils that formed in glacial outwash. They are on terraces and plains. Slopes are 0 to 15 percent. The mean annual precipitation is about 1,270 millimeters. The mean annual temperature is about 10 degrees C."

Verify soils for each site, as required.

Zoning Summary:

A review of the land use code was conducted to assess the surrounding zoning for each site. The zoning is consistently R2 or R3, which is single-family residences.

Residential R3 – Single family residence – Section 18A.10.120

"The Residential 3 (R3) and Residential 4 (R4) zoning districts are the City's primary residential zones, which provide for single-family dwellings in established residential neighborhoods. The Residential 4 (R4) designation provides for increased residential density through smaller lot sizes and allowance for residential development comprising two (2) units per lot.

The R3 and R4 zoning districts are applicable to lands designated Single-Family in the comprehensive plan."

Link:

<https://lakewood.municipal.codes/LMC/18A.10.120>

Residential R2 – Single family residence – Section 18A.10.120

"The Residential 1 (R1) and Residential 2 (R2) zoning districts provide for a continuation of large residential lots in specific areas where a pattern of large lots and extensive tree coverage exists. These zoning districts seek to preserve the identity of these residential areas, preserve significant tree stands and riparian environments along lake shores and within stream corridors, and reduce traffic volumes in the east-west arterial corridors.

Applicability. The R1 and R2 zoning districts are applicable to lands designated Residential Estate in the comprehensive plan."

Link:

<https://lakewood.municipal.codes/LMC/18A.10.120>

Shoreline Critical Area Ordinance:

The Shoreline Management Program and Chapter 14.02 Environmental Rules and Procedures should be consulted during any future final design development to comply with regulatory policy.

Field observations noted indication of wetland species. An OHWM delineation should be performed for the next phase of the design as development within critical area buffers such as along a shoreline or wetland, including impervious surfaces, is subject to the requirements for Critical Areas contained in this SMP. Impervious surface coverage within the approved lake setback shall be limited to ten percent (10%) within twenty-five (25) feet of the OHWM and twenty percent (20%) within the remaining portion of the applied setback.

Program and Concept Design

The project aims to develop ROW street end sites to improve water access to the variety of lakes in the City of Lakewood for the greater community and to provide opportunities for passive activities at each site. The primary passive activities may include:

1. Lake and wildlife viewing
2. Hand-carry boating access
3. Small gathering
4. Wading
5. Picnicking
6. Fishing
7. Socializing

Design Approach

The following is a list of activities and facilities planned for the sites depending on site conditions. These program elements will be common to each site as appropriate to the scale, vegetation, and topography.

Consistent design program elements between sites include:

Parking Strategy:

- a. Prioritize using existing available parking in the ROW, with no significant improvements. No vehicular parking stall striping will be provided unless a site is ADA accessible.
- b. ADA parking at sites designated as accessible only. ADA stall will be designed to meet van stall guidelines. One stall with 96" (8') parking space and a 96" (8') aisle, or a 132" (11') parking space and a 60" (5') aisle.
- c. One ADA site per lake with a preference for Westlake on Steilacoom Lake, Lake City Blvd on American Lake & Holden St. on Lake Louise
- d. Parking area will be paved and/or striped to meet ADA van stall criteria with a connecting accessible route
- e. Priority is for improved pedestrian access for the neighborhood and not to emphasize creating new parking spaces
- f. Bicycle parking is proposed for each site
- g. No parking signs as necessary

Placemaking — A small entry space or plaza at each site. Space may include:

- a. Site marker – that includes the name of the lake. Use a consistent theme or vernacular as a place-making element. The proposed marker feature is a decorative steel pole that names the lake as a common identity or wayfinding marker to the Lake.
- b. Stainless steel pipes provide consistent eye-catching access markers at each site. Pipes will have lake names with blue vinyl letters and blue vinyl stripes that echo the water droplet pattern.
- c. Benches & Picnic Tables
- d. Bike parking – Simple U-style lock-up station.
- e. Gathering areas and paths shall be crushed rock for all non-accessible areas. Accessible sites will include an asphalt paved walkway.
- f. Conceptual Public Art Graphics– on flatwork at street end entry and on vertical concrete walls where they exist at a site. Develop a consistent theme for the flatwork and art painting. The concept plan work has proposed a water droplet or wave ripple effect created using a colored

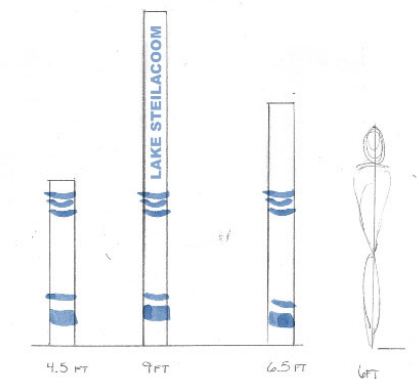


Figure 1: Potential marker concept

thermoplastic surface treatment. The thermoplastic paint system is available in a variety of widths and colors.

- g. Bollards – as traffic control barriers in place of traffic guardrails to create open views and enhance a sense of arrival.

Signage:

- a. Improve awareness of the street end access; include offsite signage that directs the community and neighbors to the street end water access sites. These could be on the closest arterial street.
- b. Signage/wayfinding at site entrance for public access points at least one sign per site.
- c. Park Rules Sign with Parks preferred policy for users to 'pack-it-in, pack-it-out'
- d. Interpretive signs, where appropriate

Pathway to water:

- a. Pathways will be laid out to preserve existing significant tree features to the extent possible
- b. To support improved inclusivity and usability of the street end access, to the extent feasible, the improvements will create pathway routes that follow the 2015 Architectural Barriers Act Standards (ABAS).
- c. Accessible route longitudinal running slope should not exceed 8.33% following the technical requirements of the outdoor developed area guidelines Chapter 10 ABA Standards (<https://www.access-board.gov/aba/guides/chapter-10-outdoor/>). Short segments are permitted to have a running slope of 10% to 12%. 5% is preferred.
- d. Access path – Material crushed rock (1/4" minus crushed rock) or asphalt.
- e. Surveys were not conducted to support this assessment and design. Site contours are GIS-based, and the two-foot contours' accuracy is at conceptual level. The final design at each site will verify the slope with an actual field survey. JA Brennan Associate's design staff has provided limited field measurements to verify the slope for the proposed concept designs.
- f. Provide a moment for respite or pause on the way to the water. It may include small gathering areas for seating.
- g. Some sites have steep slopes that may offer an opportunity for a viewpoint or widened node along the access path that offers a moment for users to enjoy lake views.
- h. Seating may include a bench, bench swing, stone seat, or picnic table.
- i. Stone seat could be a cut stone to serve as seating and or stair.
- j. ADA accessible –one site provided for each lake as required by public policy.
- k. Provide ADA parking stall at accessible sites.
- l. Terrace steps where needed; site-specific steps may be stone.
- m. Stairs and steps will be treads and risers with pressure-treated wood or stone steps. Treads will be a timber header with crushed rock backfill. Landings will be crushed rock.
- n. Site grading and low retaining walls may be required to support access. Walls will be stone or concrete unit blocks, varying by site as required to meet grades.

Fencing or barrier to delineate private properties:

- a. Perimeter fencing is proposed to delineate each site
 - i. Concrete rail fence. The concept plans have prioritized using a two-rail concrete rail fence due to its longevity as a material choice.
 - ii. City of Lakewood Standard: Chain link fence with slats and pine rail fence with welded wire mesh infill.

Landscape planting:

- a. Preserve existing trees.
- b. Provide maintainable site vegetation and landscaping through native meadow areas (eco-turf), or lawn at most access sites, with some proposed small trees and low native plantings.
- c. Follow CPTED criteria and ensure site lines for views are enhanced or maintained into the site for safety.
- d. Site improvements may require some native shoreline buffer enhancement to satisfy shoreline code requirements; where appropriate, certain sites will include low native buffer plants. Max height of shrubs is preferred at 3'-4'.

- e. Create a step-able landscape where appropriate with lower-growing native plants (salal/ferns/snowberry mix or similar).
- f. For larger access sites, when trying to achieve a buffer or screen to the adjacent properties with planting, prioritize the use of native or naturalized smaller trees that require less frequent watering.
- g. Remove and manage invasive weed species.
- h. The proposed improvements do not include irrigation to support landscaping. Gator Bags could be utilized to support new tree establishment. Proposed trees have therefore been limited anticipating CPTED sight lines, minimal-no irrigation support and potential costs to replace and maintain.

Natural shoreline beach enhancement:

- a. Where applicable, place pea gravel substrate above the ordinary high-water mark (OHWM). If the beach has a decent substrate, no action is needed.
- b. Use habitat boulders as slope retaining, if needed, and natural features at the lakeshore edge.
- c. Incorporate natural materials such as quarried stone or boulder seats or cut stone, as a step feature and a seating element.
- d. Use habitat logs or beach logs where appropriate.
- e. Provide limited deck facilities as required for an accessible site location. Deck material will be natural wood that is pressure-treated or composite materials. The deck may be required to be an open grated system; in this instance, we recommend a fiberglass reinforced system.
- f. Provide for hand carry boat put in where feasible at the water access sites.
- g. Make fishing available as a passive use.
- h. Consider a beach mat for accessible beach locations.

Encroachment:

- a. The City will need to execute survey work and facilitate encroachment resolution for several sites
- b. Determine extent of encroachment removal
- c. Assess enforcement, legal reconciliation or removal process, timeline and budget implications
- d. ROW demarcation – at neighbor's property line might be best facilitated through public and/or owner communication during next phase of improvement

Site Analysis Summaries & Proposed Plans

Steilacoom Lake Summary

" Steilacoom Lake is a reservoir approximately 4 km (2.5 mi) southwest of Tacoma in Pierce County, Washington, United States. Its boundaries lie entirely within the City of Lakewood, Washington. The reservoir covers approximately 306 acres (1,240,000 m²) and has a mean depth of 11 ft (3.4 m) and a maximum depth of 20 feet (6.1 m). Steilacoom Lake is a freshwater lake that drains into Puget Sound via Chambers Creek, beginning at its northern tip. The lake is fed at its southeastern end by two creeks: Ponce de Leon Creek, which originates in springs below Lakewood Towne Center, and Clover Creek, which flows from its source near Frederickson to the lake."

Source: <https://lakemonster.com/lake/WA/Lake%20Steilacoom%20-water-temperature-476>

Steilacoom Lake Sites

Site #1 Westlake Ave

Introduction

This site is on the west side of Steilacoom Lake at the street end of SW Westlake Ave and the intersection of W Shore Ave. The neighborhood is single-family residences. Street access is a two-lane asphalt paved surface with on-street parking available. There are currently no signs indicating this is a public (water) access site. A traffic barrier and guardrail protect the undeveloped street end from vehicles driving into the lake.



Existing invasive vegetation is well established, with blackberry and ivy dominating the site. An existing user trail offers a path to the lake. Three plastic yard furniture seats exist at the lake edge creating a small space for respite and indicating current public use of the site

Zoning

Residential R3 – Single family residence – Section 18A.10.120.

Access Easement

Public ROW, no apparent easements exist on the City property.

Site Width and Length

Approximate ROW width is 60', Length +/- 160'.

Site Soils

See Site Inventory Summary on page 3

Topography

The site is gently sloped with a sandy, gravelly beach. Due to these conditions, pedestrian access to the water is very achievable as noted by current desire paths to the lakeshore by the local community

Wind and Wave Impacts

No apparent wave impact or erosion concerns. Neighbors' fences on each side of the street access project into the lake, protecting the site.

Vegetative Communities

The site is covered in blackberry and is edged by neighboring screening planting comprised of laurel, rhododendron and pieris. No significant trees exist on site; adjacent residential properties provide decent tree canopy cover.



Wetland plant species are evident at the lake edge, including native juncus, invasive reed canary grass and invasive yellow iris.

Parking Analysis

On-street parking is available. On-street parking appears to be viable in this location.

Visual Resources and Signage

The site has a great view for looking at the lake. Public access signage is not provided but may help to identify this resource as a public amenity. Removal of blackberry through the site would improve visibility through the site to the lake.

Structures

No structures are apparent on the site. Adjacent fences by the neighbors create a sense of enclosure.

CPTED Concerns

Tall invasive vegetation does not allow for sight lines to the water edge. Minimal existing trees within this site offer future potential to maintain better sight lines into and through the site, as the majority of the vegetation consisted of grasses, blackberries and other understory and herbaceous scrub species.

Encroachment

No apparent concerns.

Utilities

Overhead power at the entry point to the site.

No apparent drainage or sewer structures.

Accessible Route Opportunities

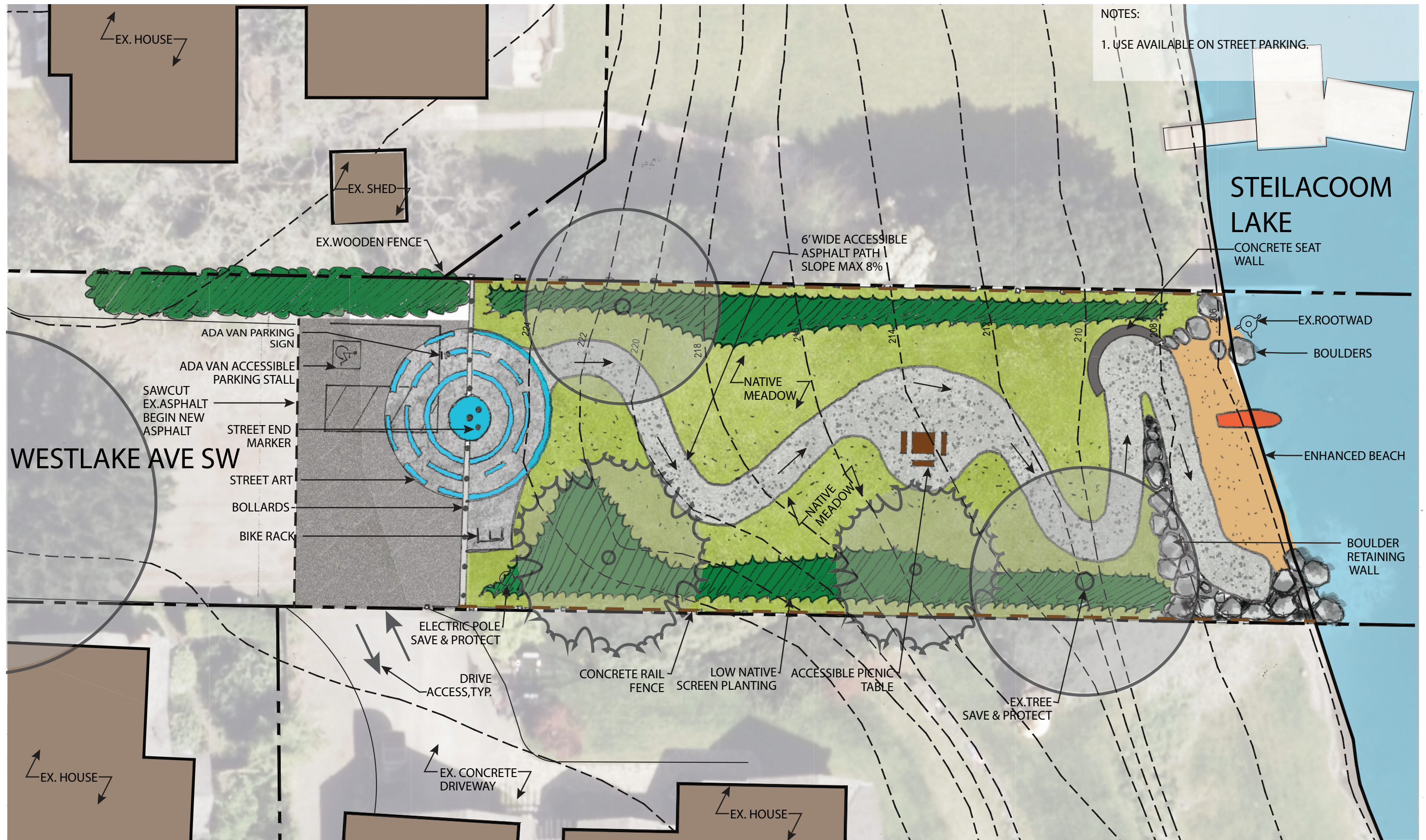
Creating an accessible route to the water appears feasible.

Recommendations

This site offers significant potential as a priority for potential development. Improvements to existing site conditions could achievably improve neighborhood access and provides a strong option for accessible lakefront access among all the sites along Lake Steilacoom

Proposed improvements include:

1. Provide one ADA van parking stall. Create an accessible route to a picnic table with a water view.
2. Resurfacing of the asphalt paved area is proposed to accommodate ADA van stall parking and the entry sequence to the site
3. New surfacing is proposed at the entry to create a small arrival space to the street end site
4. The site entry improves the site's identity as a public street end for use by the greater community, offering access to the shore of Steilacoom Lake. Currently, the site is overgrown with invasive species and limited lake views.
5. The street end marker is centrally located to align with the street's center line, creating a visual connection to the site
6. Traffic-rated bollards are proposed to replace the existing guardrail and open the site lines to the street end space
7. Painted street art at the entry to highlight the entry to the public space
8. New perimeter fence is a concrete rail fence to delineate the ROW edge to adjacent neighbors.
9. The proposed path is a 6' wide asphalt path that meanders its way through the site navigating the slope and creating an accessible route to the water's edge. A picnic table offers a moment of respite for users and provides views of the lake.
10. A secondary moment is offered at the shore edge with a small concrete seat wall feature before accessing the beach.
11. Beach enhancements include adding a blended rounded gravel rock mix of 1" diameter to pea gravel-sized material placed above OHW. Habitat boulders are proposed as informal seating elements and beach features.
12. Landscape improvements include invasive removal and native plant restoration at the site's edges. The plant palette will be limited to low-growing shrubs such as sword fern, salal and snowberry. Primary restoration will be native meadow seed.



1 WESTLAKE AVE SW - STEILACOOM LAKE (ACCESSIBLE)

LAKEWOOD STREET ENDS - CONCEPT PLANS



Scale: 1/8" = 1'-0"

0' 8' 16'

DATE: 01/11/2023

Site #2 – Mt Tacoma Drive SW

This site is located at the intersection of 96th St and Mt Tacoma Drive SW. The street end is buffered from the view with conifer spruce and fir species that have been planted by the community at the entry to the street end shoreline access.

Zoning

Residential R3 – Single family residence – Section 18A.10.120.

Access Easement

Public ROW, no apparent easements exist on the City property.

Site Width and Length

Approximate ROW width is 30'. Length 90' (Includes drive lane).

Site Soils

See Site Inventory Summary on page 3

Topography

The berm at the entry creates a steep slope to navigate. The site is long, narrow, and gently sloping. A gravelly or sandy beach is apparent.

Wind and Wave Impacts

No apparent wave impact or erosion concerns. Low water/high water data should be reviewed in the next stage of design.

Vegetative Communities

Entry to the site is not welcoming as the existing conifer trees planted buffer the main access from view.

The site is densely covered in tall grasses and grape vine and is edged by neighboring hedge planting comprised of laurel. No significant trees exist on site. The adjacent residential property to the south provides decent tree canopy cover. An existing fig tree creates a sense of discovery and provides seasonal fruit to the site.

The shoreline edge is vegetated with emergent grasses and willow species.

Wetland plant species are evident at the lake edge, including native *Juncus*, invasive reed canary grass and invasive yellow iris.

Parking Analysis

On-street parking is available, though the ROW is narrow and creates challenges for vehicles to turn around. On-street parking appears to be viable in this location.

Visual Resources and Signage

The site has a great view for looking at the lake. Public access signage is not provided but may help to identify this resource as a public amenity. Removal of blackberry through the site would create site lines to the lake.

Structures

No structures are apparent on the site. Adjacent fences by the neighbors create a sense of enclosure. Neighbors to the south appear to have a wall structure and seating area on or adjacent to the site.

CPTED Concerns

Conifer species at the entry do not allow site lines to the water edge. Views through the site to the lake are currently encumbered by tall overgrown vegetation.

Encroachment

Possible encroachment on the south edge of the property. A survey is required to verify.



Utilities

No apparent overhead power.

An existing drainage structure at the site entry exists. A catch basin is at the northwest point of entry to the site; the location of a pipe outlet was not clear.

Accessible Route Opportunities

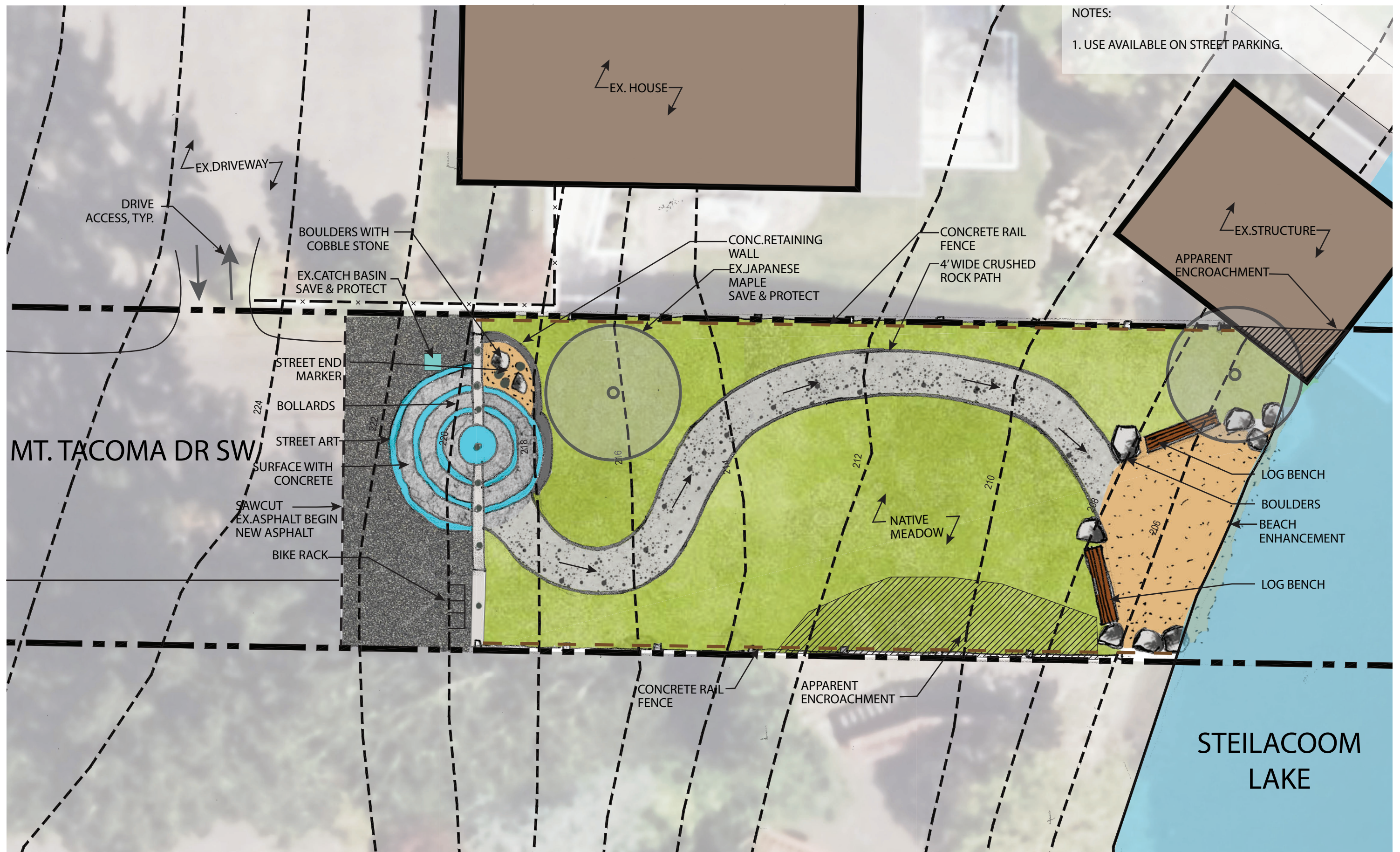
Creating an accessible route to the water appears feasible.

Recommendations

This site offers opportunity for concept design to provide improvements for neighborhood access

Proposed improvements include:

1. Maintain existing available parking in ROW
2. New concrete surfacing is proposed at the entrance to create a small arrival space
3. The street end marker is off-set from the arrival space to ensure site lines to the lake and maintain a visual connection to the site
4. Traffic-rated bollards are proposed to replace the existing guardrail and open the site lines to the street end space
5. Painted street art at the entry to highlight the entry to the public space
6. New perimeter fence is a concrete rail fence to delineate the ROW edge to adjacent neighbors.
7. The proposed path is a 4' wide crushed rock path that meanders its way through the site navigating the slope and creating a route to the water's edge. A picnic table offers a moment of respite for users and provides views of the lake.
8. Low retaining walls comprised of stone or concrete are proposed to manage the slope and grade change to create the path and picnic table space
9. Beach enhancements include adding a blended rounded gravel rock mix of 1" diameter to pea gravel-sized material placed above OHW. Habitat boulders are proposed as informal seating elements and beach features.
10. Preserve existing Japanese maple
11. Landscape improvements include invasive removal and native plant restoration at the site's edges. The plant palette will be limited to low-growing shrubs such as sword fern, salal and snowberry.
12. Apparent encroachment is managed with a fence. A survey is needed to verify ROW and property boundaries.



2 MT TACOMA DR SW - STEILACOOM LAKE

LAKEWOOD STREET ENDS - CONCEPT PLANS



j.a. brennan
associates PLLC



Scale: 1/4" = 1'-0"
0' 4' 8'
DATE: 01/11/2023

Site #3 – Beach Lane

Introduction

This site, located near the intersection of Interlaken Lane SW and Beach Lane SW, is in a single-family residential neighborhood. The street end offers open site lines to Steilacoom Lake. The site is not inviting to the public, as it feels like it is part of the adjacent residential property. Ornamental plantings, lawn and a small vegetable patch are established in the ROW. The property to the north is planted with a hedge row framing the space.

Zoning

Residential R2 – Single family residence – Section 18A.10.120.

Site Width and Length

Approximate ROW width is 30'. Length +/- 152'.

Access Easement

Public ROW, no apparent easements exist.

Site Soils

See Site Inventory Summary on page 3

Topography

The site is sloped at the upper portion and becomes more gently sloping closer to the lake edge.

Wind and Wave Impacts

No apparent wave impact or erosion concerns. Low water/high water data should be reviewed in the next stage of design.

Vegetative Communities

Entry to the site is readily available as low ornamental plantings frame the entry. The site is primarily lawn, with ornamental plantings and a vegetable garden. No significant trees exist on site. The shoreline edge is vegetated with emergent grasses and yellow iris. Wetland plant species are evident at the lake edge, including native juncus, invasive reed canary grass and invasive yellow iris.

Parking Analysis

On-street parking is available, though the ROW is narrow and creates challenges for vehicles to turn around. On-street parking appears to be viable in this location. The potential for adjustments in the ROW to widen the shoulder for parking may be considered.

Visual Resources and Signage

The site has a great view for looking at the lake. Public access signage may help to identify this resource as a public amenity. Gardens and plantings by a neighbor could be an asset to the site. Existing landscaping maintained by the neighbor supports a pleasant experience as the site is cared for, but it does not feel welcoming as a public space.

Structures

No structures are apparent on the site. Adjacent fences by the neighbors create a sense of enclosure. The home to the south is close to the property, and with no barrier or fence, the site feels like it is part of the private home property. The adjacent property has a dock that projects out onto the lake; it does not appear to extend into ROW.

CPTED Concerns

Open sight lines to the lake from the street and adjacent properties make the site feel safe.



Encroachment

There is current encroachment on the property by an adjacent neighbor, including a vegetable garden and ornamental plantings. The southern side of the site may have additional encroachment from the sideyard and existing fencing which needs to be verified by a formal survey.

Utilities

No apparent overhead power. A drainage structure exists at the site entry. Catch basin at the northwest point of entry to the site; the location of a pipe outlet was not clear. Water utility is in the ROW.

Accessible Route Opportunities

It appears possible to meander an accessible route across the site or create a flat area.

Recommendations

This site offers opportunity for concept design that provides improvements for neighborhood access.

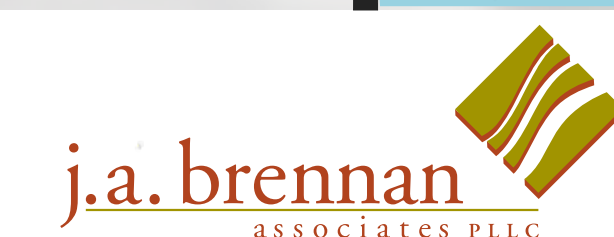
Proposed improvements include:

1. Maintain existing available parking in ROW
2. New concrete surfacing is proposed at the entrance to create a small arrival space with a seating bench.
3. The street end marker is off-set from the street center line to ensure that site lines to the lake are maintained
4. Traffic-rated bollards are proposed to replace the existing curb and open the site lines to the street end space
5. Painted street art at the entry to highlight the entry to the public space
6. New perimeter fence is a concrete rail fence to delineate the ROW edge to adjacent neighbors.
7. The proposed path is a 4' wide crushed rock path that meanders its way through the site navigating the slope and creating a route to the water's edge. A picnic table offers a moment of respite for users and provides views of the lake.
8. Low retaining walls comprised of stone are proposed to manage the slope and grade change to create the path and picnic table space.
9. Stone stair access is provided to the beach.
10. Beach enhancements include adding a blended rounded gravel rock mix of 1" diameter to pea gravel-sized material placed above OHW. Habitat boulders are proposed as informal seating elements and beach features.
11. Landscape improvements include invasive removal and native plant restoration at the site's edges. The plant palette will be limited to a native meadow, low growing shrubs such as sword fern, salal and snowberry.
12. Apparent encroachment is managed with a fence to screen the neighbors and protect the neighbors' utilities. A survey is needed to verify ROW and property boundaries.
13. Privet shrub on the property to the north will need to be pruned to reduce overhang into the ROW.



3 BEACH LANE - STEILACOOM LAKE

LAKEWOOD STREET ENDS - CONCEPT PLANS



Scale: 1/4" = 1'-0"



DATE: 01/11/2023

Site #4 –Lake Ave SW

Introduction

This site, located at the intersection of Meadow Rd SW and Lake Ave SW, is in a single-family residential neighborhood. The street end offers open site lines to Steilacoom Lake. The site does not feel inviting to the public, as it is narrow and overgrown with vegetation. The neighboring property appears to have constructed a privacy fence into the ROW. The property to the north rises with landform and adds a sense of enclosure to the space.

Zoning

This ROW is split between R3 and R4 Zoning.
Residential R3 – Single family residence – Section 18A.10.120.

Site Width and Length

Approximate ROW width is 30'. Length 110'.

Access Easement

Public ROW, no apparent easements exist.

Site Soils

See Site Inventory Summary on page 3

Topography

The site is gently sloping. The street end provides a surface drainage path for stormwater to the lake.

Wind and Wave Impacts

No apparent wave impact or erosion concerns. Low water/high water data should be reviewed in the next stage of design.

Vegetative Communities

There is some tree cover from the adjacent property. Invasive species consist primarily of blackberry and ivy throughout the site.

Parking Analysis

On-street parking is available, although the ROW is narrow and creates challenges for vehicles to turn around. On-street parking appears to be viable in this location. The potential for adjustments in the ROW to widen the shoulder for parking may be considered.

Visual Resources and Signage

The site has great potential to enhance views of the lake. Public access signage is not provided but may help to identify this resource as a public amenity.

Structures

Concrete traffic bollards protect the site from vehicular access. The adjacent fence by the neighbors creates a sense of enclosure, although placement within the ROW should be verified by a formal survey. The property to the north has an existing dock with boat moorage adjacent to this site. CPTED Concerns

The site sloping away from the street reduces site lines to the shore, and the constraining nature of the vegetation further reduces visibility making the site feel a little unsafe. Vegetation management and lower plantings will help improve sight lines.

Encroachment

Property to the North may have structures into the ROW including ornamental plantings and garden features. A survey is needed to verify.

Utilities

No apparent overhead power. The power line ends at the street end entry. Stormwater surface runoff appears to be directed into the street end, causing erosion at the entry point to the street end. Water utility is located in the site (ROW).



Accessible Route Opportunities

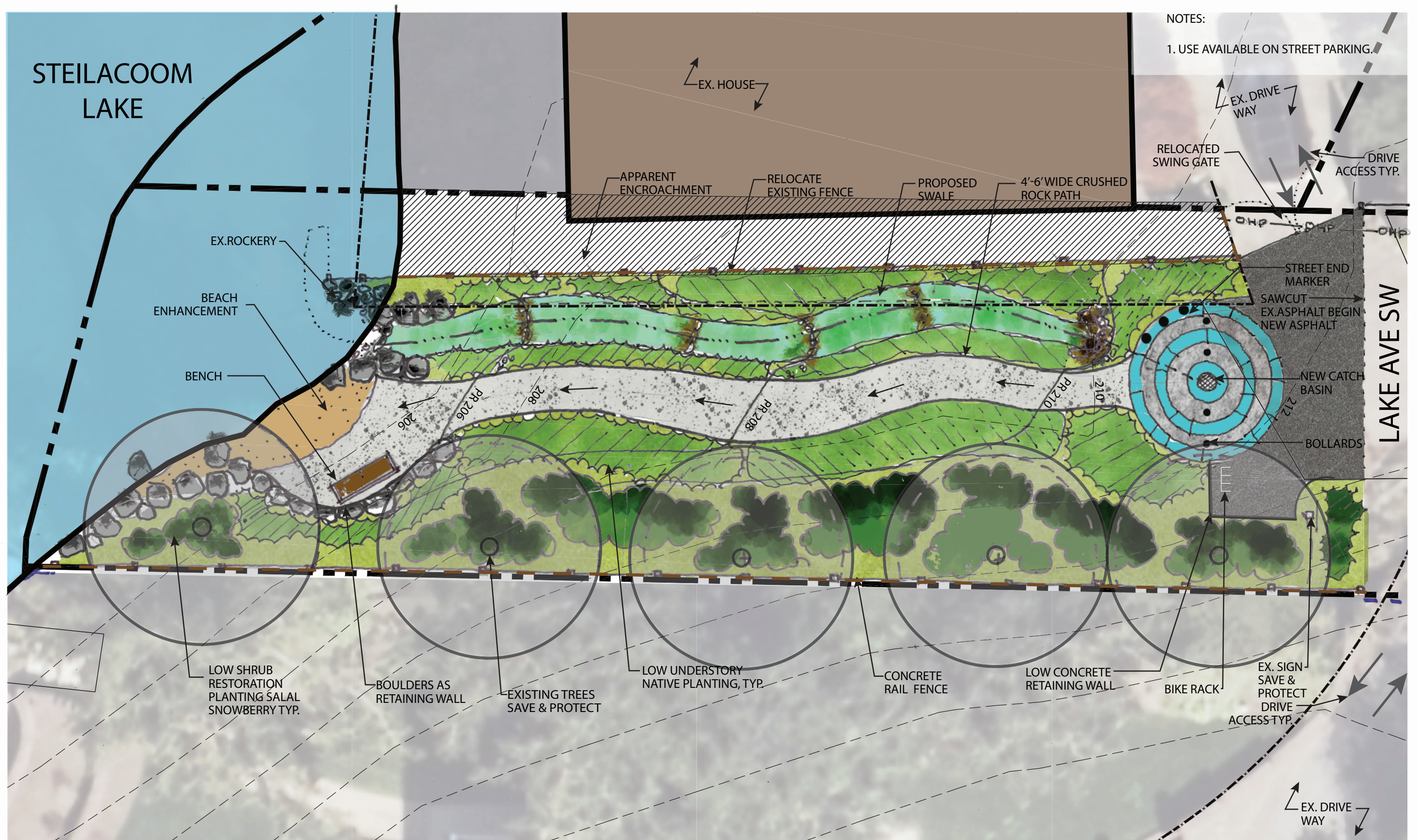
It appears possible to meander an accessible route to water's edge.

Recommendations

This site offers opportunity for concept design that provides improvements for neighborhood access and appears to be flat enough for an accessible route to the water edge.

Proposed improvements include:

1. Maintain existing available parking in ROW.
2. New asphalt paved area is proposed to replace failing asphalt and enhance the entry sequence to the site.
3. New concrete surfacing is proposed at the entry to create a small arrival space to invite visitors to the street end site.
4. Painted street art at the entry helps to highlight the entry to the public space.
5. The street end marker is centrally located to align with the street's center line, creating a visual connection to the site.
6. Traffic-rated bollards are proposed to replace the existing guardrail and open the site lines.
7. Bike parking is provided at the entry.
8. The apparent encroachment to the north could be reduced by reclaiming 3' to 5' while leaving a reduced side yard for the neighbor.
9. To help manage stormwater runoff, a central catch basin is proposed in the center of the street art/entry plaza as a feature and to help mitigate runoff eroding the site. A pipe will run water into a small swale on the north edge. A series of stone weirs will help slow the water flow, and emergent grass plant material will help filter the water before entering the lake.
10. New perimeter fence is a concrete rail fence to delineate the ROW edge to adjacent neighbors.
11. The proposed path varies from 4'- 6' wide with a widened 6' portion to ease users passing one another. The path material is crushed rock and meanders its way through the site navigating the slope and creating an accessible route to a bench that offers a moment of respite for users and provides views of the lake.
12. From the bench, the space connects the lake edge with an enhanced beach
13. Beach enhancements include adding a blended rounded gravel rock mix of 1" diameter to pea gravel-sized material placed above OHW. Habitat boulders are proposed as informal seating elements and beach features.
14. Landscape improvements include invasive removal and native plant restoration at the site's edges. The plant palette will be limited to low-growing shrubs such as sword fern, salal and snowberry.



4 LAKE AVE SW - STEILACOOM LAKE

LAKWOOD STREET ENDS - CONCEPT PLANS



j.a. brennan
associates PLLC



Scale: 1/4" = 1'-0"
0' 4' 8'
DATE: 01/11/2023

Site #5 – 100th Avenue SW

Introduction

This site is located near the intersection of Dekoven Drive SW and 100th Ave SW in a single-family residential neighborhood. The existing conditions do not offer sight lines to Steilacoom Lake. The site is not inviting to the public and feels like it is part of the adjacent residential property. Ornamental plantings maintained by the neighbors, significant trees, and vehicular guardrail barriers are established in the ROW. The property to the south is planted with a hedgerow of laurel framing the entry.

Zoning

Residential R3 – Single family residence – Section 18A.10.120

Site Width and Length

Approximate ROW width is 80'. Length +/- 75' (from guardrail)

Access Easement

Public ROW, no apparent easements exist.

Site Soils

See Site Inventory Summary on page 3

Topography

Steeply sloped, becoming gentler at the water's edge.

Wind and Wave Impacts

No apparent wave impact or erosion concerns. Low water/high water data should be reviewed in the next stage of design.

Vegetative Communities

The entry to the site is not welcoming to the public. Water views are blocked by ornamental plantings, tall established trees, and shrubs. The understory of invasive species makes it challenging for water access. Three to four significant douglas fir trees and garry oak add significant tree cover and offer character to the site.

Parking Analysis

Parking without impact to neighboring property access is currently possible due to the width of the site

Visual Resources and Signage

From the street, the view to the lake is blocked by vegetation. Once you enter the site, views clear and offer a view of the lake. Public access signage may help to identify this resource as a public amenity. Existing landscaping maintained by the neighbor supports a pleasant experience as the site is cared for, but it does not feel welcoming as a public space.

Structures

The steel guardrail for vehicular protection is falling apart. Ornamental garden features include a fountain and sculptures. The property to the north and south has an existing dock with boat moorage adjacent to the site. Fences on both sides of the site enclose the property.

CPTED Concerns

Taller ornamental plantings and the site slope limit views from the street. Once you arrive at the lake edge, the site feels very open and offers great views.

Encroachment

The property to the north has an ornamental garden and garden features in the ROW. The existing carport on the southern residence appears to be in the ROW. A formal survey to verify the extent of encroachment is required.



Utilities

No apparent overhead power. The power line ends at the street end entry. Stormwater surface runoff appears to be directed into the street end, causing erosion along the user path. Water utility in the ROW.

Accessible Route Opportunities

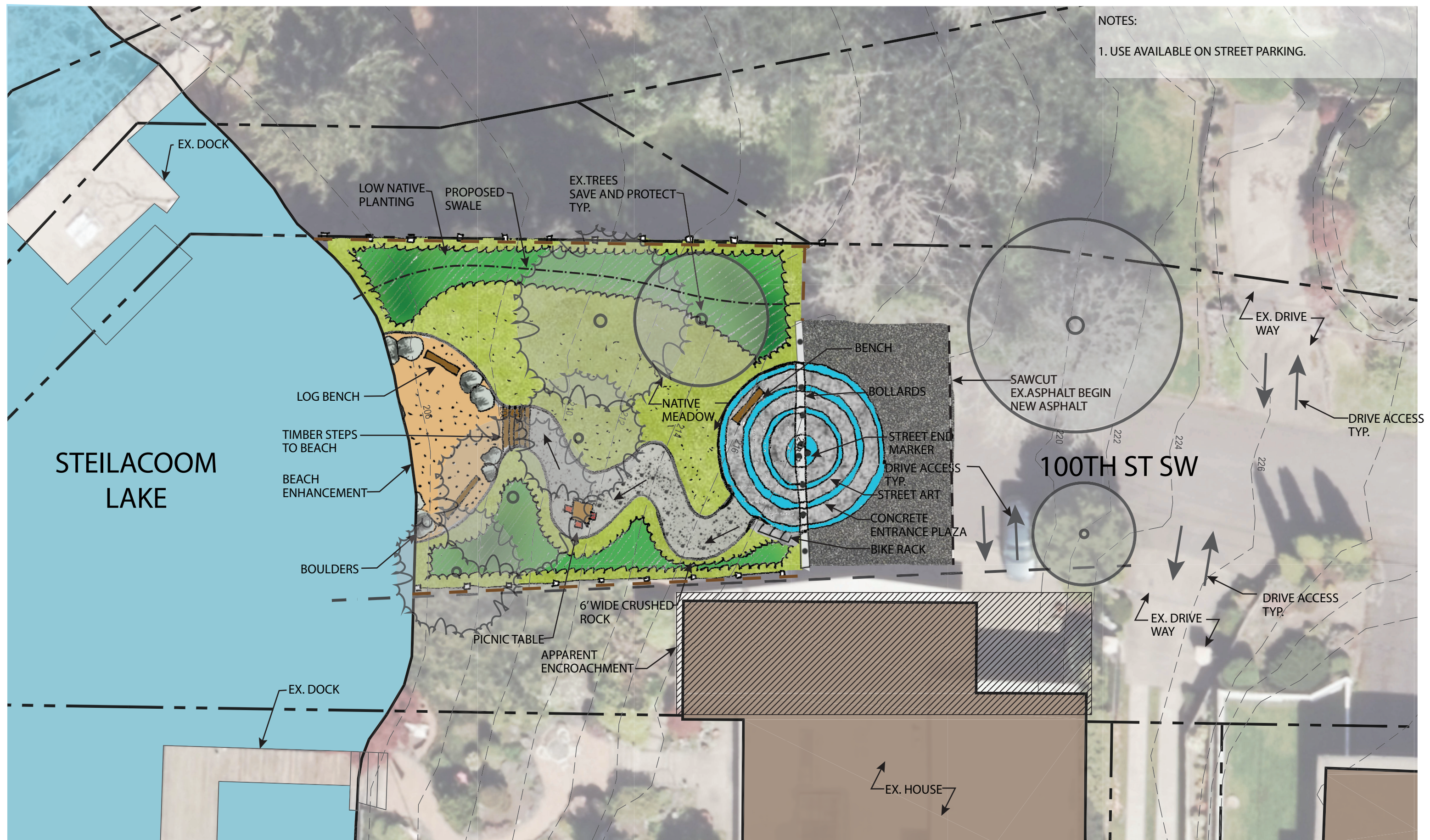
The sloping nature of the site would present challenges for an accessible route all the way to the water edge. Improvements could consider a space part way down the site where the grade presents opportunities for a small gathering space that could offer seating to provide viewing opportunities to the lake.

Recommendations:

This site offers opportunity for concept design to provide improvements for neighborhood access.

Proposed improvements include:

1. Maintain existing available parking in ROW.
2. New asphalt paved area is proposed to replace failing asphalt and enhance the entry sequence to the site.
3. New concrete surfacing is proposed at the entry to create a small arrival space to invite visitors to the street end site.
4. Painted street art at the entry helps to highlight the entry to the public space.
5. The street end marker is centrally located to align with the street's center line, creating a visual connection to the site.
6. Traffic-rated bollards are proposed to replace the existing guardrail and open the site lines.
7. Bike parking is provided at the entry.
8. The apparent encroachment to the north could be reduced by reclaiming 3' to 5' while leaving a reduced side yard for the neighbor.
9. To help manage stormwater runoff, a central catch basin is proposed in the center of the street art/entry plaza as a feature and to help mitigate runoff eroding the site. A pipe will run water into a small swale on the north edge. A series of stone weirs will help slow the water flow, and emergent grass plant material will help filter the water before entering the lake.
10. New perimeter fence is a concrete rail fence to delineate the ROW edge to adjacent neighbors.
11. The proposed path varies from 4'- 6' wide with a widened 6' portion to ease users passing one another. The path material is crushed rock and meanders its way through the site navigating the slope with timber steps.
12. From the steps, the space connects the lake edge with an enhanced beach
13. Beach enhancements include adding a blended rounded gravel rock mix of 1" diameter to pea gravel-sized material placed above OHW. Habitat boulders are proposed as informal seating elements and beach features.
14. Landscape improvements include invasive removal and native plant restoration at the site's edges. The plant palette will be limited to low-growing shrubs such as sword fern, salal and snowberry.



5 100TH ST SW - STEILACOOM LAKE

LAKEWOOD STREET ENDS - CONCEPT PLANS



Scale: 1/8" = 1'-0"

0' 8' 16'

DATE: 01/11/2023

Site #6 – Holly Hedge Lane

Introduction

This site is located near the intersection of Holly Hedge Lane and Mt Tacoma Drive SW. This site is in a dense residential neighborhood. Development including a significant retaining wall has encumbered access to the site. There is no evidence of public access to the lake at this location.

An existing timber retaining wall with ornamental planting appear to be constructed in the ROW. The site has a private residential terraced garden from the adjacent residence landscape. The site currently offers no public access due to the retaining walls.

Zoning

Residential R3 – Single family residence – Section 18A.10.120.

Access Easement

Public ROW no apparent easements exist on the City property.

Site Width and Length

Approximate ROW width is 15'. Length +/- 230'

Site Soils

See Site Inventory Summary on page 3

Topography

The site is steeply terraced at the access point and slopes steeply to the shore.

Wind and Wave Impacts

No apparent wave impact or erosion concerns. Low water/high water data should be reviewed in the next stage of design.

Vegetative Communities

Tree cover of douglas fir with an understory of ornamental plantings.

Parking Analysis

Parking would be very constrained if at all feasible; the ROW is a narrow two-lane drive. Parking feels like the user is on a private residential driveway.

Visual Resources and Signage

From the street end entry, there are no views of the lake. Private development has encumbered any views. If a user were enabled to access the site, there would be a view from the lake edge as existing vegetation is maintained.

Structures

A timber retaining wall appears to be constructed within the ROW. Site surveys are needed to verify the extent.

CPTED Concerns

The site currently offers no access to the public and feels like privately owned property.

Encroachment

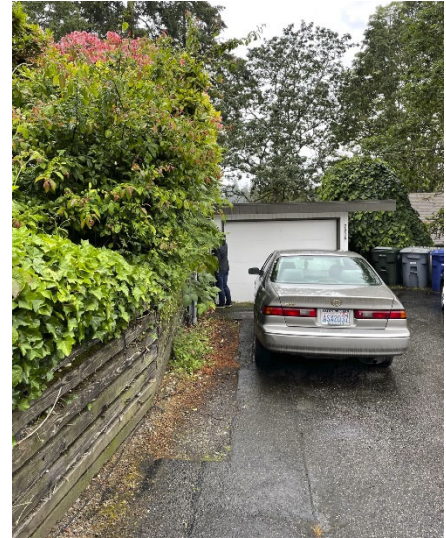
There appears to be development within the ROW including retaining walls, fencing, and ornamental plantings. Proximity of a detached garage could also be verified through a formal survey of the site.

Utilities

No apparent overhead power. There may be existing power lines underground. Stormwater surface runoff appears to be directed into existing catch basin structures. Water utility in the ROW.

Accessible Route Opportunities

Creating an accessible route at this site would be very challenging, if at all feasible.

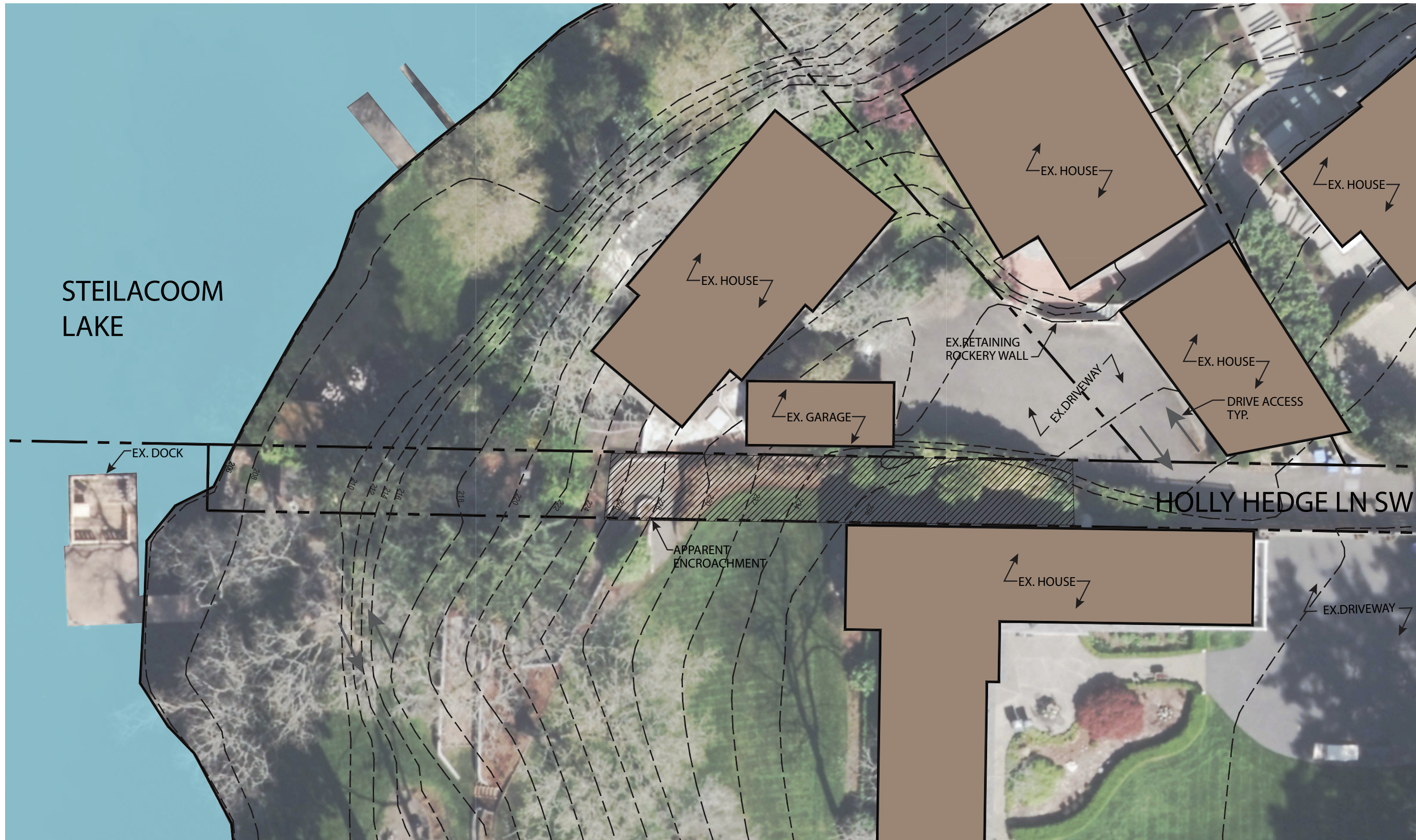


Recommendations:

Considering current development and the narrow site width there are significant challenges for development. Survey and property assessment will need to verify ROW. This site was not advanced to the design stage for any proposed improvements.

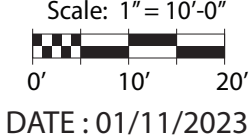
Proposed improvements include:

None proposed



6 HOLLY HEDGE LN SW - STEILACOOM LAKE (NO DEVELOPMENT)

LAKEWOOD STREET ENDS - EXISTING PLAN



American Lake Summary

"American Lake is heavily developed with residential housing, golf courses, and a VA hospital. Several parks (in Lakewood and JBLM) provide the community with extensive use of the lake, including park facilities, playgrounds, boat launches, swimming, and picnic facilities. Groundwater from the shallow aquifer is the primary source of water flowing into and out of American Lake. Approximately two-thirds of the annual inflow into the lake is from this shallow aquifer (Woodward-Clyde 1998). Due to its size, American Lake is considered a Shoreline of Statewide Significance." – 2010 Shoreline Analysis Report

Lake Elevation – 231 *Approximate
OHWM +/- 230.60 *Approximate

American Lake Sites

Site #8 – Lake City Blvd

Introduction

This site is located at the south end of Lake City Blvd SW near the intersection of 130th St SW. Single-family residence border the east and west sides of the property. This site has the feel of a small neighborhood pocket park and has current parking spaces accommodating site use.

A chain link fence encloses the site on three sides with a small gate defining site entry. Ivy vines currently cover the north and west portions of the chain link fence, limiting views into the site. The site has a single picnic table with a trash receptacle.



A unique concrete vault structure, located in the water, is located about 8 feet from the shoreline. The structure is a rectangular-shaped concrete stem wall with a steel guardrail that creates a "fishing pier". A user-made earthen berm creates a walkable path offering access through the water to the vault which is regularly used as a fishing pier. Noted from parks staff, this site is regularly utilized by the local community for fishing. There is limited lake access accommodating this recreational activity within the City currently, and conflicting activities such as swimming and boating inhibit this recreational activity at the existing two public parks on American Lake.

Zoning

The ROW is situated between Residential R2 and R3 – Single family residence – Section 18A.10.120

Access Easement

Public ROW, no apparent easements exist on this City property

Site Width and Length

Approximate ROW width is 80' at its widest. Length +/- 130'

Site Soil

See Site Inventory Summary on page 3

Topography

The site gently slopes to American Lake

Wind and Wave Impacts

The site has a wonderful small gravelly sandy pocket beach that is quite flat. During the initial site visit, no apparent wave impact or erosion concerns were evident. Low water/high water data should be reviewed in the next stage of design. As noted by parks staff, there is currently moderate erosion on the beachfront shoreline at American Lake Park which is on the same side of the lake approximately 1500' to the west.

Vegetative Communities

The site has two mature aspen trees near the water's edge on the east side that provide character and shade. Trees on the adjacent residential property to the east provide additional structure and shade. A remnant asphalt drive extends through the site to the water's edge at the lake.

Parking Analysis

Parking opportunities are readily available with the wider ROW condition at this site. Currently, three to four cars can easily park perpendicular to the gated entry. Improvements could include an accessible parking stall.

Visual Resources and Signage

Views from the street are blocked by the ivy vines growing on the existing chain link fence. There is a great opportunity to open the view from the street and enhance this neighborhood's open space. Adding formal signage will help define this as a public space.

Structures

The steel guardrail for vehicular protection is falling apart. A chain link fence atop a concrete stem wall defines the property edge on the east and west side of the park. A chain link fence with a pedestrian gate edges the site's north side. The fishing pier, comprised of a concrete stem wall and tubular steel rail, sits within the lake in the central portion of the site. Picnic table and trash receptacle are provided. During field assessment a neighbor reported concrete remnants from an old launch in the water on the east side of the site (as noted on the plan).

CPTED Concerns

The site is quite open. Removing the ivy will improve sight-lines to the lake from the parking area. Views into the site from the neighboring single-family residence are readily available.

Encroachment

A retaining wall, ornamental plantings and the majority of a paved driveway to the residence along the south appear in the street end ROW. Shoreline encroachment is also apparent along the south shore based on GIS data. A survey is needed to verify the full extent of encroachment.

Utilities

No apparent overhead power. The power line may be underground and access to the line may be required through the existing concrete vault on site. Stormwater surface runoff appears to be directed into existing catch basin structures. Water utility in the ROW.

Accessible Route Opportunities

Creating an accessible route to the lake is achievable but will require a switch-back ramp system and retaining walls.

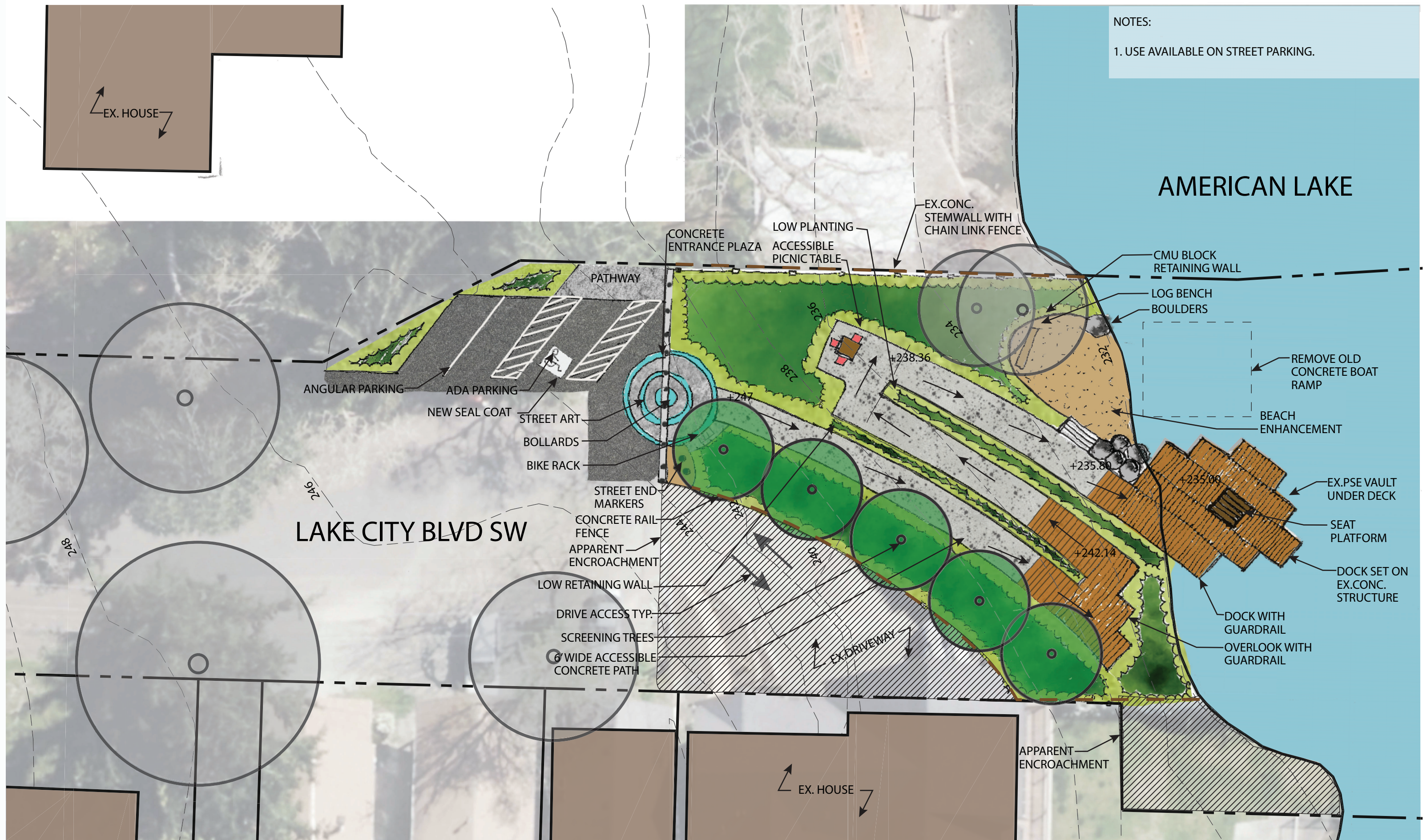
Recommendations:

This site has great potential to become a more robust neighborhood and community asset. Accessibility improvements would increase recreational opportunities on American Lake and further enhance current use and recreational experiences.

Proposed improvements include:

1. Improved parking with designated parking with one ADA Van stall parking and improved egress to the site entry.
2. Resurface the parking and site entry with new seal coat of asphalt.
3. The street end marker is located at the southeast edge to align with the center line of the street, creating a visual connection to the site.
4. Traffic-rated bollards are proposed to replace the northern guardrail and open the site lines to the street end space.
5. Painted street art at the entry to highlight the entry to the public space.
6. Replace the fence with a low concrete rail fence to open site lines.
7. To enhance the welcome feeling at the site a low shrub planting with a row of vine maples is proposed to define the park edge on the west side, allowing views into the park while providing a sense of privacy to the neighbors. The concrete rail fence replaces a 6' tall chain link fence and traffic guardrail with ivy.

8. The accessible route navigates a grade change of +/-12' from the entry to the beach. The proposed path is a paved surface utilizing a series of terraced walls that creates a ramp down to the lake edge offering different views as park users navigate their way to the water edge.
9. As users descend the ramp, a moment of pause is offered at the first landing, where an overlook deck is offered for users to take in the views of American Lake and Mt Rainier. An open cable rail system with a tubular steel post is proposed as the primary guardrail for this site.
10. The existing concrete structure is being proposed to support an over-water deck structure that will offer improved fishing use with a railing appropriate for fishing poles and will be designed for ADA access for fishing. The deck railing will complement the overlook railing. Further investigation would need to be made to support the integrity, use and coverage of the existing concrete in-water structure as proposed.
11. At the path's terminus, the user can enter onto the overwater deck or step down to the enhanced sandy beach on the east side of the path.
12. The southwest shore edge will be enhanced with riparian habitat planting.
13. Beach enhancements include the removal of debris from a broken concrete boat launch and the placement of a blended rounded gravel rock mix comprised of 1" diameter to pea gravel-sized material. Habitat boulders are proposed as informal seating elements and beach features.
14. Landscape improvements include a plant palette limited to low-growing shrubs such as sword fern, salal and snowberry with limited use of low-growing trees such as vine maple.
15. There is significant apparent encroachment on the south-westerly property area.



NOTES:
1. USE AVAILABLE ON STREET PARKING.

AMERICAN LAKE

LAKE CITY BLVD SW

8 LAKE CITY BLVD SW - AMERICAN LAKE (ACCESSIBLE)

LAKEWOOD STREET ENDS - CONCEPT PLANS



Scale: 1/8" = 1'-0"
0' 8' 16'

DATE: 01/11/2023

Site #9 – Wadsworth St

Introduction

This site is located at the street end of Wadsworth St near the intersection of Silcox Drive SW. The neighborhood is a single-family residential.

The site features are limited as this street end currently serves as a paved boat launch supporting water-access to Silcox Island in the middle of American Lake. Current access is a narrow two-lane drive. The neighboring properties have extensive fencing, further constraining the site. Each adjacent property has a sliding gate that needs to remain open for access and limits parking and turn-around access to the public. Both adjacent properties have over-water dock and pier structures that extend into the lake.

Zoning

The site is situated in Residential R3 – Single family residence – Section 18A.10.120
Parcel # 0219212131

Site Width and Length

Approximate ROW width is 40' at its widest to 24' at its narrowest. Length 105'

Access Easement

Public ROW, no apparent easements exist

Site Soil

See Site Inventory Summary on page 3

Topography

Street slopes consistently with a moderate slope to the water's edge.

Wind and Wave Impacts

The site has gravelly sandy beach material overtop of the paved boat launch. During the initial site visit, no apparent wave impact or erosion concerns were evident. Low water/high water data should be reviewed in the next stage of design.

Vegetative Communities

There is no significant vegetation. Patches of grass edge the south side and shoreline and are grow through cracks in the paving.

Parking Analysis

This narrow street end has limited-no capacity for on-street parking with consideration to maintaining neighboring access to Bill's Boathouse to the north and the residence to the south.

Visual Resources and Signage

Views of the lake are very good at this location.

Structures

No apparent structures on site. Adjacent properties have existing wood and chain link fencing. Floating wharf and pile-supported pier on either side of the site.

CPTED Concerns

The site is quite open.

Encroachment

No evidence of encroachment.



Utilities

Overhead power and power pole in the ROW on the south side of the site. Stormwater surface runoff appears to be directed into existing catch basin structures. Water utility in the ROW.

Accessible Route Opportunities

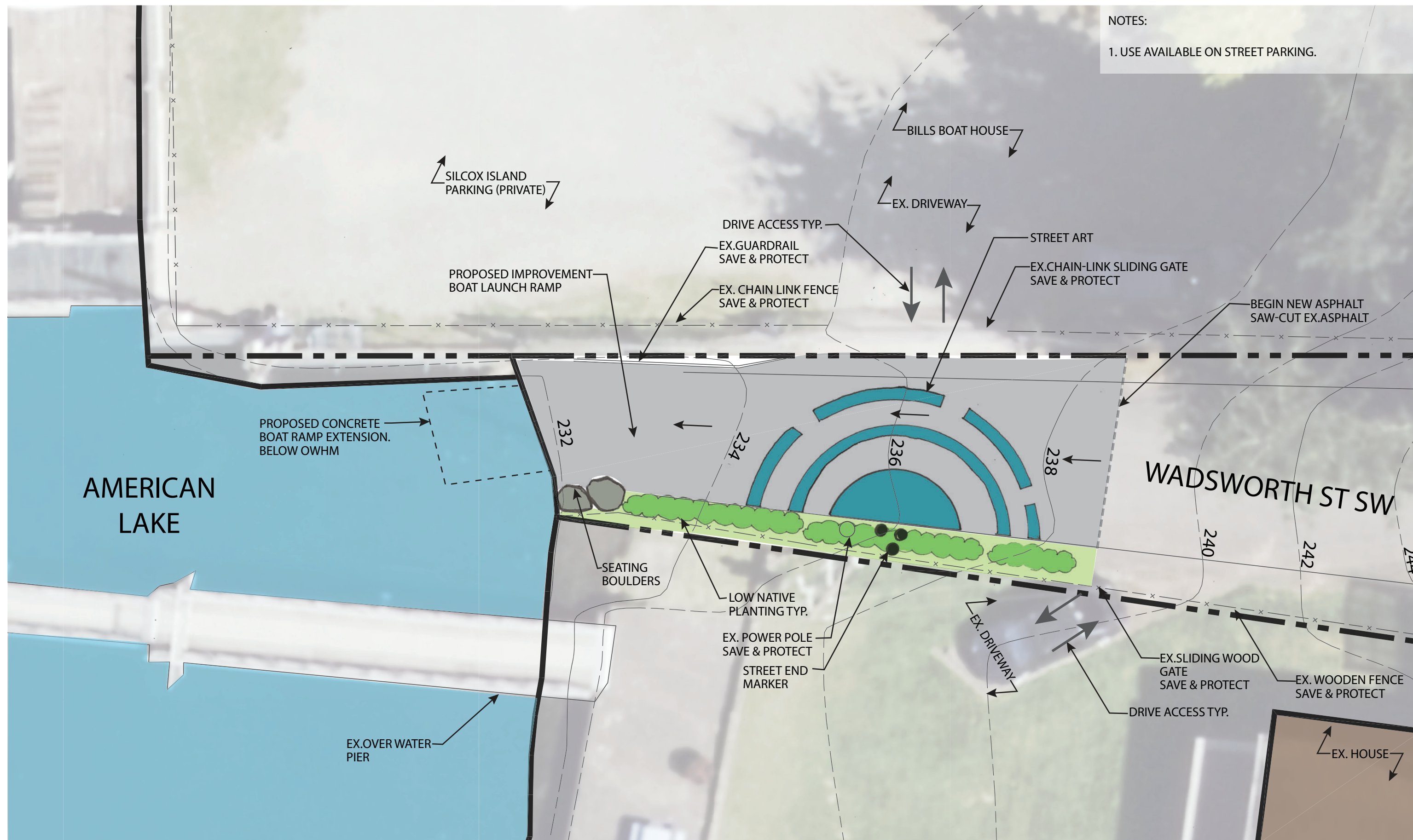
Challenging site for an accessible route.

Recommendations

Consideration for improved boat launch amenities, pavement place making elements and access marker. Some modest plantings can also be considered.

Proposed improvements include:

1. Maintain existing available parking in ROW.
2. New concrete surfacing is proposed to improve the boat launch.
3. The street end marker is off set to maintain boat launch access.
4. Traffic-rated bollards are proposed to protect the marker.
5. Painted street art emerges from the marker creating a series of concentric arcs emanating from the marker.
6. Habitat boulders are proposed as informal seating elements and features at the shoreline edge.
7. Landscape improvements are limited to enhancing the narrow strip on the west side of the access. The plant palette will be limited to low-growing shrubs such as sword fern, salal and snowberry.



9 WADSWORTH ST SW - AMERICAN LAKE

LAKEWOOD STREET ENDS - CONCEPT PLANS



Scale: 1/8" = 1'-0"

0' 8' 16'

DATE: 01/11/2023

Lake Louise Summary

Lake Louise is one of Lakewood's smaller lakes, surrounded by private residential properties.

A small boat launch does provide public access to the lake for boaters and swimmers.

Lake Size: 39 Acres +/-lake

Lake Depth: 35' deep

Lake Louise Sites

Site #10 – 104th St Melody Lane

Introduction

This site is located at the street end of 104th St and Melody Lane within a single-family neighborhood.

Like Wadsworth on American Lake, this site functions as a boat launch to access Lake Louise. It is quite a busy boat launch in the summer season, as we understand from our discussion with the neighbor. The boat launch is steep and uses a gravel substrate, creating challenges for vehicles as they launch their. The launch route into the lake is pitted and worn.



An existing pump station facility dominates the north entry of the site. The facility creates an elevated grade change that almost functions as an overlook or viewpoint to the site, except that electric utility cabinets disrupt the view. The concrete retaining wall of the vault creates an opportunity for wall mural art on the beach side of the site. A six-foot-tall privacy fence edges the street end on each side of the adjacent properties. The neighborhood community has installed a picnic table and trash receptacle as an amenity to this site and currently maintains the trash.

Zoning

The ROW is situated between Residential R3 and R4 – Single family residence – Section 18A.10.120

Site Width & Length

Approximate ROW width is 100, Length is +/- 65'

Access Easement

Public ROW, no apparent easements exist

Site Soil

See Site Inventory Summary on page 3

Topography

The site is steeply sloped. At the lake's edge along the north side, it flattens out where an opportunity exists to create a small gathering space.

Wind and Wave Impacts

The site has a gravelly sandy beach. During the initial site visit, no apparent wave impact or erosion concerns were evident. Low water/high water data should be reviewed in the next stage of design.

Vegetative Communities

This site has limited vegetation. Ivy persists on the east edge at the fence line of the neighboring property. The neighbor to the north has an overhanging purple plum tree that does provide some tree cover on the site. The site is primarily covered in gravel.

Parking Analysis

Parallel parking is available, but the narrow two-lane street feels very constrained. Consider opportunities for minor widening if parking is desired. Parking on the shoulder up the street is also viable for current site access.

Visual Resources and Signage

Views of the lake are very good at this location. There is existing signage indicating boat safety and boat launch access, but it is not clear this is a publically accessible site.

Structures

There is a concrete retaining wall with tubular steel guardrail and pump station utilities, including electrical cabinets and vaults and adjacent property to the north with wood and chain link fencing and landscaping CPTED Concerns

The site is quite open, but the pump station structure does sit high above the sloping grade, obstructing site lines and creating a pocket of space that is difficult to observe from the street.

Encroachment

Apparent encroachment exists on the northern edge where the residential property abuts the pump station. A survey would be needed to verify the extent of the encroachment.

Utilities

There is a sewer or storm pump station on the site and stormwater surface runoff appears to be directed into existing catch basin structures. There is water utility in the ROW and there are no overhead power is apparent at the site.

Accessible Route Opportunities

This is a challenging site for an accessible route.

Recommendations:

There is great potential for opportunities for improvement at this site that would support and enhance current use.

Proposed improvements include:

1. Maintain existing available parking in ROW
2. Painted street art at the entry to highlight the entry to the public space. A new asphalt surface is proposed at the entry.
3. The street end marker is off-set to the south to ensure site lines to the lake and not block access to the boat launch. The marker creates a visual connection along Melody Lane SW.
4. Two entry points are proposed, one on either side of the existing utility vault structure. To the north, an apparent encroachment exists and is modified to include a walkway to a small picnic table space with a connecting stair to the lower picnic table space.
5. The boat launch proposed improvement includes a resurfaced launch with concrete.
6. New perimeter fence is a concrete rail fence to delineate the ROW edge to adjacent neighbors.
7. A picnic table offers a moment of respite for users and provides views of the lake.
8. A low retaining wall comprised of stone is proposed to manage the slope and grade change between the picnic table and the boat launch.
9. Seating steps are proposed to connect the picnic space to the beach edge.
10. Beach enhancements include adding a blended rounded gravel rock mix of 1" diameter to pea gravel-sized material placed above OHW. Habitat boulders are proposed as informal seating and beach features; a log bench is provided for users.
11. Landscape improvements include invasive removal and native plant restoration at the north edge of the site. The plant palette will be limited to low-growing shrubs such as sword fern, salal and snowberry.



10 MELODY LN SW - LAKE LOUISE

LAKEWOOD STREET ENDS - CONCEPT PLANS



Scale: 1/8" = 1'-0"

0' 8' 16'

DATE: 01/11/2023

Site #11 – Holden Rd SW

Introduction

This site is located along Lake Louise Drive SW and at Holden Rd SW.

The site is in a single-family neighborhood and slopes from the street edge to the lake with a variable degree of terrain. A large stormwater vault creates an elevated platform at the entry to the street end. From the vault a culvert daylights into a small, armored swale that runs straight to the lake's edge. A series of rocks and gabions line the swale edge at the outlet to the lake. There is substantial tree cover with a decent understory of shrubs and invasive species.



A sandy beach exists at the water's edge, with a large cottonwood tree framing the edge of the site to the north. Ivy persists as a primary ground cover in the understory. The neighbor to the south has a few old floating docks at the beach that appear unused as vegetation is growing over on the floats.

Zoning

The ROW is situated between Residential R3 and R4 – Single family residence – Section 18A.10.120

Site Width and Length

Approximate ROW width is 50'. Length +/- 240'.

Access Easement

Public ROW, no apparent easements exist

Site Soil

See *Site Inventory Summary* on page 3

Topography

The site has variable degrees of slope. The most southerly edge offers a gentler route to the water's edge as it allows access around the existing stormwater vault.

Wind and Wave Impacts

The site has a sandy beach. During the initial site visit, no apparent wave impact or erosion concerns were evident. Low water/high water data should be reviewed in the next stage of design.

Vegetative Communities

The site has substantial tree cover, consisting primarily of alder, native cherry, and a row of cedar trees on the neighbor's property to the north. The existing cottonwood at the water's edge is on the site and is about 28" in diameter, providing substantial canopy cover. *Cornus stolonifera*, ivy, ferns and holly are the primary understory.

Parking Analysis

The two-lane arterial street is wide enough for parallel parking, though it feels tight.

Visual Resources and Signage

Existing vegetation allows no view of the lake from the street. The vault and plantings create a visual barrier to the lake that are not inviting for public access. Signage could be used to identify the public access site.

Structures

There is a concrete vault with steel locking lid near the site entrance, steel traffic bollards at the vault structure, and a stone retaining wall, primarily on private property along the adjacent driveway. It appears to protect the vault on the street end site. CPTED Concerns

There is a decent existing tree canopy cover and the site access sloping away from the site entry limits views from the street. Once you arrive down at the lake edge, the site feels very open and offers great views of the lake.

Encroachment

No evidence of encroachment.

Utilities

There is a stormwater vault and culvert outlet at the site entrance, water utility, fire hydrant at the street, and overhead power which does not appear to enter the site.

Accessible Route Opportunities

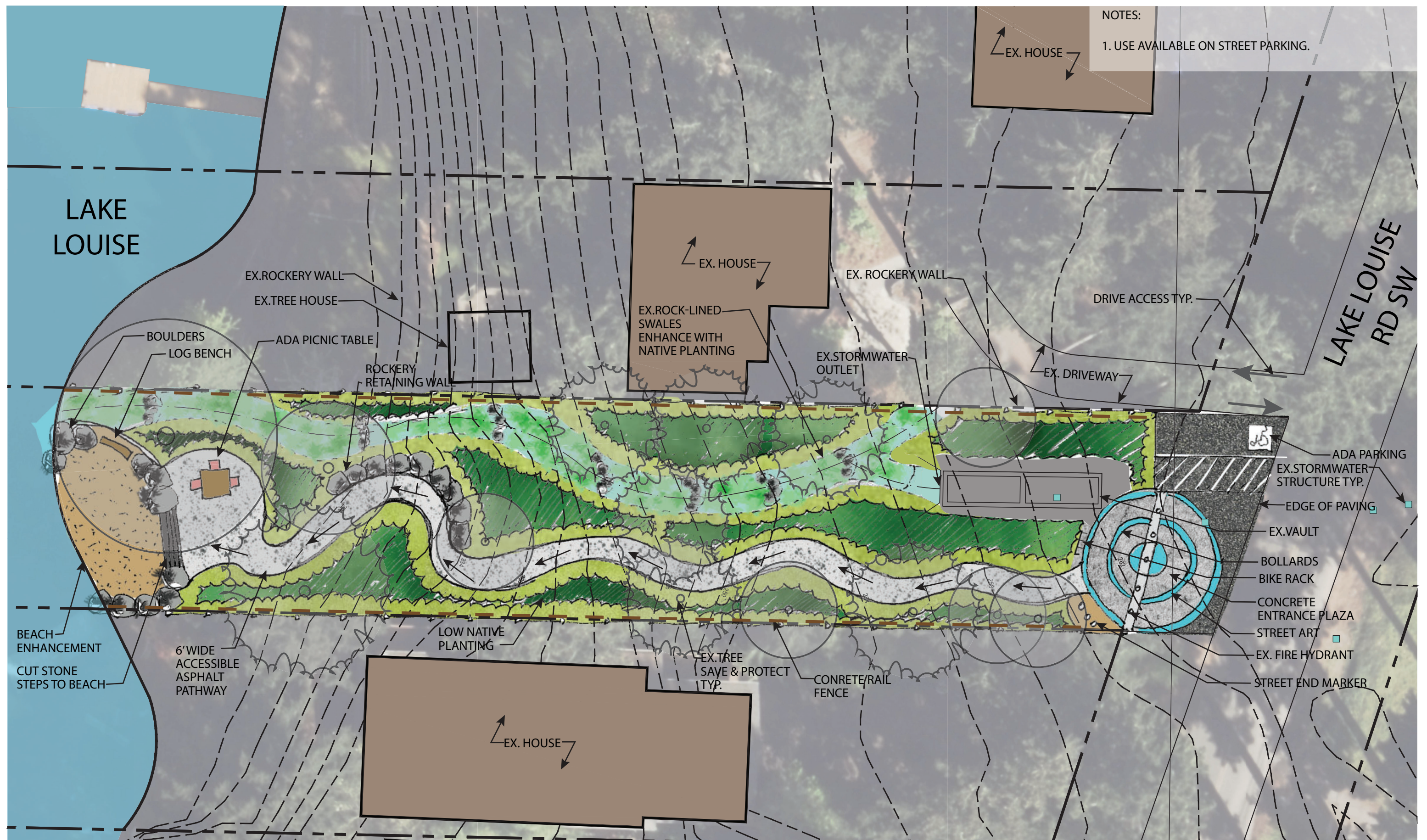
An accessible route may be possible on the eastern edge of the site.

Recommendations

There is great opportunity for improvement at this site.

Proposed improvements include:

1. Provide one ADA van parking stall. Create an accessible route to a picnic table with a water view.
2. New asphalt paved area is proposed to accommodate access to an ADA van stall parking and enhance the entry sequence to the site.
3. New surfacing is proposed at the entry to create a small arrival space to the street end site; this arrival sequence will be adjacent to the existing stormwater vault structure.
4. The site entry improves the site's identity as a public street end for use by the greater community, offering access to the shore of Lake Louise. In its current form, the site contains several trees and is overgrown with invasive species limiting views to the lake.
5. The street end marker is centrally in the entry plaza creating a visual connection to the site
6. Traffic-rated bollards are proposed to replace the existing bollards
7. Painted street art at the entry helps to highlight the entry to the public space and serves as a traffic calming element, as the painted surface extends partway into the southbound drive lane
8. New perimeter fence is a concrete rail fence to delineate the ROW edge to adjacent neighbors.
9. The proposed path is a 6' wide asphalt path that meanders its way through the site navigating the slope and existing trees creating an accessible route to a picnic table, offering a moment of respite for users, and providing views of the lake
10. From the picnic table, the space steps down to the lake edge with an enhanced beach
11. A secondary seating opportunity is offered at the shore edge with a small log bench.
12. Beach enhancements include adding a blended rounded gravel rock mix of 1" diameter to pea gravel-sized material placed above OHW. In some areas the existing sand beach should be retained. Habitat boulders are proposed as informal seating elements and beach features.
13. Landscape improvements include invasive removal and native plant restoration at the site's edges. The plant palette will be limited to low-growing shrubs such as sword fern, salal and snowberry.



11 HOLDEN ST - LAKE LOUISE (ACCESSIBLE)

LAKEWOOD STREET ENDS - CONCEPT PLANS



Scale: 1" = 10'-0"
0' 10' 20'
DATE: 01/11/2023

Gravelly Lake Summary

Gravelly Lake approximately 300 acres in size, 55' deep, and surrounded by private residential properties. It lies within the south-eastern side of the City just NE of American Lake and along the I-5 corridor and currently offers no improved public access to the lakeshore. Lake levels fluctuate seasonally from +/- 5' to as high as 11'.6 change through the year.

Gravelly Lake Sites

Site #12 – Hill Top Lane

Introduction

This site is located at Hill Top Lane and Nyanza Road SW. The site was not accessible for the initial site visit. Blackberry and rockery wall blocked access.

Zoning

The site is Residential R3 – Single family residence – Section 18A.10.120.

ROW Width and Length

Approximate ROW width is 25'. Length +/- 290'

Access Easement

The site is within the City ROW.

Site Soil

See *Site Inventory Summary on page 3*

Topography

The site is steeply sloped.

Wind and Wave Impacts

No available access to the beach.

Vegetative Communities

Tree canopy of Douglas fir, willow, and alder. The understory is primarily blackberry, making our initial site visit impassable.

Parking Analysis

Parallel parking in the ROW appears feasible. It is a narrow two-lane drive.

Visual Resources and Signage

No views exist from the street end entry point. If developed in the future, signage would identify public access.

Structures

There is a rockery retaining wall in ROW and a 6-foot-tall wood privacy fence visible along the north side of the site.

CPTED Concerns

Sight lines are not evident from the street.

Encroachment

Potential 6-foot privacy fence in the ROW.

Utilities

There are trench drains at the street end, Water utility in the ROW, and overhead power in the street but does not appear to enter the site

Accessible Route Opportunities

An accessible route does not appear achievable but further site investigation could be made with a survey and clearing of current vegetation to confirm



Recommendations:

This site was not advanced in concept design stage due to current site analysis and access limitations. It should be noted this site has similar existing conditions to Linwood Lane SW based on GIS data and aerial photography.

Proposed improvements include:

Future investigation including vegetation clearing and a site survey could further verify potential for development. Due to access limitations noted above, no development is proposed for this assessment.



12 HILLTOP LN SW - GRAVELLY LAKE (NO DEVELOPMENT)

LAKEWOOD STREET ENDS - EXISTING PLAN



Scale: 1/8" = 1'-0"

0' 8' 16'

DATE: 01/11/2023

Site #13 – Linwood Lane SW

Introduction

This site is in a single-family neighborhood at Linwood Lane and Loch Lane SW. The access sits between two large single-family residential properties. There is a manicured hedge row planting of laurel and boxwood frame the corridor on either side of the ROW access.

A rustic 4' tall wooden fence with a gate conceals the access, and the ornamental plantings further buffer the street end, making it feel like you are entering a private garden. No signage indicates this is a public access corridor to the water. Several significant trees exist at the length of the street end corridor.



As you descend the slope, the large scale of the trees frames the corridor to the water and gives a sense that you are walking amongst a mature second-growth forest. As you descend the slope, thick understory plantings make access to the water challenging. Once you reach the water's edge, it is a very peaceful, serene setting under cover of the tree canopy, with a great little pocket beach.

Zoning

The site is situated between Residential R3 and R4 – Single family residence – Section 18A.10.120.

ROW Width and Length

Approximate ROW width is 25'. Length is +/- 350'.

Access Easement

The site is within the city ROW.

Site Soil

See Site Inventory Summary on page 3 Topography

The site starts flat for several feet and transitions to a steep slope with variable terrain as it descends to Gravelly Lake.

Wind and Wave Impacts

The site has a sandy pea gravelly beach. During the initial site visit, no apparent wave impact or erosion concerns were evident. Low water/high water data should be reviewed in the next stage of design.

Vegetative Communities

As you enter the public access, it feels like you are entering a private residential garden. Ornamental plantings by the neighbors conceal the stormwater vault and buffer public access. Several significant Douglas fir trees exist at the length of the street end corridor. The understory comprises an ornamental thicket of laurel, invasive blackberry, and ivy.

Parking Analysis

Street parking is available.

Visual Resources and Signage

The street views of the lake are not available at this location. Once in the site and descending the slope, views of the lake can be achieved, and views would be improved with strategic vegetation removal and thinning.

Structures

The fencing and gate at the entry point appear to be the only structures at this location.

CPTED Concerns

With a decent canopy cover of trees and understory of shrubs and with the site access sloping away from the site entry, it does limit views from the street. The neighbors have decent views of the ROW access, so a sense of eyes on the space or safety is felt.

Encroachment

Potential 6-foot privacy fence, a portion of driveway and gate in the ROW.

Utilities

There is a stormwater utility vault at entry.

Accessible Route Opportunities

An accessible route does not appear achievable due to the steep grade at the site. A small gathering area at the top of the bank could be provided to offer accessible view access.

Recommendations

The site has great improvement opportunities, such as an enhanced pocket beach with amenities. Consider a small plaza, bench seating or picnic table, riparian enhancement, and public access signage.

Proposed improvements include:

1. New surfacing is proposed at the entry to create a small arrival space to the street end site.
2. The site entry improves the site's identity as a public street end for use by the greater community, offering access to the shore of Gravelly Lake. In its current form, the site appears to be privately owned.
3. The street end marker is located at this NW edge to align with the street's center line, creating a visual connection to the site.
4. Traffic-rated bollards are proposed to replace the wooden gate and fence and open the site lines to the street end space.
5. Painted street art at the entry to highlight the entry to the public space.
6. The existing stormwater vault and associated structures are maintained and now have better access. The proposed path moves around the vaults to the west.
7. New perimeter fence is a concrete rail fence to delineate the ROW edge to adjacent neighbors.
8. The proposed path is a narrow 4' wide crushed rock surface path that navigates through and around the existing vegetation. The upper portion of the path offers an accessible route that terminates at a small overlook or viewpoint and stair access to the lake. At this overlook begins a substantial descent meandering the user down a series of timber steps and trail switchbacks to descend the steep slope and arrive at a beautiful pocket beach that offers lake views.
9. Beach enhancements include adding a blended rounded gravel rock mix of 1" diameter to pea gravel-sized material above OHW. Habitat boulders are proposed as informal seating elements and beach features, a small habitat log placed at the beach edge is also included.
10. Landscape improvements include invasive removal on the slope and native plant restoration. The plant palette will be limited to low-growing shrubs such as sword fern, salal and snowberry.



13 LINWOOD LN SW - GRAVELLY LAKE (ACCESSIBLE)

LAKESWOOD STREET ENDS - CONCEPT PLANS



Scale: 1" = 10'-0"

0' 10' 20'

DATE: 01/11/2023

Cost Estimates

Preliminary cost estimates to accompany proposed site designs have been developed and include contingencies, cost escalation from 2022 to 2024 at 10% each year, a permit allowance for development and WSST. (See Appendix A)

Next Steps:

A matrix to summarize key scope criteria of all sites was created to help prioritize future decision-making. (See Appendix B) Through the next phase of this process the City will consult with the Parks & Recreation Advisory Board for their recommendation for future design or development of the street ends and propose a recommendation to City Council.

Appendices City of Lakewood Street Ends Concept Design

Appendix A 2009 Study PRAB Recommendation

Summary Recommendations Street Ends Evaluation 2009		
Site #	Site / Street End	PRAB Recommendations
Lake Steilacoom		
1	Westlake Ave.	Maintain, improve or develop
2	Mt. Tacoma Dr.	Lease
3	Beach Lane	Maintain, improve or develop
4	Lake Avenue	Lease
5	100th Street	Vacate and sell
6	Holly Hedge	Vacate and sell
7	Edgewater Park	Maintain, improve or develop
American Lake		
8	Lake City Blvd.	Maintain, improve or develop
9	Wadsworth St	Maintain, improve or develop
Lake Louise		
10	104th / Melody Lane	Maintain, improve or develop
11	Holden St	Maintain, improve or develop
Gravelly Lake		
12	Hilltop Lane	Leave as-is
13	Linwood Lane	Leave as-is

Appendix B Street Ends Matrix Summary

Street End Site	Lake	ADA Access & Parking	Development Level Proposed	Development Cost	Existing Lake Public Access	Apparent Encroachment	Current Community Use	Score
(Scoring Criteria)= Includes proposed site development		(2) both (1) access (0) none	(1) heavy (2) moderate (3) minor (0) none	(3) >\$300K (2) \$300-500K (1) >\$500K	(0) yes (3) none*	(0) structures (1) landscaping (2) none	(0) none (1) moderate (3) heavy*	TOTAL
1. Westlake Ave	Steilacoom	2	1	2	0	2	1	8
2. Mt Tacoma Dr	Steilacoom	0	3	3	0	1	0	7
3. Beach Lane	Steilacoom	0	2	3	0	1	0	6
4. Lake Avenue	Steilacoom	0	2	2	0	0	1	5
5. 100th Street	Steilacoom	0	2	3	0	0	1	6
6. Holly Hedge Ln.	Steilacoom	0	0	0	0	1	0	1
8. Lake City Blvd	American	2	1	1	0	0	3	7
9. Wadsworth St	American	0	3	3	0	2	3	11
10. 104th St/ Melody Ln	Louise	0	2	2	0	0	3	7
11. Holden St	Louise	2	1	1	0	1	0	5
12. Hilltop Ln	Gravelly	0	0	0	3	1	0	4
13. Linwood Ln	Gravelly	1	1	2	3	1	0	8

* Criteria was weighted to support sites currently being used, future ADA access & parking and access to lakes without current public access.

Appendix C Site Cost Estimates

Lakewood Street Ends Water Access Concept Designs

Client: City of Lakewood -Parks and Recreation Department

PRELIMINARY BUDGET ESTIMATE

Cost Summary of Sites

Date: 11-Jan-23



2701 1st Ave, Suite 510
Seattle, WA 98121
(206) 583-0620

Lake		Project Site	Improvement Type	Summary Cost
Steilacoom Lake	1	1 Sw Westlake Ave	Heavy Development	\$ 444,291.77
	2	2 Mt Tacoma Dr SW	Minor Development	\$ 260,650.71
	3	3 Beach Lane	Moderate Developmnet	\$ 280,031.01
	4	4 Lake Ave SW	Moderate Developmnet	\$ 300,116.04
	5	5 100th Avenue SW	Moderate Developmnet	\$ 257,331.63
	6	6 Holly Hedge	(No Development)	\$ -
American Lake	7	8 Lake City Blvd	Heavy Developmnet	\$ 558,038.73
	8	9 Wadsworth St.	Minor Development	\$ 135,900.74
Lake Louise	9	10 104th St. Melody Ln	Moderate Developmnet	\$ 370,487.52
	10	11 Holden st	Heavy Development	\$ 574,563.70
Gravelly Lake	11	12 Hilltop Lane	(No Development)	\$ -
	12	13 Linwood Lane SW	Heavy Development	\$ 482,911.40
Total Project Costs				\$ 3,664,323.25

Cost Estimating Notes:

RS MEANS 2022 City

Cost index: --

year

Lakewood Street Ends Water Access Concept Designs

Client: City of Lakewood - Parks and Recreation Department
PRELIMINARY BUDGET ESTIMATE



2701 1st Ave, Suite 510
Seattle, WA 98121
(206) 583-0620

Project Site #1: Westlake Ave SW

Site Area +/- : 9800 sf

Date: 11-Jan-23

Lake: Steilacoom Lake

Improvement Type: Heavy Development

MOBILIZATION						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Mobilization	10	%	195,435.00	19,543.50	
						\$19,543.50
DEMOLITION , CLEARING & EROSION CONTROL						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Site Survey Work	1	LS	6,000.00	6,000.00	
2	Demo/BMP/ TESC/Protection of Plants, Facilities	1	LS	7,000.00	7,000.00	
3	Clear, Grub, Haul, & Dump	0.25	AC	40,000.00	10,000.00	
4	Demo guardrail	35	LF	35.00	1,225.00	
5	Saw Cut and Demo asphalt grind edge	140	SY	20.00	2,800.00	
						\$27,025.00
GRADING & DRAINAGE						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Grading	1	LS	4,000.00	4,000.00	
2	Stormwater Improvement	1	LS	8,000.00	8,000.00	
						\$12,000.00
Parking Improvements						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	ADA Van Stall - Universal Accessible Symbol	1	EA	350.00	350.00	
2	Van Stall Sign	1	LS	1,200.00	1,200.00	
3	No Parking Sign	1	LS	1,200.00	1,200.00	
4	Stripping for ADA Stall	80	LF	85.00	6,800.00	
5	Asphalt Paving Restoration (driveway & parking) 3" section	200	SF	6.00	1,200.00	
6	Seal Coat asphalt	65	SY	4.00	260.00	
						\$11,010.00
Beach Enhancement						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Rounded pea gravel aggregate	2	TN	140.00	280.00	
2	Habitat log	0	EA	1,400.00	0.00	
3	Habitat boulder	2	TN	1,500.00	3,000.00	
4	Cut Stone feature	0	TN	1,800.00	0.00	
						\$3,280.00
Overwater Structures						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Deck Structure	0	SF	120.00	0.00	
2	Float or pile support wharf	0	LF	600.00	0.00	
						\$0.00
PEDESTRIAN CIRCULATION & HARDSCAPE						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	6' Wide Asphalt Path	220	LF	26.00	5,720.00	
2	6' Wide Crushed Rock Path	0	SF	6.00	0.00	
3	4' Wide crushed rock path	0	SF	6.00	0.00	
4	Beach Stairs - Stone 8'- length	0	LF	700.00	0.00	
5	Painted Street Art - Thermoplastic paint	135	LF	15.00	2,025.00	
6	Concrete paving 6" (Small Entry Plaza)	1250	SF	16.00	20,000.00	
7	Concrete paving (4")	0	SF	11.00	0.00	
8	Cut Stone seating stairs 8' long	0	LF	165.00	0.00	
9	6' Wide concrete stairs	0	LF	202.00	0.00	
10	Timber Steps	0	LF	55.00	0.00	
11	Landscape Cobble Rock	0.5	TN	400.00	200.00	
12	Retaining Wall - Boulder rockery	1	TN	1,500.00	1,500.00	
13	Retaining Wall - Cut Stone	0	LF	600.00	0.00	
14	Retaining/ Seat Wall - Concrete	2	CY	2,000.00	4,000.00	
15	Retaining Wall - CMU Block Wall	0	LF	300.00	0.00	
						\$33,445.00
SITE FURNITURE						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Picnic Table	1	EA	4,200.00	4,200.00	
2	Bench	1	EA	3,800.00	3,800.00	
3	Bollards	10	EA	1,500.00	15,000.00	
4	Pine Rail Fence	0	LF	30.00	0.00	
5	6' Chain Link Fence with slats	0	LF	35.00	0.00	
6	Concrete Rail Fence	315	LF	125.00	39,375.00	
7	Ornamental Steel fence	0	LF	75.00	0.00	
8	Waterfront Access Sign	1	EA	2,300.00	2,300.00	
9	Park Rules Sign	1	EA	5,000.00	5,000.00	
10	Site marker- Sculptural piece - Stainless steel Post	1	EA	13,000.00	13,000.00	
11	Interpretive Signage	0	EA	4,500.00	0.00	
12	Bike Rack	1	EA	1,300.00	1,300.00	
						\$83,975.00
PLANTING & IRRIGATION						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Restoration Native Planting	650	SF	8.00	5,200.00	
2	Native meadow	6,500	SF	3.00	19,500.00	
						\$24,700.00
Estimate Subtotal						
						214,978.50
Escalate to Summer 2024 (10% per year)		10%	%	214,978.50	21,497.85	
General Contractor Overhead and Profit		12%	%	236,476.35	28,377.16	
Sales Tax (Lakewood)		10%	%	264,853.51	26,485.35	
Design Contingency		25%	%	291,338.86	72,834.72	
Permitting		2%	%	364,173.58	7,283.47	
Design Fee		20%	%	364,173.58	72,834.72	
GRAND TOTAL						444,291.77

ASSUMPTIONS: Costs are preliminary. Cost in 2022 U.S. Dollars.

Cost Estimating Notes:

RS MEANS 2022 City Cost index: --
Inflation 8%-10% per year

Lakewood Street Ends Water Access Concept Designs

Client: City of Lakewood - Parks and Recreation Department
PRELIMINARY BUDGET ESTIMATE



Project Site #2: Mt. Tacoma Dr.

Site Area +/- : 2100 sf

Date: 11-Jan-23

Lake: Stellacoom Lake

Improvement Type: Minor Development

2701 1st Ave, Suite 510
Seattle, WA 98121
(206) 583-0620

MOBILIZATION						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Mobilization	10	%	114,655.00	11,465.50	
						\$11,465.50
DEMOLITION , CLEARING & EROSION CONTROL						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Site Survey Work	1	LS	6,000.00	6,000.00	
2	Demo/BMP/ TESC/Protection of Plants, Facilities	1	LS	7,000.00	7,000.00	
3	Clear, Grub, Haul, & Dump	0.18	AC	40,000.00	7,200.00	
4	Demo guardrail	10	LF	35.00	350.00	
5	Saw Cut and Demo asphalt grind edge	140	SY	20.00	2,800.00	
						\$23,350.00
GRADING & DRAINAGE						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Grading	1	LS	4,500.00	4,500.00	
2	Stormwater Improvement	1	LS	5,000.00	5,000.00	
						\$9,500.00
Parking Improvements						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	ADA Van Stall - Universal Accessible Symbol		EA	350.00	0.00	
2	Van Stall Sign		LS	1,200.00	0.00	
3	No Parking Sign	1	LS	1,200.00	1,200.00	
4	Stripping for ADA Stall		LF	85.00	0.00	
5	Asphalt Paving Restoration (driveway & parking) 3" section	200	SF	6.00	1,200.00	
6	Seal Coat asphalt	55	SY	4.00	220.00	
						\$2,620.00
Beach Enhancement						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Rounded pea gravel aggregate	1.5	TN	140.00	210.00	
2	Habitat log	0	EA	1,400.00	0.00	
3	Habitat boulder	1.5	TN	1,500.00	2,250.00	
4	Cut Stone feature	1	TN	1,800.00	1,800.00	
						\$4,260.00
Overwater Structures						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Deck Structure	0	SF	120.00	0.00	
2	Float or pile support wharf	0	LF	600.00	0.00	
						\$0.00
PEDESTRIAN CIRCULATION & HARDSCAPE						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	6' Wide Asphalt Path	0	LF	26.00	0.00	
2	6' Wide Crushed Rock Path	0	SF	6.00	0.00	
3	4' Wide crushed rock path	350	SF	6.00	2,100.00	
4	Beach Stairs - Stone 8'- length	0	LF	700.00	0.00	
5	Painted Street Art - Thermoplastic paint	100	LF	15.00	1,500.00	
6	Concrete paving 6" (Small Entry Plaza)	200	SF	16.00	3,200.00	
7	Concrete paving (4")	0	SF	11.00	0.00	
8	Cut Stone seating stairs 8' long	0	LF	165.00	0.00	
9	6' Wide concrete stairs	0	LF	202.00	0.00	
10	Timber Steps	0	LF	55.00	0.00	
11	Landscape Cobble Rock	0.5	TN	400.00	200.00	
12	Retaining Wall - Boulder rockery		TN	1,500.00	0.00	
13	Retaining Wall - Cut Stone	0	LF	600.00	0.00	
14	Retaining/ Seat Wall - Concrete	2	CY	2,000.00	4,000.00	
15	Retaining Wall - CMU Block Wall	0	LF	300.00	0.00	
						\$11,000.00
SITE FURNITURE						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Picnic Table	1	EA	4,200.00	4,200.00	
2	Bench	2	EA	3,800.00	7,600.00	
3	Bollards	6	EA	1,500.00	9,000.00	
4	Pine Rail Fence	0	LF	30.00	0.00	
5	6' Chain Link Fence with slats	0	LF	35.00	0.00	
6	Concrete Rail Fence	125	LF	125.00	15,625.00	
7	Ornamental Steel fence	0	LF	75.00	0.00	
8	Waterfront Access Sign	1	EA	2,300.00	2,300.00	
9	Park Rules Sign	1	EA	5,000.00	5,000.00	
10	Site marker- Sculptural piece - Stainless steel Post	1	LS	13,000.00	13,000.00	
11	Interpretive Signage	0	EA	4,500.00	0.00	
12	Bike Rack	0	EA	1,300.00	0.00	
						\$56,725.00
PLANTING & IRRIGATION						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Restoration Native Planting	300	SF	8.00	2,400.00	
2	Native meadow	1,600	SF	3.00	4,800.00	
						\$7,200.00
Estimate Subtotal						
						126,120.50
Escalate to Summer 2024 (10% per year)		10%	%	126,120.50	12,612.05	
General Contractor Overhead and Profit		12%	%	138,732.55	16,647.91	
Sales Tax (Lakewood)		10%	%	155,380.46	15,538.05	
Design Contingency		25%	%	170,918.50	42,729.63	
Permitting		2%	%	213,648.13	4,272.96	
Design Fee		20%	%	213,648.13	42,729.63	
GRAND TOTAL						260,650.71

ASSUMPTIONS: Costs are preliminary. Cost in 2022 U.S. Dollars.

Cost Estimating Notes:

RS MEANS 2022 City Cost index: --

Inflation 8%-10% per year

Lakewood Street Ends Water Access Concept Designs

Client: City of Lakewood - Parks and Recreation Department
PRELIMINARY BUDGET ESTIMATE



Project Site #3: Beach Lane

Site Area +/- : 2700 sf

Date: 11-Jan-23

Lake: Stellacoom Lake

Improvement Type: Moderate Development

2701 1st Ave, Suite 510
Seattle, WA 98121
(206) 583-0620

MOBILIZATION						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Mobilization	10	%	123,180.00	12,318.00	
						\$12,318.00
DEMOLITION , CLEARING & EROSION CONTROL						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Site Survey Work	1	LS	6,000.00	6,000.00	
2	Demo/BMP/ TESC/Protection of Plants, Facilities	1	LS	7,000.00	7,000.00	
3	Clear, Grub, Haul, & Dump	0.12	AC	40,000.00	4,800.00	
4	Demo guardrail	0	LF	35.00	0.00	
5	Saw Cut and Demo asphalt grind edge	0	SY	20.00	0.00	
						\$17,800.00
GRADING & DRAINAGE						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Grading	1	LS	3,000.00	3,000.00	
2	Stormwater Improvement	1	LS	5,000.00	5,000.00	
						\$8,000.00
Parking Improvements						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	ADA Van Stall - Universal Accessible Symbol	0	EA	350.00	0.00	
2	Van Stall Sign	0	LS	1,200.00	0.00	
3	No Parking Sign	1	LS	1,200.00	1,200.00	
4	Stripping for ADA Stall	0	LF	85.00	0.00	
5	Asphalt Paving Restoration (driveway & parking) 3" section	230	SF	6.00	1,380.00	
6	Seal Coat asphalt	25	SY	4.00	100.00	
						\$2,680.00
Beach Enhancement						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Rounded pea gravel aggregate	2	TN	140.00	280.00	
2	Habitat log	1	EA	1,400.00	1,400.00	
3	Habitat boulder	3	TN	1,500.00	4,500.00	
4	Cut Stone seat	0	TN	1,500.00	0.00	
						\$6,180.00
Overwater Structures						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Deck Structure	0	SF	120.00	0.00	
2	Float or pile support wharf	0	LF	600.00	0.00	
						\$0.00
PEDESTRIAN CIRCULATION & HARDSCAPE						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	6' Wide Asphalt Path	0	LF	26.00	0.00	
2	6' Wide Crushed Rock Path	0	SF	6.00	0.00	
3	4' Wide crushed rock path	500	SF	6.00	3,000.00	
4	Beach Stairs - Stone 8'- length	12	LF	700.00	8,400.00	
5	Painted Street Art - Thermoplastic paint	130	LF	15.00	1,950.00	
6	Concrete paving 6" (Small Entry Plaza)	320	SF	16.00	5,120.00	
7	Concrete paving (4")	0	SF	11.00	0.00	
8	Cut Stone seating stairs 8' long	0	LF	165.00	0.00	
9	6' Wide concrete stairs	0	LF	202.00	0.00	
10	Timber Steps	0	LF	55.00	0.00	
11	Landscape Cobble Rock	1	TN	400.00	400.00	
12	Retaining Wall - Boulder rockery	2	TN	1,500.00	3,000.00	
13	Retaining Wall - Cut Stone	0	LF	600.00	0.00	
14	Retaining/ Seat Wall - Concrete	0	CY	2,000.00	0.00	
15	Retaining Wall - CMU Block Wall	0	LF	300.00	0.00	
						\$21,870.00
SITE FURNITURE						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Picnic Table	1	EA	4,200.00	4,200.00	
2	Bench	1	EA	3,800.00	3,800.00	
3	Bollards	7	EA	1,500.00	10,500.00	
4	Pine Rail Fence	0	LF	30.00	0.00	
5	6' Chain Link Fence with slats	0	LF	35.00	0.00	
6	Concrete Rail Fence	150	LF	125.00	18,750.00	
7	Ornamental Steel fence	0	LF	75.00	0.00	
8	Waterfront Access Sign	1	EA	2,300.00	2,300.00	
9	Park Rules Sign	1	EA	5,000.00	5,000.00	
10	Site marker- Sculptural piece - Stainless steel Post	1	LS	13,000.00	13,000.00	
11	Interpretive Signage	0	EA	4,500.00	0.00	
12	Bike Rack	1	EA	1,300.00	1,300.00	
						\$58,850.00
PLANTING & IRRIGATION						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Restoration Native Planting	600	SF	8.00	4,800.00	
2	Native meadow	1,000	SF	3.00	3,000.00	
						\$7,800.00
Estimate Subtotal						
						135,498.00
Escalate to Summer 2024 (10% per year)		10%	%	135,498.00	13,549.80	
General Contractor Overhead and Profit		12%	%	149,047.80	17,885.74	
Sales Tax (Lakewood)		10%	%	166,933.54	16,693.35	
Design Contingency		25%	%	183,626.89	45,906.72	
Permitting		2%	%	229,533.61	4,590.67	
Design Fee		20%	%	229,533.61	45,906.72	
GRAND TOTAL						280,031.01

ASSUMPTIONS: Costs are preliminary. Cost in 2022 U.S. Dollars.

Cost Estimating Notes:

RS MEANS 2022 City Cost index: --
Inflation 8%-10% per year

Lakewood Street Ends Water Access Concept Designs

Client: City of Lakewood - Parks and Recreation Department
PRELIMINARY BUDGET ESTIMATE



Project Site #4: Lake Ave SW

Site Area +/- : 3500 sf

Date: 11-Jan-23

Lake: Stellacoom Lake

Improvement Type: Moderate Development

2701 1st Ave, Suite 510
Seattle, WA 98121
(206) 583-0620

MOBILIZATION						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Mobilization	10	%	132,015.00	13,201.50	
						\$13,201.50
DEMOLITION , CLEARING & EROSION CONTROL						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Site Survey Work	1	LS	6,000.00	6,000.00	
2	Demo/BMP/ TESC/Protection of Plants, Facilities	1	LS	7,000.00	7,000.00	
3	Clear, Grub, Haul, & Dump	0.1	AC	40,000.00	4,000.00	
4	Demo guardrail	12	LF	35.00	420.00	
5	Saw Cut and Demo asphalt grind edge	14	SY	20.00	280.00	
						\$17,700.00
GRADING & DRAINAGE						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Grading	1	LS	3,000.00	3,000.00	
2	Stormwater Improvement	1	LS	12,500.00	12,500.00	
						\$15,500.00
Parking Improvements						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	ADA Van Stall - Universal Accessible Symbol	0	EA	350.00	0.00	
2	Van Stall Sign	0	LS	1,200.00	0.00	
3	No Parking Sign	1	LS	1,200.00	1,200.00	
4	Stripping for ADA Stall	0	LF	85.00	0.00	
5	Asphalt Paving Restoration (driveway & parking) 3" section	0	SF	6.00	0.00	
6	Seal Coat asphalt	40	SY	4.00	160.00	
						\$1,360.00
Beach Enhancement						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Rounded pea gravel aggregate	2	TN	140.00	280.00	
2	Habitat log	0	EA	1,400.00	0.00	
2	Habitat boulder	2	TN	1,500.00	3,000.00	
3	Cut Stone feature	1	TN	1,800.00	1,800.00	
3	Shoreline Armouring	1	TN	250.00	250.00	
						\$5,330.00
Overwater Structures						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Deck Structure	0	SF	120.00	0.00	
2	Float or pile support wharf	0	LF	600.00	0.00	
						\$0.00
PEDESTRIAN CIRCULATION & HARDSCAPE						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	6' Wide Asphalt Path	0	LF	26.00	0.00	
2	6' Wide Crushed Rock Path	0	SF	6.00	0.00	
3	4' Wide crushed rock path	350	SF	6.00	2,100.00	
4	Beach Stairs - Stone 8'- length	0	LF	700.00	0.00	
5	Painted Street Art - Thermoplastic paint	80	LF	15.00	1,200.00	
6	Concrete paving 6" (Small Entry Plaza)	300	SF	16.00	4,800.00	
7	Concrete paving (4")	0	SF	11.00	0.00	
8	Cut Stone seating stairs 8' long	0	LF	165.00	0.00	
9	6' Wide concrete stairs	0	LF	202.00	0.00	
10	Timber Steps	0	LF	55.00	0.00	
11	Landscape Cobble Rock	0	TN	400.00	0.00	
12	Retaining Wall - Boulder rockery /headwall	1	TN	1,500.00	1,500.00	
13	Retaining Wall - Cut Stone	0	LF	600.00	0.00	
14	Retaining/ Seat Wall - Concrete	0	CY	2,000.00	0.00	
15	Retaining Wall - CMU Block Wall	25	LF	300.00	7,500.00	
						\$17,100.00
SITE FURNITURE						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Picnic Table	0	EA	4,200.00	0.00	
2	Bench	1	EA	3,800.00	3,800.00	
3	Bollards	4	EA	1,500.00	6,000.00	
4	Pine Rail Fence	0	LF	30.00	0.00	
5	6' Chain Link Fence with slats	0	LF	35.00	0.00	
6	Concrete Rail Fence	125	LF	125.00	15,625.00	
7	Ornamental Steel fence	0	LF	75.00	0.00	
8	Waterfront Access Sign	1	EA	2,300.00	2,300.00	
9	Park Rules Sign	1	EA	5,000.00	5,000.00	
10	Site marker- Sculptural piece - Stainless steel Post	1	LS	13,000.00	13,000.00	
11	Interpretive Signage	0	EA	4,500.00	0.00	
12	Bike Rack	1	EA	1,300.00	1,300.00	
						\$47,025.00
PLANTING & IRRIGATION						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Restoration Native Planting	3,500	SF	8.00	28,000.00	
2	Native meadow	0	SF	3.00	0.00	
						\$28,000.00
Estimate Subtotal						
						145,216.50
Escalate to Summer 2024 (10% per year)		10%	%	145,216.50	14,521.65	
General Contractor Overhead and Profit		12%	%	159,738.15	19,168.58	
Sales Tax (Lakewood)		10%	%	178,906.73	17,890.67	
Design Contingency		25%	%	196,797.40	49,199.35	
Permitting		2%	%	245,996.75	4,919.94	
Design Fee		20%	%	245,996.75	49,199.35	
GRAND TOTAL						300,116.04

ASSUMPTIONS: Costs are preliminary. Cost in 2022 U.S. Dollars.

Cost Estimating Notes:

RS MEANS 2022 City Cost index: --
Inflation 8%-10% per year

Lakewood Street Ends Water Access Concept Designs

Client: City of Lakewood - Parks and Recreation Department
PRELIMINARY BUDGET ESTIMATE



Project Site #5: 100th Avenue SW

Site Area +/- : 4600 sf

Date: 11-Jan-23

Lake: Steilacoom Lake

Improvement Type: Moderate Development

2701 1st Ave, Suite 510
Seattle, WA 98121
(206) 583-0620

MOBILIZATION						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Mobilization	10	%	113,195.00	11,319.50	
						\$11,319.50
DEMOLITION , CLEARING & EROSION CONTROL						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Site Survey Work	1	LS	6,000.00	6,000.00	
2	Demo/BMP/ TESC/Protection of Plants, Facilities	1	LS	7,000.00	7,000.00	
3	Clear, Grub, Haul, & Dump	0.12	AC	40,000.00	4,800.00	
4	Demo guardrail	16	LF	35.00	560.00	
5	Saw Cut and Demo asphalt grind edge	50	SY	20.00	1,000.00	
						\$13,360.00
GRADING & DRAINAGE						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Grading	1	LS	3,000.00	3,000.00	
2	Stormwater Improvement	1	LS	5,000.00	5,000.00	
						\$8,000.00
Parking Improvements						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	ADA Van Stall - Universal Accessible Symbol	0	EA	350.00	0.00	
2	Van Stall Sign	0	LS	1,200.00	0.00	
3	No Parking Sign	1	LS	1,200.00	1,200.00	
4	Stripping for ADA Stall	0	LF	85.00	0.00	
5	Asphalt Paving Restoration (driveway & parking) 3" section	0	SF	6.00	0.00	
6	Seal Coat asphalt	55	SY	4.00	220.00	
						\$1,420.00
Beach Enhancement						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Rounded pea gravel aggregate	208	TN	140.00	29,120.00	
2	Habitat log	2	EA	1,400.00	2,800.00	
3	Habitat boulder	9	TN	1,500.00	13,500.00	
4	Cut Stone feature	2	TN	1,800.00	3,600.00	
						\$49,020.00
Overwater Structures						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Deck Structure	0	SF	120.00	0.00	
2	Float or pile support wharf	0	LF	600.00	0.00	
						\$0.00
PEDESTRIAN CIRCULATION & HARDSCAPE						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	6' Wide Asphalt Path	0	LF	26.00	0.00	
2	6' Wide Crushed Rock Path	410	SF	6.00	2,460.00	
3	4' Wide crushed rock path	0	SF	6.00	0.00	
4	Beach Stairs - Stone 8'- length	0	LF	700.00	0.00	
5	Painted Street Art - Thermoplastic paint	120	LF	15.00	1,800.00	
6	Concrete paving 6" (Small Entry Plaza)	620	SF	16.00	9,920.00	
7	Concrete paving (4")	0	SF	11.00	0.00	
8	Cut Stone seating stairs 8' long	0	LF	165.00	0.00	
9	6' Wide concrete stairs	0	LF	202.00	0.00	
10	Timber Steps	30	LF	55.00	1,650.00	
11	Landscape Cobble Rock	0	TN	400.00	0.00	
12	Retaining Wall - Boulder rockery	0	TN	1,500.00	0.00	
13	Retaining Wall - Cut Stone	0	LF	600.00	0.00	
14	Retaining/ Seat Wall - Concrete	0	CY	2,000.00	0.00	
15	Retaining Wall - CMU Block Wall	0	LF	300.00	0.00	
						\$15,830.00
SITE FURNITURE						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Picnic Table	1	EA	4,200.00	4,200.00	
2	Bench	1	EA	3,800.00	3,800.00	
3	Bollards	6	EA	1,500.00	9,000.00	
4	Pine Rail Fence	0	LF	30.00	0.00	
5	6' Chain Link Fence with slats	0	LF	35.00	0.00	
6	Concrete Rail Fence	158	LF	125.00	19,750.00	
7	Ornamental Steel fence	0	LF	75.00	0.00	
8	Waterfront Access Sign	0	EA	2,300.00	0.00	
9	Park Rules Sign	1	EA	5,000.00	5,000.00	
10	Site marker- Sculptural piece - Stainless steel Post	1	LS	13,000.00	13,000.00	
11	Interpretive Signage	0	EA	4,500.00	0.00	
12	Bike Rack	1	EA	1,300.00	1,300.00	
						\$56,050.00
PLANTING & IRRIGATION						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Restoration Native Planting	2,020	SF	8.00	16,160.00	
2	Native meadow	1,265	SF	3.00	3,795.00	
						\$19,955.00
Estimate Subtotal						
						124,514.50
Escalate to Summer 2024 (10% per year)		10%	%	124,514.50	12,451.45	
General Contractor Overhead and Profit		12%	%	136,965.95	16,435.91	
Sales Tax (Lakewood)		10%	%	153,401.86	15,340.19	
Design Contingency		25%	%	168,742.05	42,185.51	
Permitting		2%	%	210,927.56	4,218.55	
Design Fee		20%	%	210,927.56	42,185.51	
GRAND TOTAL						257,331.63

ASSUMPTIONS: Costs are preliminary. Cost in 2022 U.S. Dollars.

Cost Estimating Notes:

RS MEANS 2022 City Cost index: --

Inflation 8%-10% per year

Lakewood Street Ends Water Access Concept Designs

Client: City of Lakewood - Parks and Recreation Department
PRELIMINARY BUDGET ESTIMATE



2701 1st Ave, Suite 510
Seattle, WA 98121
(206) 583-0620

Project Site #8: Lake City Blvd
Site Area +/- : 5810 sf
Date: 11-Jan-23
Lake: American Lake
Improvement Type: Heavy Development

MOBILIZATION						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Mobilization	10	%	245,470.00	24,547.00	
						\$24,547.00
DEMOLITION , CLEARING & EROSION CONTROL						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Site Survey Work	1	LS	6,000.00	6,000.00	
2	Demo/BMP/ TESC/Protection of Plants, Facilities	1	LS	7,000.00	7,000.00	
3	Debris Boom/ Turbidity Curtain	1	LS	8,000.00	8,000.00	
4	Clear, Grub, Haul, & Dump	0.2	AC	40,000.00	8,000.00	
5	Demo guardrail	35	LF	35.00	1,225.00	
6	Remove broken concrete boat launch	1	LS	10,000.00	10,000.00	
7	Saw Cut and Demo asphalt grind edge	65	SY	20.00	1,300.00	
						\$41,525.00
GRADING & DRAINAGE						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Grading	1	LS	15,000.00	15,000.00	
2	Stormwater Improvement	1	LS	20,000.00	20,000.00	
						\$35,000.00
Parking Improvements						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	ADA Van Stall - Universal Accessible Symbol	1	EA	350.00	350.00	
2	Van Stall Sign	1	LS	1,200.00	1,200.00	
3	No Parking Sign	1	LS	1,200.00	1,200.00	
4	Stripping for ADA Stall	330	LF	85.00	28,050.00	
5	Asphalt Paving Restoration (driveway & parking) 3" section	0	SF	6.00	0.00	
6	Seal Coat asphalt	210	SY	4.00	840.00	
						\$31,640.00
Beach Enhancement						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Rounded pea gravel aggregate	15	TN	140.00	2,100.00	
2	Habitat log	1	EA	1,400.00	1,400.00	
3	Habitat boulder	5	TN	1,500.00	7,500.00	
4	Cut Stone feature	1	TN	1,800.00	1,800.00	
						\$12,800.00
Overwater Structures						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Deck Structure	770	SF	120.00	92,400.00	
2	Pile support deck	180	LF	600.00	108,000.00	
3	Guardrail -Railing	150	LF	180.00	27,000.00	
						\$227,400.00
PEDESTRIAN CIRCULATION & HARDSCAPE						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	6' Wide Asphalt Path	0	LF	26.00	0.00	
2	6' Wide Crushed Rock Path	0	SF	6.00	0.00	
3	4' Wide crushed rock path	0	SF	6.00	0.00	
4	Beach Stairs - Stone 8'- length	4	LF	700.00	2,800.00	
5	Painted Street Art - Thermoplastic paint	100	LF	15.00	1,500.00	
6	Concrete paving 6" (Small Entry Plaza)	310	SF	16.00	4,960.00	
7	Concrete paving (4")	1345	SF	11.00	14,795.00	
8	Cut Stone seating stairs 8' long	0	LF	165.00	0.00	
9	6' Wide concrete stairs	8	LF	250.00	2,000.00	
10	Timber Steps	0	LF	55.00	0.00	
11	Landscape Cobble Rock	1	TN	400.00	400.00	
12	Retaining Wall - Boulder rockery	0	TN	1,500.00	0.00	
13	Retaining Wall - Cut Stone	0	LF	600.00	0.00	
14	Retaining/ Seat Wall - Concrete	0	CY	2,000.00	0.00	
15	Retaining Wall - Concrete Block Wall	220	LF	300.00	66,000.00	
						\$92,455.00
SITE FURNITURE						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Picnic Table	1	EA	4,200.00	4,200.00	
2	Bench	1	EA	3,800.00	3,800.00	
3	Bollards	6	EA	1,500.00	9,000.00	
4	Pine Rail Fence	0	LF	30.00	0.00	
5	6' Chain Link Fence with slats	0	LF	35.00	0.00	
6	Concrete Rail Fence	98	LF	125.00	12,250.00	
7	Ornamental Steel fence	0	LF	75.00	0.00	
8	Waterfront Access Sign	1	EA	2,300.00	2,300.00	
9	Park Rules Sign	1	EA	5,000.00	5,000.00	
10	Site marker- Sculptural piece - Stainless steel Post	1	LS	13,000.00	13,000.00	
11	Interpretive Signage	0	EA	4,500.00	0.00	
12	Bike Rack	1	EA	1,300.00	1,300.00	
						\$50,850.00
PLANTING & IRRIGATION						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Restoration Native Planting	3,130	SF	8.00	25,040.00	
2	Native meadow	200	SF	3.00	600.00	
						\$25,640.00
Estimate Subtotal						
						270,017.00
Escalate to Summer 2024 (10% per year)		10%	%	270,017.00	27,001.70	
General Contractor Overhead and Profit		12%	%	297,018.70	35,642.24	
Sales Tax (Lakewood)		10%	%	332,660.94	33,266.09	
Design Contingency		25%	%	365,927.04	91,481.76	
City Staff		2%	%	457,408.80	9,148.18	
Design Fee		20%	%	457,408.80	91,481.76	
GRAND TOTAL						558,038.73

ASSUMPTIONS: Costs are preliminary. Cost in 2022 U.S. Dollars.

Cost Estimating Notes:
RS MEANS 2022 City Cost index: --
Inflation 8%-10% per year

Lakewood Street Ends Water Access Concept Designs

Client: City of Lakewood -Parks and Recreation Department
PRELIMINARY BUDGET ESTIMATE



2701 1st Ave, Suite 510
Seattle, WA 98121
(206) 583-0620

Project Site #9: Wadsworth St.
Site Area +/- : 892 sf
Date: 11-Jan-23
Lake: American Lake
Improvement Type: Minor Development

MOBILIZATION						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Mobilization	10	%	59,780.00	5,978.00	
						\$5,978.00
DEMOLITION , CLEARING & EROSION CONTROL						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Site Survey Work	1	LS	6,000.00	6,000.00	
2	Demo/BMP/ TESC/Protection of Plants, Facilities	1	LS	4,000.00	4,000.00	
3	Debris Boom/ Turbidity Curtain	1	LS	5,000.00	5,000.00	
4	Clear, Grub, Haul, & Dump	0.1	AC	40,000.00	4,000.00	
5	Demo guardrail	0	LF	35.00	0.00	
6	Saw Cut and Demo asphalt grind edge	80	SY	20.00	1,600.00	
						\$20,600.00
GRADING & DRAINAGE						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Grading	1	LS	2,000.00	2,000.00	
2	Stormwater Improvement	0	LS	5,000.00	0.00	
						\$2,000.00
Parking Improvements						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	ADA Van Stall - Universal Accessible Symbol	0	EA	350.00	0.00	
2	Van Stall Sign	0	LS	1,200.00	0.00	
3	No Parking Sign	1	LS	1,200.00	1,200.00	
4	Stripping for ADA Stall	0	LF	85.00	0.00	
5	Asphalt Paving Restoration (driveway & parking) 3" section	700	SF	6.00	4,200.00	
6	Seal Coat asphalt	10	SY	4.00	40.00	
						\$5,440.00
Beach Enhancement						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Rounded pea gravel aggregate	0	TN	140.00	0.00	
2	Habitat log	0	EA	1,400.00	0.00	
3	Habitat boulder	0	TN	1,500.00	0.00	
4	Cut Stone feature	2	TN	1,800.00	3,600.00	
						\$3,600.00
Overwater Structures						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Deck Structure	0	SF	120.00	0.00	
2	Float or pile support wharf	0	LF	600.00	0.00	
						\$0.00
PEDESTRIAN CIRCULATION & HARDSCAPE						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	6' Wide Asphalt Path	0	LF	26.00	0.00	
2	Boat ramp extension - in water	200	SF	65.00	13,000.00	
3	6' Wide Crushed Rock Path	0	SF	6.00	0.00	
4	4' Wide crushed rock path	0	SF	6.00	0.00	
5	Beach Stairs - Stone 8'- length	0	LF	700.00	0.00	
6	Painted Street Art - Thermoplastic paint	80	LF	15.00	1,200.00	
7	Concrete paving 6" (Small Entry Plaza)	0	SF	16.00	0.00	
8	Concrete paving (4")	0	SF	11.00	0.00	
9	Cut Stone seating stairs 8' long	0	LF	165.00	0.00	
10	6' Wide concrete stairs	0	LF	202.00	0.00	
11	Timber Steps	0	LF	55.00	0.00	
12	Landscape Cobble Rock	0	TN	400.00	0.00	
13	Retaining Wall - Boulder rockery	0	TN	1,500.00	0.00	
14	Retaining Wall - Cut Stone	0	LF	600.00	0.00	
15	Retaining/ Seat Wall - Concrete	0	CY	2,000.00	0.00	
16	Retaining Wall - CMU Block Wall	0	LF	300.00	0.00	
						\$14,200.00
SITE FURNITURE						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Picnic Table	0	EA	4,200.00	0.00	
2	Bench	0	EA	3,800.00	0.00	
3	Bollards	3	EA	1,500.00	4,500.00	
4	Pine Rail Fence	0	LF	30.00	0.00	
5	6' Chain Link Fence with slats	0	LF	35.00	0.00	
6	Concrete Rail Fence	0	LF	125.00	0.00	
7	Ornamental Steel fence	0	LF	75.00	0.00	
8	Waterfront Access Sign	0	EA	2,300.00	0.00	
9	Park Rules Sign	1	EA	5,000.00	5,000.00	
10	Site marker- Sculptural piece - Stainless steel Post	1	LS	13,000.00	13,000.00	
11	Interpretive Signage	0	EA	4,500.00	0.00	
12	Bike Rack	0	EA	1,300.00	0.00	
						\$22,500.00
PLANTING & IRRIGATION						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Restoration Native Planting	60	SF	8.00	480.00	
2	Native meadow	0	SF	3.00	0.00	
						\$480.00
Estimate Subtotal						
						65,758.00
	Escalate to Summer 2024 (10% per year)	10%	%	65,758.00	6,575.80	
	General Contractor Overhead and Profit	12%	%	72,333.80	8,680.06	
	Sales Tax (Lakewood)	10%	%	81,013.86	8,101.39	
	Design Contingency	25%	%	89,115.24	22,278.81	
	Permitting	2%	%	111,394.05	2,227.88	
	Design Fee	20%	%	111,394.05	22,278.81	
GRAND TOTAL						135,900.74

ASSUMPTIONS: Costs are preliminary. Cost in 2022 U.S. Dollars.

Cost Estimating Notes:

RS MEANS 2022 City Cost index: --
Inflation 8%-10% per year

Lakewood Street Ends Water Access Concept Designs

Client: City of Lakewood -Parks and Recreation Department
PRELIMINARY BUDGET ESTIMATE



2701 1st Ave, Suite 510
Seattle, WA 98121
(206) 583-0620

Project Site #10: 104th Melody Ln SW
Site Area +/- :2815 sf
Date: 11-Jan-23
Lake: Lake Louise
Improvement Type: Moderate Development

MOBILIZATION						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Mobilization	10	%	162,970.00	16,297.00	
						\$16,297.00
DEMOLITION , CLEARING & EROSION CONTROL						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Site Survey Work	1	LS	6,000.00	6,000.00	
2	Demo/BMP/ TESC/Protection of Plants, Facilities	1	LS	7,000.00	7,000.00	
3	Debris Boom/ Turbidity Curtain	1	LS	5,000.00	5,000.00	
4	Clear, Grub, Haul, & Dump	0.1	AC	40,000.00	4,000.00	
5	Misc. Demolition	1	LS	7,000.00	7,000.00	
6	Saw Cut and Demo asphalt grind edge	25	SY	20.00	500.00	
						\$29,500.00
GRADING & DRAINAGE						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Grading	1	LS	3,000.00	3,000.00	
2	Stormwater Improvement	1	LS	5,000.00	5,000.00	
						\$8,000.00
Parking Improvements						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	ADA Van Stall - Universal Accessible Symbol	0	EA	350.00	0.00	
2	Van Stall Sign	0	LS	1,200.00	0.00	
3	No Parking Sign	1	LS	1,200.00	1,200.00	
4	Stripping for ADA Stall	0	LF	85.00	0.00	
5	Asphalt Paving Restoration (driveway & parking) 3" section	0	SF	6.00	0.00	
6	Seal Coat asphalt	0	SY	4.00	0.00	
						\$1,200.00
Beach Enhancement						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Rounded pea gravel aggregate	8	TN	140.00	1,120.00	
2	Habitat log	0	EA	1,400.00	0.00	
3	Habitat boulder	3	TN	1,500.00	4,500.00	
4	Cut Stone feature	2	TN	1,800.00	3,600.00	
						\$9,220.00
Overwater Structures						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Deck Structure	0	SF	120.00	0.00	
2	Float or pile support wharf	0	LF	600.00	0.00	
						\$0.00
PEDESTRIAN CIRCULATION & HARDSCAPE						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	6' Wide Asphalt Path	0	LF	26.00	0.00	
2	Paved Concrete Boat Ramp 6" thick	1100	SF	20.00	22,000.00	
3	Boat ramp extension - in water	160	SF	65.00	10,400.00	
4	6' Wide Crushed Rock Path	320	SF	6.00	1,920.00	
5	4' Wide crushed rock path	0	SF	6.00	0.00	
6	Beach Stairs - Stone 8'- length	1	LF	700.00	700.00	
7	Painted Street Art - Thermoplastic paint	120	LF	15.00	1,800.00	
8	Concrete paving 6" (Small Entry Plaza)	400	SF	16.00	6,400.00	
9	Concrete paving (4")	0	SF	11.00	0.00	
10	Cut Stone seating stairs 8' long	0	LF	165.00	0.00	
11	6' Wide concrete stairs	0	LF	202.00	0.00	
12	Timber Steps	102	LF	55.00	5,610.00	
13	Landscape Cobble Rock	1	TN	400.00	400.00	
14	Retaining Wall - Boulder rockery	7	TN	1,500.00	10,500.00	
15	Retaining Wall - Cut Stone	0	LF	600.00	0.00	
16	Retaining/ Seat Wall - Concrete	2	CY	2,000.00	4,000.00	
17	Retaining Wall - CMU Block Wall	15	LF	300.00	4,500.00	
						\$68,230.00
SITE FURNITURE						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Picnic Table	1	EA	4,200.00	4,200.00	
2	Bench	1	EA	3,800.00	3,800.00	
3	Bollards	6	EA	1,500.00	9,000.00	
4	Pine Rail Fence	0	LF	30.00	0.00	
5	6' Chain Link Fence with slats	0	LF	35.00	0.00	
6	Concrete Rail Fence	96	LF	125.00	12,000.00	
7	Ornamental Steel fence	0	LF	75.00	0.00	
8	Waterfront Access Sign	1	EA	2,300.00	2,300.00	
9	Park Rules Sign	1	EA	5,000.00	5,000.00	
10	Site marker- Sculptural piece - Stainless steel Post	1	LS	13,000.00	13,000.00	
11	Interpretive Signage	0	EA	4,500.00	0.00	
12	Bike Rack	1	EA	1,300.00	1,300.00	
						\$50,600.00
PLANTING & IRRIGATION						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Restoration Native Planting	830	SF	8.00	6,640.00	
2	Native meadow	0	SF	3.00	0.00	
						\$6,640.00
Estimate Subtotal						
						179,267.00
Escalate to Summer 2024 (10% per year)		10%	%	179,267.00	17,926.70	
General Contractor Overhead and Profit		12%	%	197,193.70	23,663.24	
Sales Tax (Lakewood)		10%	%	220,856.94	22,085.69	
Design Contingency		25%	%	242,942.64	60,735.66	
Permitting		2%	%	303,678.30	6,073.57	
Design Fee		20%	%	303,678.30	60,735.66	
GRAND TOTAL						370,487.52

ASSUMPTIONS: Costs are preliminary. Cost in 2022 U.S. Dollars.

Cost Estimating Notes:
RS MEANS 2022 City Cost index: --
Inflation 8%-10% per year

Lakewood Street Ends Water Access Concept Designs

Client: City of Lakewood - Parks and Recreation Department
PRELIMINARY BUDGET ESTIMATE



Project Site #11: Holden St.

Site Area +/- : 13428 sf

Date: 11-Jan-23

Lake: Lake Louise

Improvement Type: Heavy Development

2701 1st Ave, Suite 510
Seattle, WA 98121
(206) 583-0620

MOBILIZATION						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Mobilization	10	%	252,739.00	25,273.90	
						\$25,273.90
DEMOLITION , CLEARING & EROSION CONTROL						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Site Survey Work	1	LS	6,000.00	6,000.00	
2	Demo/BMP/ TESC/Protection of Plants, Facilities	1	LS	7,000.00	7,000.00	
3	Clear, Grub, Haul, & Dump	0.3	AC	40,000.00	12,000.00	
4	Misc. Demolition	1	LS	3,500.00	3,500.00	
5	Saw Cut and Demo asphalt grind edge	20	SY	20.00	400.00	
						\$28,900.00
GRADING & DRAINAGE						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Grading	1	LS	4,500.00	4,500.00	
2	Stormwater Improvement	1	LS	8,500.00	8,500.00	
						\$13,000.00
Parking Improvements						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	ADA Van Stall - Universal Accessible Symbol	1	EA	350.00	350.00	
2	Van Stall Sign	1	LS	1,200.00	1,200.00	
3	No Parking Sign	1	LS	1,200.00	1,200.00	
4	Stripping for ADA Stall	210	LF	85.00	17,850.00	
5	Asphalt Paving Restoration (driveway & parking) 3" section	510	SF	6.00	3,060.00	
6	Seal Coat asphalt	0	SY	4.00	0.00	
						\$23,660.00
Beach Enhancement						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Rounded pea gravel aggregate	22	TN	140.00	3,080.00	
2	Habitat log	1	EA	1,400.00	1,400.00	
3	Habitat boulder	8	TN	1,500.00	12,000.00	
4	Cut Stone feature	3	TN	1,800.00	5,400.00	
						\$21,880.00
Overwater Structures						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Deck Structure	0	SF	120.00	0.00	
2	Float or pile support wharf	0	LF	600.00	0.00	
						\$0.00
PEDESTRIAN CIRCULATION & HARDSCAPE						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	6' Wide Asphalt Path	225	LF	26.00	5,850.00	
2	6' Wide Crushed Rock Path	0	SF	6.00	0.00	
3	4' Wide crushed rock path	0	SF	6.00	0.00	
4	Beach Stairs - Stone 8'- length	4	LF	700.00	2,800.00	
5	Painted Street Art - Thermoplastic paint	187	LF	15.00	2,805.00	
6	Concrete paving 6" (Small Entry Plaza)	1140	SF	16.00	18,240.00	
7	Concrete paving (4")	0	SF	11.00	0.00	
8	Cut Stone seating stairs 8' long	0	LF	165.00	0.00	
9	6' Wide concrete stairs	0	LF	202.00	0.00	
10	Timber Steps	0	LF	55.00	0.00	
11	Landscape Cobble Rock	23	TN	400.00	9,200.00	
12	Retaining Wall - Boulder rockery	9	TN	1,500.00	13,500.00	
13	Retaining Wall - Cut Stone	0	LF	600.00	0.00	
14	Retaining/ Seat Wall - Concrete	0	CY	2,000.00	0.00	
15	Retaining Wall - CMU Block Wall	0	LF	300.00	0.00	
						\$52,395.00
SITE FURNITURE						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Picnic Table	1	EA	4,200.00	4,200.00	
2	Bench	1	EA	3,800.00	3,800.00	
3	Bollards	8	EA	1,500.00	12,000.00	
4	Pine Rail Fence	0	LF	30.00	0.00	
5	6' Chain Link Fence with slats	0	LF	35.00	0.00	
6	Concrete Rail Fence	476	LF	125.00	59,500.00	
7	Ornamental Steel fence	0	LF	75.00	0.00	
8	Waterfront Access Sign	1	EA	2,300.00	2,300.00	
9	Park Rules Sign	1	EA	5,000.00	5,000.00	
10	Site marker- Sculptural piece - Stainless steel Post	1	EA	13,000.00	13,000.00	
11	Interpretive Signage	0	EA	4,500.00	0.00	
12	Bike Rack	1	EA	1,300.00	1,300.00	
						\$101,100.00
PLANTING & IRRIGATION						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Restoration Native Planting	7,168	SF	8.00	57,344.00	
2	Native meadow	0	SF	4.00	0.00	
						\$57,344.00
Estimate Subtotal						
						278,012.90
Escalate to Summer 2024 (10% per year)		10%	%	278,012.90	27,801.29	
General Contractor Overhead and Profit		12%	%	305,814.19	36,697.70	
Sales Tax (Lakewood)		10%	%	342,511.89	34,251.19	
Design Contingency		25%	%	376,763.08	94,190.77	
Permitting		2%	%	470,953.85	9,419.08	
Design Fee		20%	%	470,953.85	94,190.77	
GRAND TOTAL						574,563.70

ASSUMPTIONS: Costs are preliminary. Cost in 2022 U.S. Dollars.

Cost Estimating Notes:

RS MEANS 2022 City Cost index: --

Inflation 8%-10% per year

Lakewood Street End Water Access Concept Plans

Client: City of Lakewood - Parks and Recreation Department
PRELIMINARY BUDGET ESTIMATE



Project Site #13: Linwood Lane SW

Site Area +/- : 8020 sf

Date: 11-Jan-23

Lake: Gravelly Lake

Improvement Type: Heavy Development

2701 1st Ave, Suite 510
Seattle, WA 98121
(206) 583-0620

MOBILIZATION						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Mobilization	10	%	212,423.00	21,242.30	
						\$21,242.30
DEMOLITION , CLEARING & EROSION CONTROL						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Site Survey Work	1	LS	6,000.00	6,000.00	
2	Demo/BMP/ TESC/Protection of Plants, Facilities	0	LS	7,000.00	0.00	
3	Clear, Grub, Haul, & Dump	0.12	AC	40,000.00	4,800.00	
4	Misc. Demolition	1	LS	6,000.00	6,000.00	
5	Saw Cut and Demo asphalt grind edge	0	SY	20.00	0.00	
						\$16,800.00
GRADING & DRAINAGE						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Grading	1	LS	6,000.00	6,000.00	
2	Stormwater Improvement	1	LS	7,000.00	7,000.00	
						\$13,000.00
Parking Improvements						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	ADA Van Stall - Universal Accessible Symbol	0	EA	350.00	0.00	
2	Van Stall Sign	0	LS	1,200.00	0.00	
3	No Parking Sign	1	LS	1,200.00	1,200.00	
4	Stripping for ADA Stall	0	LF	85.00	0.00	
5	Asphalt Paving Restoration (driveway & parking) 3" section	0	SF	6.00	0.00	
6	Seal Coat asphalt	0	SY	4.00	0.00	
						\$1,200.00
Beach Enhancement						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Rounded pea gravel aggregate	7	TN	140.00	980.00	
2	Habitat log	1	EA	1,400.00	1,400.00	
3	Habitat boulder	6	TN	1,500.00	9,000.00	
4	Cut Stone feature	2	TN	1,800.00	3,600.00	
						\$14,980.00
Overwater Structures						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Deck Structure	0	SF	120.00	0.00	
2	Float or pile support wharf	0	LF	600.00	0.00	
						\$0.00
PEDESTRIAN CIRCULATION & HARDSCAPE						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	6' Wide Asphalt Path	0	LF	26.00	0.00	
2	6' Wide Crushed Rock Path	0	SF	6.00	0.00	
3	4' Wide crushed rock path	1418	SF	6.00	8,508.00	
4	Beach Stairs - Stone 8'- length	4	LF	700.00	2,800.00	
5	Painted Street Art - Thermoplastic paint	84	LF	15.00	1,260.00	
6	Concrete paving 6" (Small Entry Plaza)	280	SF	16.00	4,480.00	
7	Concrete paving (4")	0	SF	11.00	0.00	
8	Cut Stone seating stairs 8' long	0	LF	165.00	0.00	
9	6' Wide concrete stairs	0	LF	202.00	0.00	
10	Timber Steps	51	LF	55.00	2,805.00	
11	Landscape Cobble Rock	0	TN	400.00	0.00	
12	Retaining Wall - Boulder rockery	0	TN	1,500.00	0.00	
13	Retaining Wall - Cut Stone	0	LF	600.00	0.00	
14	Retaining/ Seat Wall - Concrete	0	CY	2,000.00	0.00	
15	Retaining Wall - CMU Block Wall	0	LF	300.00	0.00	
						\$19,853.00
SITE FURNITURE						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Picnic Table	0	EA	4,200.00	0.00	
2	Bench	2	EA	3,800.00	7,600.00	
3	Bollards	6	EA	1,500.00	9,000.00	
4	Pine Rail Fence	0	LF	30.00	0.00	
5	6' Chain Link Fence with slats	0	LF	35.00	0.00	
6	Concrete Rail Fence	630	LF	125.00	78,750.00	
7	Ornamental Steel fence	0	LF	75.00	0.00	
8	Waterfront Access Sign	1	EA	2,300.00	2,300.00	
9	Park Rules Sign	1	EA	5,000.00	5,000.00	
10	Site marker- Sculptural piece - Stainless steel Post	1	LS	13,000.00	13,000.00	
11	Interpretive Signage	0	EA	4,500.00	0.00	
12	Bike Rack	1	EA	1,300.00	1,300.00	
						\$116,950.00
PLANTING & IRRIGATION						
Item	Description	Quantity	Unit	Unit Costs	Subtotal	Total
1	Restoration Native Planting	5,540	SF	8.00	44,320.00	
2	Native meadow	500	SF	3.00	1,500.00	
						\$45,820.00
Estimate Subtotal						
						233,665.30
Escalate to Summer 2024 (10% per year)		10%	%	233,665.30	23,366.53	
General Contractor Overhead and Profit		12%	%	257,031.83	30,843.82	
Sales Tax (Lakewood)		10%	%	287,875.65	28,787.56	
Design Contingency		25%	%	316,663.21	79,165.80	
Permitting		2%	%	395,829.02	7,916.58	
Design Fee		20%	%	395,829.02	79,165.80	
GRAND TOTAL						482,911.40

ASSUMPTIONS: Costs are preliminary. Cost in 2022 U.S. Dollars.

Cost Estimating Notes:

RS MEANS 2022 City Cost index: --
Inflation 8%-10% per year