

Draft Maple Valley Inventory & Characterization Report

SHORELINE MASTER PROGRAM CITY OF MAPLE VALLEY

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Figure 1. Pipe Lake, Lake Lucerne, and Lake Wilderness in Maple Valley, WA. *Image source:*
King County iMap. 1

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1.1 Background

The City of Maple Valley incorporated in 1997. Until that time, Maple Valley was governed by King County and as a result, the three lakes in Maple Valley have been under the care of King County's Department of Natural Resources and Parks (DNRP).

Under the care of the King County DNRP, the lakes are the beneficiaries of many water quality and surface water studies and projects. All three have Aquatic Vegetation Management Plans and Lake Lucerne and Pipe Lake have undergone an extensive project to eradicate noxious Hydrilla. In addition, residents around the lakes participate in King County's Lake Stewardship Program as volunteer water quality monitors.

The City of Maple Valley adopted King County's Shoreline Master Program (SMP) and remains under its jurisdiction until the City adopts its own comprehensive SMP. The lakes will continue to benefit from participation in regional projects and programs designed to manage water quality for public safety and the general health of the lakes themselves

Upon incorporation, the City of Maple Valley intended to adopt its own Shoreline Master Program. This intent meets the state's regulations (WAC 173-26-191) requiring Shoreline Master Programs to be consistent with local Comprehensive Plans and other planning and regulatory tools such as local development regulations and the Critical Areas Ordinance.

The City of Maple Valley initiated its SMP process in 2001. The draft policies and recommendations were reviewed by the City Council and submitted for preliminary review by the Department of Ecology (DOE) in mid-2004. The City completed a final draft SMP in 2007 but did not complete the adoption process. Since 2007, the City has continued to regulate shoreline use and development under the King County SMP. This inventory and characterization report was developed as part of the 2007 comprehensive SMP update process and has been edited only for relevance to 2019. All inventory information remains the same as was developed in 2007.

1.2 Historic Overview

Maple Valley's three lakes were among the popular water resorts in the early 20th century. Lake Wilderness, once a popular weekend and vacation destination, is a 67-acre lake with a mean depth of 21 feet and a maximum depth of 38 feet. The Lake's watershed is 318 acres in size and drains to Soos Creek. The Lake Wilderness Center and surrounding park were transferred from King County to the City of Maple Valley in 2003. The 108-acre Lake Wilderness Park includes a lodge, tennis courts, a ball field, a swimming beach, a dock, and a boat launch. About 65,000 people make use of the lake facilities and the public park each year.

The remainder of the lakeshore is held in private ownership including several tracts reserved as Native Growth Protection Easements. Surrounding the lake are numerous private homes as well as limited private access points for swimming, boating, fishing, and residential activities including the a five-acre private park. A small section of the lakeshore is owned by King County and is used as a trail that connects to the Cedar River Trail System.

In 2004, the boat launch adjacent to the park was transferred to the City from the Washington State Department of Fish and Wildlife (WDFW). The City assumed operation and maintenance of the launch once WDFW completed necessary repairs and replacement of the launch pad. Remaining portions of the boat launch property are to be restored to their natural state. The City granted WDFW a perpetual easement across the property for continued access to the launch.

No permanent streams flow into Lake Wilderness. The lake is fed by groundwater seeps, direct precipitation, and storm water runoff. Surface water exits the lake along the northwest shore via Jenkins Creek.

Lake Lucerne and Pipe Lake are almost entirely developed as single-family parcels along their shores. The portion of the waterbody considered Lake Lucerne is 16 acres in size with a mean depth of 18 feet and a maximum depth of 37 feet. Pipe Lake is 52 acres in size with a mean depth of 27 feet and a maximum depth of 65 feet. The two lakes are connected to one another at ordinary high water levels and therefore considered one waterbody for the purposes of shoreline management. In brochures published in the 1920s, Lake Lucerne and Pipe Lake were considered “edens of sylvan beauty in a land of pure delight” and by the 1950s the properties around both lakes had been platted and sold. Today, surrounded by privately owned residential lots, neither Lake Lucerne nor Pipe Lake provides any public access to the water within the City of Maple Valley.

1.3 Study Area Boundaries

The study area for the City’s SMP includes all areas within 200 feet landward of the ordinary high water mark (OHWM) of Lake Lucerne, Pipe Lake, and Lake Wilderness, excepting those areas designated in the SMP as Urban Conservancy or Natural Environment.

The Urban Conservancy exceptions on Lake Wilderness include the Lake Wilderness Park, two tracts owned by King County, and two tracts set aside for parks in the Highlands at Lake Wilderness and Lake Forest Estates. There is a five-acre private park along the eastern shoreline of Lake Wilderness owned by Lake Forest Estates.

Three Urban Conservancy exceptions exist on Lake Lucerne and Pipe Lake: two tracks are set aside for private parks in both Cedar Downs and Cherokee Bay and one is set aside for the Cherokee Bay Boat Launch.

1.4 Regulatory Environment

1.4.1 Local

Lake Wilderness, Lake Lucerne, and all but about one-third of Pipe Lake are under the jurisdiction of the City of Maple Valley. (The remaining third of Pipe Lake is in the City of Covington.) The land uses surrounding the lakes are regulated by the Maple Valley Comprehensive Plan, the City's Critical Area Ordinance, and Title 18 "Development Regulations" in the Maple Valley Municipal Code. Until adoption of the Maple Valley SMP, the three lakes are under the jurisdiction of the King County SMP and associated implementation projects and programs.

1.4.2 State

The Washington State Department of Ecology has the authority to establish guidelines for regulating the state's shorelines. The Growth Management Act requires that participating jurisdictions enact a Critical Areas Ordinance (CAO) to regulate land uses in identified critical areas.

1.4.3 Federal

Maple Valley is located within the boundaries of the Water Resource Inventory Area (WRIA) 8 and 9 Chinook Salmon Conservation Plans and is a financial partner with other cities and King County in the effort to rebuild the Chinook populations in WRIA 8 and WRIA 9.

1.5 Land Use

The property surrounding Lake Wilderness is zoned Low Density Residential (R-4, R6) and Parks, Recreation, Open Space (PRO). The property surrounding Lake Lucerne and Pipe Lake is zoned Low Density Residential (R-6), with a small section of lakeshore designated Parks, Recreation, Open Space (PRO). Nearly all of the property along the lakeshores is developed as single-family residential. The exceptions are the public and private parks used for recreation.

1.6 Watershed

The lakes are located primarily in the Green/Duwamish and Central Puget Sound Watershed. A small portion of the City is located in the Cedar River Watershed.

Existing Shoreline Conditions: Data Analysis Summary

2. 2.1 Water Quality

Since 1985 Lake Wilderness, Lake Lucerne, and Pipe Lake residents have participated in King County's Small Lakes Volunteer Monitoring Program. Volunteers collect water samples for phosphorus and chlorophyll analysis. This analysis estimates the trophic state of the lakes. The *King County Lake Water Quality: A Trend Report on King County Small Lakes Report* (November 2001) compiled the results of a 16-year trend lasting from 1986 to 2000 on water quality in 26 small lakes.

Using trophic parameters, the water quality in each of the Maple Valley lakes is described in a section of the report entitled "Individual Lake Results". In addition, The *Lakes of Maple Valley and Covington Monitoring Report for the 2009 Water Year* (December 2009) prepared for the City graded the conditions of the water quality in the three lakes.

2.1.1 Lake Wilderness

Summer surface temperatures on Lake Wilderness are too warm for salmonids but an observed thermocline at 25 feet could provide refuge. Lake Wilderness is relatively shallow and therefore lacks much available water habitat under the 25-foot contour. The pH, dissolved oxygen, thermal structure, and chemical contamination of Lake Wilderness are not known.

The report uses this rating system to measure environmental baseline conditions: Properly Functioning (PR), At Risk (AR), and Not Properly Functioning (NPF). Lake Wilderness rates a NPF for phosphorus content. This means there is a need to control phosphorus input, to prevent chemical contamination, and to increase shade along the shoreline.

The *King County Lake Water Quality Report* states that the water quality in Lake Wilderness has been generally good throughout the 16-year monitoring period and is characterized by excellent water clarity, low chlorophyll-a values, and moderate phosphorus levels. The report describes water quality at Lake Wilderness as "moderately productive" (mesotrophic) where groundwater is an important source of water to the lake.

The King County report acknowledges that lake stewardship is an important factor to ensure ongoing erosion and nutrient control measures as land is developed or shoreline alterations occur.

2.1.2 Lake Lucerne/Pipe Lake

Summer surface temperatures on Lake Lucerne and Pipe Lake are too warm for salmonids but an observed thermocline between 20 and 30 feet could provide refuge. Pipe Lake is too shallow

to provide sufficient thermal refuge although submerged springs may be present to provide some thermal refuge. Using the *Lakes of Maple Valley and Covington Monitoring Report, Table I Indicators*, Lake Lucerne and Pipe Lake rate an “at risk” (AR) for phosphorus content. The dissolved oxygen concentrations in both lakes are unknown. As with Lake Wilderness, this means there is a need to control phosphorus input, prevent chemical contamination, and to increase shade.

The *King County Lake Water Quality Report* describes the water quality at Lake Lucerne as very good throughout the 16-year monitoring period characterized by excellent water clarity, low chlorophyll-*a* values, and slightly elevated phosphorus levels. The report states, “...over all water quality at Lake Lucerne is less productive (oligotrophic) where groundwater is a primary source of water to the lake.

The *King County Lake Water Quality Report* describes the water quality at Pipe Lake as very good throughout the 16-year monitoring period characterized by excellent water clarity, low chlorophyll-*a* values, and slightly elevated phosphorus levels. The report states that, “overall water quality is less productive (oligotrophic) at Pipe Lake where groundwater is the primary source of water to the lake.

As with Lake Wilderness, the report acknowledges that stewardship of Lake Lucerne and Pipe Lake is an important factor to ensure ongoing erosion and nutrient control measures as land is developed or as shoreline alterations occur. As with Lake Wilderness, a well-established stewardship program is in place.

2.2 Habitat Access

2.2.1 Lake Wilderness

There are no apparent barriers within 200 feet of the lake. This may be a downstream issue for Jenkins Creek.

2.2.2 Lake Lucerne/Pipe Lake

There are no apparent barriers within 200 feet of either lake.

2.3 Habitat Elements

2.3.1 Lake Wilderness

Exotic Species

Exotic invasive emergent and shoreline vegetation is present in Lake Wilderness and bass, sunfish, and perch (all exotic warm water species) dominate the fish community. The presence of bullfrogs will continue to modify the fish, invertebrate, and amphibian community. Based on

these indicators, the habitat elements are rated from “at risk” (AR) to “not properly functioning” (NPF). Efforts are at work to control exotic vegetation species. To date, the City’s objectives for controlling exotic habitat species have not been determined.

Shoreline Upwelling

This issue is not critical in Lake Wilderness unless the City’s objective is to establish salmonid spawning. Salmonid spawning depends on upwelling and downwelling zones –almost certainly not an issue in Lake Wilderness. It is not known whether shoreline upwelling is affected by shoreline modifications, however, since the lakes are spring fed and continue to maintain historic water levels, it is possible that upwelling zones in the lakes have been affected.

Structural Complexity

The submergent plant community in Lake Wilderness has been almost completely eliminated by the exotic-plant eradication efforts, and it is likely that the scarcity of emergent species has also resulted from those efforts. Until submergent and emergent plant communities can be reestablished, this indicator will remain “at risk” (AR) or “not properly functioning” (NPF).

Lake Wilderness has abundant woody debris along its undeveloped sections of shoreline. However, with some exceptions, the residential sections of the shoreline have relatively little woody debris. Given this distinction, the habitat conditions differ greatly among the sections.

Substrate Composition

As mentioned earlier, the chemical contamination of the water or substrate is an unknown. Substrate alterations in the form of shoreline armoring and beach nourishment are common in Lake Wilderness. Given this, the rating for substrate composition is “at risk” (AR).

2.3.2 Lake Lucerne/Pipe Lake

Exotic Species

Exotic invasive emergent and shoreline vegetation are present in Lake Lucerne and Pipe Lake. As with Lake Wilderness, bass, sunfish, and perch (all exotic warm water species) dominate the fish community. However, exotic warm water fish species may be desirable; docks, piers, and floats provide refuge habitat for large bass.

The presence of bullfrogs will continue to modify the fish, invertebrate, and amphibian community. Based on these indicators, the habitat elements are rated “not properly functioning” (NPF). Efforts are at work to control exotic vegetation species.

Shoreline Upwelling/Downwelling

Bulkheads can interfere with upwelling zone, so it is possible that the rating for this indicator in Lake Lucerne and Pipe Lake is “at risk” (AR). However, this rating may not be critical for Maple Valley unless the City’s objective is to establish salmonid spawning.

Structural Complexity

As a result of immediate action taken in 1995 upon the discovery of hydrilla in Pipe Lake and Lake Lucerne, eradication methods have almost completely rid the lakes of this noxious weed. (*Pipe and Lucerne Lakes 2004 Hydrilla Eradication Project Annual Report*; King County DNRP).

However, the entire submergent plant community has been almost completely eliminated by the hydrilla eradication efforts. It is likely that the scarcity of emergent species is also a result of those efforts. Woody debris, another component of structural complexity, is absent or scarce around much of the shorelines of both lakes. The rating for structural complexity would therefore be “not properly functioning” (NPF).

Substrate Composition

Based on the need for beach nourishment and shoreline armoring, the rating for this indicator on Lake Lucerne and Pipe Lake is “at risk” (AR).

2.4 Shoreline Conditions

2.4.1 Lake Wilderness

Shoreline Vegetation and Riparian Structure

Due to indicators such as the lack of vegetation, the amount of impervious surfaces, and invasive vegetation, conditions differ substantially along distinct sections of Lake Wilderness shoreline. The eastern shoreline from the private beach owned by Lake Forest Estates Homeowner’s Association north to the track owned by King County is rated “properly functioning” (PF). From the private beach south there is a section of shoreline that nearly is “properly functioning”. However, the shoreline that consists of individual private parcels is rated “not properly functioning” (NPF) and the shoreline along the Lake Wilderness Park is “at risk” (AR).

Shoreline Gradient

Given that the majority of the residential sections of the Lake Wilderness shoreline are bulk headed, Lake Wilderness rates a “not properly functioning” (NPF) score. However, the natural areas along the Lake Wilderness Park shoreline and the eastern shoreline rate “properly functioning” (PF). Although there are indications of erosion at locations where vegetation has been cleared due to unmanaged human access, erosion on Lake Wilderness is not considered a pervasive problem.

2.4.2 Lake Lucerne/Pipe Lake

Shoreline Vegetation and Riparian Structure

Due to the presence of impervious surfaces, the absence of shoreline vegetation, and the number of bulkheads on private property, essentially all of the shoreline of both Lake Lucerne and Pipe Lake lacks the defined appropriate riparian structure. The Matrix Indicator is “not properly functioning” (NPF) for almost the entire shorelines along the lakes. Ninety-eight percent of the Pipe Lake shoreline and ninety-one percent of the Lake Lucerne shoreline rate an “at risk” (AR) score.

Shoreline Gradient

More than half of the shorelines of Pipe Lake and Lake Lucerne are bulk headed and as a result both lakes rated a “not properly functioning”(NPF) score. Over half of Pipe Lake (58%) and nearly two-thirds of Lake Lucerne (63%) shorelines are armored. Erosion is not a pervasive problem on either lake.

Public Access

Public access is limited to the Lake Wilderness Park and the King County Trail along the shore that bisects the Lake Wilderness Arboretum. Several private parks provide water access for residents in subdivisions along the shorelines. Thus the physical ability for the public to reach and touch the water’s edge, or to make use of facilities is restricted to one formal location on Lake Wilderness.

However, the City of Maple Valley’s proposed Non-Motorized Plan recommends more public access points to the lakes, and the draft SMP recommends that developments of more than four lots include public access to the water.

Lake Lucerne and Pipe Lake both have private beaches owned and operated by respective homeowner’s associations. There is limited informal public access on these lakes.

2.5 Stormwater, Wastewater and other Utilities

2.5.1 Lake Wilderness

Lake Wilderness properties are connected to public water and sewer. Utilities are buried underground.

2.5.2 Lake Lucerne/Pipe Lake

Properties on Lake Lucerne and Pipe Lake are connected to public water and sewer. Utilities are piped underwater. Lake Lucerne has three stormwater outfalls and Pipe Lake has one.

2.6 In-Water Structures

2.6.1 Lake Wilderness

Most private lots surrounding Lake Wilderness include manmade embankments to contain the shoreline. In-water structures include cement and rock bulkheads, docks, wood pilings and decks. Some properties also have gravel beaches, stone pavers, and lawns leading to the embankment or shoreline. A few properties have boathouses.

Lake Wilderness Park has sandy beach and dock for public use and a boat ramp next door. The private park has structures and a beach.

2.6.2 Pipe Lake

Practically every lot around Pipe Lake has one or more docks, a cement or rock bulkhead, a gravel beach or a grass lawn leading to the water. A few properties have floating docks, boathouses, or a gazebo.

2.6.3 Lake Lucerne

There are fewer in-water structures on Lake Lucerne but bulkheads and docks are present. Few properties have preserved the woody debris along the water's edge. (Exhibit A is a compilation of the identified in-water structures on the three lakes.)

2.7 Archaeological and Historic

Given its historical and cultural significance to the area, the Lake Wilderness Conference Center shall be preserved permanently for scientific study, education and public observation.

Archaeological sites located both in and out of the shoreline jurisdiction are subject to Chapter 27.44 RCW (Indian Graves and Records) and Chapter 27.53 RCW (Archaeological Site and Records) and shall comply with Chapter 25-48 WAC as well as the provisions of the Maple Valley SMP.

3. 2.8 Roads and Transportation Facilities

The lakes are accessible via paved roads and neighborhood streets.

Conclusion

The lakes in Maple Valley are well used and cared for in many ways. Private property owners take pride in their lake vistas and gladly participate in efforts to sustain and improve the water quality and shoreline ecology. Lake Wilderness Park provides the public with a much-loved place for active water-related recreation such as boating and swimming. The nearby King

County trail through the Lake Wilderness Arboretum provides an opportunity for quiet contemplation.

In general, the shoreline “improvements” made by individual property owners such as clearing natural vegetation including woody debris and planting lawns compromises the natural habitat functions and the ecological values of the shorelines. This activity resulted in the presence of yellow flag iris along the shores, a species that should be replaced with native vegetation. Other manmade intrusions such as gravel allow contaminants to easily infiltrate the water. Finally, phosphorus (a nutrient for aquatic plant growth) and nitrogen (a chemical found in lawn fertilizer) combine to cause the rapid growth of invasive species such as hydrilla.

Many government and volunteer programs are in place to address the degraded aspects of the lakes and their shorelines. The City of Maple Valley is in the process of implementing the Lake Wilderness Master Plan developed in 2007. The City also implements policies and regulations to address land use, transportation, and water quality issues. The adoption of a Maple Valley SMP will give the City control over requirements to repair, replace, and restore in-water structures, embankments, as well as houses and accessory structures on the land. The draft SMP encourages increased public access to the water.

The existing conditions portray a snapshot of the lakes in transition as hydrilla, milfoil, and other non-native and destructive plants are removed or eradicated from their waters. The conditions describe relatively healthy conditions for lakes of their type and sizes. Changes along the shorelines with regard to restoring woody debris and other natural elements will take place over time as redevelopment occurs.

Appendix A

LAKE WILDERNESS IN-WATER STRUCTURES

The table below provides a parcel by parcel description of shoreline physical conditions (2007).

Lot #	Parcel #	Description
1		dock, deck, rock pavers, bulkhead
2		dock, concrete block bulkhead
3		dock, pilings only, no deck, cement bulkhead
4		dock, poured cement bulkhead
5		dock, poured cement bulkhead
6	40	dock, cement with board top deck, bulkhead
7	45	dock, wood pilings, bulkhead, For-Sak Windo-Sav
8	50	dock, cement bulkhead, 1/2 boulders and overgrown
9		dock with log wood bulkhead topped with cement slabs
10		dock, boat house with poured cement, decorative rocks in cement
11	71	dock with cement block bulkhead, log in front
12		dock with log 1/2 log and 1/2 river rock bulkhead
13		dock with poured cement bulkhead
14		dock with poured cement bulkhead and cement steps to beach
15	100	dock with water slide, rock garden bulkhead with flowing waterfall
16	107	no deck, big rock bulkhead (house being built)
17		(adjoining property?)

Lot #	Parcel #	Description
18		dock, big rock bulkhead
19		dock, wood river rock below wood bulkhead and deck
20		dock, cement bulkhead
21		
22		
23		
24		24, 25, & 26 dock, cement bulkhead with small rock on top
25		
26		
27		27 & 28 corner woodlands with big log
28		
29		
30		after corner wooden lot
5		empty wooded lot
6		dock with cement overgrown pavers, bulkhead
7		no dock, wooded bulkhead tied planks
8		dock with poured cement bulkhead
9		dock, no bulkhead, plants
10		dock, bil log bulkhead, boat on beach
11	29	dock, plants bulkhead, small stone bulkhead

Lot #	Parcel #	Description
12		no dock, stone and wood bulkhead with plants
13		dock with cement slabs, bulkhead
14		dock with plants ?bulkhead
15		dock no bulkhead, lots of gravel, log way out
16		no dock, no bulkhead
17		dock, no bulkhead
18		
19		
20		dock, no bulkhead
21		dock, log bulkhead
22		empty wooded lot
23		empty wooded lot
24		dock, log bulkhead then stone
25		big dock with 1/4 log bulkhead, slide and diving board
26		empty wooded lot, no bulkhead
27		empty wooded lot, no bulkhead
28		dock with big wood bulkhead, stones below
29		dock (falling apart) cement/ steelplate bulkhead
30		deck, partial dock, no bulkhead
31		empty wooded lot

Lot #	Parcel #	Description
32		dock with big log bulkhead
33		no dock, log (rotten) bulkhead
34		dock with log bulkhead
35		dock with log bulkhead
36		dock with paved cement bulkhead
37		dock (shared?) with paved cement bulkhead
38		empty wooded lot
39		empty wooded lot
40		no dock, log bulkhead
41		dock, log bulkhead with wood deck
42		floating dock, log bulkhead
43		big tree, no dock
44		dock, log bulkhead, stone pavers, (last dock has flag)

Appendix B

LAKE LUCERNE IN-WATER STRUCTURES

The table below provides a parcel by parcel description of shoreline physical conditions.

Lot #	Description
1A	
2A	brown house
3A	
4A	
5A	tire bulkhead
6A	
7A	
8A	
9A	red boat on dock
ROW	dock
10A	
11A	
12A	
13A	
14A	
15A	
ROW	all wooded
16A	empty wooded lot
17A	empty wooded lot
18A	hidden
19A	2 canoes
20A	empty wooded lot
21A	
ROW	drainage
23	
22	
20	
Lot 2	
Lot 1	
19	
18	empty wooded lot
17	
16	
15	
14	
Lot 1	

Lot #	Description
Lot 2	straight tree line
11	
10	
9	
8	
7	
6	
5	
4	
3	
2	
1	
7B	
8B	
9B	
10B	
11B	
12B	
13B	
14B	
15B	
16B	
22	
23	
ROW	
21A	
20A	all woods, no house or dock
19A	
18A	
17A	
16A	
Access	all woods, no house or dock
15A	
14A	no dock
Access	with dock
13A	
12A	
11A	
10A	

Appendix C

PIPE LAKE IN-WATER STRUCTURES

The table below provides a parcel by parcel description of shoreline physical conditions.

Lot #	Description
1	bulkhead
2	bulkhead
27	wood dock with rock bulkhead
26	wood dock with rock bulkhead, cement steps to dock
25	no dock, no bulkhead, gravel to shore
24	dock with 1/2 cinder block bulkhead 1/2 length of property
23	dock with 1/2 poured cement bulkhead and gravel
22	dock with gravel and grass, no bulkhead
21	dock with wood bulkhead and steps
20	dock with wood steps, big rocks, gazebo
19	dock with 1/2 rock bulkhead erosion
18	dock with rock bulkhead, cement steps to water
17	dock (falling apart) overgrown rock bulkhead, red house
16	dock with cement and rock bulkhead
15	dock with small paving, bulkhead
14	no dock, log bulkhead, big log
13	dock, no bulkhead

Lot #	Description
12	dock with poured cement bulkhead
11	dock with big rock bulkhead, round smooth rocks
10	dock with cinder block bulkhead
9	dock with red cinder block bulkhead, also 1/2 wood bulkhead
8	dock with cinder block and rock pavers bulkhead, 2 high
7	dock with poured cement bulkhead
6	dock with poured cement bulkhead, 2 layers, sand beach connected to #5
5	same as above
4	dock with gravel beach, no bulkhead
3	dock with small rock bulkhead and grass down to water
2	dock with gravel beach, no bulkhead
1	dock with big tall cement bulkhead, square white house
18	dock with poured cement bulkhead, perfect grass, dolphins on house
20	dock with cemented rock wall, also log side bulkhead
19	dock with cement bulkhead
21	dock with cement bulkhead, 2 docks: 1big, 1 small) red house
36	dock with cement rocked wall (3 rowboats on bulkhead)
21	small rock bulkhead, 1/2 cemented rock
31	steps to dock with big river rock bulkhead
32	no dock, no bulkhead, grass to gravel

30	dock, no bulkhead
Lot #	Description
33	no dock, no bulkhead, weeds
36	dock, no bulkhead
40	no dock, hugh rock bulkhead
39	dock, rock bulkhead separated
10	dock, big rock bulkhead, fence
61	dock with row of rocks, bulkhead
26	dock, cement and rock bulkhead, steps
38	big dock, double bulkhead, pavers
34	no dock (pilings), small rock bulkhead
85	dock with float (full of weeds) grown over rock bulkhead
98	empty wooded lot, scrub trees
1	dock, rock and gravel bulkhead
2	floating dock, double bulkhead, interlocking pavers
3	dock, big rock bulkhead (up high on rock)
4	dock with wood bulkhead
5	no dock, no bulkhead, tall grass
Tract A	docks, sand beach
19	dock, no bulkhead
16	no description

17	dock, no bulkhead
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Appendix D

AVAILABLE INVENTORY MATERIALS

1. Shoreline Master Program Comparison: Shoreline Uses and Modifications for each Designation
2. Letter from Army Corps of Engineers re: Rock Creek 03/29/02
3. Letter and Chart from Washington Dept. of Natural Resources re: Natural Heritage Information System
4. Excerpts from King County Lake Water Quality Report re: Lake Lucerne, Pipe Lake, and Lake Wilderness
5. Maps
 - Zoning
 - Land Use
 - Shoreline Master Plan Map 07/18/01
 - The three lakes Shoreline Designations 07/18/01
 - Lake Lucerne and Pipe Lake Shoreline Designations (color) 07/18/01
 - Lake Wilderness Shoreline Designations (color) 07/18/01
 - Aerial Photo Lake Lucerne and Pipe Lakes delineating shoreline jurisdiction (8.5 x 11)
 - Aerial Photo Lake Wilderness delineating shoreline jurisdiction (8.5 x 11)
 - Aerial Photos as above 11x17
 - City of Maple Valley Lake Basins
 - WA Dept. of Fish and Wildlife Habitats and Species Map 09/17/01 re: wetlands, riparian zones, urban natural open space, waterfowl concentrations, bald eagle, Roosevelt Elk, Western Pond Turtle,
 - King County Assessor's Maps delineating property lines

- King County (WRIA) 8 Distribution of Steelhead Trout, Sockeye Salmon, Cutthroat Trout, Coho Salmon, Chinook Salmon
- Washington State Conservation Commission WRIA 9 Cutthroat, Coho, Chinook Distribution

6. Related Documents

- Chart Cross-Section of lakes' sediment
- Eight page Power Point of Maple Valley re: conditions surrounding the lakes
- King County Dept. of Natural Resources Website: Lake Locations and Features (locations, physical characteristics, and public facilities of lakes)
- King County Water Quality Report
- Green/Duwamish Restoration Programmatic DEIS, Section 3 Affected Environment pgs 3-30 – 3-65 (06/00)
- King County Dept. of Natural Resources re: Eurasian water milfoil and hydrilla in Lake Lucerne
- King County Dept. of Public Health re: getting sick in lake water

7. Miscellaneous Documents

8. Handwritten list of properties and property owners on the three lakes noting description and condition of docks; refers to photographs (perhaps above mentioned aerial photos)

9. Correspondence (Written; E-mail)

- 07/31/03 Alice Schisel to Steven Taylor DOE comments on draft SMP
- 07/28/03 Stephen Stanley to Alice Schisel Additional Comments with instructions to City of Maple Valley
- 04/15/03 John Owen memo Summary of Inventory Analysis (missing Tab A Request for Scientific and Environmental Data, Tab B Inventory Field Data, Tab C Preliminary Analysis of Shoreline Inventory Data (copy of Tab C is in appendices of draft SMP), Tab D Workshop Handout)
- 02/11/05 from Paul Ingram to Richard Robohm re critical areas (wetlands buffers)

Appendix E

REFERENCES

1. Maple Valley Shoreline Master Program Update.
2. The Lakes of Maple Valley and Covington. December 7, 2009.
<https://www.maplevalleywa.gov/home/showdocument?id=2283>
3. Resources for shoreline property owners. King County Department of Permitting and Environmental Review. <https://kingcounty.gov/services/environment/water-and-land/shorelines/property-owner-resources.aspx>. Accessed July 2019.
4. *Puget Sound Shoreline Stewardship Guidebook* (King County Department of Natural Resources and Parks) 2002. <https://your.kingcounty.gov/dnrp/library/2002/kcr1004.pdf>