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TECHNICAL MEMORANDUM

DATE:	January 8, 2024
TO:	Peter Corelis, PE, City of Bainbridge Island
FROM:	Tad Schwager, Parametrix
SUBJECT:	Sakai Pond Trail Segment Alternatives – Environmental Screening
CC:	Jennifer Dvorak, Parametrix
PROJECT NUMBER:	214-2290-013
PROJECT NAME:	Bainbridge Island Sound to Olympics Trail

Sound to Olympics Trail

The Sound to Olympics Trail (STO) is a regional trail system that will connect Kitsap County to surrounding trail networks across Washington. The STO will provide a link to the Olympic Discovery Trail in the west, serving as the western terminus of the nationwide Great American Rail Trail, which will span from Washington to Maryland. STO's two eastern termini are in Bainbridge Island and Kingston, where users can take the Washington State Ferries to connect to trails east of the Puget Sound, such as Burke-Gilman Trail and Sound to Mountains Greenway. As part of a $16 million Rebuilding American Infrastructure with Sustainability and Equity (RAISE) grant from the U.S. Department of Transportation, the City of Bainbridge Island (City) will acquire $1.7 million in federal funding for the STO from Agate Pass Bridge to the existing STO near Winslow. The broader initiative will plan and design 100 miles of new multiuse trails in the Puget Sound to Pacific (PS2P) corridor, extending from Bainbridge Island to La Push.

An existing 1-mile segment of STO on Bainbridge Island connects the Bainbridge Island Ferry Terminal north to Sakai Park. The proposed remainder of the STO throughout the city will mostly parallel SR 305, which is relatively flat with existing right-of-way for the trail. The STO is designed as a two-way shared-use path with a preferred 12-foot paved surface, accommodating users of all ages and abilities.

Environmental Screening Memo

The project will determine the next steps for the STO on Bainbridge Island. A planning-level alignment will be identified from Agate Pass Bridge to Madison Avenue NE in a separate report. A 20% engineered design will be prepared for the section of trail from Madison Avenue NE to Sakai Park near High School Road (Sakai Pond Segment). **This memo focuses on the Sakai Pond Segment only.**

This memo provides a screening-level assessment of environmental impacts, critical area permitting, and mitigation requirements for two alternative trail alignments along the Sakai Park Segment. The City will select a preferred alignment after review of this assessment.

Background

The City and partnering organizations identified two alternative alignments from which a preferred alternative will be selected. The alignments will pass through or adjacent to a 23-acre Category II wetland complex (based on a 2017 delineation), which is associated with a fish-bearing (Type F) stream (Bainbridge Island 2023). Mitigation ratios and buffers would be larger for Category I wetlands. The wetland buffer is assumed to be 225 feet and the ~~200-foot~~200-foot stream buffer would overlap with the wetland buffer. This wetland complex is referred to as Sakai Pond. Alternative 1 follows the east side of Sakai Pond, at the base of or on top of the road fill associated with SR 305. Alternative 2 skirts the west side of Sakai Pond, meandering through a wetland complex and crossing the stream before adjoining the Alternative 1 alignment north of the pond (Figure 1). Both alternatives would have varying impacts to critical areas. Critical areas are defined in the Bainbridge Island Municipal Code (BIMC) and include: aquifer recharge areas, fish and wildlife habitat conservation areas, frequently flooded areas, geologically hazardous areas, and wetlands. Detailed roll plots of each are provided in Attachment A.

This screening-level memorandum is for informative purposes only and does not suffice for a critical area permit application with the City. Critical area reports are required for a critical area permit and shall be prepared by qualified professionals in the respective areas of concern once the preferred alternative has been selected.

PERMIT REQUIREMENTS

The City will be the lead agency for project review under the State Environmental Policy Act (SEPA) and will determine whether the project would have a "probable significant, adverse environmental impact" or whether an exemption or determination of non-significance (DNS) will apply. The SEPA review process will ensure a broad suite of federal, state, and local environmental laws are considered.

Many of the governing laws and required permits would apply to both alternatives, with significant differences for mitigation as a result of impacts. These impacts and mitigation differences are highlighted in the summary Table 2, at the end of this report, with descriptions of the impacts for each alternative provided below.

Alternative 1 Impacts and Permits

The Alternative 1 trail alignment parallels SR 305, roughly following the toe of the road fill prism on the west side of the highway. It follows the east side of Sakai Pond/wetland complex, intermittently crossing over wetland habitat. This Alternative proposes approximately 125 linear feet of trail through wetland with an estimated of 2,500 square feet of permanent wetland impact and 1,450 linear feet of trail through wetland buffer with an estimated impact of 29,000 square feet of buffer impact. Approximately 1,180 linear feet of the trail would impact healthy and/or mature tree stands, and 1,060 linear feet would impact moderately healthy tree stands of fair quality in the buffer. Additionally, the trail would be within an aquifer recharge area.

Alternative 1 will require federal and local permits, and potentially a state permit. These include U.S. Army Corps of Engineers (USACE) authorization under Section 404 of the Clean Water Act (CWA). Before authorization can be obtained, the project must also demonstrate compliance with Section 401 of the CWA, Section 106 of the National Historic Preservation Act (NHPA), and Section 7 of the Endangered Species Act (ESA). A Hydraulic Project Approval (HPA) issued by the Washington Department of Fish and Wildlife (WDFW) may be required if project work is to occur below the ordinary high water mark (OHWM) of the mapped

stream in the vicinity. Locally, requirements would include a site assessment review if the project has the potential to generate stormwater runoff that could contaminate or affect aquifer recharge rates, a critical areas permit, as well as other typical development permits issued by the City.

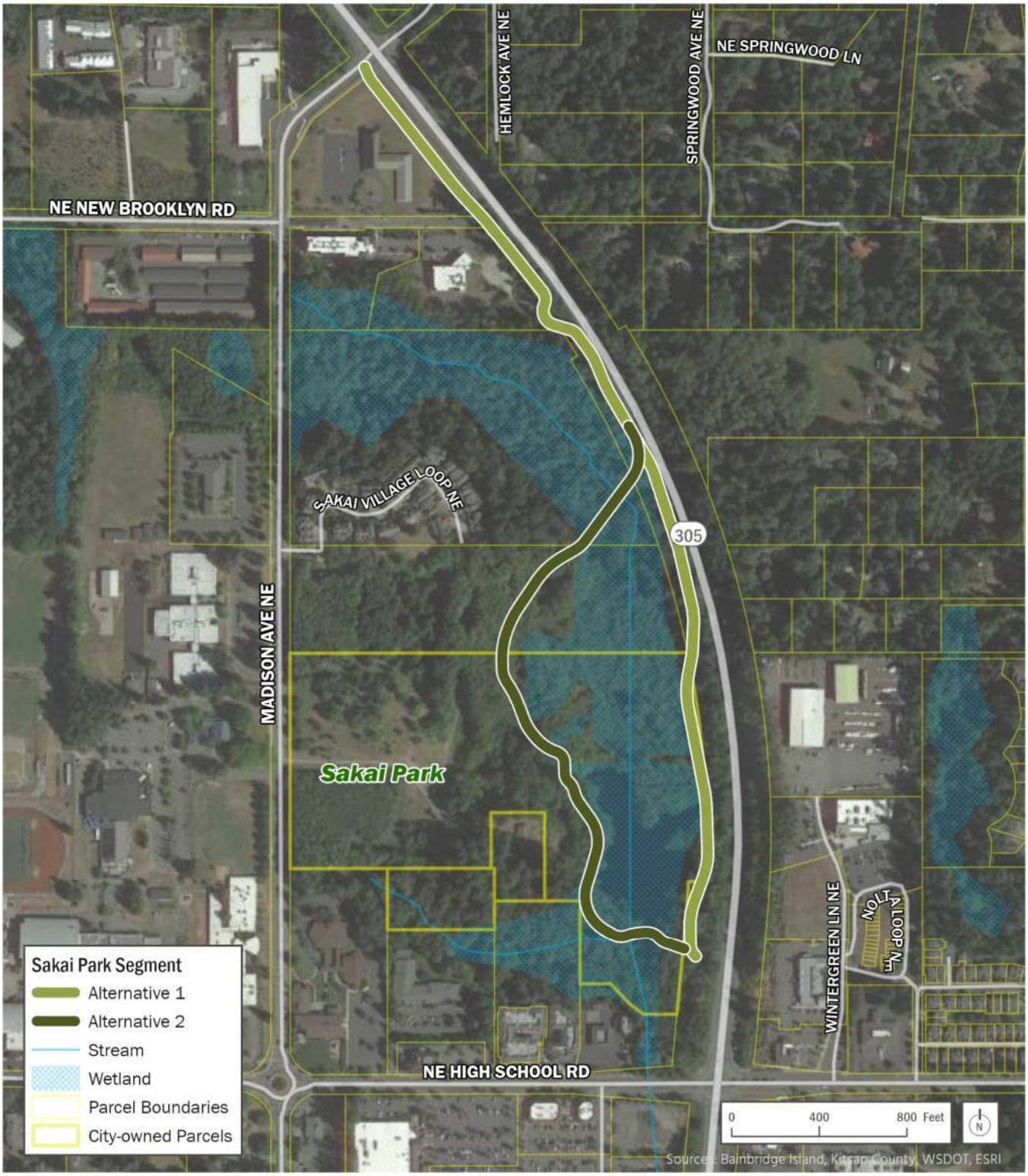


Figure 1. Sakai Park Segment: Alternative Alignments

Alternative 2 Impacts and Permits

From the existing trail, the Alternative 2 trail alignment would extend west, crossing wetland and stream habitat within the Sakai Pond/wetland complex and continue north along the wetland boundary before heading back east to end at the junction of Madison Avenue North and SR 305. This alternative proposes approximately 950 linear feet of trail with 19,000 square feet of permanent wetland impact and 1,000 linear feet of trail with 20,000 square feet of wetland buffer impact, along with potential stream crossings. Approximately 1,120 linear feet of the trail would impact healthy and/or mature tree stands and 1,930 linear feet would impact moderately healthy tree stands of fair quality in the buffer. Additionally, the trail would be within an aquifer recharge area.

Alternative 2 will require federal, state, and local permits, including Section 404/401 of the CWA, Section 106 of the NHPA, Section 7 of the ESA, HPA, a site assessment review if the project has the potential to generate stormwater runoff that could contaminate groundwater or affect aquifer recharge rates, a critical areas permit, and other typical development permits issued by the City.

CRITICAL AREA DEVELOPMENT REQUIREMENTS AND MITIGATION

Mitigation requirements are set forth in BIMC Chapter 16.20 within the critical areas section. See Figure 1, above, for an illustration of mapped critical areas in relation to the alignment alternatives.

Aquifer Recharge Areas

The entirety of Bainbridge Island is classified as an aquifer recharge area. Any development that has the potential to change surface water hydrology or aquifer recharge rates, or to generate pollutants identified as a potential source of drinking water contamination must complete a site assessment review (SAR) in accordance with BIMC 15.19 and the listed elements identified in BIMC 16.20.180.

Fish and Wildlife Habitat Conservation Areas

Fish and wildlife habitat conservation areas include:

- Streams;
- Habitats recognized by federal or state agencies for federal- and/or state-listed endangered, threatened, sensitive and candidate/monitored species;
- Areas that contain habitats and species of local importance, biodiversity areas and corridors as defined in the Washington Department of Fish and Wildlife (WDFW) Priority Habitats and Species (PHS) list (WDFW 2023); and
- And all areas within the city meeting one or more of the preceding criteria.

Alternative 1 does not cross any known streams, although the alignment may infringe below the OHWM of the pond and wetland. This impact cannot be quantified until more detailed design and resource delineations are available. Alternative 2 crosses over a mapped Type F stream (Bainbridge Island 2023), which will require approvals from WDFW. Local development standards are listed in BIMC 16.20.110(G).

Both alternatives will impact fish and wildlife habitat conservation area buffers. Buffers for Type F streams are 200 feet (BIMC 16.20.110(E)(2)) and are increased to include streamside wetlands. These buffers

would overlap and be included in the wetland buffer. Buffer impacts shall be mitigated at a 1:1 ratio. Modifications to buffers may be made to reduce or eliminate the impacts. These include buffer width averaging or reduction, as described below.

Buffer Width Averaging – The width of a required buffer may be averaged if the applicant can demonstrate that averaging can provide equal or greater functions and values as would be provided under the required buffer and all of the following conditions are met:

- The total area of buffer after averaging is equal to the area required without averaging.
- Averaging cannot result in any portion of the buffer being reduced more than 25% of its required width.

Buffer Width Reduction – The width of a required buffer may be reduced if the applicant can demonstrate that the reduction would provide equal or greater functions and values as would be provided under the required buffer and all of the following conditions are met:

- The buffer may not be reduced more than 25% of its required width.
- Native vegetation on other portions of the site is retained in order to offset habitat loss from buffer reduction.

Frequently Flooded Areas

The project area does not occur within a designated frequently flooded area.

Geologically Hazardous Areas

Geologically hazardous areas include erosion hazard areas, landslide hazard areas, and seismic hazard areas (including fault and liquefaction hazard areas). Both trail alternatives are outside the boundaries of the mapped hazard areas in proximity to the project.

Wetlands

Both project alternatives will impact wetland and wetland buffer areas. The wetland complex within the project footprint is assumed to be a Category II based on a 2017 delineation but will need to be re-delineated because the delineation is more than five years old. Mitigation ratios and buffers would be larger for Category I wetlands.

Wetland Impacts

For wetland impacts, mitigation requirements are determined by wetland category and type of mitigation, with the first number in the ratio indicating the amount of wetland area to be restored and the second number specifying the amount of wetland area lost (Table 1) (BIMC 16.20.140(J)(4)).

Table 1. Mitigation Requirements Ratios for Wetland Impacts

CATEGORY AND TYPE	REESTABLISHMENT OR CREATION	REHABILITATION	1:1 REESTABLISHMENT OR CREATION (R/C) AND ENHANCEMENT (E)	ENHANCEMENT ONLY
I – Mature Forested	6:1	12:1	1:1 R/C and 10:1 E	24:1
I – Based on functions	4:1	8:1	1:1 R/C and 6:1 E	16:1
II	**3:1**	**6:1**	**1:1 R/C and 4:1 E**	**12:1**
III	2:1	4:1	1:1 R/C and 2:1 E	8:1
IV	1.5:1	3:1	1:1 R/C and 2:1 E	6:1

Mitigation requirements can also be achieved through use of the credit/debit tool described in Calculating Credits and Debits for Compensatory Mitigation in Wetlands of Western Washington: Final Report (Ecology 2012).

Compensatory mitigation may occur on- site or at an off-site location if it is determined that the off-site location is preferable (BIMC 16.20.140(J). Considerations for a preferrable off-site location may include:

- On-site conditions do not favor mitigation success due to soil conditions, hydrology, or adverse impacts of adjacent land uses.
- On-site conditions are isolated from other aquatic or riparian habitats.
- An off-site location is beneficial to larger ecosystems or watershed functions.
- An off-site location has greater likelihood of success or will provide greater functional benefits.
- The proposal for an off-site location uses a watershed approach consistent with Selecting Wetland Mitigation Sites Using a Watershed Approach (Ecology 2009).

An off-site mitigation area can include a wetland mitigation bank or an in-lieu fee program.

Wetland Buffer Impacts

Wetland buffer widths are determined based on wetland category, habitat function, and impact of land use (BIMC 16.20.140(I). A Category II wetland with high level of function for habitat and moderate level of impact for a paved trail has a standard buffer width of 225 feet. The impact to wetlands and buffers cannot be quantified until more detailed design and resource delineations are available. For wetland buffer impacts, buffer modification options are available. See buffer modifications under the Fish and Wildlife Habitat Conservation Areas section above.

Shading Impacts

Shading impacts can result from the installation of a raised boardwalk. This will cause a reduction in the level of light reaching the wetland surface and, therefore, modify the vegetation cover and structure. The effects on vegetation vary depending on the height, aspect, and design of the structure. Shaded impacts are based on the anticipated shaded area, not the area of the structure, and ratios are half of the recommended ratios for permanent impacts (Ecology 2021). For this purpose of this project, it was assumed the shaded area was the same as for direct wetland impacts (estimated linear feet of trail by 20 feet).

SUMMARY

A summary of potential mitigation needs and permit requirements for each alternative is provided below in Table 2. Three scenarios are provided for wetland mitigation is based on 2,500 square feet of permanent or shading wetland impact for Alternative 1 and 19,000 square feet of permanent or shading wetland impact for Alternative 2. The estimated areas are approximate based on linear footage through the wetland and wetland buffer multiplied by an estimated trail width of 20 feet.

Table 2. Summary of Environmental Screening

		ALTERNATIVE 1	ALTERNATIVE 2
REESTABLISHMENT OR CREATION (3:1) for CATEGORY II WETLAND		7,500 ft² or *3,750* ft²	57,000 ft² or *28,500* ft²
REHABILITATION (6:1) for CATEGORY II WETLAND		15,000 ft² or *7,500* ft²	114,000 ft² or *57,000* ft²
ENHANCEMENT ONLY (12:1) CATEGORY II WETLAND		30,000 ft² or *15,000* ft²	228,000 ft² or *114,000* ft²
WETLAND BUFFER (1:1)		29,000 ft²	20,000 ft²
STREAMS		No crossings	2 Type F crossings
TREE IMPACTS	Healthy/Mature Moderately Healthy/Fair Young/Unhealthy Clear/Poor Quality	23,600 ft² 21,200 ft² 6,800 ft² 10,000 ft²	22,400 ft² 38,600 ft² 0 ft² 10,000 ft²
PERMITS REQUIRED	**FEDERAL**	• Clean Water Act, Section 404/401 • Endangered Species Act, Section 7 • National Historic Preservation Act, Section 106	• Clean Water Act, Section 404/401 • Endangered Species Act Section 7 • National Historic Preservation Act, Section 106
	STATE	• Hydraulic Project Approval (probable)	• Hydraulic Project Approval
	LOCAL	• Site Assessment Review • Critical Areas Permit	• Site Assessment Review • Critical Areas Permit

Note: Italicized blue numbers indicate amount of mitigation needed if impact is a shaded impact only.

ft² = square feet.

REFERENCES

Bainbridge Island. 2023. Critical Areas Web Application. City of Bainbridge Island, Washington. Available at Critical Areas Web Application (arcgis.com).

Ecology (Washington State Department of Ecology) 2012. Calculating Credits and Debits for Compensatory Mitigation in Wetlands of Western Washington: Final Report. Washington State Department of Ecology Publication No. 10-06-011.

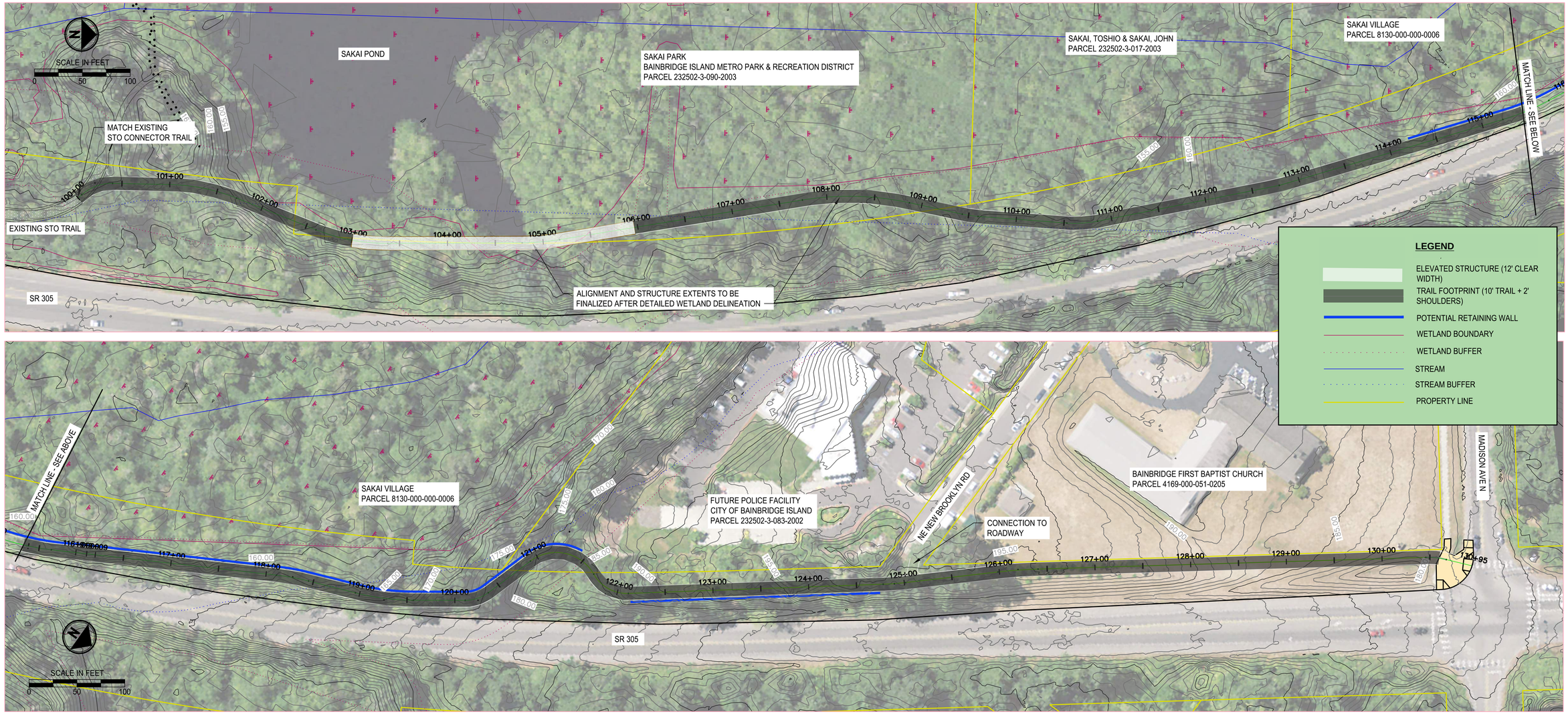
Ecology. 2009. Wetland Mitigation Sites Using a Watershed Approach (Western Washington). Ecology Publication No. 09-06-32.

Ecology., USACE (U.S. Army Corps of Engineers Seattle District), and EPA (U.S. Environmental Protection Agency Region 10). 2021. Wetland Mitigation in Washington State – Part 1: Agency Policies and Guidance (Version 2). f Ecology Publication No. 21-06-003.

WDFW (Washington Department of Fish and Wildlife). 2023. PHS on the Web: An interactive map of WDFW priority habitats and species information for project review. Available at http://wdfw.wa.gov/mapping/phs/.

Attachment A

Detailed Roll Plots



TYPICAL BOARDWALK CROSS SECTION
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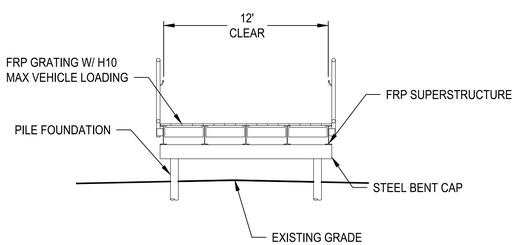
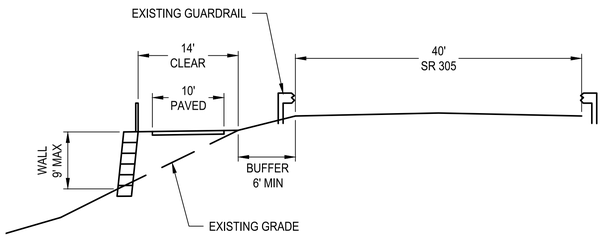
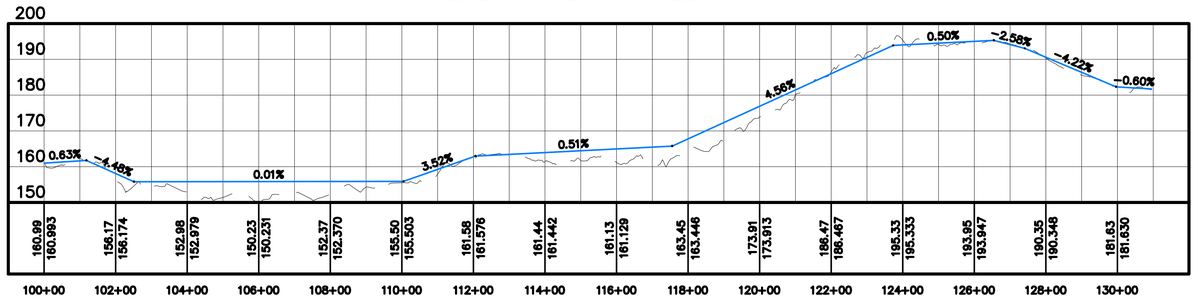


TYPICAL CROSS SECTION ADJACENT SR305
STA 114+00 TO 120+00



ALTERNATIVE 1 PROFILE



NOT FOR CONSTRUCTION

	REVISIONS	DATE	BY

DESIGNED #####
DRAWN #####
CHECKED #####
APPROVED #####

ONE INCH AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

FILE NAME ALT1-rollplot
JOB No. XX
DATE XX/XX

PRELIMINARY

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PROJECT NAME
BAINBRIDGE SOUND TO OLYMPICS TRAIL XXXX

ALTERNATIVE 1

DRAWING NO.
OF XX
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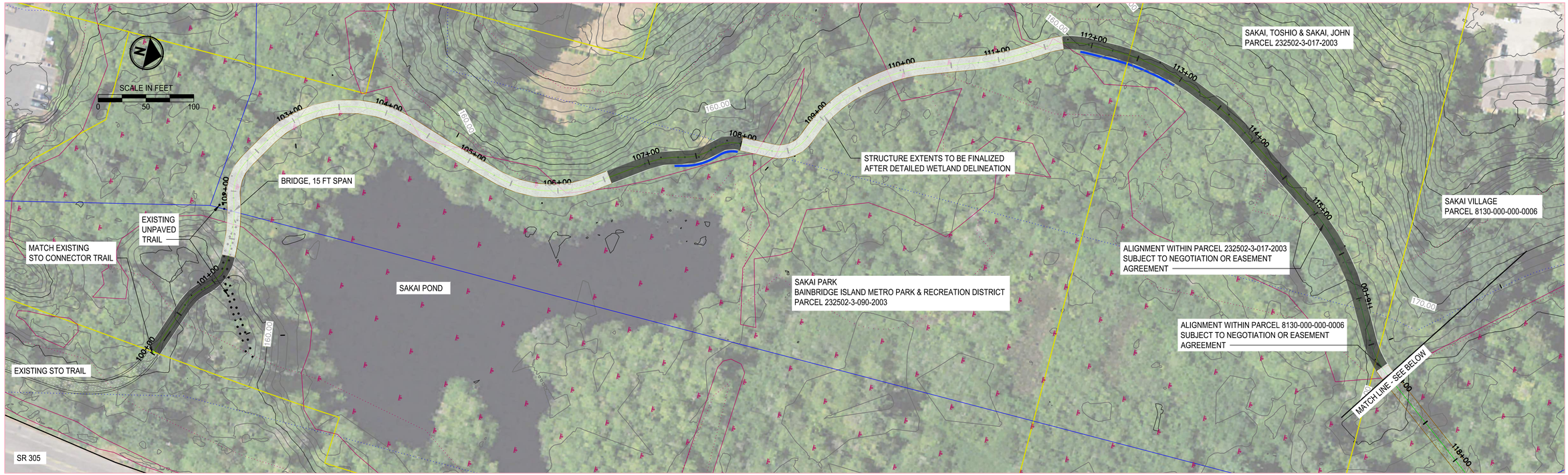
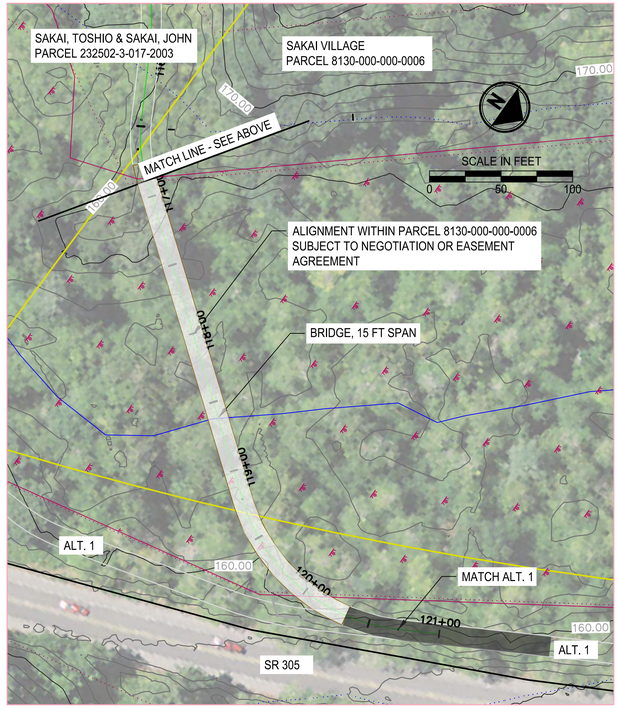




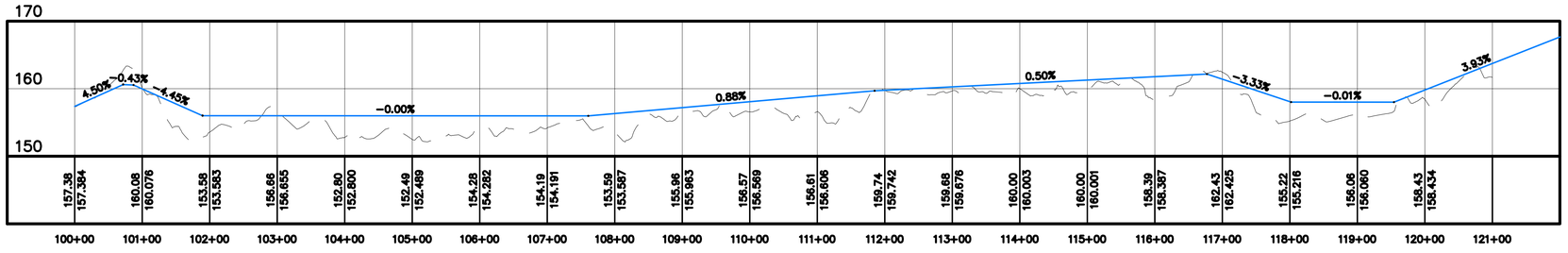
LEGEND

- ELEVATED STRUCTURE (12' CLEAR WIDTH)
- TRAIL FOOTPRINT (10' TRAIL + 2' SHOULDERS)
- POTENTIAL RETAINING WALL
- WETLAND BOUNDARY
- WETLAND BUFFER
- STREAM
- STREAM BUFFER
- PROPERTY LINE

ALTERNATIVE 2 NOTES:

1. Wetland and stream locations are based on a combination of GIS and limited delineation efforts by others. A detailed delineation and hydraulic analysis would be required to verify the exact locations and extents of all structures.
2. The proposed trail follows existing park paths between stations 100+00 and 104+00. Existing paths are obscured by the tree canopy.
3. Elevated structures are assumed for all wetlands and stream crossings. The trail would be constructed at-grade at all other locations, including within buffers.

ALTERNATIVE 2 PROFILE



NOT FOR CONSTRUCTION

PRELIMINARY

REVISIONS	DATE	BY

DESIGNED #####
DRAWN #####
CHECKED #####
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ONE INCH AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

FILE NAME ALT1-rollplot
JOB No. XX
DATE XX/XX

Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

PROJECT NAME
BAINBRIDGE SOUND TO OLYMPICS TRAIL

ALTERNATIVE 2

DRAWING NO. ##### OF XX

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