

Reservoir Siting Study



Welcome to the Reservoir Siting Public Open House

November 13, 2025
6:00-8:00 pm

Columbia Room, St. Helens City Hall
265 Strand Street, St. Helens, OR 97051

Welcome!

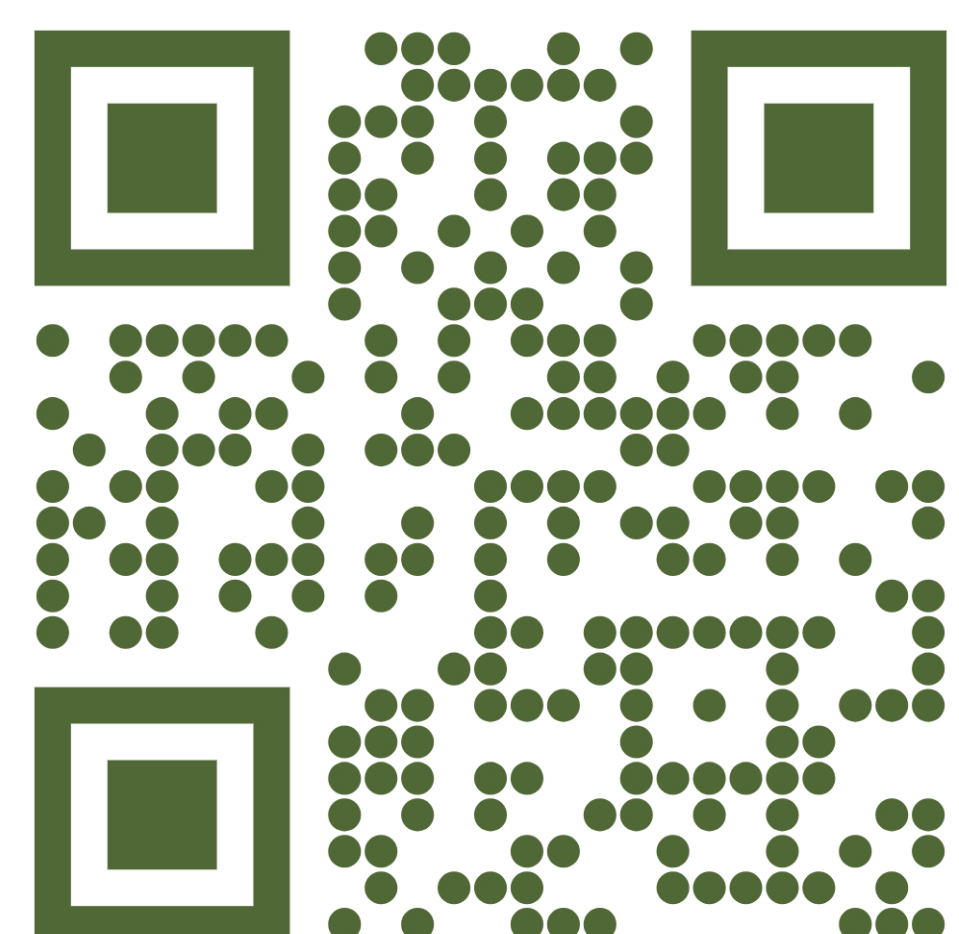
We are glad you joined us. This open house will provide information about the proposed location for the new water reservoir.

Information provided:

- Project overview
- Siting considerations and process
- Analysis maps
- Siting recommendations

Please help us by:

- Reviewing our objectives and process
- Asking questions about the project
- Providing comments
- Use the QR code to check out the project website



Reservoir Siting Study

Purpose and Need

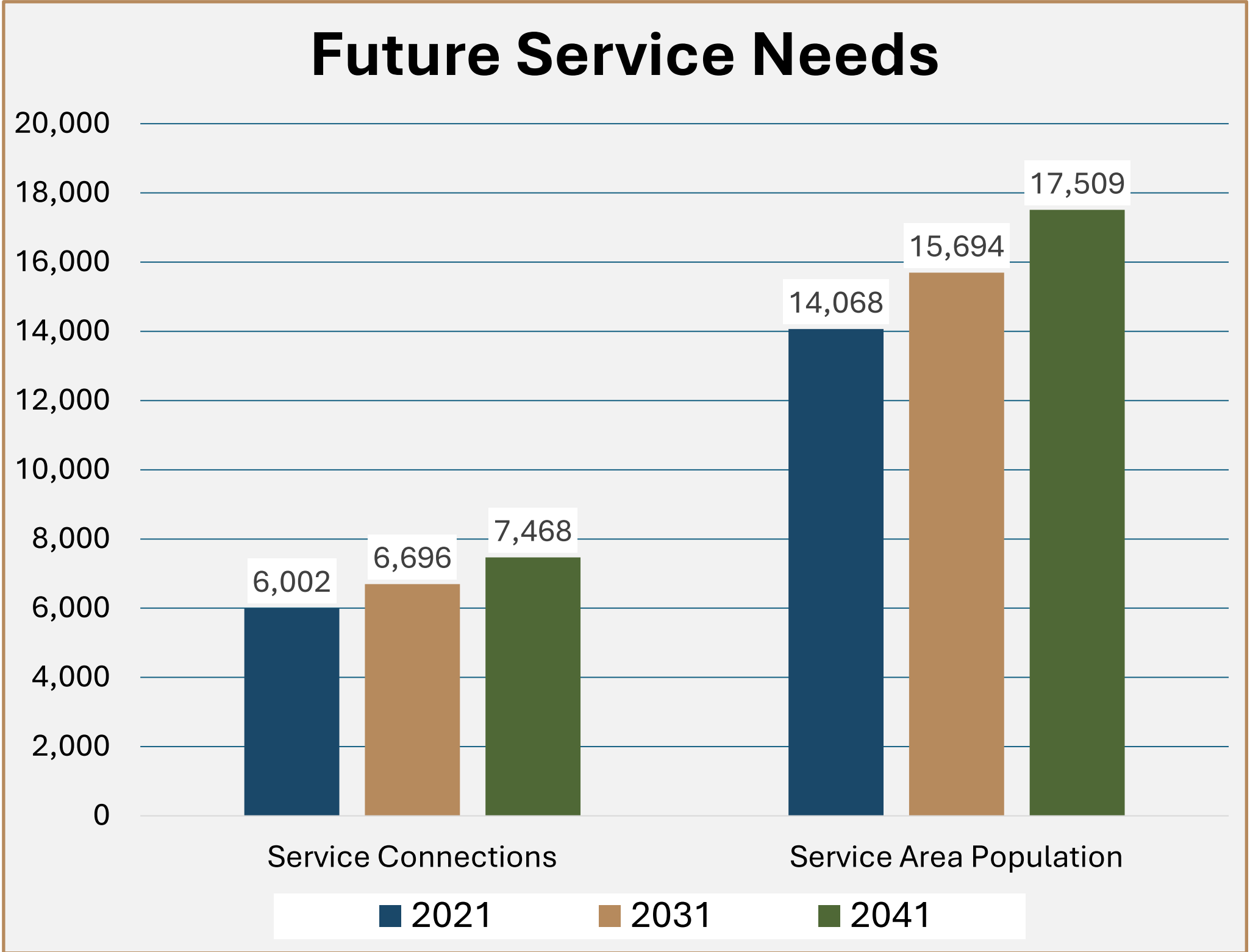


Project Background

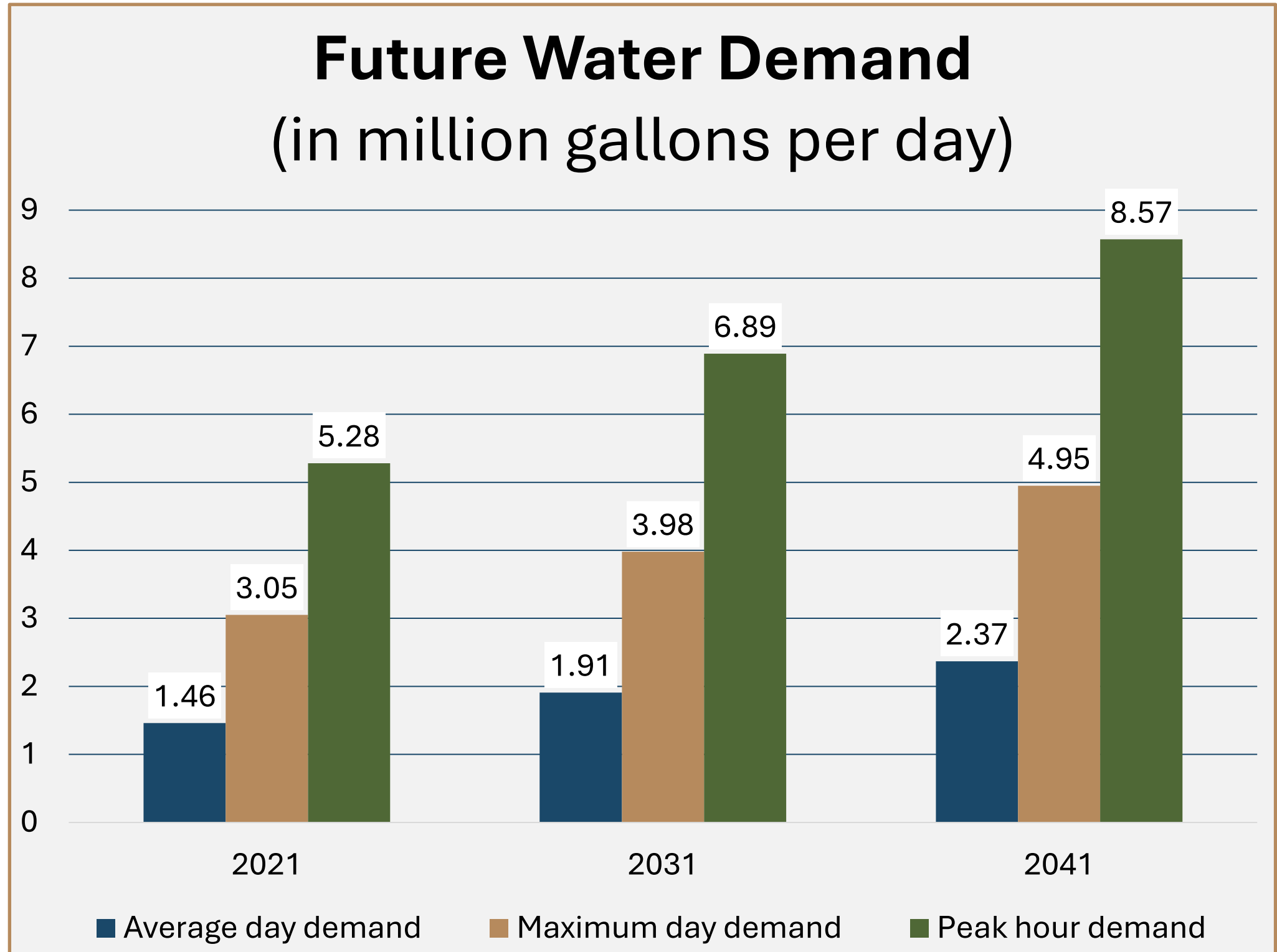
The St. Helens 5.0-million-gallon reservoir project aims to construct a new water storage reservoir to address critical infrastructure needs within the City’s aging water system, particularly with the recent loss of the City’s oldest and second largest water reservoir.

The new reservoir will enhance operational storage capacity, address fire capacity needs, and improve resilience to seismic events, while meeting both current and future water storage demands.

The objective of this siting study is to determine the most suitable site to construct a new reservoir and allow the City to move forward with property acquisition, design, and construction.



Reservoir Example

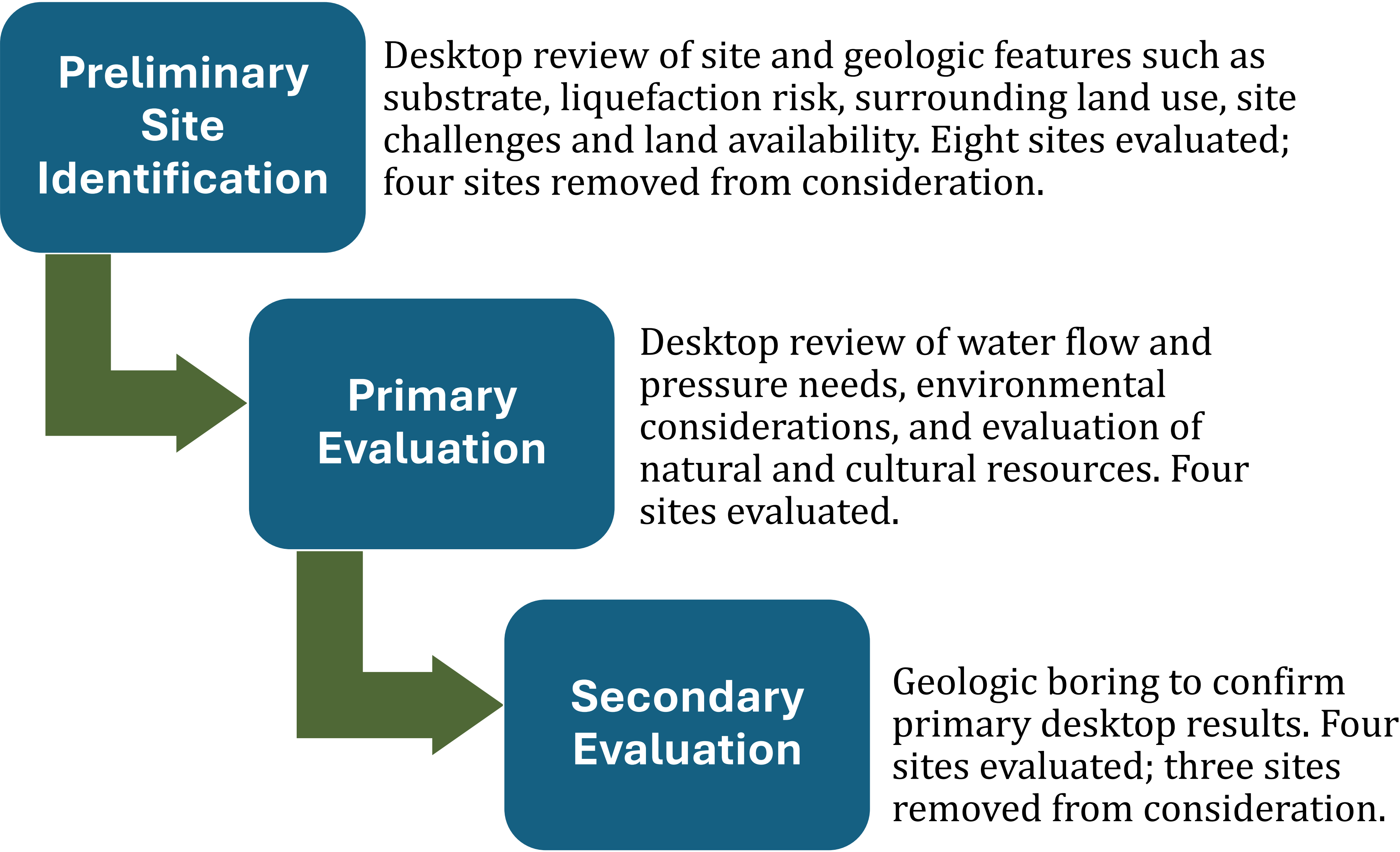


Project Timeline



Reservoir Siting Study

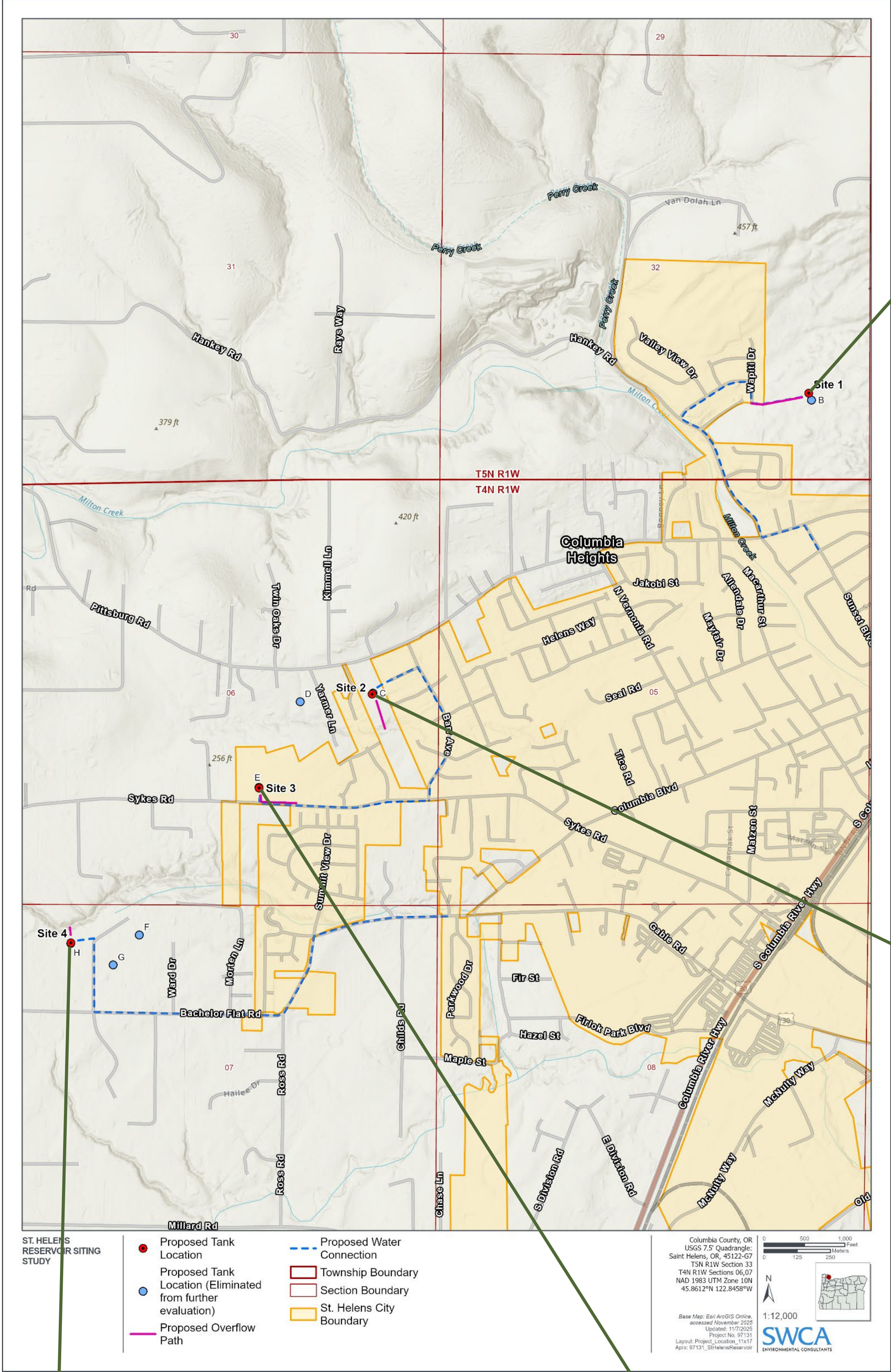
Evaluation Process



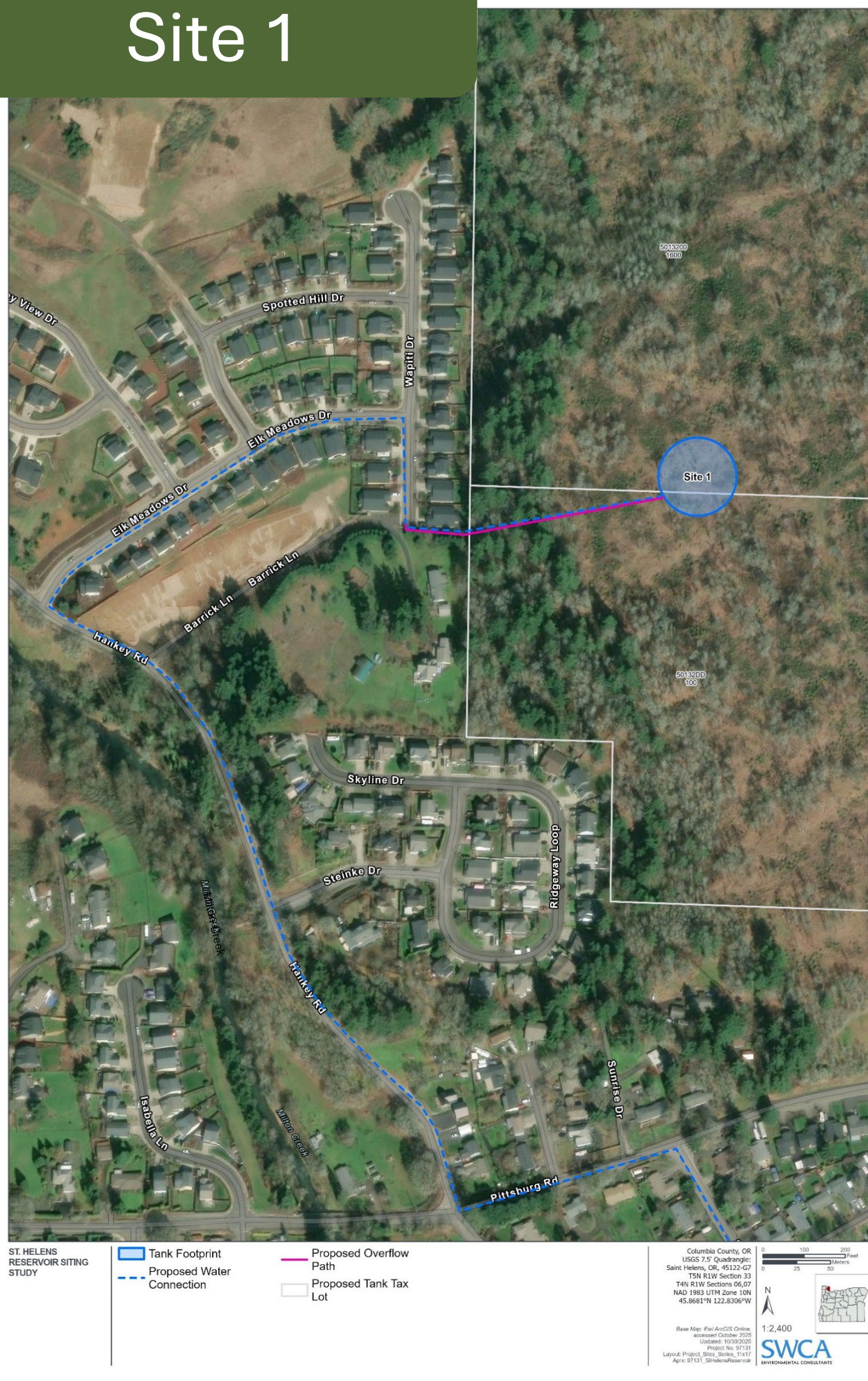
Evaluation Criteria	
Site Features	Topography, system connections, flow and pressure needs, and size
Geologic Factors	Soil and seismic stability
Environmental and Cultural Resources	Protecting local plants, animals, habitats, wetlands and cultural sites
Constructability	Access, slope, utilities ease of building on site
Community Impacts	Effects on nearby homes and visual impacts
Costs	Affordability of construction and materials

Reservoir Siting Study

Potential Sites



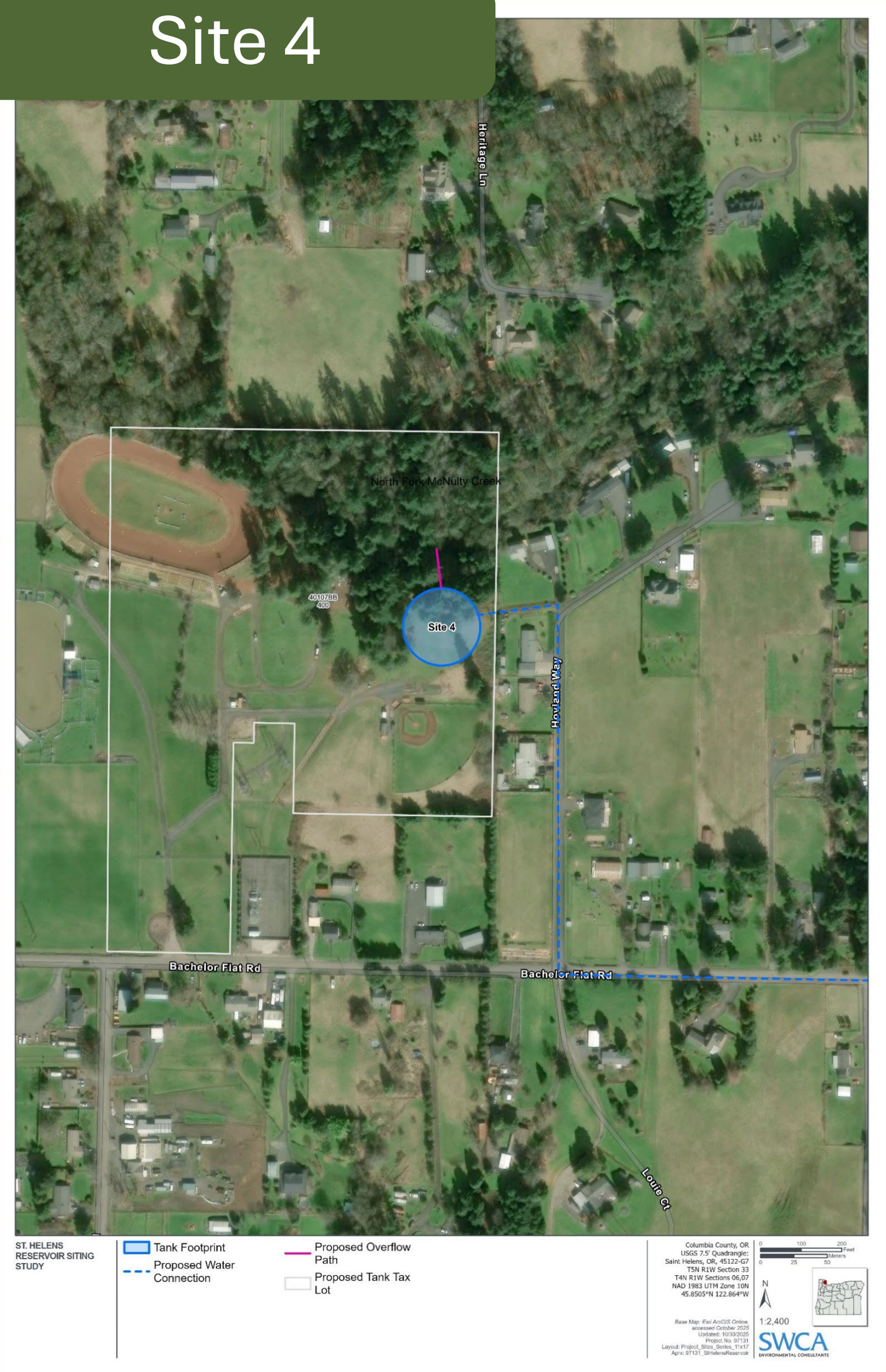
Site 1



Site 2



Site 4



Site 3



The logo is an oval emblem with a tan border. Inside, a stylized landscape is depicted: a blue sky with white sun rays at the top, a white mountain peak with a red diagonal stripe, a row of dark green evergreen trees, a blue river with white highlights, and green grass in the foreground. Below the oval is a tan banner with the text 'City of St. Helens' in a dark blue serif font. Underneath the banner is a green oval containing the text 'FOUNDED 1850' in white capital letters.

ST HELENS RESERVOIR SITING STUDY

- Proposed Tank Location
- Proposed Overflow Path
- - - Proposed Water Connection
- Proposed Tank Tax Lot

National Hydrography Dataset

- Intermittent Stream/River
- Perennial Stream/River
- National Wetlands Inventory
- Freshwater Emergent Wetland

FEMA Flood Hazard

- 1% Annual Chance Flood Hazard
- 0.2% Annual Chance Flood Hazard

Regulatory Floodway

Surface Management Agency

- Private
- County
- St. Helens City
- Boundary
- Tax Lot

Base Map: Esri ArcGIS Online, Aerial Imagery, 2015
 Imagery Date: 2015
 Imagery Path: 2015
 Imagery Scale: 1:12,000
 Imagery Source: Esri
 Imagery Type: Aerial Imagery
 Imagery Year: 2015

Scale: 1:12,000
 0 100 200 Feet
 0 100 200 Meters

North Arrow

SWQA
 SOUTHWEST QUANTIFICATION ASSOCIATES

ST. HELENS RESERVOIR SITING STUDY

● Proposed Tank Location
 --- Proposed Tank Tax Lot
 - - - Project 2-mile Buffer

StreamNet Fish Distribution Species

--- Bull trout
 --- Chinook salmon
 --- Chum salmon
 --- Coho salmon
 --- Green sturgeon
 --- Sockeye salmon
 --- Steelhead

Caples
 Columbia City
 St. Helens
 McNully
 Warren
 Yankton
 Scappoose Landing
 Warrenton River
 Greenway
 Warrenton Slough

Columbia River
 Lewis & Clark Highway
 Highway 30
 Highway 101

Columbia County, OR
 USGS 7.5 Quadrangle
 Saint Helens, OR, 43122-07
 T1N 43W Section 10
 T4S R1W Section 06,07
 BAO 1401 147E Zone 10N
 45.85147°N 122.84637°W

Scale Map: F01-A0022 (2nd)
 Author: J. H. H. H. H.
 Designer: J. H. H. H. H.
 Layout: J. H. H. H. H.
 Date: 12/11/11 (Revised/Updated)

1:40,000

SWCA
 SOUTHWESTERN CONSULTANTS

Zoning

Columbia County Zoning

- Community Service - Institutional (CS-I)
- Community Service - Utility (CS-U)
- Forest Agriculture (FA-B0)
- Primary Forest (PF-B0)
- Rural Residential - 2 Acre Minimum (RR-2)
- Rural Residential - 5 Acre Minimum (RR-5)
- Single Family Residential (R-10)
- Multi-Family Residential (MFR)
- Mobile Home Residential (MHR)
- Commercial - General (C-3)
- Commercial - Highway (C-5)
- Heavy Industrial (M-1)
- Light Industrial (M-2)
- Surface Mining (SM)

St. Helens Zoning

- Suburban Residential (R10)
- Moderate Residential (R7)
- General Residential (R5)
- Apartment Residential (AR)
- General Commercial (GC)
- Highway Commercial (HC)
- Light Industrial (LI)
- Heavy Industrial (HI)
- Public Lands (PL)

ST HELENS RESERVOIR SITING STUDY

- Proposed Tank Location
- Proposed Tank Tax Lot
- St. Helens City Boundary

ST. HELENS ZONING

- General Commercial (GC)
- Highway Commercial (HC)
- Light Industrial (LI)
- Heavy Industrial (HI)
- Public Lands (PL)

Scale: 1:12,000

North Arrow

SWWA
SWEETWATER WATERSHED AUTHORITY

Map Data:
Columbia County, OR
USGS 7.5 Quadrangle
Saint Helens, OR, 45124-02
T29 N19W Section 31
T4N R10W Section 06,07
NAD 1983 UTM Zone 10N
45 8612'N 122 8450'W

Base Map: Esri/Aerial Data, Aerial Imagery 11/2005, Vector Data 11/2005, Light Gray 11/2005, Dark Gray 11/2005, Apr 01/15, Unpublished

[illegible]

Reservoir Siting Study

Secondary Site Evaluation



Field Verification

Site 1



Soil Composition: Basalt Rock*
Liquefaction Risk: None*
Landslide Risk: Low*
*Geologic boring not completed

Site 2



Seismic Forces: Medium (Class C)
Substrate: Colluvium (0.5-14.5 ft), Decomposed Basalt (14.5-17.5 ft), and Intact Basalt (17.5-36.5 ft)
Depth to Groundwater: 9.5 ft Below Ground Surface (BGS)
Liquefaction Risk: Low
Landslide Risk: Low
Implications: None

Site 3



Seismic Forces: High (Class E)
Substrate: Fill (0-7 ft), Missoula Flood Deposits (7-61.5 ft)
Depth to Groundwater: 15.7 ft BGS
Liquefaction Risk: Low
Landslide Risk: Low
Soil Compressibility: Moderate
Implications: Tank height constraints, structural slab may be required

Site 4



Seismic Forces: High (Class E)
Substrate: Missoula Flood Deposits, Very Soft Silt Clay, Soft to Stiff Clays and Silt
Depth to Groundwater: 15 BGS
Liquefaction Risk: High
Landslide Risk: High
Soil Compressibility: High
Implications: Deep foundations and surcharging required, tank height constraints

Reservoir Siting Study



Preferred Site

Site 2



Site Features

- Adequate size for reservoir
- Low slopes
- Excellent water system connections, fill rates, fire flow and pressure

Constructability

- Access and abundant space allow flexibility in construction
- High geotechnical stability - would not require additional foundation
- Landowner willingness
- Reduced costs compared to other potential sites

Geologic Favorability

- Low landslide or liquefaction risks
- Best geotechnical stability of all sites
- Low substrate compressibility requires no additional foundation, reducing costs

Community Impacts

- Reduced cost for the community due to constructability, and geologic favorability
- 70-100 feet from existing homes with some existing vegetation for screening

Environmental and Cultural Resources

Environmental

- Site contains 0.61 acre of wetlands and 317 linear feet of perennial stream, which may be avoidable,
- Site is mostly developed (65%) with open space, suggesting fewer environmental constraints
- No aquatic special status species on site.

Cultural

- No previously recorded cultural resources
- Low to moderate probability of identifying cultural resources during construction