



Pettit Lake: A New Treasure for Silverton

Fall 2019
Silverton

Elizabeth Koonce • Robert Ribe

LA 489/589 Advanced Design Studio



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Elizabeth Koonce

Report Author • Department of Landscape Architecture

Robert Ribe

Professor • Department of Landscape Architecture

COLLEGE OF DESIGN



Acknowledgments

The class wishes to acknowledge and thank the city of Silverton and Silverton City Council members for making this project possible. We would also like to thank the following city of Silverton staff for their assistance and contributions that were instrumental to the completion of this report:

Elizabeth Gray, Assistant to the City Manager/HR Coordinator
Jason Gottgetreu, Community Development Director

This report represents original student work and recommendations prepared by students in the University of Oregon's Sustainable City Year Program for the City of Silverton. Text and images contained in this report may not be used without permission from the University of Oregon.

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About SCI

The Sustainable Cities Institute (SCI) is an applied think tank focusing on sustainability and cities through applied research, teaching, and community partnerships. We work across disciplines that match the complexity of cities to address sustainability challenges, from regional planning to building design and from enhancing engagement of diverse communities to understanding the impacts on municipal budgets from disruptive technologies and many issues in between.

SCI focuses on sustainability-based research and teaching opportunities through two primary efforts:

1. Our Sustainable City Year Program (SCYP), a massively scaled university-community partnership program that matches the resources of the University with one Oregon community each year to help advance that community's sustainability goals; and

2. Our Urbanism Next Center, which focuses on how autonomous vehicles, e-commerce, and the sharing economy will impact the form and function of cities.

In all cases, we share our expertise and experiences with scholars, policymakers, community leaders, and project partners. We further extend our impact via an annual Expert-in-Residence Program, SCI China visiting scholars program, study abroad course on redesigning cities for people on bicycle, and through our co-leadership of the Educational Partnerships for Innovation in Communities Network (EPIC-N), which is transferring SCYP to universities and communities across the globe. Our work connects student passion, faculty experience, and community needs to produce innovative, tangible solutions for the creation of a sustainable society.

About SCYP

The Sustainable City Year Program (SCYP) is a year-long partnership between SCI and a partner in Oregon, in which students and faculty in courses from across the university collaborate with a public entity on sustainability and livability projects. SCYP faculty and students work in collaboration with staff from the partner agency through a variety of studio projects and service-

learning courses to provide students with real-world projects to investigate. Students bring energy, enthusiasm, and innovative approaches to difficult, persistent problems. SCYP's primary value derives from collaborations that result in on-the-ground impact and expanded conversations for a community ready to transition to a more sustainable and livable future.

About Silverton, Oregon

The first settlers came to the banks of Silver Creek, following timber and water power, in the 1800s. Silverton was incorporated in 1885. The young town was a trading and banking center of prominence and ranked among the most progressive towns of western Oregon.

By 1921, Silverton industries were producing exports for other areas and even some foreign countries. The Fischer Flour Mills on South Water Street was among the exporters. Power for the mill was obtained by damming Silver Creek at a point near the present pool, diverting water into a millrace that ran along the creek to the mill and then dumped back into the creek.

The development and opening of the Oregon Garden in the 1990s signify the success of a partnership between the Garden, a private enterprise attracting tourists to botanical displays, and the city of Silverton. The Oregon Garden's

expansive wetlands area has benefited from the City's excess reclaimed water since 2000, while the community benefits from trade the Garden draws to the area. Silverton was recognized for these reuse efforts as a "Community Water Champion" by the National Water Reuse Association in 2018.

Today, approximately 10,380 residents call the city of Silverton home. In addition to the Oregon Garden, the City features a historic downtown, hospital, community pool, and access to nature activities including nearby Silver Falls State Park.

Course Participants

HANA KETTERER, Landscape Architecture Graduate

ELIZABETH KOONCE, Landscape Architecture Graduate

JEFFREY KUEBLER, Landscape Architecture Graduate

NEO LEHOKO, Landscape Architecture Graduate

DAVID PAULS, Landscape Architecture Graduate

LEXI SMALDONE, Landscape Architecture Graduate

EMI HALPERIN, Landscape Architecture Undergraduate

NANCY SILVERS, Landscape Architecture Undergraduate

Executive Summary

This report includes student work from the LA 489/589 Advanced Design Studio in fall term of 2019. This work was executed by landscape architecture students in collaboration with the city of Silverton with the goal of presenting cohesive designs for the Pettit Lake property as a public park and possible income-generating resource for the City.

Site analyses of geology, hydrology, landslide risk assessment, existing park assets, soils, sunlight, acoustics, and historical vegetation are included, as well as background research on the city of Silverton; The Oregon Garden, which abuts the site; and Don Pettit, the former resident of the site.

Students working in small groups developed three combined plans as well as eight individual designs. Student final projects, focusing on design goals and objectives for the site, include passive day-use parks, naturalistic campgrounds, hiking trails, funiculars,

and wildlife interpretation centers.

Various potential design layouts and programmatic combinations are included in this report in response to the city of Silverton's program matrix elements. Eight distinct designs were produced, which were combined into three plans. Of key importance for Silverton community members were the retention of the site's natural character and calm, secluded quality, while still allowing public enjoyment of the landscape. Students incorporated these objectives into their final designs.

FIG. 1
Marion County and
Silverton, Oregon



The following map displays a summary of student options and their locations around Pettit Lake.

Decision and Development Sequence Pettit Lake Recreation Plan Options

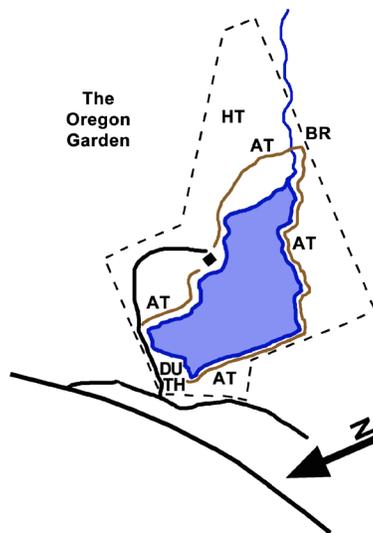
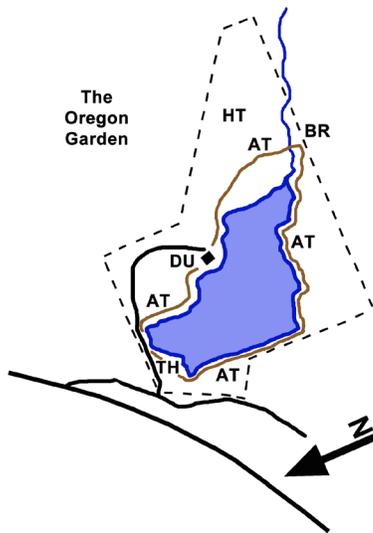
[Green Elements Denote More Optional Elements]

No Campground

With Campground

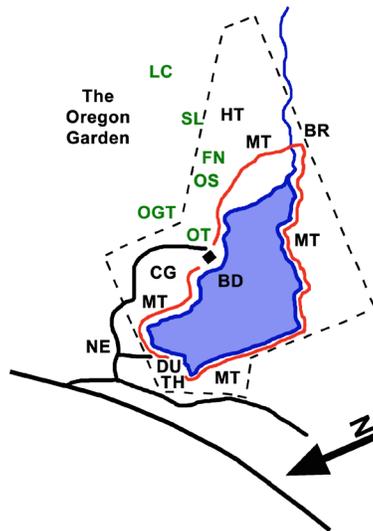
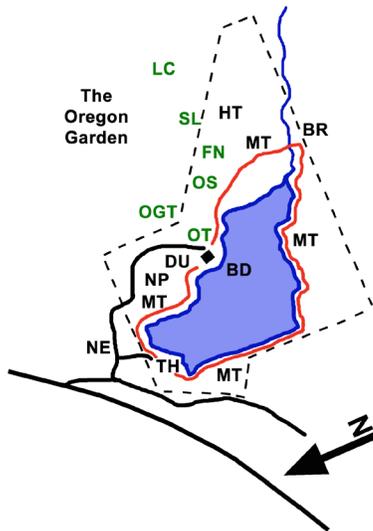
Phase One

Phase One



Phase Two

Phase Two



LEGEND OF POTENTIAL PETTIT LAKE RECREATION PROJECTS

- | | |
|--|-------------------------|
| AT Accessible <8% Grade Compacted Gravel Trail | TH Trailhead |
| HT Hiking Trail System on Northeast Slope | DU Day Use & Playground |
| MT Multi-modal <8% Wide Paved Trail | CG Campground |
| BD Boat Rental & Public Dock | OT Outdoor Theater |
| BR High Bridge Over Creek | NP Nature Playground |
| OGT Trail up To Oregon Garden | FN Funicular |
| NE New 'Greener' Entry Road | LC Life Care Center |
| OS Oak Savanna Restoration | SL Savanna Lookout |

Introduction

The city of Silverton owns 80 acres of land that includes Pettit Lake (18 acres) just south of a major tourist attraction, the Oregon Garden. The City would like to develop this parcel of land into a valuable resource for its citizens and visitors while also incorporating the nearby Garden. The site has potential advantages as an outdoor concert venue, interpretive center, and campground. Other program elements call for the development of a portion of the site to help pay for public facilities, recreation, habitat restoration, or other civic uses.

The city of Silverton partnered with SCYP and landscape architecture students to develop designs for the development of the Pettit Lake property. The City wants to turn the lake into an amenity of public value to citizens and visitors. If possible, designs were to complement and leverage the programs and tourism at the Oregon Garden, which borders the property. The class collaborated with city staff to develop alternative design proposals for a diversity of site programs, including elements such as a regional park, high-end senior housing, outdoor theater, trails, and other recreation and education elements. Many of the student design proposals centered on

creating outdoor spaces for gathering, play, and natural recreation.

Midterm and final reviews took place in Silverton. Community members, staff, and elected officials provided feedback on proposed designs.

TIMELINE

October 7, 2019: Class site visit

October 18, 2019: Class visit to the Oregon Garden

November 4, 2019: Mid-term presentation (UO)

November 6, 2019: Open house (Silverton)

November 13-17, 2019: Additional fieldwork

December 4, 2019: Final presentaiton (Silverton)

Site Analysis

GEOLOGY

Typology terrain and surface geology analyses, conducted by Jeffrey Kuebler.

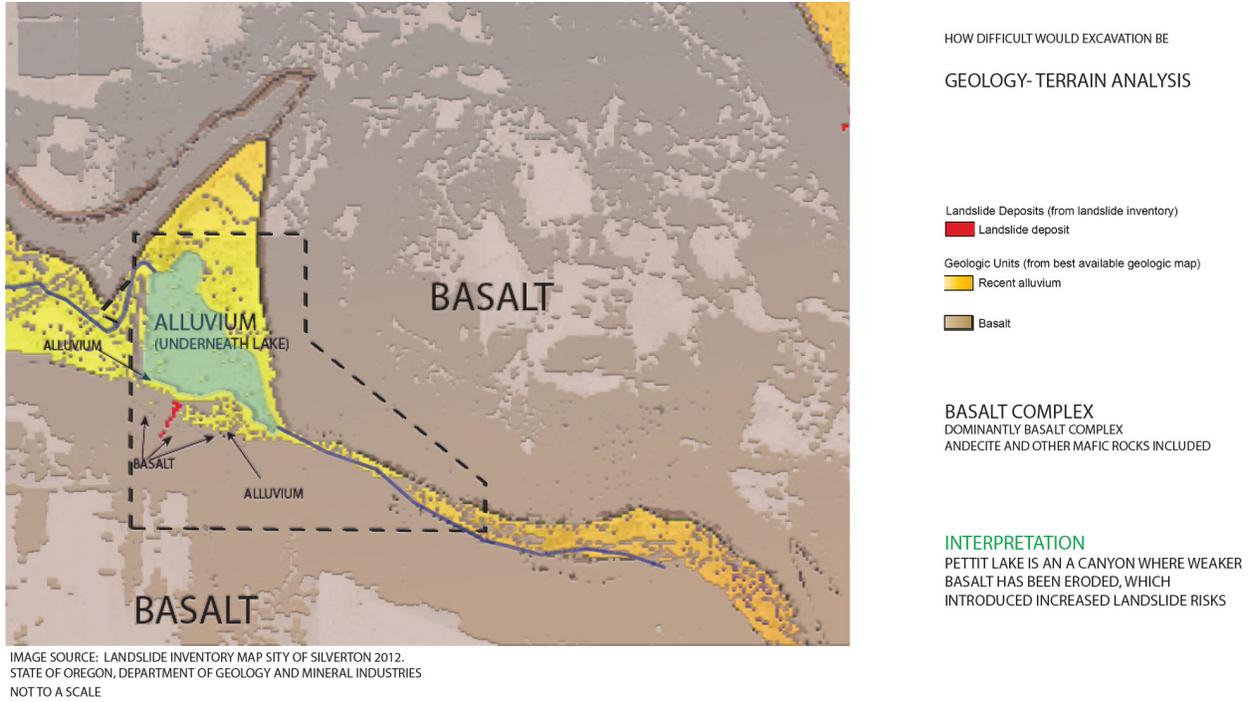


FIG. 2
Geological terrain analysis.

Pettit Lake is located within a canyon of weaker eroded basalt, which increases the probability of landslides within the property in the event of an earthquake.

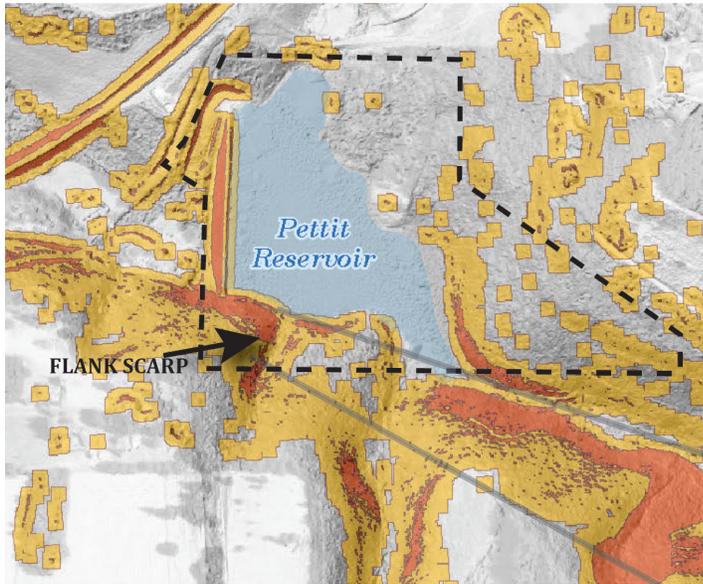


IMAGE SOURCE: SHALLOW LANDSLIDE SUSCEPTIBILITY MAP CITY OF SILVERTON 2012. STATE OF OREGON, DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES

FIG. 3
Surface geology
assessment of the site.

DATA USED TO MAKE GENERAL LANDSLIDE HAZARD OBSERVATIONS

SHALLOW-LANDSLIDE SUSCEPTIBILITY CLASSIFICATION

Each landslide susceptibility hazard zone shown on this map has been developed according to a number of specific factors. The classification scheme was developed by the Oregon Department of Geology and Mineral Industries (Burns and others, 2012). The symbology used to display these hazard zones is explained below.

Landslide Susceptibility Zones This map uses color to show the relative degree of hazard. Each zone is a combination of several factors.

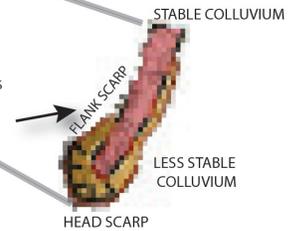
-  **HIGH:** High susceptibility to shallow landslides.
-  **MODERATE:** Moderate susceptibility to shallow landslides.
-  **LOW:** Low susceptibility to shallow landslides.

Contributing Factors*	Final Hazard Zone		
	High	Moderate	Low
① Factor of Safety (FOS)	less than 1.25	1.25 - 1.5	greater than 1.5
② Landslide Inventory	included	—	—
③ Buffers	2H:1V (head scarps)	2H:1V (FOS less than 1.5)	—

INTERPRETATION

ORANGE AREAS [EXCEPTING POND EMBANKMENT] ARE MORE LIKELY FUTURE LANDSLIDES, NEW DEVELOPMENTS SHOULD AVOID THESE WHEREVER POSSIBLE

THE FLANK SCARP IS THE BIGGEST LANDSLIDE HAZARD ON OUR SITE DURING AN EARTHQUAKE



DATA USED TO MAKE GENERAL LANDSLIDE HAZARD OBSERVATIONS

SHALLOW-LANDSLIDE SUSCEPTIBILITY CLASSIFICATION

Each landslide susceptibility hazard zone shown on this map has been developed according to a number of specific factors. The classification scheme was developed by the Oregon Department of Geology and Mineral Industries (Burns and others, 2012). The symbology used to display these hazard zones is explained below.

Landslide Susceptibility Zones: This map uses color to show the relative degree of hazard. Each zone is a combination of several factors.

-  **HIGH:** High susceptibility to shallow landslides.
-  **MODERATE:** Moderate susceptibility to shallow landslides.
-  **LOW:** Low susceptibility to shallow landslides.

Hazard Zone Matrix Table

Contributing Factors*	Final Hazard Zone		
	High	Moderate	Low
① Factor of Safety (FOS)	less than 1.25	1.25 - 1.5	greater than 1.5
② Landslide Inventory	included	—	—
③ Buffers	2H:1V (head scarps)	2H:1V (FOS less than 1.5)	—

FIG. 4
Data used to assess
geology

Dark orange areas (excepting the lake embankment) are considered more likely sites for future landslides in the event of an earthquake. It is recommended that new building developments avoid these areas wherever possible. The largest landslide hazard on the site is the unstable flank scarp on the southern end of the property. High landslide hazards mapped in relation to earthquake events are

correlated to landslide hazards that can occur during heavy storms, particularly if forests are removed or slopes are undercut by construction.

HYDROLOGY

Watershed analysis for Pettit Lake, conducted by Jeffrey Kuebler.

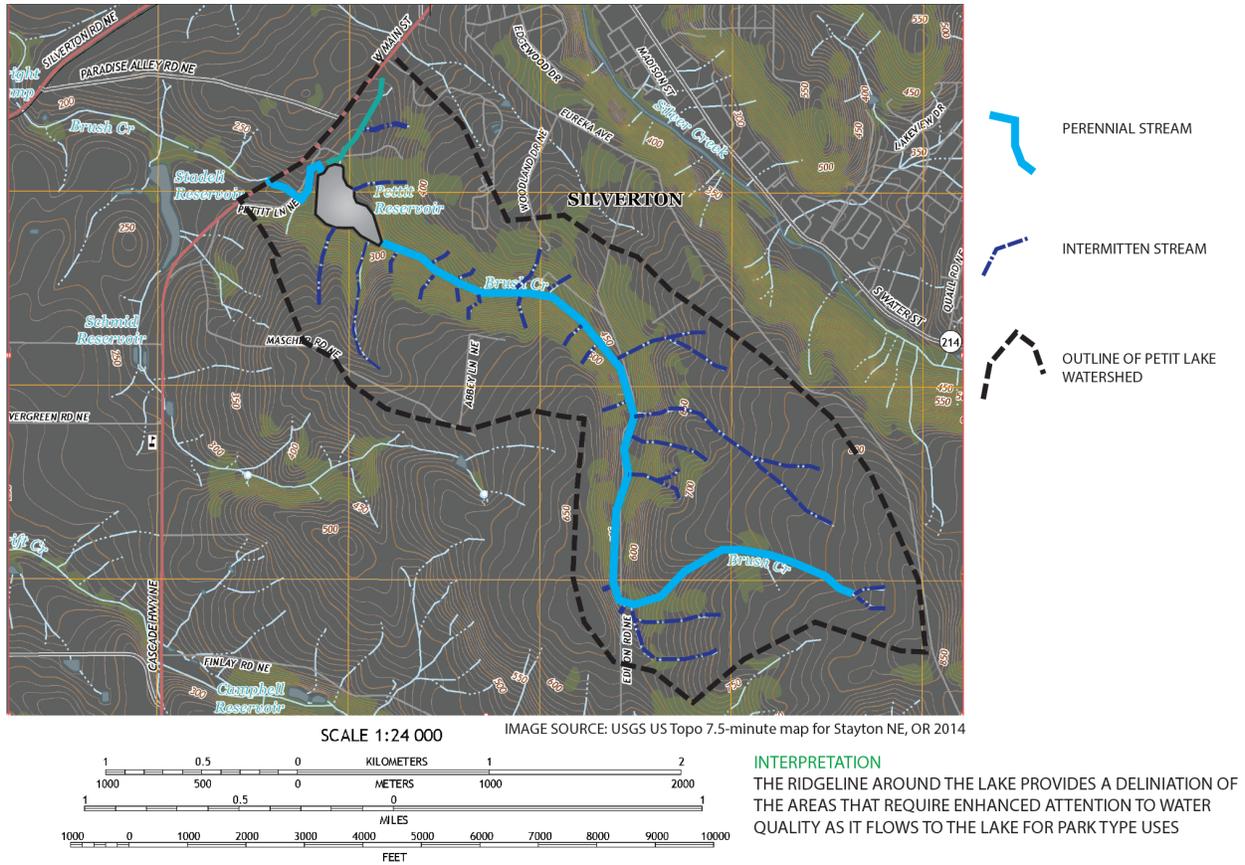
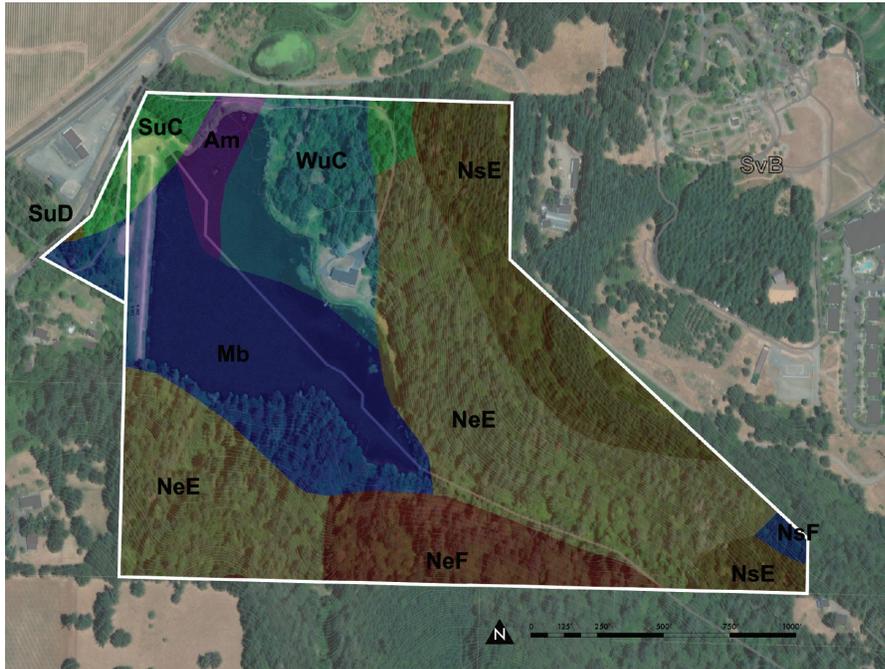


FIG. 5
Hydrological assessment of Pettit lake.

The ridgeline around the lake delineates the areas that require enhanced attention to water quality, as water flows down the ridge and into the lake for potential recreational use by future park visitors.

SOILS

Analysis of the soil profile of the site, conducted by David Pauls.



Amity Silty Loam (AM)

Silverton silt loam, 2 to 12 percent slopes (SuC)

Woodburn silt loam, 3 to 12 percent slopes (WuC)

McBee silty clay loam (Mb)

Nekia silty clay loam, 20 to 30 percent slopes (NeE)

Nekia silty clay loam, 30 to 50 percent slopes (NeF)

Nekia very stony silty clay loam, 2 to 30 percent slopes (NsE)

Nekia very stony silty clay loam, 30 to 50 percent slopes (NsF)

FIG. 6
Soil assessment of
Pettit Lake.

The Pettit Lake site soils are as follows:

- Amity silty loam (AM)
- Silverton silt loam, 2 to 12% slopes (SuC)
- Woodburn silt loam, 3 to 12% slopes (WuC)
- McBee silty clay loam (Mb)
- Nekia silty clay loam, 20 to 30% slopes (NeE)
- Nekia silty clay loam, 30 to 50% slopes (NeF)
- Nekia very stony silty clay loam, 20 to 30% slopes (NsE)
- Nekia very stony silty clay loam, 30 to 50% slopes (NsF)

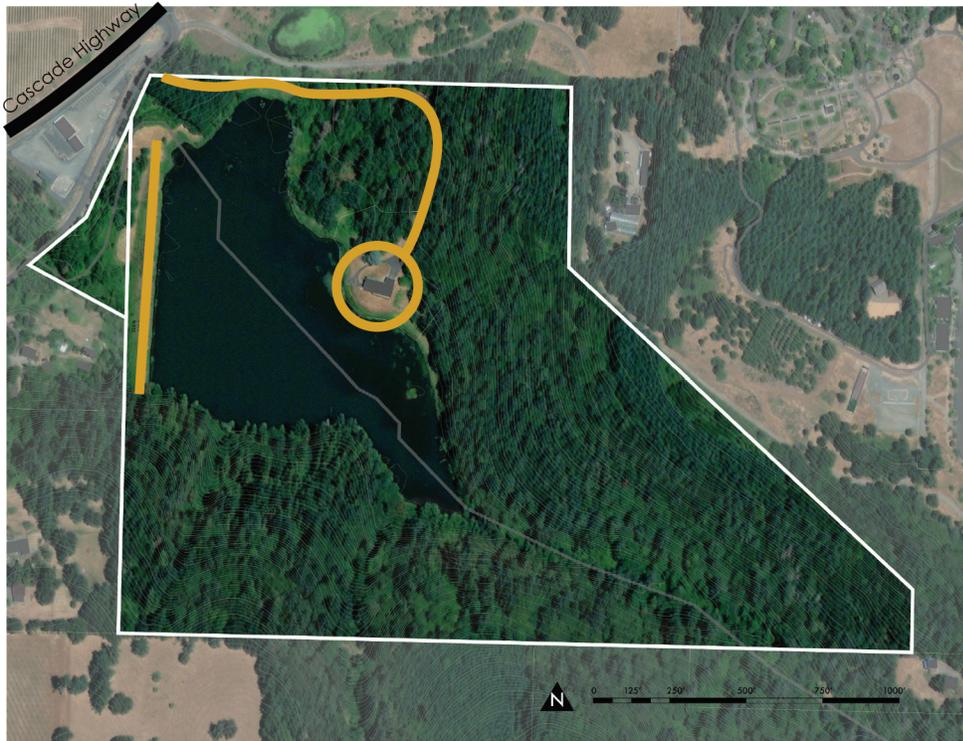


FIG. 7
Anthropogenic soils.

Areas where native soil has been altered by humans for development are classified as areas of anthropogenic soils. On the Pettit Lake property, roads and paved surfaces have been altered to increase bearing capacity and runoff, and the earthen dam has been altered to reduce infiltration.

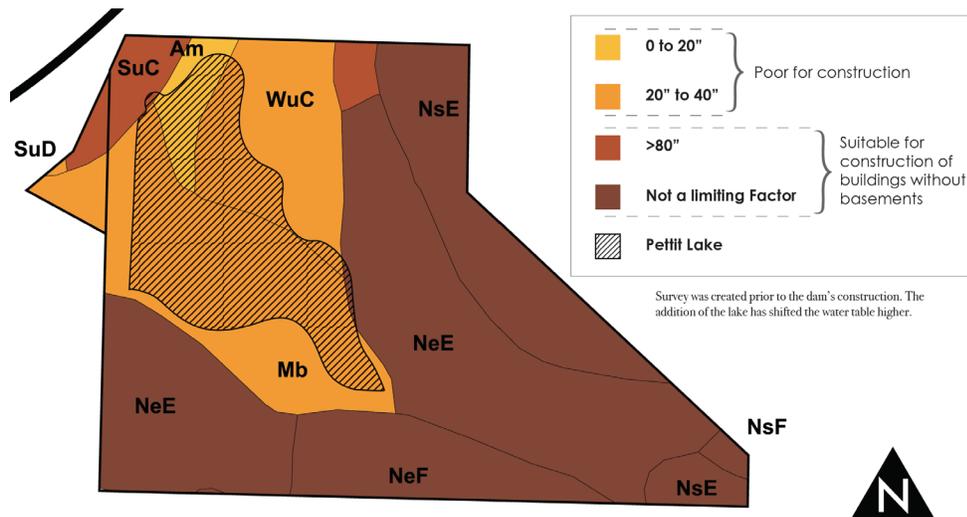
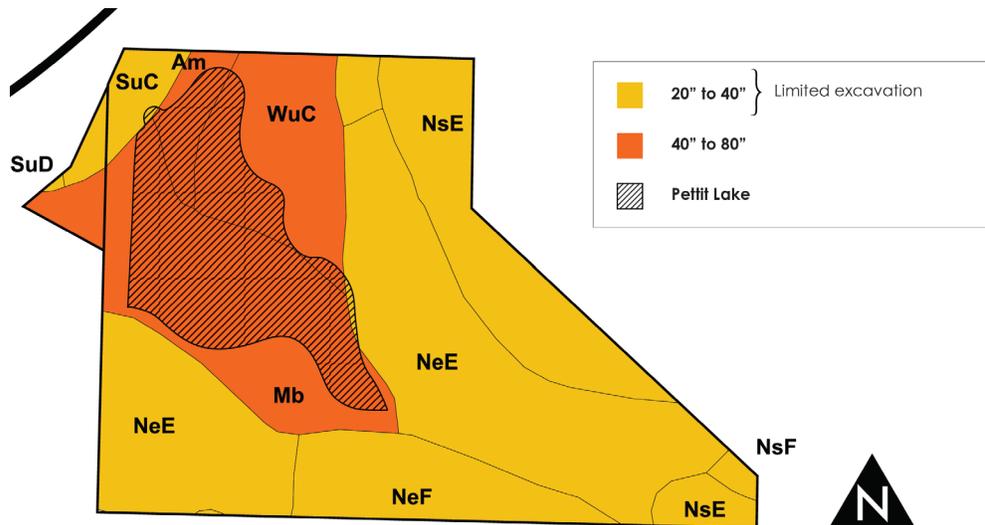


FIG. 8
Survey of depth to water table on the property.

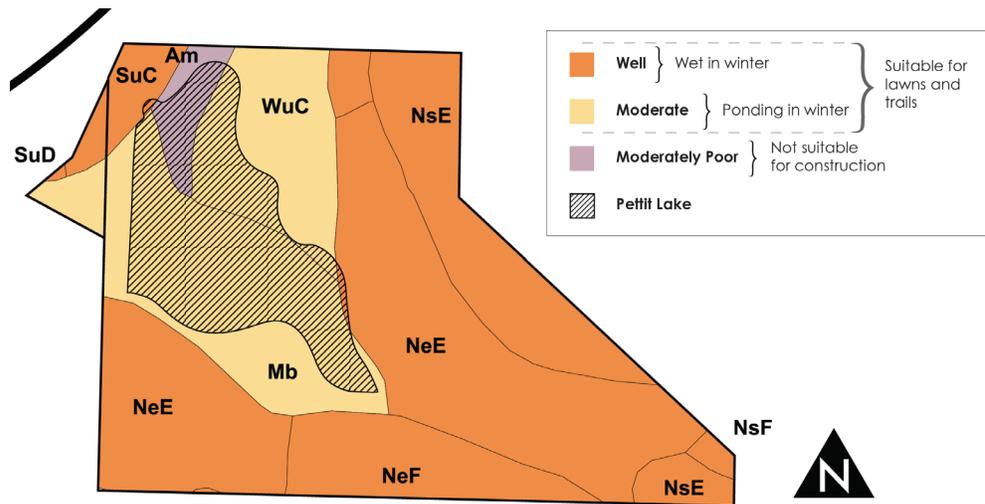
The survey of water table depths of the Pettit Lake site was created prior to the construction of the earthen dam on the property.

FIG. 9
Survey of depth
to bedrock on the
property.

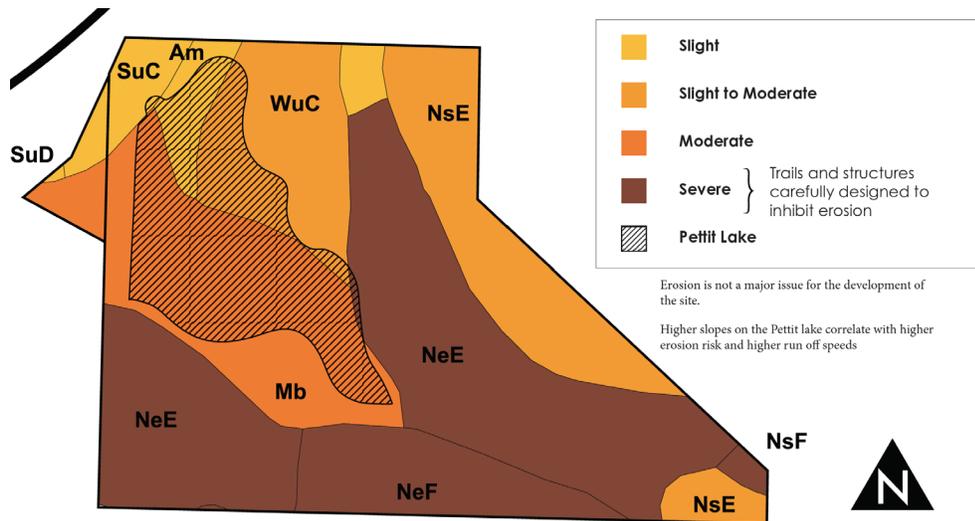


Bedrock depths of 20 to 40 inches will limit excavation.

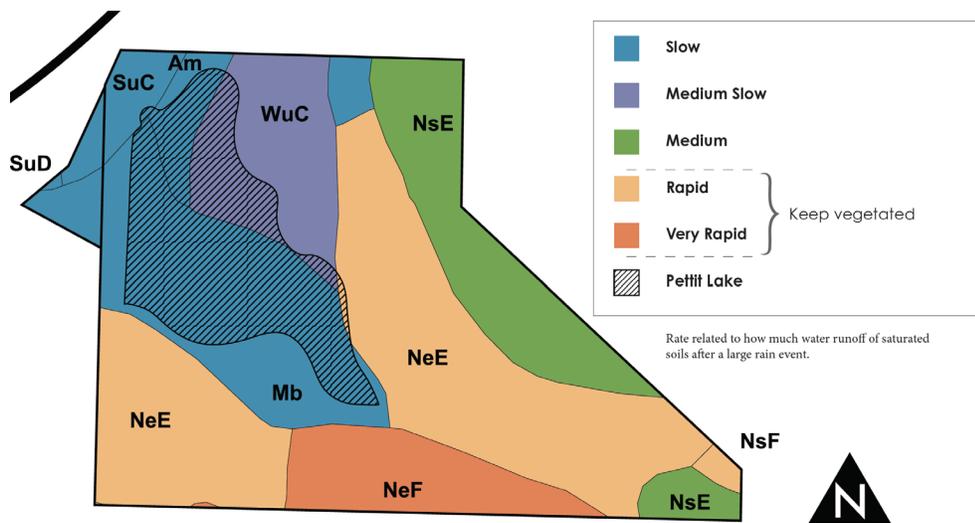
FIG. 10
Survey of drainage on
the property.



The vast majority of the site has “moderate” to “well” drainage, which will be wet or ponded in winter but is suitable for lawns and trails. A small wetland section in the northwest corner of the site is rated “moderately poor” and is not considered suitable for construction.

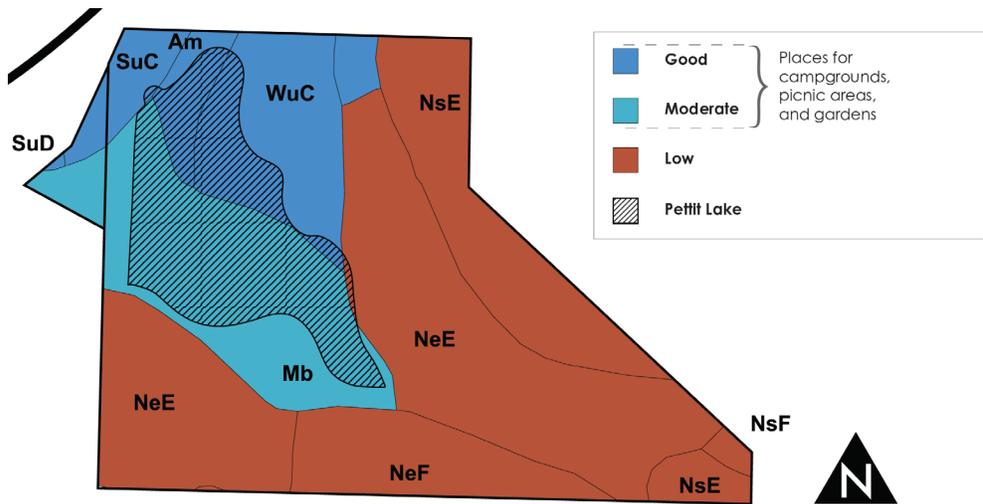


Erosion is not a major issue for site development. Higher slopes to the south and east of Pettit Lake correlate with higher erosion risk and higher runoff speeds. On these slopes, trails and structures will need to be carefully designed to inhibit erosion.



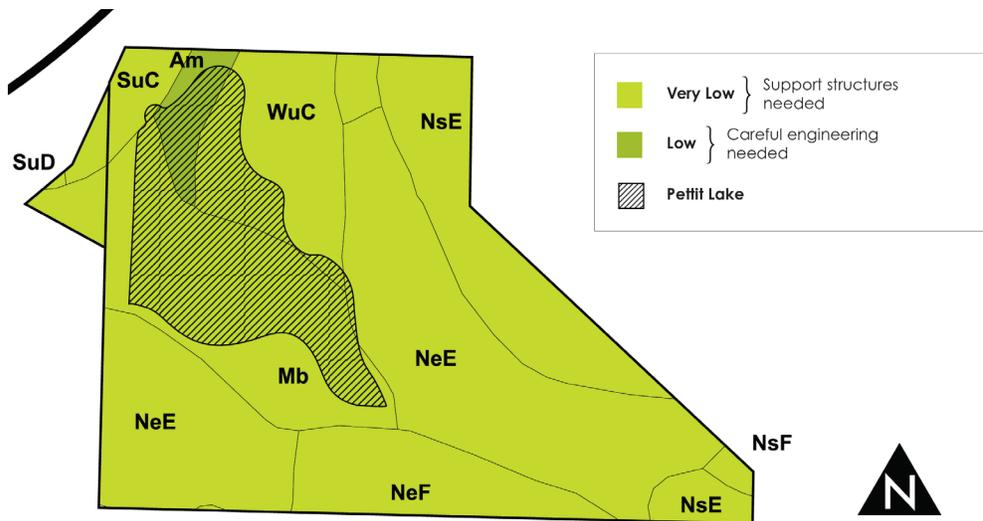
Runoff rate is based on water runoff of saturated soils after a large rain event. Large portions of the site with steeper slopes have the potential for “rapid” or “very rapid” runoff rates. It is recommended that these slopes be kept vegetated to reduce runoff risk.

FIG. 13
Garden soil quality on the site.



The more level portions of the site have garden soil quality ratings of “good” and/or “moderate”. These locations are ideal for campgrounds, gardens, and picnic areas.

FIG. 14
Survey of soil shear strength on the property.



The entire Pettit Lake property has poor shear strength, of which almost the entirety is rated as “very low”. Support structures and careful engineering will be required when building on the entire site.

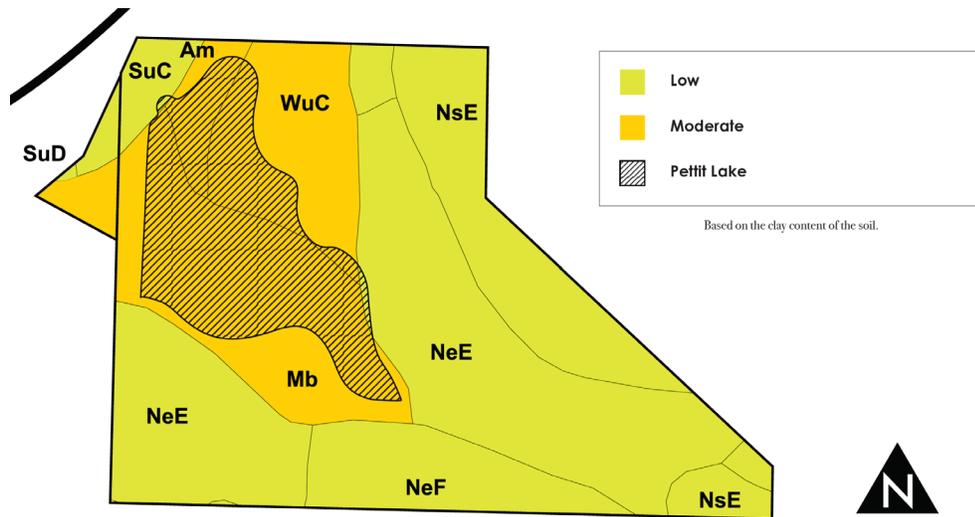


FIG. 15
Shrink-swell potential of
the site's soils.

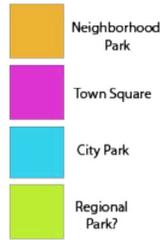
Shrink-swell potential is based on the clay content of the site's soils and is rated as "low" to "moderate" for the entire site.

EXISTING PARK ASSETS AND INFRASTRUCTURE

Analysis of the weaknesses and opportunities of the current Silverton park assets and infrastructure, conducted by Elizabeth Koonce.

FIG. 16
Current location and typology of Silverton's current parks, as well as the location and size of the Pettit Lake site.

Silverton Parks Assets & Infrastructure



The city of Silverton wants to increase connections between their downtown and parks. The Pettit Lake property is adjacent to The Oregon Garden and offers opportunities for connecting the two sites.

	Park Asset						
Park Name	Restroom	Playground	Pavillion	Trails	Seating	River Access	Education
Old Mill	No	No	No	No	Yes	No	Yes
Coolidge McClaine	Yes	Yes	Yes	Yes	Yes	Yes	No
Pioneer	No	Yes	Yes	No	No	No	No
Lincoln Street	No	Yes	No	No	Yes	No	No
Town Square	Yes	No	Yes	No	Yes	No	No
Roger's Wayside	Yes	No	Yes	No	No	No	No
Skate Park	No	No	No	No	Yes	No	No
Reservoir	Yes	No	No	No	Yes	Yes	No

FIG. 17
Table showing the assets and amenities provided by Silverton's current parks.

Silverton's parks may be suffering from underuse, overuse, and aging infrastructure. A lack of formal trail development and invasive vegetation, coupled with a lack of interpretive and educational programs, has created an opportunity to provide the City with the amenities it lacks through Pettit Lake designs.

SUITABLE SLOPES

Analysis of buildable slopes on the Pettit Lake property, conducted by Lexi Smaldone.



FIG. 18

Analysis of slope suitability on the site.

About 60% of the site property is considered suitable for development. Areas not highlighted on the buildable slopes map would require extensive engineering and would be more costly to develop. The earthen dam on the property is built to be stable under normal conditions but would not be safe during an earthquake.

SOUNDSCAPE

An analysis of the soundscape and potential noise abatement on the site, conducted by Neo Lehoko.

Locations that produce potentially unpleasant noise.

'Lo-fi' Soundscape.

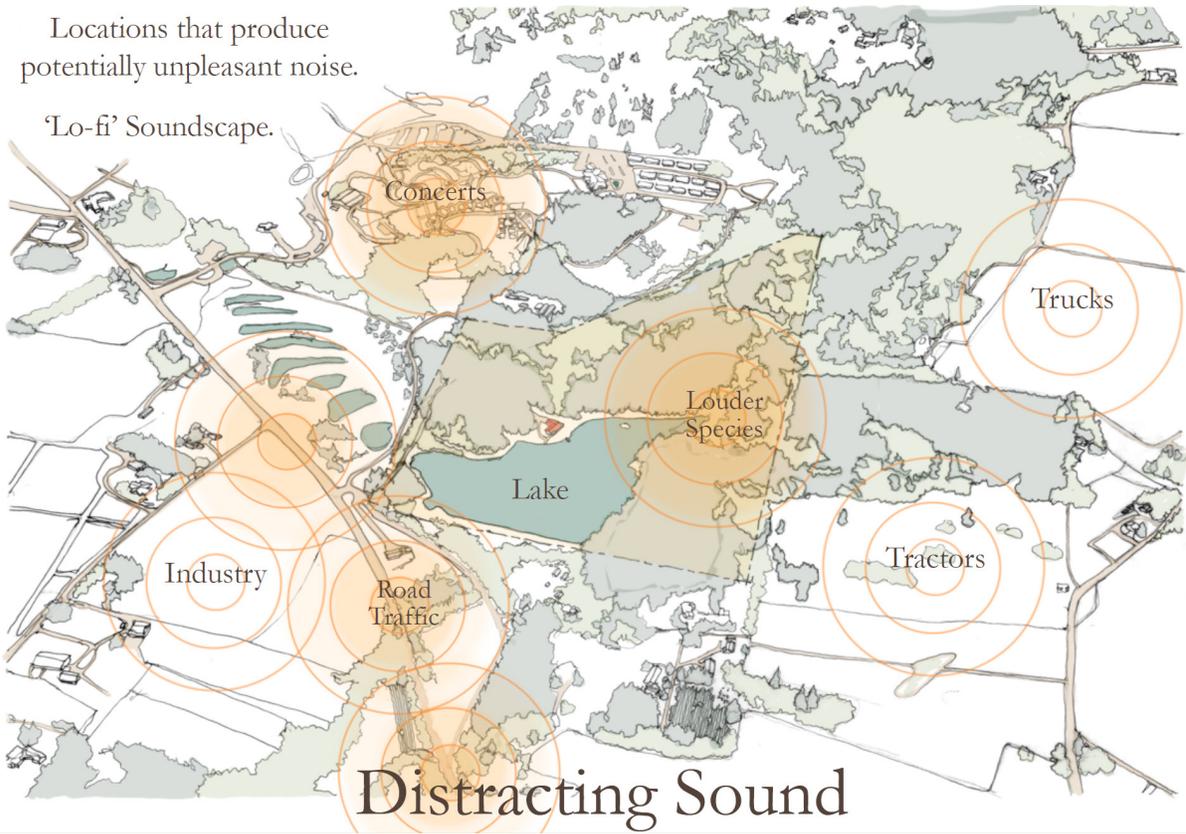


FIG. 19
An analysis of lo-fi sounds at Pettit Lake.

Lo-fi soundscapes indicate locations that produce potentially unpleasant or distracting sound. Industry is not expected to occur southwest of Pettit Lake and truck sounds emanate from the highway rather than from northeast of Pettit Lake.

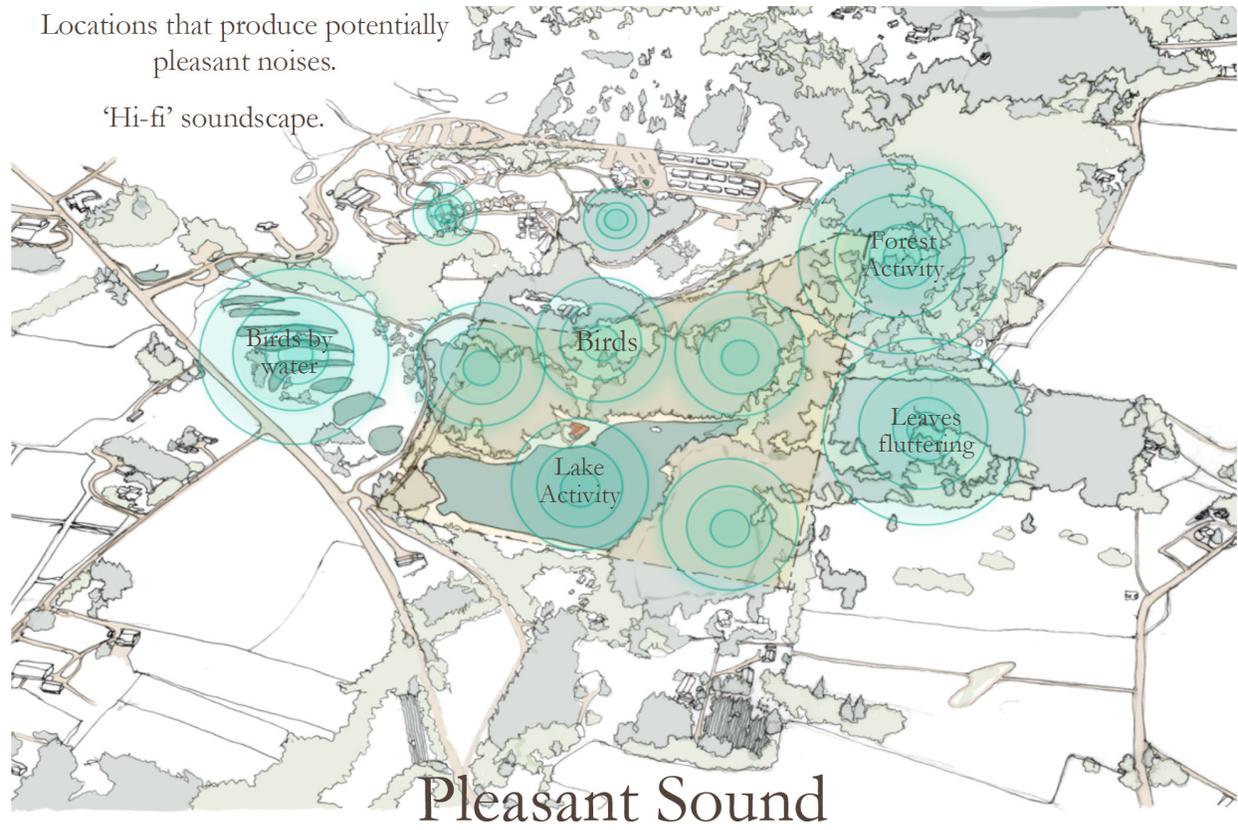


FIG. 20

An analysis of hi-fi sounds at Pettit Lake.

Hi-fi soundscapes indicate locations that produce potentially pleasant noises.

Sample Theatre Location and Projected Sound Trajectory

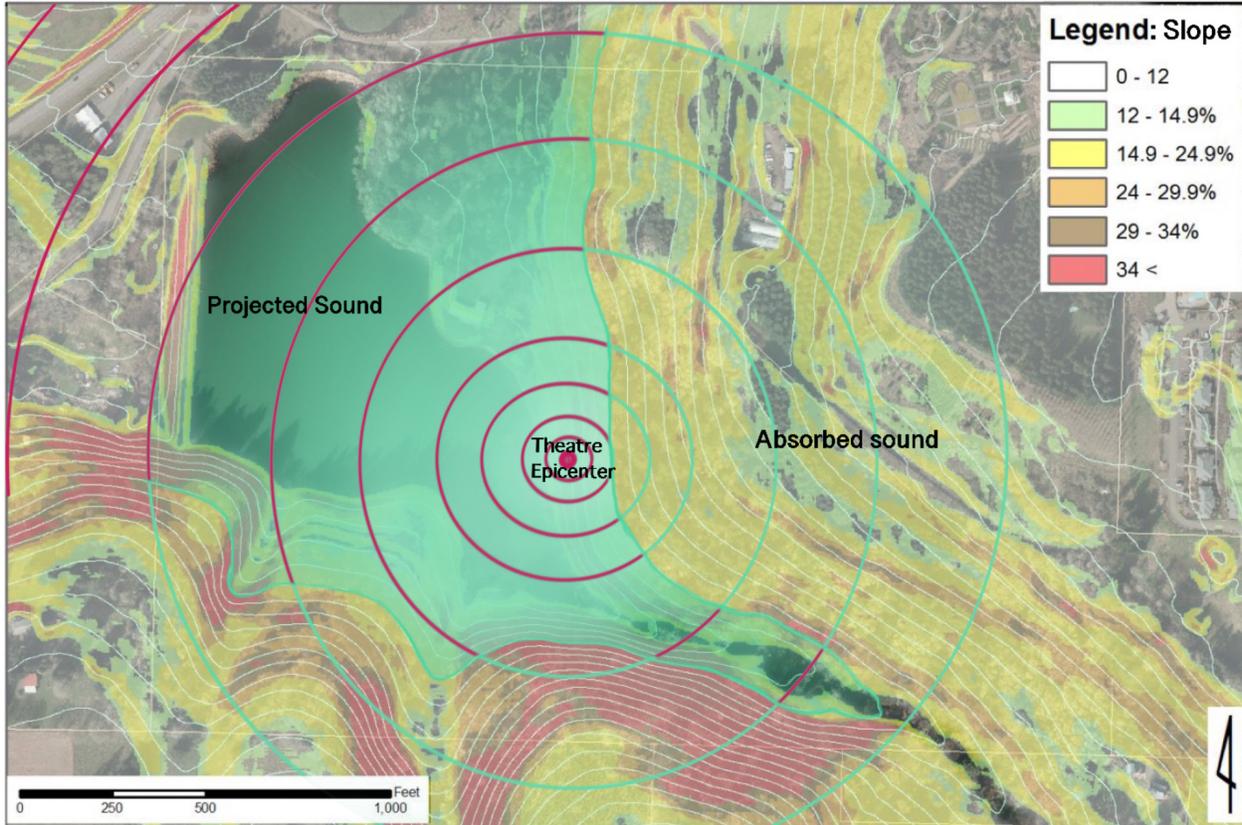


FIG. 21
An analysis of how sound would project from a sample outdoor theater location.

Sound is pressure, the effects of which are often physical. In researching the potential location for an outdoor theater or concert venue, it is important to keep in mind that excessive noise is shown to affect land and water habitats. By paying attention to sound quality, a very beautiful soundscape can be added to the landscape. If a theater were built somewhere near the sample site, terrain would absorb the sound in all directions except to the northwest. Residents of Silverton and The Oregon Garden in all directions except to the northwest would not hear high noise impacts.

NATURAL HISTORY

An analysis of the natural history and plant communities of the Pettit Lake property, conducted by Hana Ketterer.

Plant Communities

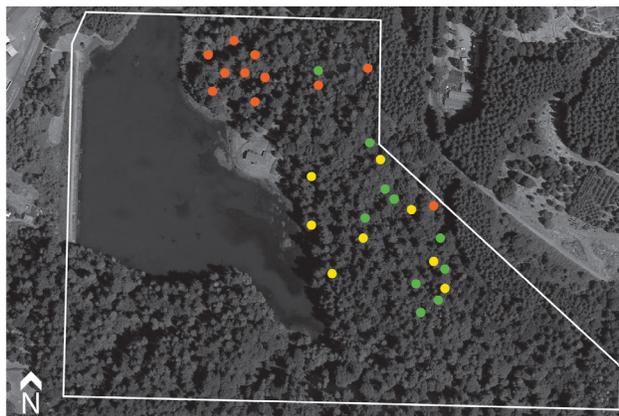


- Canopy Cover on SW facing slope
Doug Fir, predominant hardwood: Oregon Oak
- Canopy Cover on North facing slope
Doug Fir, predominant hardwood: Big Leaf Maple
- Doug Fir Plantation, with minimal understory
- Invasives, minimal but still present
Blackberry, English Ivy, Single-Seed Hawthorne
- Planted community
Blue Spruce, Apple, Bay Leaf
- Along Creek Edge
Cascara, Ninebark, Cottonwood, Alder
- Filbert Patch
- Multi-layered Lakeshore Diverse Habitat

Ground Cover/ Shrub Layer
Western Sword Fern, Ocean Spray, Oregon Grape, Holly

FIG. 22
A map of current plant communities at Pettit Lake.

Ecologically Dominant Trees*



- Doug Fir
Pseudotsuga menziesii
- Oregon White Oak
Quercus garryana
- Big Leaf Maple
Acer macrophyllum

FIG. 23
An initial survey of current dominant trees on the property.

***Not a comprehensive survey:** First walk through recording location of trees dominant in size, health, and aesthetic appearance.

Dominant trees were chosen based on size, health, and aesthetic appearance. This is not intended to be a comprehensive survey.

FIG. 24
Airphoto of site from
1963.



1963 - Clearcut in the early 60s, no reservoir.

Historical aerial photos of the property show that much of the site was clear-cut for timber in the early 1960s and that the lake was not yet present.



FIG. 25
Aerial photo of site from
1979.

1979 - Dam and reservoir added, clearcut regrowth.

By 1979 the dam and reservoir were created, and the clear-cut timber on the eastern side of the property began to regrow.

FIG. 26
Aerial photo of site from
1986.



1986 - Continued forest regrowth, north hilltop plantation planted.

In 1986, aerial photos show continued forest regrowth and the addition of a Douglas Fir plantation on the property's northern high point.



FIG. 27
Aerial photo of site from
1994.

1994 - Doug Fir plantation maturing.

Throughout the 1990's the Douglas Fir plantation continued to be maintained and mature.

FIG. 28
Aerial photo of site from
2005.



2005 - Continued regrowth, similar to present day conditions.

Aerial photos from 2005 show similar conditions to the current site: continued regrowth of the forest on the property and discontinued maintenance of the Douglas Fir plantation on the north end of the property.

LAND USE

Maps of the city of Silverton Comprehensive Plan Designations and Marion County zoning districts.

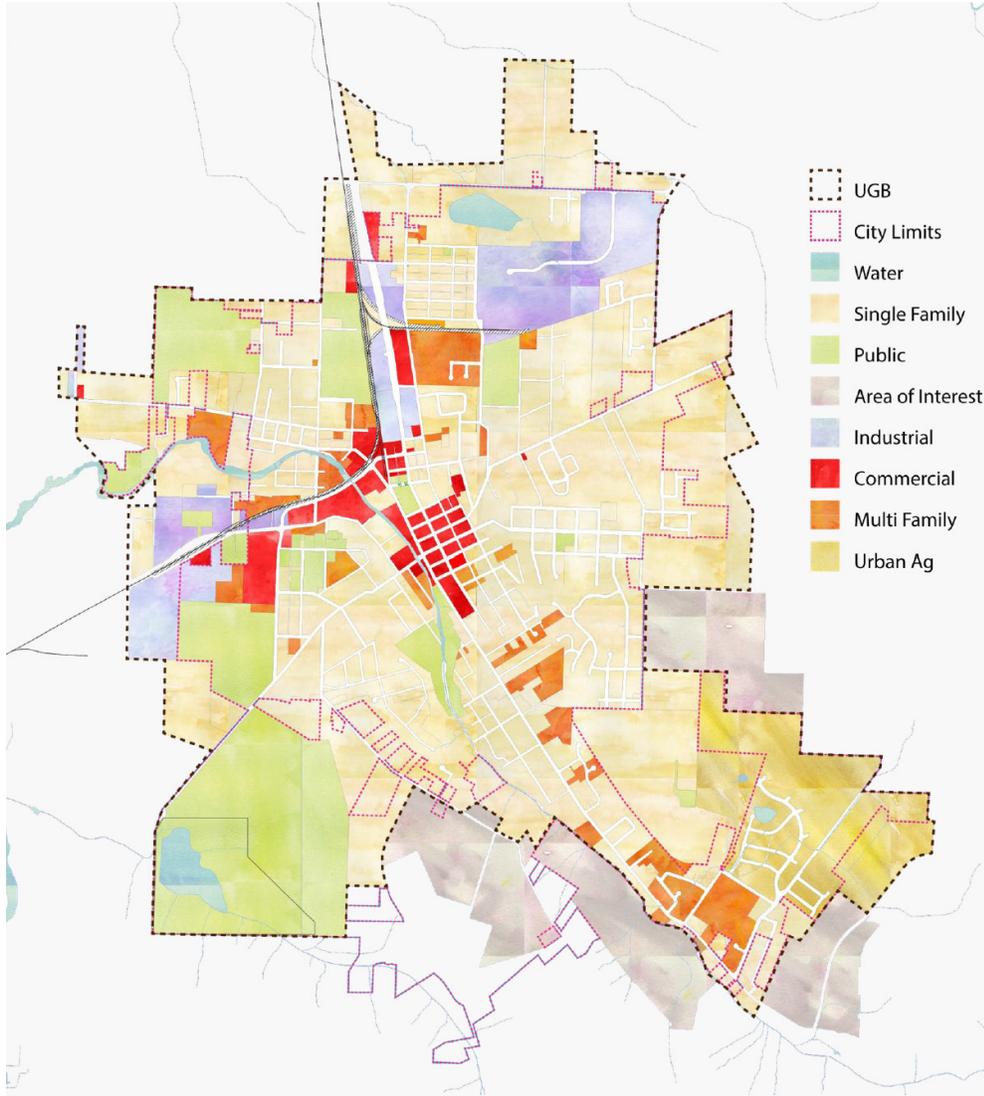


FIG. 29
City of Silverton
Comprehensive Plan
Designations.

FIG. 30
Marion County zoning
districts.



SOLAR ANGLES

Analysis of the sun extremes and solar angles at the Pettit Lake site, conducted by Emi Halperin.

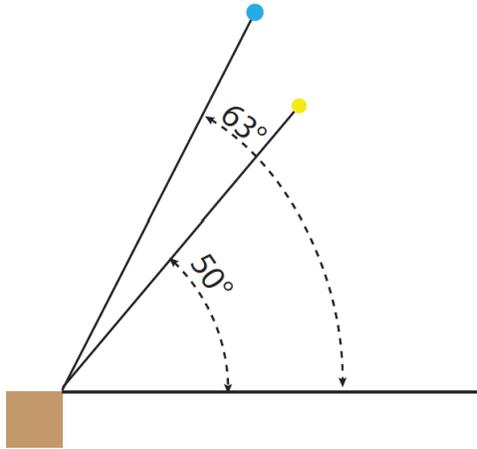


FIG. 31
Altitude of noon clock time.

Pettit Lake is expected to be most heavily utilized by visitors during the summer months. By picking the indicator dates of July Fourth and Labor Day, we can extrapolate suggested placement of structures on site.

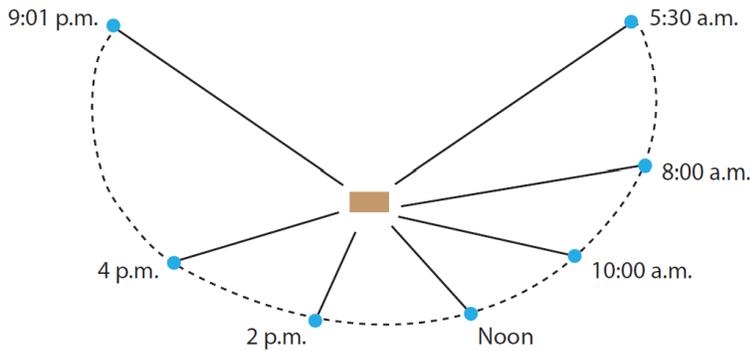


FIG. 32
Azimuth (clock time) of the sun on July Fourth at Pettit Lake.

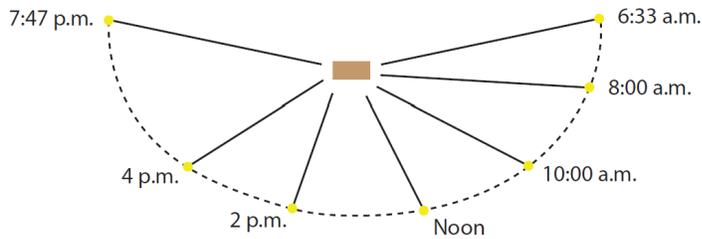


FIG. 33
Azimuth (clock time) of the sun on Labor Day at Pettit Lake.

High sun angles suggest shading devices that would protect structures in the summer and allow solar penetration in the winter.

THE OREGON GARDEN

A description and history of The Oregon Garden, conducted by Nancy Silvers.

The Oregon Garden was conceived in the 1940's by the Oregon Nurseryman's Garden Foundation (today known as the Oregon Association of Nurseries) as a showcase garden. The city of Silverton was selected as the city to partner with the garden and build its infrastructure. The Garden was designed with the cooling mechanism of its wetlands for the City's wastewater in mind.

The groundbreaking ceremony was in 1997 and the Garden opened to the public in 2001. The Oregon Garden went into receivership of Marion County in 2005 as it continued to face financial challenges. In 2019 Marion County forgave The Oregon Garden's approximately \$5 million in debt.



FIG. 34
The Oregon Garden in relation to the Pettit property.

The Oregon Garden is an 80-acre botanical garden featuring 20 unique gardens. It is home to Oregon's only Frank Lloyd Wright home and The Oregon Garden Resort. The Garden and Resort host both public and private events including weddings, Art in the Garden, Christmas at the Garden, and a barn dance and bar-b-que, among others.

DON PETTIT

A description and timeline of Don Pettit's life, written by Nancy Silvers.

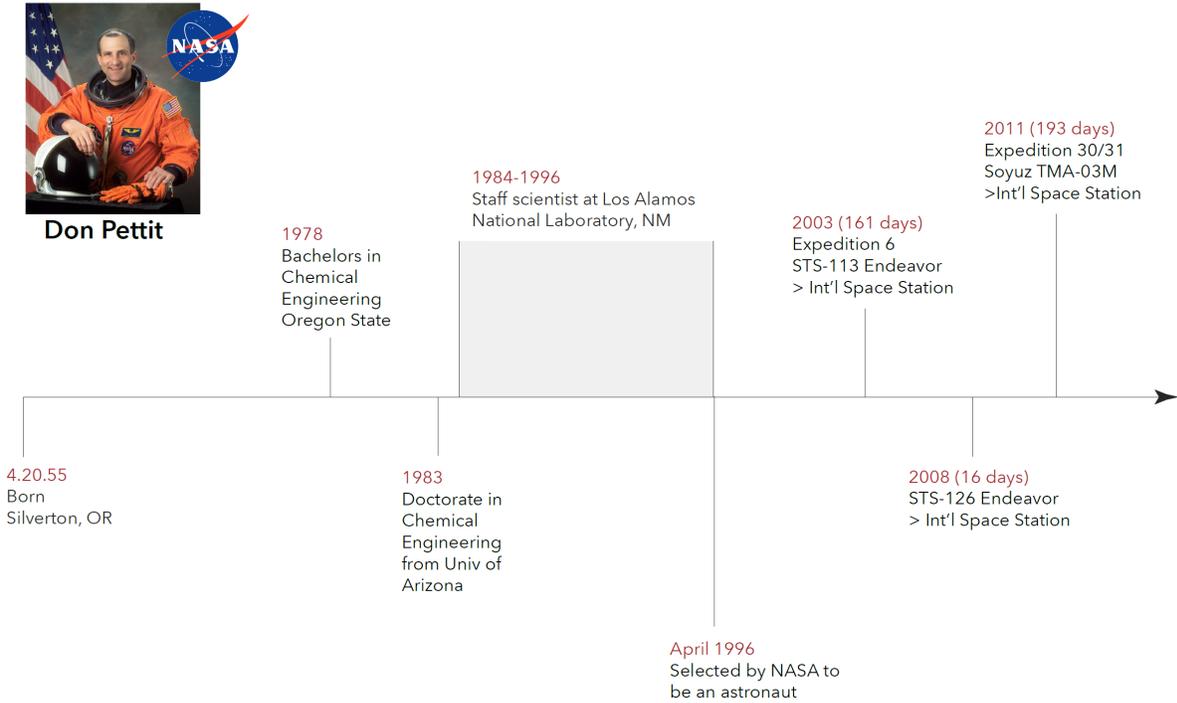


FIG. 35
Significant events in
Don Pettit's life.

Don Pettit is an American chemical engineer, astronaut, and inventor who grew up on the Pettit Property.

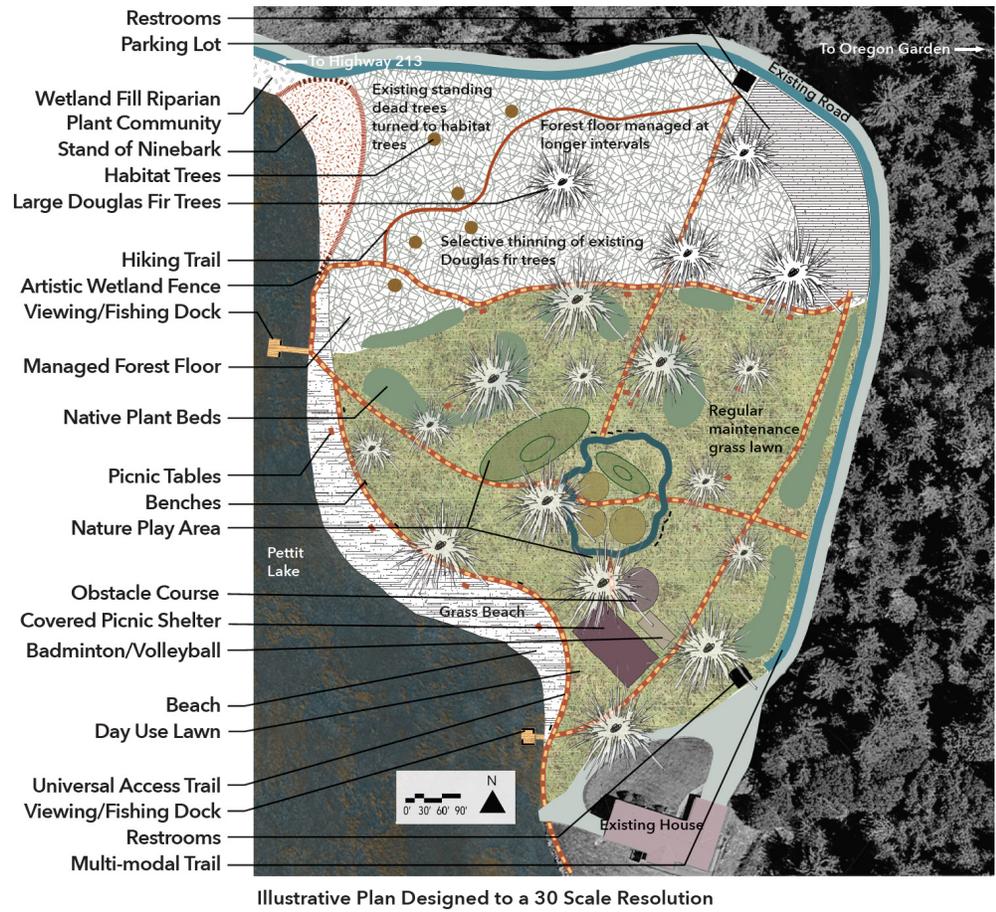


FIG. 38
 Illustrative plan.



FIG. 39
 Time to play and explore rendering.

FIG. 40
Take time in nature
rendering.



NANCY SILVERS: DAY USE PARK/NATURE PLAY

Pettit Lake Park: Connecting adults, families, and children with nature; nurturing recreation, play, and outdoor education.

Design goals:

1. Protect and enhance natural features.
 - Fence off all areas of sensitive habitat.
 - Install interpretive signage.
2. Encourage healthy living and active lifestyles.
 - Install nature play areas and an obstacle course in proximity to one another.

This design provides opportunities for people of all ages and abilities to explore and connect with the natural environment by offering a universal access trail to all key areas of the design. The planting beds are intended for native plants and the management of existing vegetation encourages healthy ecosystems.

LEXI SMALDONE: DAYCATION AT PETTIT LAKE

Day-Use Park and Boat Rental at Pettit Park: finding balance between city park and local sanctuary.

Design goals:

1. Provide a diversity of recreational facilities to meet the needs and interests of the community.
 - Ensure recreational opportunities are provided for everyone.
 - Increase the variety of recreational facilities in the community.
 - Satisfy local latent demand for pickleball facilities.

2. Protect existing habitat and minimize development impacts.
 - Preserve more than 50% of the design area’s forest.
 - Preserve more than 70% of the riparian habitat along the northeast edge of the lake.
 - Incorporate all existing infrastructure into park design.

3. Promote equitable access to natural settings.
 - Provide the required number of ADA-accessible parking spaces.
 - Connect the park to Pettit Lake’s multimodal path.
 - Offer an ADA-accessible viewpoint of Pettit Lake.

4. Encourage healthy lifestyles.
 - Present opportunities for play at all ages and abilities.
 - Provide spaces for mindfulness and self-care.
 - Create an affordable and accessible place for a short-term vacation.

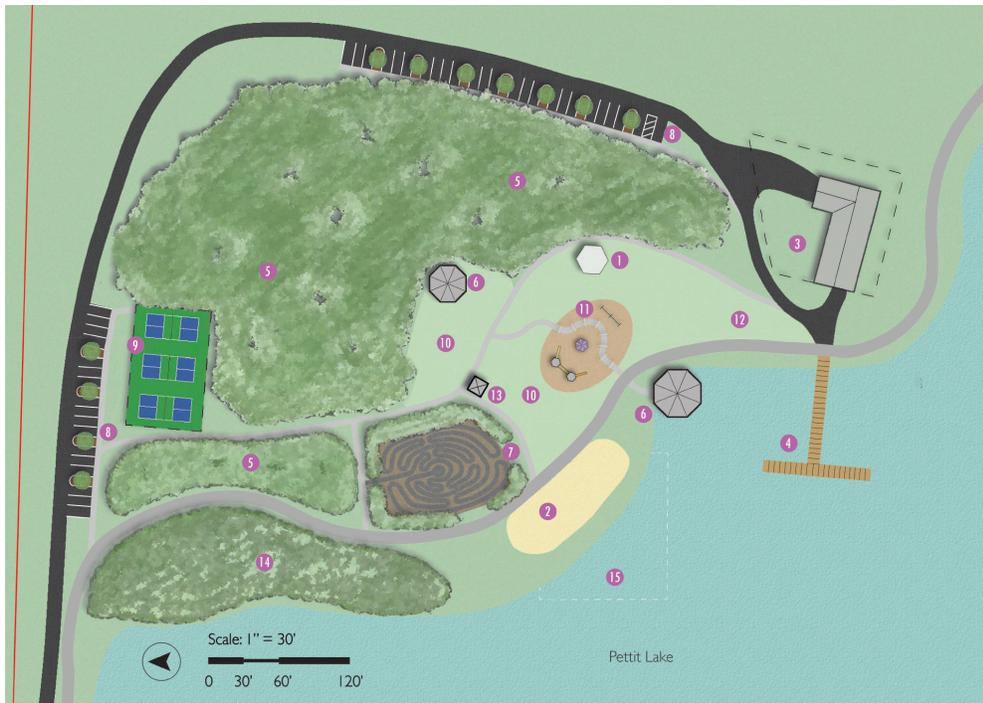


FIG. 41
Illustrative plan.

The Pettit property is a quiet, dreamy place that invites people to come appreciate its beauty. A day-use park with a small boat rental service is the perfect opportunity to allow just that. This design will provide active and passive recreation opportunities for people of all ages. The Pettit house will remain, and the top floor will continue to be rented. A fence will keep park visitors away from the home, while the bottom floor will act as concessions for the boat rental and pickleball courts.

FIG. 42
Pickleball courts.



FIG. 43
Boat rental.





FIG. 44
View from across Pettit
Lake.

Pettit Park provides multiple opportunities to relax and enjoy the beautiful landscape, making it the perfect spot for a short getaway. Located within city limits, there's no need to leave town to de-stress or go on a family trip.

JEFFREY KUEBLER: WINDOW TO PETTIT LAKE PARK

The entrance to the day-use park is the window to this beautiful community amenity. This space functions as a node of family-friendly recreation, introducing visitors to other ecological and recreational opportunities throughout the park that visitors can explore.

Design goals:

1. Connect Silverton with their community asset.
 - A renewed source of community pride.
 - New ways for families and visitors to explore the city.
 - Exemplary volunteer opportunities.
 - Excellent place for outdoor education.
 - An opportunity for the community to have a say in its future development.
2. Create opportunities for families to engage with diverse ecosystems.
 - Safe access to nature play.
 - Diversity of structured and unstructured play.
 - Interpretive participation with restored ecological zones.
 - Enhanced, universal opportunities to access lake activities.
3. Improve ecological health and biological integrity.
 - Reduce monoculture and promote available biodiversity.
 - Reintroduce conditions for littoral habitat.
 - Promote ecological structure resilient to presumed environmental changes.
4. Provide high quality open space recreation with a diverse set of activities for the community.
 - Provide a system of amenities that offers an equitably distributed means of enjoying the park.
 - Provide means to appreciate the park visually, tactilely, and experientially.
 - Create an imageable park for the community; site experiences are memorable.



FIG. 45
Illustrative plan.

As the foyer to Pettit Lake Park, this focus area adds amenities including a themed playground, a multi-use plaza with tables and grill stations, a three-door restroom, a hearth structure with fireplace, a sand-play and grass-play beach, an interpretive boardwalk over the restored littoral zone, and variably social picnicking.



FIG. 46
Hearth and plaza.

FIG. 47
Space station
playground.



FIG. 48
Grass-play beach and
covered fire ring.



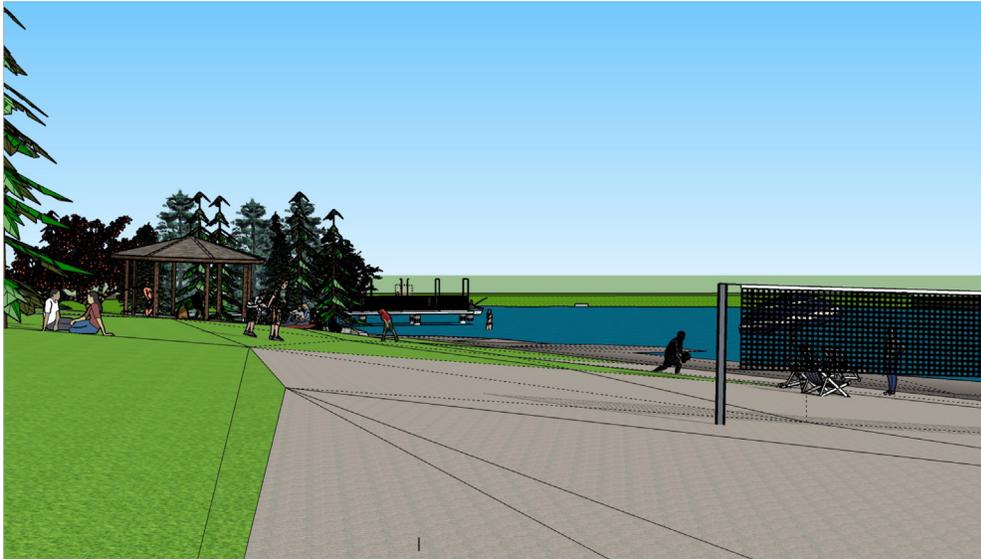


FIG. 49
Sand-play beach, view
to boardwalk.



FIG. 50
Boat view of littoral
ecology, boardwalk,
and beach.



FIG. 51
Oblique view: day use
park entrance.

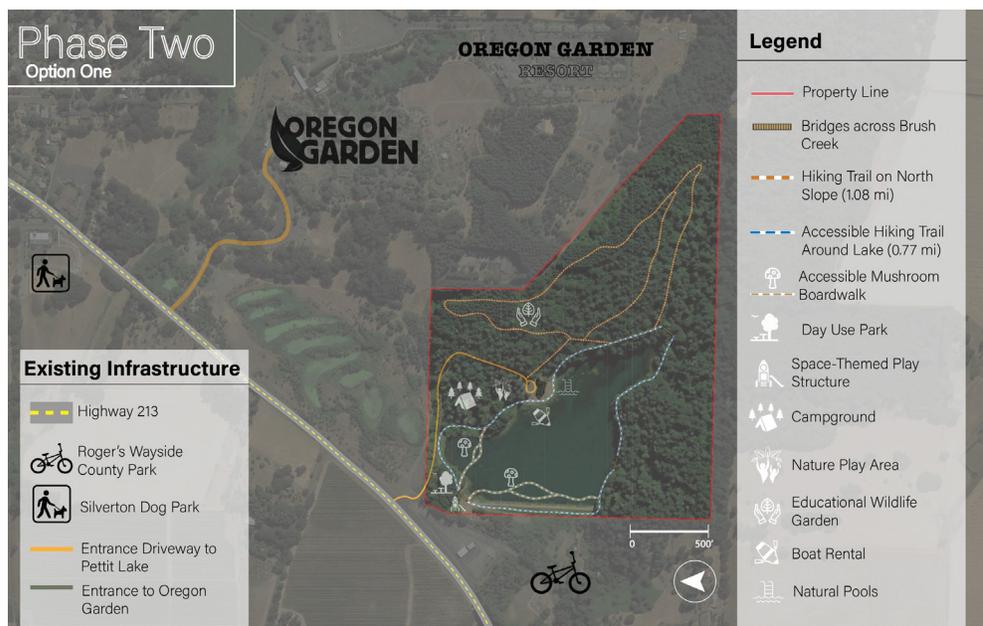
Design Phase Two

Two phases of design were presented to the city of Silverton. Phase Two was intended to showcase a wider range of programming possibilities and design interventions and was broken into two options combining students' designs into cohesive plans.

OPTION 1: WIDE RANGE OF PROGRAMMING

Option 1 features an enhanced passive day use park near the park entrance; a campground near the Pettit house with a lawn beach; native plant gardens connecting up slope into The Oregon Garden; small boat rental with the Pettit house; a nature play and learning playground; an outdoor theater for 300 people with additional parking; sculptural features in the lake; and small fishing and nodal features along the lakeside trail. The design also includes accessible hiking trails around the lake and further trails on the north side slope towards Brush Creek.

FIG. 52
Map of design phase two.



DAVID PAULS: PETTIT LAKE CAMPGROUND

The Pettit Lake Campground design works within the confines of the space, incorporating existing Douglas fir trees and introducing a rhododendron garden to create a unique and immersive camping experience.

Design goals:

1. Incorporate existing Douglas fir trees into the campground design.
 - Weave roads around trees without damaging them.
 - Locate sites near trees providing canopy cover and forest atmosphere.
 - Use trees as natural screens that create rooms within the campground.
2. Provide a range of amenities and site types for a variety of users.
 - Create RV, tent, cabin, and group sites.
 - Provide bathrooms with septic tanks.
 - Design easy access in and out of the campground to other programs in the park.
3. Add dense rhododendron plantings to create a garden atmosphere and a unique camping experience.
 - Use rhododendrons to create privacy between sites.
 - Plant both native and non-native varieties.
 - Use rhododendrons to keep visitors from creating user trails through the campground.
4. Create the most amount of camping and cabin sites possible within the designed area while still providing the users with a sense of isolation from others.
 - Provide easy access to all sites without excessive traffic.
 - Space sites appropriately apart so users have privacy.
 - Make roads easily navigable by RVs.
 - Use vegetation to screen sites from each other.

THE PLAN

Entry Kiosk

Entrance kiosk allows for self service and site selection without the direct need of the park host.

Trail and Tent Site

Site offers level pads for tents and 30' deep parking spot accessible for small trailers.

Bathrooms

Bathrooms with showers close to road for easy access and maintenance.

Cabins

Small cabins along the lake shore take advantage of the lakeside views.

13' x 36' footprint



Source: <https://www.lake-cabin.com/> (Downloaded: 10/15/2019)

Side Exit

Decreases traffic through the loops and creates more access in and out of the campground.

Group Camping

Tent sites located close together in a more secluded area ideal for groups.

RV Pull Through Site

60' long pull through site for large RVs to easily park.

RV Site

40' deep site with side spot for towed car, designed at an angle for ease in backing into site.

Tent Camping

Walk in tent sites located in a more isolated part of the campground for a more secluded experience.

Two Way Road

Existing road widened to facilitate more traffic and better flow within the park.

Multi-modal Trail

Paved 10' wide trail accessible to user of all abilities.

Park Host

Current residential house converted to the residence of the Park host who can oversee the daily operation of the park and campground.



FIG. 53
Illustrative plan.



FIG. 54
Tent site.



FIG. 55
RV site.

FIG. 56
Entry road.



Single lane one-way loops form the campground's design, weaving through the existing Douglas fir trees. This design creates easily accessible sites that allow a variety of different users from tents to RVs. Campsites are surrounded by dense plantings of native and non-native rhododendrons that enhance the natural atmosphere during their blooms throughout the spring and summer. Nestled at the heart of the Pettit property, the campground has easy access to the park's other programs and The Oregon Garden bordering the property.

HANA KETTERER: SOUND SPACE

An amphitheater that embraces the history of Pettit Lake and celebrates the phenomenon of a comet traveling on an orbit around the lake.



FIG. 57
Anatomy of a comet
and the amphitheater
design.

Design Goals:

1. Give intel to the story of Donald Pettit, the astronaut that grew up on the Pettit Lake property.
 - Use the concept of a comet and its orbit to inspire the form and design of the amphitheater.
2. Provide a space that can be used for events (i.e. concerts, weddings, ceremonies, performances, etc.) as well as passive and recreational uses.
 - Allow the amphitheater to be occupied by spectators during an event but also be used as an extension of the day use park and trails.
3. Provide an opportunity for the city to profit from the amphitheater.
 - Design an accessible amphitheater that is flexible for a multitude of events and audiences.

FIG. 58
Location of the
amphitheater in the site
context.



Sound Space is an outdoor amphitheater nestled in the trees looking out over Pettit Lake. Its form exemplifies that of a comet, with the stage holding the energy and life of its performers and the audience following the show as the structure tapers to the entrance.

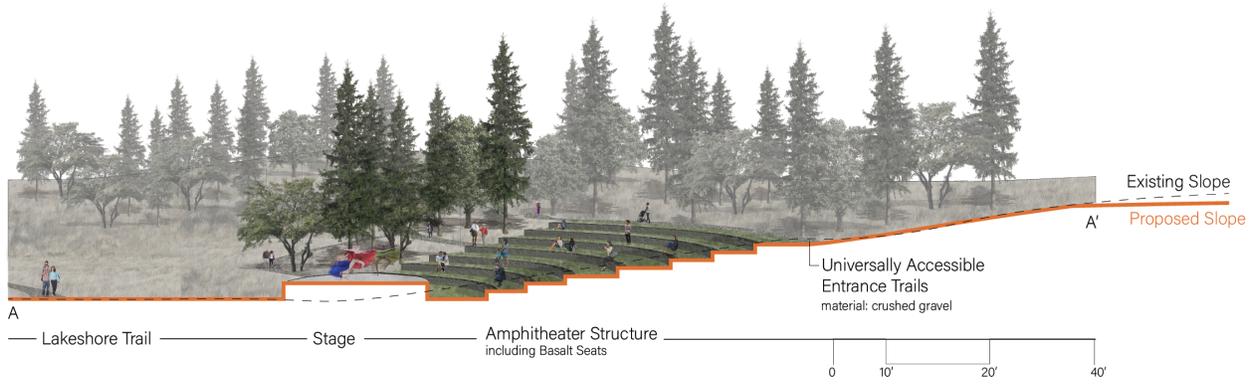


FIG. 59
Section elevation
showing the
amphitheater on the
slope of the site.

The amphitheater is a flexible space that can host many events of different sizes, seating around 300 spectators comfortably. The varying row depths protect smaller, more intimate events from being overwhelmed by the rest of the space. All three entrance trails are universally accessible, with none exceeding a 5% slope. The Sound Space amphitheater can be rented out for events or open to the public for passive recreational use when it is not reserved.



FIG. 60
Looking at Pettit Lake
from the top row of the
amphitheater.

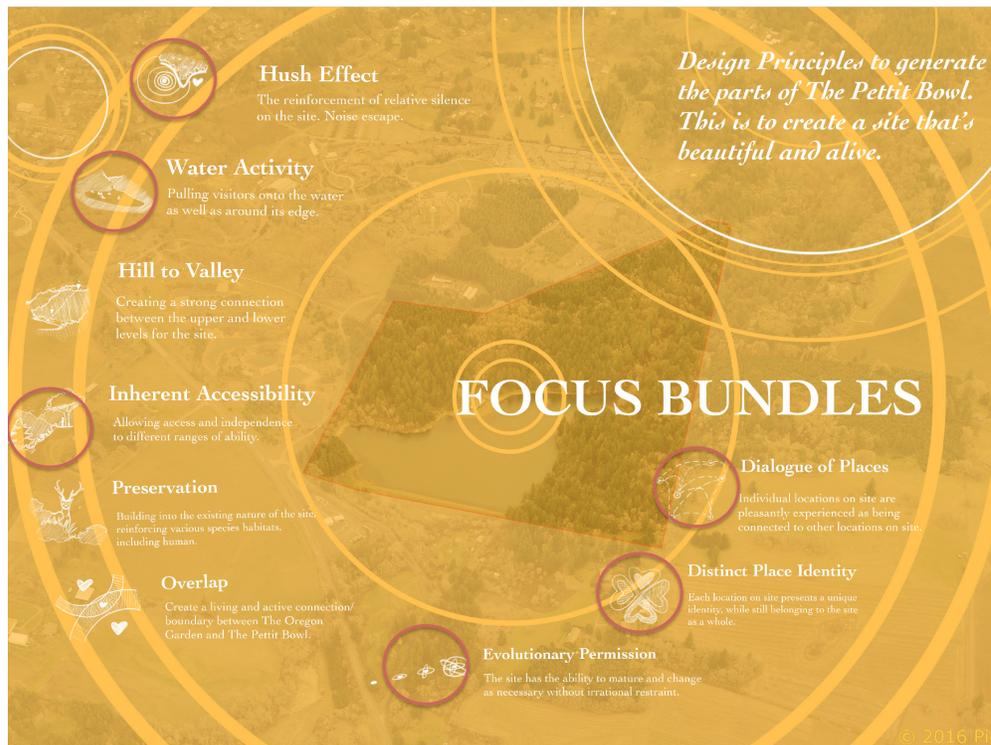
NEO LEHOKO: MUSHROOM FOREST AND RAPTOR STANDS

Create a dialogue of places with distinct identities across Pettit Lake that are inherently accessible, overlapping, and preserve the existing nature of the site.

Design Goals:

1. Create a visual buffer from the road.
2. Create a potential probe system for the dam.
3. Provide a mushroom-picking activity site.
4. Provide a comfortable and accessible amenity for park visitors.

FIG. 61
Focus bundles for the mushroom forest and raptor stands.



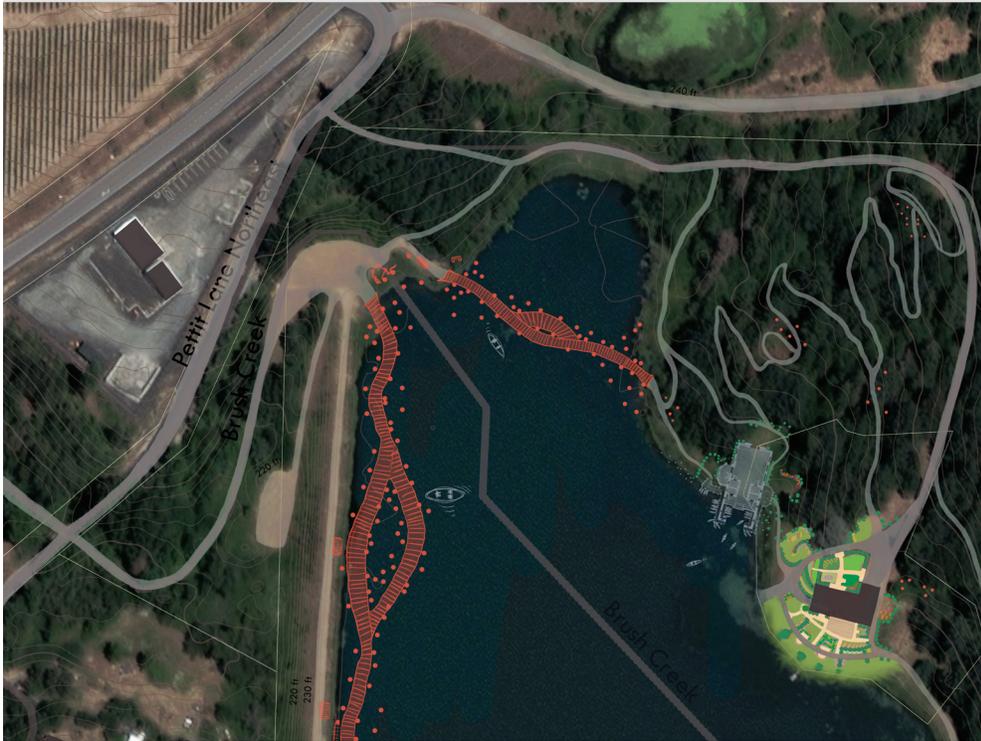


FIG. 62
Plan view of the design.

Mushroom inoculation with tree posts is possible but time sensitive. In order to ensure only edible mushrooms are grown, inoculation must be planned for the time just after the natural fungicide of the trees has died but before other spores have the opportunity to take hold. This would be difficult to do for the entire structure, so the full installation would unfold and increase gradually over a few years. As this kind of system requires decay, the posts should be allowed to decay naturally and be replaced as long as the site remains inhabited by people.

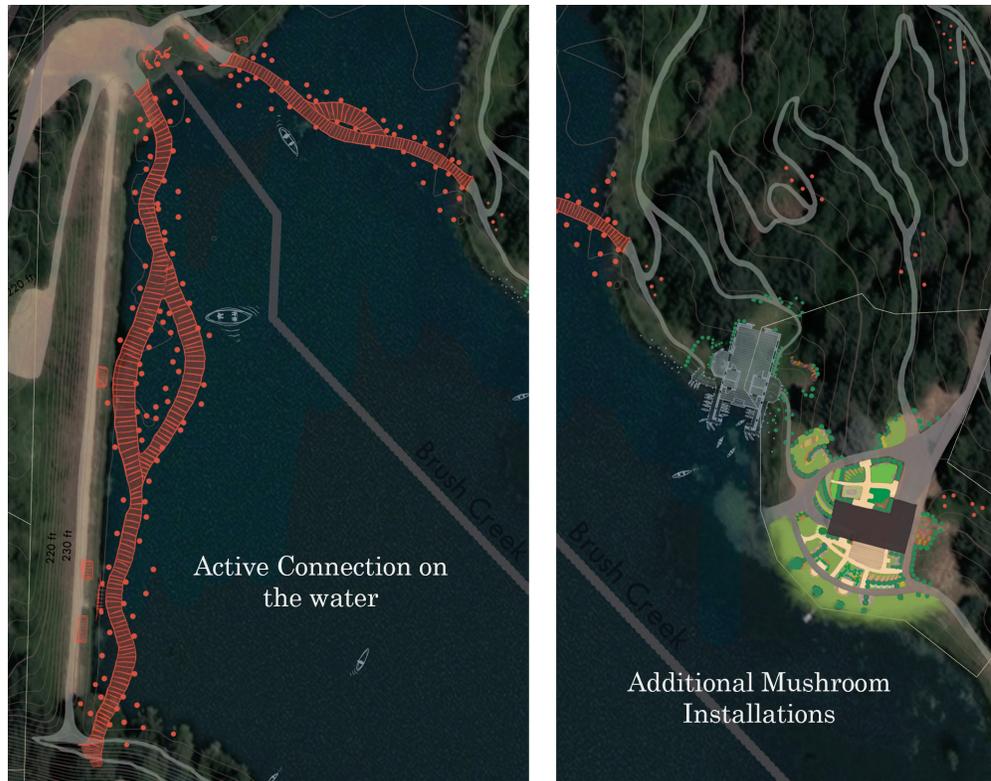


FIG. 63
Perspective sketch of the mushroom forest.

FIG. 64
Detail sketches of the
mushroom posts.



FIG. 65
Detailed site plan
images.



EMI HALPERIN: NATURE BOUND BUG PARK

A place where kids of all ages are free to discover, create, and play with nature while in the regular rhythm of life.

Design Goals:

1. Provide a safe environment for kids to be kids.
2. Create separate spaces for children of different ages.
3. Encourage learning through interactive educational play spaces.
4. Create a place for the imagination to run wild.



FIG. 66
Illustrative plan.



FIG. 67
Nature play key.

The main motive of this design is to divide the park into different play centers based on age group, catering to the various developmental practices that may be set as goals for each age range. The developmental goals set to be achieved in the “Tot Lot” may include crawling, balancing, and improving social skills. Conversely, the “Pine Pals Place” rock scramble aims to improve a child’s hand-eye coordination and muscle growth as they play. By sectioning off various ages, each area can focus on a more precise learning goal.

FIG. 68
Wood climbing
structure on a tucked-
away trail coming from
the Tot Lot.

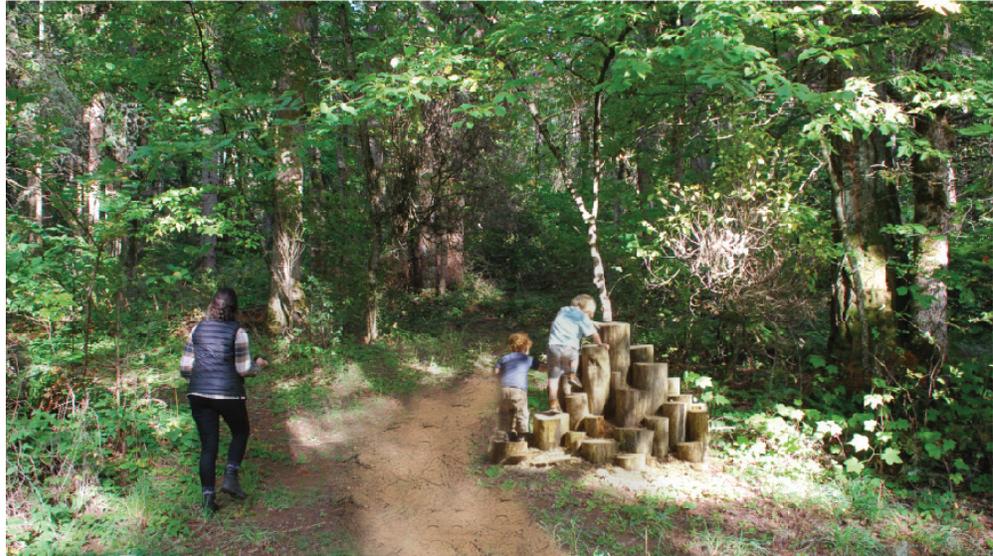
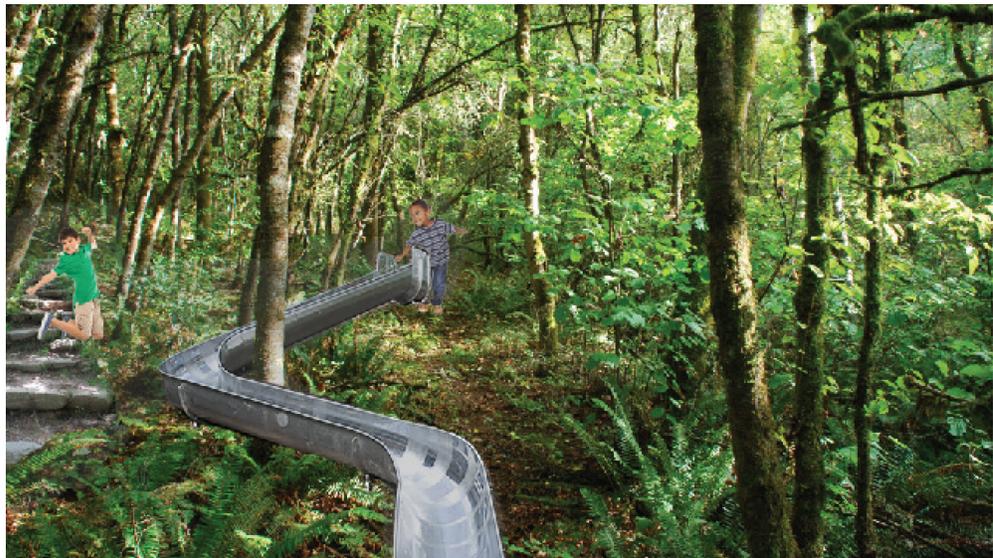


FIG. 69
Green plant playhouse
along the outskirts of
the Critter Country.



FIG. 70
Long metal slide
weaving in between
trees on the Pine Pals
Place with stairs leading
up the slope.



ELIZABETH KOONCE: WILDLIFE GARDEN TRAIL AND WILDLIFE INTERPRETIVE CENTER

An educational habitat exhibition garden and trail culminating in a wildlife interpretive center and native plant nursery.

Design Goals:

1. Emphasize use of native plants that are most beneficial to native wildlife.
 - Demonstrate a variety of ecotones
 - Sell plants at native plant nursery
 - Provide tips and strategies for using native plants in backyard landscapes
 - Restore significant portion of oak/pine savanna

2. Provide microhabitats for herptiles, pollinators, bats, and birds.
 - Create rock piles or a “rock garden” habitat
 - Girdle trees at different ages/times to create snag forest
 - Install and maintain vernal pools
 - Retain nurse logs and brush piles

3. Educate the general public about wildlife landscaping and its benefits.
 - Design interpretive and educational signage along garden paths and trails
 - Provide workshops, classes, and exhibits at the Wildlife Interpretive Center (WIC)
 - Advocate for pesticide and herbicide-free gardening through the nursery, WIC, and signage

4. Provide physical and conceptual connection between Pettit Park and The Oregon Garden.
 - Show clear gradient from “wild” parkland to “gardened” landscape on trail
 - Create second entrance to The Oregon Gardens (TOG) near native plant nursery at culmination of trail
 - Advertise for WIC at TOG and vice versa
 - Move fence separating properties to accommodate trail connection

FIG. 71
Illustrative plan.



This wandering trail provides a physical and conceptual connection between Pettit Park and The Oregon Garden while educating the public about wildlife landscaping and its benefits. This is accomplished through the creation of beautifully maintained microhabitats for herptiles, pollinators, bats, birds, and small mammals which emphasize the use of native plants most beneficial to wildlife. The trail culminates in a wildlife interpretive center and native plant nursery where visitors can purchase the plants seen along the trail and bring native wildlife into their own backyards.



FIG. 72
Pollinator gardens trail
entrance.

FIG. 73
Snag forest trail.



FIG. 74
Wildlife interpretive
center and native plant
nursery.



ELIZABETH KOONCE: TRAILHEAD PARKING

A small but functional entrance to Pettit Lake park that can be easily installed on the site and allows access to trails and other amenities as they are added.

Design Goals:

- Provide a straightforward solution to the site's public access challenge.
- Create a parking lot and trailhead kiosk that can serve the park throughout many stages of its development.



FIG. 75
Aerial photo of current site conditions.



FIG. 76
Aerial photo of proposed site conditions.

The proposed trailhead consists of a compacted gravel lot to accommodate up to 25 cars, a vault toilet, dog waste station, covered kiosk with trail map and Pettit Park information, and trailhead markers with trail lengths clearly presented.

FIG. 77
Photoshop rendering of
the potential trailhead
parking lot and kiosk.



OPTION 2: VARIED PROGRAMMING

Option 2 features a combination of the passive day use parks and hiking trails. It adds a luxury senior care facility nestled into the higher slopes of the property. This facility is accessed via a funicular, as well as a small gravel parking lot with a trailhead at the property's entrance.

NEO LEHOKO: FUNICULAR AND LIFE CARE CENTER

A beautiful and restive senior life care center accessed from a whimsical funicular that provides a unique view of the site.

Design Goals:

- Create stations above and below the funicular as hubs of revenue.
- Provide a life care center that is unique, serene, and rooted in place.

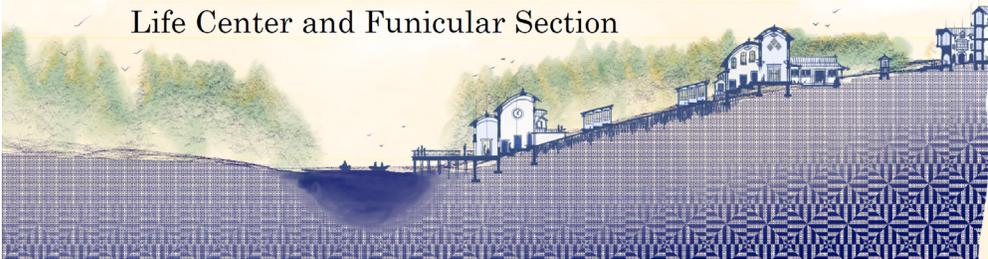


FIG. 78
Illustrative plan.

FIG. 79
Detail plan of care center and funicular.



FIG. 80
Section of funicular and care center.



Conclusion

The Pettit Lake property is a beloved resource for the city of Silverton, and many citizens are looking forward to the land being open to the public. Revenue-creating designs such as campsites, native plant nurseries, senior centers, and amphitheaters will require greater resources and impact the natural aspects of the land, which are cherished by Silverton residents. Such designs will need to be clearly and thoughtfully presented to the public. Opportunities to enjoy the natural beauty of the site and preserve its qualities are a must, and analysis of the site shows that it is potentially well-suited to the development and maintenance of trails. The northern part of the site is the best-suited to more intense development or building and could accommodate the heavier infrastructure of campgrounds or other building resources. In Pettit Lake, Silverton has the opportunity to create an iconic park that is a draw for tourists and a treasured asset for residents.

SCI Directors and Staff

Marc Schlossberg	SCI Co-Director, and Professor of Planning, Public Policy, and Management, University of Oregon
Nico Larco	SCI Co-Director, and Professor of Architecture, University of Oregon
Megan Banks	SCYP Director, University of Oregon
Sean Vermilya	Report Coordinator
Katie Fields	SCYP Graduate Employee
Danielle Lewis	Student Graphic Designer

