CRITICAL AREAS REPORT

Nisqually State Park – New Full Service Park

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NISQUALLY STATE PARK

1 EXECUTIVE SUMMARY

1.1 Findings

The project areas within Nisqually State Park were screened for streams, wetlands, and priority habitats. A total of 37 wetlands were identified in the study area. Three streams also flow along the park boundaries, Nisqually River, Ohop River, and Mashel River. Those features are described in detail in Section 4.2 – Critical Area Descriptions.

The project will generate some unavoidable buffer impacts and impacts to the shoreline area. A current assessment of proposed impacts are described in Section 6 and mitigation plans are provided in Appendix A.

No priority habitat and species (PHS) and no active breeding/nest sites were identified within the study area.

2 INTRODUCTION

2.1 Purpose

This Critical Areas Report (CAR), including a wetland study, habitat assessment, and conceptual mitigation plan was prepared to document existing conditions, proposed site development, applicable critical area regulations, and preliminary conceptual mitigation planning for the Nisqually State Park – New Full-Service Park.

Watershed staff worked with the project team to identify wetland and stream site constraints. Robert W. Droll Landscape Architects and Washington State Parks and Recreation Commission (WSPRC) utilized this information during the design process to avoid and minimize impacts to critical areas in accordance with local, state, and federal regulations. Due to the timing of site survey and site plan progression, this submittal presents a conceptual mitigation plan and notes where further impact reductions are planned. This document also details compliance with Pierce County critical area regulations and shoreline no-net-loss requirements.

2.2 Location

Nisqually State Park is located on Mashel Prairie Rd off of Highway 7 (National Park Hwy) in unincorporated Pierce County in Washington state (Figure 1). The State Park consists of several tax parcels totaling approximately 1,300 acres in size (Figure 2).

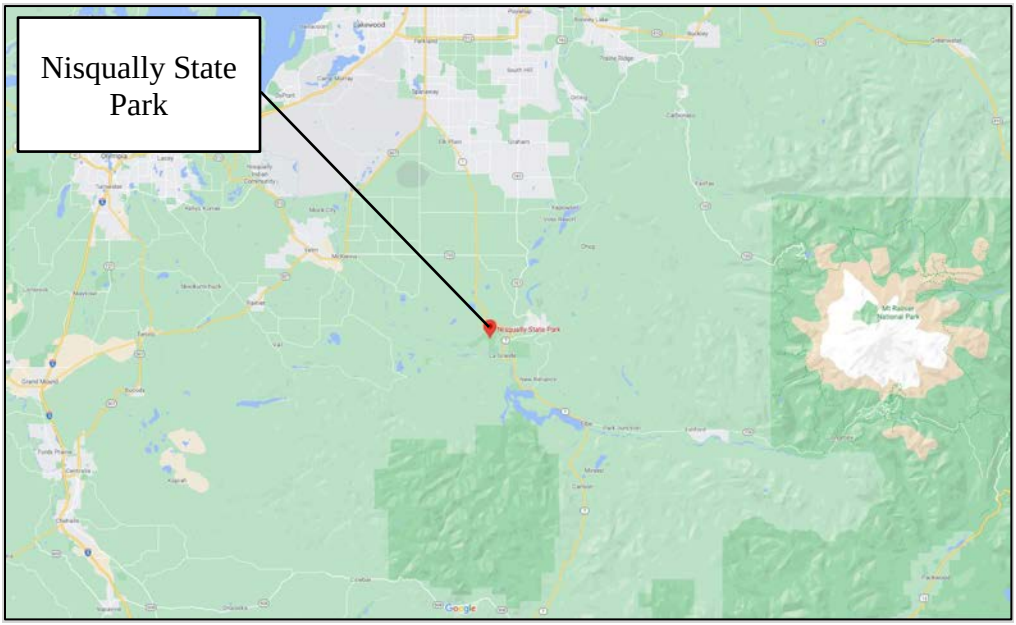

Figure 1. Vicinity map of Nisqually State Park (Imagery source: Google maps).

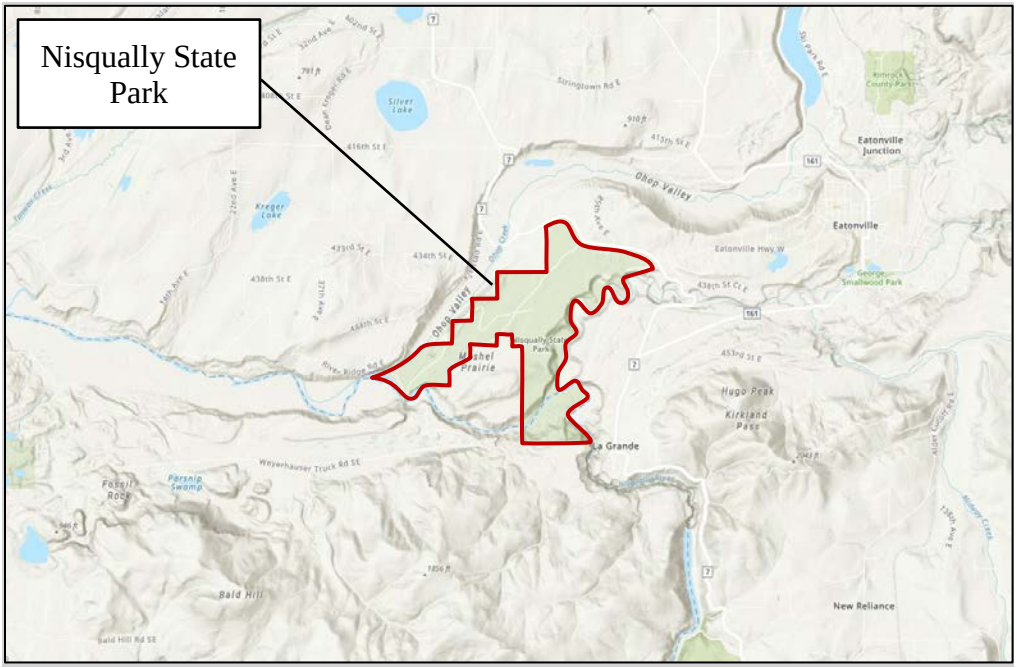

Figure 2. Nisqually State Park and immediate vicinity (Imagery source: Washington State Department of Transportation [WSDOT]).

2.3 Study Area

The study area is located centrally in Nisqually State Park and is bisected by Mashel Prairie Road. The initial site reconnaissance covered approximately 300-acres of the approximately 1,300-acre park (Figure 3). The current project-focused wetland delineation and reconnaissance study areas are spread out across the park (Figure 4). Study areas are depicted in our Existing conditions maps in Appendix A.

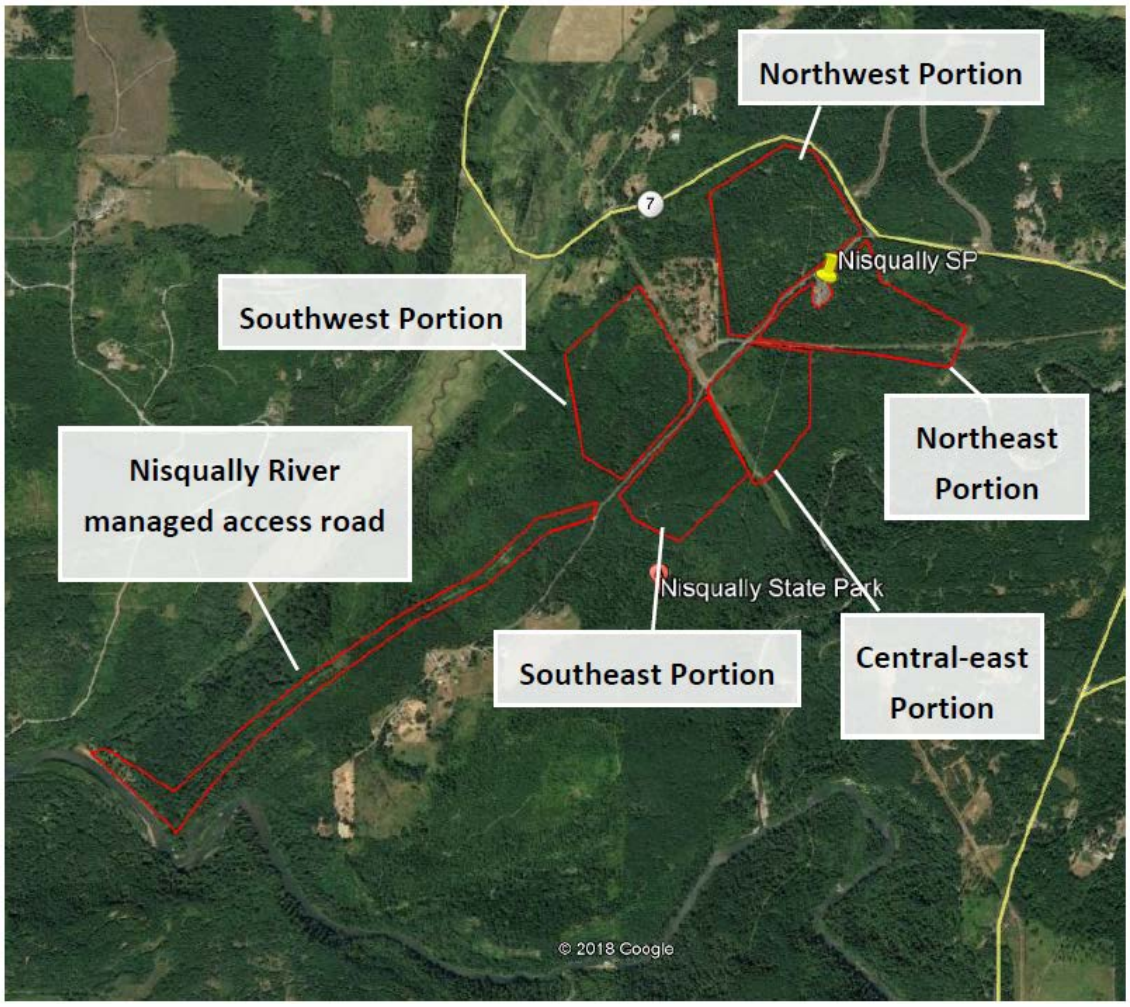

Figure 3. General areas screened for wetlands and streams (red outlines) in the initial pre-design site assessment by The Watershed Company in 2019. (Imagery source: Google Earth)

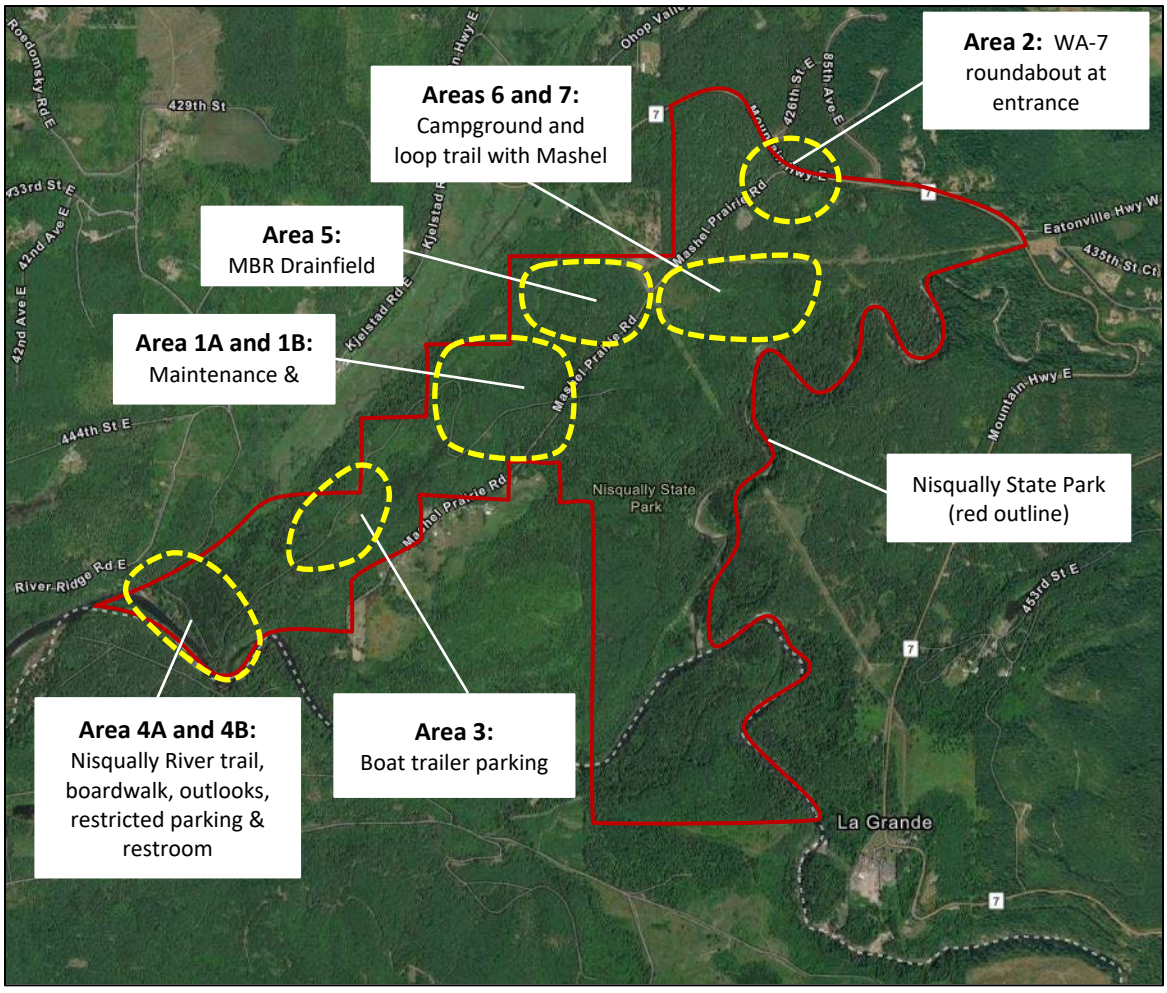

Figure 4. 2021-2022 Study areas approximate locations - Overview Map (Imagery source: WSDOT). Park boundary outlined in red. Approximate project areas sketched in yellow (see Appendix A for more detail).

3 METHODS

3.1 Wetlands & Streams

3.1.1 Existing Documentation Review

Public-domain information on the study area was reviewed for this critical areas study. These sources include US Department of Agriculture Natural Resources Conservation Service Web Soil Survey and WETS hydrologic data, U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory mapping, Washington Department of Fish and Wildlife (WDFW) PHS on the Web and SalmonScape mapping, Pierce County's PublicGIS, and Washington Department of Natural

Resources (DNR) Forest Practices Application Mapping Tool and Wetlands of High Conservation Value (WHCV) mapping.

3.1.2 Fieldwork

The study area was evaluated for jurisdictional wetlands using methodology from the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region Version 2.0* (Regional Supplement, US Army Corps of Engineers [Corps] 2010). The wetland boundaries were determined on the basis of vegetation, soils, and hydrology examination. Areas meeting the hydric criteria set forth in the Regional Supplement were determined to be wetland. Soil, vegetation, and hydrology parameters were sampled at several locations within the study area to determine wetland boundaries. 61 data points were recorded and marked with yellow- and black-striped flags (see Appendix B).

The encumbering boundaries of wetlands within 200 feet of the study area were marked with pink- and black-stripped flags. Wetlands located more than 200 feet from the study area, up to 315-feet away, were assessed at a reconnaissance level. The current 2020-2021 site assessment generally covers the prior broad-scale 2019 wetland reconnaissance study areas in greater detail. One exception is the Nisqually Managed Access Road. Some wetlands were identified outside of project areas 3 and 4 during the 2019 reconnaissance. Those two wetlands, G and I, are shown on the overview maps. Wetland maps are provided in Appendix A of this report.

Wetlands were rated, per the Pierce County Municipal Code (PCMC), with the 2014 *Western Washington Wetland Rating System* (Washington State Department of Ecology [Ecology] publication 14-06-029). Wetland rating forms and figures are provided for the delineated wetlands (Appendix C). Wetland ratings were estimated for reconnaissance mapped wetlands as summarized in Section 4.5.1 – Local Regulations below.

The study area was evaluated for streams based on the presence or absence of an ordinary high water mark (OHWM) as defined by WDFW guidance, Section 404 of the Clean Water Act, the Washington Administrative Code (WAC) 220-660-030, and the Revised Code of Washington 90.58.030. The OHWM is located by examining the bed and bank physical characteristics and vegetation to ascertain the water elevation for mean annual floods.

3.2 Flora and Fauna

3.2.1 Existing Documentation Review

Publicly available sensitive areas and habitat documentation for the study area was reviewed for this report. Sources include aerial photographs of the site and

surrounding area, DNR WHCV mapping, and current PHS and SalmonScape information from WDFW.

3.2.2 Fieldwork

Staff ecologists screened the study area for wetland and stream features from September 2020 through December 2021. General site conditions, forest structure and composition, special habitat features, presence of wildlife species, and human disturbance were noted and recorded.

4 FINDINGS

4.1 Landscape Setting

Nisqually State Park is located in Sections 17, 19, 20, 21, 29, and 30 of Township 16N and Range 04E of the Public Land Survey System, with a small portion of the park extending into Section 25 of Township 16N, Range 03E. The study area for the maintenance building includes the southeast quarter of Section 19, Township 16N, Range 04E. It is located in the Ohop Creek sub-basin within the Nisqually Water Resource Inventory Area (WRIA 11).

The park includes diverse topography and landscape features. The majority of the site, located on a bench above the Ohop valley, is relatively flat. Steep terrain is present adjacent to Ohop Creek, the Mashel River, and the Nisqually River, located along the western, eastern, and southern boundaries of the park, respectively. The park is characterized by second growth coniferous forests, wetlands, riparian corridors, prairie areas, and abandoned logging roads. It is generally undeveloped, with the exception of a parking/horse staging area, restroom facilities, and recreational trails and utilities.

Land use in the immediate vicinity consists of commercial forestry, the Charles L Pack Experimental Forest, rural residential properties, and agricultural lands. The nearest incorporated city, Eatonville, is located approximately 1.5 miles east of the park entrance. The park is in unincorporated Pierce County.

The study area is located centrally within Nisqually State Park. Aside from Mashel Prairie Road; a gravel, gated river access road; and an abandoned gravel logging road, the study area is undeveloped. The study area is forested, primarily with native vegetation. Topography within the study area is relatively flat, with hummocky areas and shallow depressions. Wetland and stream areas were identified as described below in Section 4.2.

4.2 Critical Area Descriptions

4.2.1 Wetlands

A total of 37 wetlands were identified within 315-feet of the study areas throughout Nisqually State Park. Boundaries of 25 wetlands are located in part or in whole within approximately 200 feet of proposed site improvements. Those wetland classifications are summarized in Section 4.5.1 – Local Regulations. An additional 12 wetlands located approximately 200 to 315 feet from each project area were sketched at the reconnaissance level. Wetlands are briefly described by area below; the area reference numbers correspond with the enclosed map set (see Appendix A).

Table 1. Summary of Wetland Hydrogeomorphic (HGM) and Cowardin Classes.

Ref. #	Project Area	Wetland Name[1]	HGM Class[2]	Cowardin Classes[3]
1A	Maint., admin., wellhead	(OO)	D	PFO
1B		CC	D	PFO
		FF	D	PFO
		(DDD)	D	PFO
2	Roundabout	EE	D	PFO, PSS, PEM
3	Boat Parking	H	D	PFO, PSS
		QQ	D	PFO, PSS
		(II)	D	PFO
		(JJ)	D	PFO
		(KK)	D	PFO
		(LL)	D	PFO
		(MM)	D	PFO
	Nisqually managed access Road	(G)	D	PFO, PSS
		(I)	D	PFO, PSS
4A	Boardwalk, trails	GG	D	PFO, PEM
		HH	D	PSS, PEM
		(D)	R	PSS
		(GGG)	D	PFO
4B	Restricted parking, restroom, trails	FFF	D	PSS
		(EEE)	D	PSS
5	MBR Drainfield	CCC	D	PFO
6	Campground	A	D	PFO, PEM

		C	D	PFO
		RR	D	PFO
		SS	D	PFO
		TT	D	PSS
		UU	S	PEM
		VV	D	PFO
		WW	D	PFO, PSS
		XX	D	PFO, PSS
7	Loop trail & Mashel River overlook	B	D	PFO
		Z	D	PFO
		NN	D	PFO
		YY	D	PFO
		ZZ	D	PFO
		AAA	D	PFO
		BBB	D	PFO

1 Wetland names in parentheses were sketched and rated at a reconnaissance level. All others were delineated.
2 HGM Classes: D = Depressional; R = Riverine; S = Slope.
3 Cowardin Classes: PFO = Palustrine forested; PSS = Palustrine scrub-shrub; PEM = Palustrine emergent.

Area 1A and 1B – Maintenance & Administration + Wellhead

A total of four wetlands were identified in the vicinity of Area 1 (Appendix A, sheets W1.1 and W1.2). Delineated Wetlands CC and FF were described in our *Nisqually State Park – Maintenance Building Report*, February 2021. Wetlands CC and FF are depressional wetlands with a palustrine forested vegetation class. For the current assessment, the study area was expanded to cover a potential wellhead location. More than 200-feet away from the proposed wellhead, Wetland OO was identified at a reconnaissance level. Wetland DDD is more than 200-feet east of planned access improvements for the maintenance and administration buildings. Wetlands DDD and OO are similar in character to Wetlands CC and FF. Wetland OO is estimated to provide higher water quality and hydrologic functions due to a greater area of seasonal ponding and greater area of seasonal ponding relative to the other wetlands in sub-areas 1A and 1B.

Area 2 - WA-7 Entrance Roundabout

One wetland, Wetland EE is southeast of the proposed roundabout at the park entrance off WA-7 (Appendix A, Sheet W1.3).

The existing conditions map also sketches a portion of the adjacent roadside ditch that exhibits wetland characteristics but is cut from surrounding non-wetland. As described further in Section # - Impact Assessment below, the proposed improvements do not extend into the existing ditch.

Area 3 - Boat Trailer Parking

Seven wetlands were identified within 315-feet of the proposed boat trailer parking (Appendix A, Sheet W1.4). Two of those wetlands, H and QQ, are within 200 feet of the project area. They are both depressional wetlands comprised of Palustrine forested and scrub-shrub vegetation classes. These wetlands provide moderate habitat functions. Multiple hydroperiods and special habitat features contribute to site potential to perform habitat functions. The relatively undisturbed landscape setting and proximity to other wetlands also contributes to the moderate habitat functions ranking. Further from the project site, Wetland II was identified wetland of Wetland H and four wetlands (Wetlands JJ, KK, LL, and MM) were identified east of Wetland QQ, near the 315-foot study area extent. All wetlands located in the boat trailer study area are similar in character.

Nisqually Managed Access Road

Two wetlands (Wetlands G and I) were identified adjacent to the existing Nisqually River managed access road in the 2019 reconnaissance study. Those approximate wetland areas are shown on the existing conditions - overview (Appendix A, Sheet W1.0). These wetlands contain slope and depressional HGM classes. Palustrine forested and emergent vegetation classes are present. Based on observed characteristics and landscape setting, habitat functions are estimated as moderate.

Area 4 – Nisqually River Boardwalk, Trails, Parking

Six wetlands were identified in the vicinity of Area 4, four wetlands around sub-area 4A (GG, HH, D, GGG) and two wetlands (EEE and FFF) in sub-area 4B (Appendix A, Sheets W1.5 and W1.6).

Sub-area 4A

Wetlands GG, HH are depressional wetlands south of Ohop Creek. Wetlands GG and HH provide high and moderate habitat functions, respectively. Wetland GG has greater habitat site potential due to vegetation structure and special characteristics, like large woody debris. Wetland D is a riverine wetland along the north bank of Ohop Creek. Wetland D is conservatively estimated to provide moderate to high habitat functions given its landscape position and physical characteristics. Wetland GGG is near the outer extent of the study area. It is similar in character to other depressional forested wetlands across the site; Wetland GGG habitat functions are estimated as moderate.

Sub-area 4B

Wetland FFF is a small depressional wetland approximately 200 feet north of the study area. It is comprised of a Palustrine scrub-shrub plant community. Habitat functions are ranked as moderate, due in part to the landscape setting in a relatively undisturbed area. Wetland EEE is further north, near the outer extent

of the study area. It is similar in character to Wetland FFF and is estimated to provide moderate habitat functions as well.

Area 5 – MBR Drainfield

One wetland was identified northwest of the proposed drainfield, Wetland CCC (Appendix A, Sheet W1.7). This relatively large depressional wetland is forested. Habitat functions for Wetland CCC are ranked as high. Factors contributing to that ranking include multiple hydroperiods, high plant species richness, special habitat features, a relatively undisturbed landscape setting, and other priority habitats in the vicinity.

Area 6 – Campground

Nine wetlands are located in the vicinity of the proposed campground, Wetlands A, C, RR, SS, TT, UU, VV, WW, XX (Appendix A, Sheets W1.8 and W1.9). Wetlands near the campground area are depressions in a hummocky forest. The area contains some existing gravel roads and equestrian / foot trails. Habitat functions for these wetlands ranges from low to moderate. The habitat functions ranking varies based on site potential, including the number of Cowardin classes present, hydroperiods, plant species richness, and presence or absence of special habitat features.

Area 7 – Loop Trail

Seven wetlands were mapped in the vicinity of the proposed loop trail, Wetlands B, Z, NN, YY, ZZ, AAA, BBB (Appendix A, Sheets W1.9 – W1.11). Like the adjacent campground area, the loop trail study area is forested. It contains some existing narrow trails and gravel access road segments. Wetlands in this study area a depressions in a hummocky forested environment. The forest understory contains localized patches of hydrophytic plants, commonly slough sedge. Variations in wetland conditions, including the quantity of special habitat features yields different site potential rankings. Habitat value varies by proximity to other priority areas. Overall, habitat functions for these wetlands ranges from moderate to high.

Figure 5. Example wetlands across the site. Photographs taken over all four seasons show seasonal inundation common to the on-site wetlands. Top left – Wetland EE includes a permanent pond with cattails; remaining photographs show common depressional forested wetland conditions with varying densities of slough sedge understory.

Figure 6. (Left) Wetland G, SE of the existing Nisqually Managed Access Road; (Right) Nisqually Managed Access Road.

4.2.2 Non-Wetland Areas

As described further in the wildlife habitat assessment (Section 4.3), the study area is characterized by a second growth coniferous forest. A diverse understory community and priority snags and logs are present. Dominant plant species include Douglas-fir, black cottonwood, bigleaf maple, vine maple, Oregon grape, salal, sword fern, and trailing blackberry. Non-wetland soils were generally found to be dry and lack features that indicate hydric soils.

Figure 7. Typical non-wetland forested site conditions.

Figure 8. Examples of existing interior roads and paths: (Top Left) Gated gravel access road; (Top Right) Transmission line corridor; (Bottom Left & Right) Pedestrian / Equestrian paths.

4.2.3 Streams / Shoreline

The park is bordered by three salmon-bearing streams. Ohop Creek to the west, the Nisqually River to the south, and Mashel River to the east. All three are mapped as Shorelines of the State. These are meandering streams with relatively little disturbance. Rural lands uses are evident in some buffer areas.

Figure 9. (Left) Nisqually River; (Right) Ohop Creek.

Figure 10. Shoreline Areas: (Top Left) Looking south toward the Nisqually River; (Top Right) Looking west toward the confluence of the Nisqually River and Ohop Creek; (Bottom Left) Looking north at the Nisqually River buffer; (Bottom Right) Looking northwest to Ohop Creek from an informal path.

4.3 Wildlife Habitat Assessment

4.3.1 Local Habitat

A second growth forest comprised mostly of conifers characterizes most of the study area. The canopy is dominated by Douglas-fir with smaller populations of western red cedar, black cottonwood, and Oregon ash. The canopy provides approximately 85% aerial cover in most stands. Average tree size is estimated to be approximately 10-inches diameter at breast height.

The understory generally consists of multiple vegetative layers. Common sub-canopy and herbaceous species include vine maple, Oregon ash, Oregon grape, salal, sword fern, trailing blackberry, and slough sedge. Small quantities of invasive species, including Himalayan blackberry, Scotch broom, and reed canarygrass are present in patches. Special habitat features present within the study area include numerous snags and large downed wood.

Existing development segments the site, including the paved Mashel Prairie Road, gated gravel access roads, power line corridors, a parking lot with a restroom, and a network of trails accessible to park users on foot and horseback.

4.3.2 Landscape Habitat Considerations

Habitat patches outside of the study area are considered here as part of the overall landscape as they may influence wildlife use of the habitat near the proposed maintenance building project area. The ability of the study area itself to provide habitat increases when there is potential that the greater vicinity can act as a source for wildlife.

The study area vicinity is characterized by natural and managed forest lands, rural residential properties, agricultural lands, lakes, wetlands, rivers, riparian corridors, and utility easements. Undisturbed and moderately disturbed habitat comprises approximately 80% of the land use within one kilometer of the project areas. Due to the high degree of accessibility, these areas likely provide habitat for a variety of animals that may pass through the park.

4.4 Wildlife

4.4.1 Local Wildlife

Wildlife expected to use the site are species common in lowland Western Washington and to undisturbed and low-density rural environments. Some foraging, browsing, and nesting opportunities are present in the forested wetlands and upland areas. The site also provides corridor habitat for many species, as it connects to a larger forested area and a number of wetlands. Animals expected to use the site include those that use forested and wetland environments or that utilize abandoned logging roads.

Suitable nesting habitat is present for several birds tolerant of moderate disturbances, such as some raptors, sparrows, starlings, chickadees, woodpeckers, and wrens. Red-tailed hawks and cavity nesters have suitable nesting and foraging habitat in the forested areas. Song sparrows have suitable nesting habitat in the shrub stratum.

Downed woody debris, stumps, and open areas with relatively undisturbed habitat patches nearby in the landscape provide the opportunity for small and large mammals to use the park. Mammals that may use the site include raccoon, opossum, many small mammals (moles, voles, mice), coyote, and deer. Bats may also use the site while foraging.

Reptiles, snakes, amphibians, and small mammals may take advantage of habitat provided by downed wood located outside of the wetland. Frogs, salamanders, and toads are also associated with wetland environments and are more common in settings that have relatively little disturbance/fragmentation. The wetlands and adjacent undisturbed areas likely provide habitat for some small reptiles and amphibians.

4.4.1 Priority Species

The study area is mapped at a Township level to contain habitat that may be used by Townsend's big-eared bat per WDFW PHS data. Otherwise, the nearest documented priority species are mapped approximately 0.35 miles to the northwest of the study area, in association with Ohop Creek. The Ohop Valley is mapped as a large wetland area that supports waterfowl concentrations as well as the Townsend's big-eared bat. Ohop Creek is mapped as a breeding area for pink salmon, coho, and steelhead and also supports Chinook, sockeye, resident cutthroat, and chum. Additionally, the steep western slope along Ohop Creek is mapped as a biodiversity area/corridor.

On the east side of the park, the Mashel River corridor is mapped as a biodiversity area/corridor, a snag-rich area, and old-growth/mature forest. The Mashel River is also mapped as a breeding area for steelhead, coho, Chinook, and chum and supports pink salmon, resident coastal cutthroat, and sockeye.

At the south end of the park, The Nisqually River is mapped as habitat for several salmonid species, including Chinook, coho, sockeye salmon, steelhead, and bull trout. The on-site buffer of the Nisqually River is largely degraded and contains locally-dominant patches of invasive plants. Further landward, a mix of second growth and mature forest is present.

No priority species are mapped specifically within the study areas or were directly observed during site visits; however, evidence of pileated woodpeckers utilizing the area was noted (see Figure 11 below).

Figure 11. Habitat Features: Piliated woodpecker holes in priority snags; snags and logs.

4.5 Regulatory Implications

4.5.1 Local Regulations

Wetlands

Wetlands in Pierce County are regulated under the Pierce County Municipal Code (PCMC) Chapter 18E.30 - Wetlands. Buffer widths in Pierce County are determined by a combination of wetland category, habitat score, and surrounding land use intensity. The land use intensity of each proposed project element, along with the other classification details, are summarized in Table # below.

Additionally, a building setback of 15-feet is required from the edge of critical area buffers. Per PCC 18E.10.080.H, activities allowed in the setback include landscaping, uncovered decks, building overhangs no more than 18 inches, impervious ground surfaces, and clearing and grading.

Table 2. Summary of Wetland Classifications and Buffer Widths.

Ref. #	Project Elements	Wetland Name[1]	HGM Class	Wetland Category	Habitat Function	Land Use Intensity	Adjusted Buffer
1A	Maint., admin., wellhead	(OO)	D	II	Moderate	Low	75 ft
1B		CC	D	III	Moderate	Moderate	110 ft
		FF	D	II	Moderate		110 ft
		(DDD)	D	III	Moderate		110 ft
2	Roundabout	EE	D	II	Moderate	High	150 ft
3	Boat parking	H	D	III	Moderate	Moderate	110 ft
		QQ	D	III	Moderate		110 ft
		(II)	D	III	Moderate		110 ft
		(JJ)	D	III	Moderate		110 ft
		(KK)	D	III	Moderate		110 ft
		(LL)	D	III	Moderate		110 ft
		(MM)	D	III	Moderate		110 ft
	Nisqually managed access road	(G)	D	III	Moderate		110 ft
		(I)	D	III	Moderate		110 ft
4A	Boardwalk, trails	GG	D	II	High	Low	150 ft
		HH	D	III	Moderate		75 ft
		(D)	R	II	High		150 ft
		(GGG)	D	III	Moderate		110 ft
4B	Restricted parking, restroom, trails	FFF	D	III	Moderate	Moderate	110 ft
		(EEE)	D	III	Moderate		110 ft
5	MBR Drainfield	CCC	D	II	High	Low	150 ft
6	Campground	A	D	III	Moderate	Moderate	110 ft
		C	D	III	Low		50 ft
		RR	D	III	Low		50 ft
		SS	D	III	Low		50 ft
		TT	D	III	Low		50 ft
		UU	S	III	Low		50 ft
		VV	D	II	Moderate		110 ft
		WW	D	III	Moderate		110 ft
		XX	D	III	Moderate		110 ft
7	Loop trail & Mashel River overlook	B	D	III	Moderate	Low	75 ft
		Z	D	II	High		150 ft
		NN	D	II	High		150 ft
		YY	D	III	Moderate		75 ft

		ZZ	D	II	High		150 ft
		AAA	D	II	High		150 ft
		BBB	D	III	Moderate		75 ft

1 Wetland names in parentheses were sketched and rated at a reconnaissance level. All other wetlands were delineated; delineated wetland rating forms and figures are provided in Appendix C.

FWHCA: Shoreline / Stream Buffers

The Nisqually River, Ohop Creek, and Mashel River are all salmonid-bearing Type F1 waters requiring a 150-foot buffer (PCC 18E.40.060); they are fish and wildlife habitat conservation areas (FWHCAs). They are also shorelines of the statewide significance, designated as natural. The natural shoreline environment designation (SED) is intended to preserve shorelines that are ecologically intact and retain their natural character. Management of natural SEDs allows for low-intensity development, passive recreation and educational uses, provided no net loss of ecological functions would result (PCC 18S.20.030).

Additionally, a building setback of 15-feet is required from the edge of critical area buffers. Per PCC 18E.10.080.H, activities allowed in the setback include landscaping, uncovered decks, building overhangs no more than 18 inches, impervious ground surfaces, and clearing and grading.

4.5.2 Federal and State Regulations

Federal Agencies

Wetlands are also regulated by the Corps under Section 404 of the Clean Water Act regardless of local jurisdiction. Any filling of waters of the state, including wetlands (except isolated wetlands), would require notification and permits from the Corps. A formal isolated status inquiry can be requested from the Corps through the Jurisdictional Determination process. Unavoidable impacts to jurisdictional wetlands are typically required to be compensated through implementation of an approved mitigation plan. If activities requiring a Corps permits are proposed, a Joint Aquatic Resource Permit Application (JARPA) could be submitted to obtain authorization.

Federally permitted actions that could affect endangered species may also require a biological assessment and consultation with the USFWS and/or the National Marine Fisheries Service. Compliance with the Endangered Species Act (ESA) must be demonstrated for activities within jurisdictional wetlands and 100-year floodplains. Application for Corps permits may also require an individual 401 Water Quality Certification and Coastal Zone Management Consistency determination from Ecology and a cultural resource study in accordance with Section 106 of the National Historic Preservation Act.

In addition to species protected under the ESA, birds are federally protected under the Migratory Bird Treaty Act which prohibits the take of any migratory bird, nest, and/or egg without a permit. Local USFWS offices may provide guidance on minimization measures and determine whether or not a permit is necessary on a case-by-case basis.

Ecology

Similar to the Corps, Ecology, under Section 401 of the Clean Water Act, is charged with reviewing, conditioning, and approving or denying certain federally permitted actions that result in discharges to state waters. Ecology review under the Clean Water Act would only become necessary if a Section 404 permit from the Corps was issued. However, Ecology also regulates wetlands under the Washington Pollution Prevention and Control Act, but only if direct wetland impacts are proposed. Therefore, if filling activities are avoided, authorization from Ecology would not be needed.

If filling is proposed, a JARPA may also be submitted to Ecology in order to obtain a Section 401 Water Quality Certification and Coastal Zone Management Consistency Determination. Ecology permits are either issued concurrently with the Corps permit or within 90 days following the Corps permit.

In general, neither the Corps nor Ecology regulate wetland buffers, unless direct impacts are proposed. When direct impacts are proposed, mitigated wetlands may be required to employ buffer requirements based on Corps and Ecology joint regulatory guidance.

5 PROJECT DESCRIPTION

5.1.1 Overview

As documented by Robert W. Droll, Landscape Architect, the current permit application covers Phases 2 and 3 of the Nisqually State Park New Full-Service Park project. The project elements include a roundabout at the main entrance off WA-7, maintenance and administration buildings, a drain field, boat trailer parking, trails and overlooks, and a 60-site campground. Additionally, the existing managed access Nisqually River Road will be resurfaced and some pull outs are proposed. A restroom, parking lot, trail boardwalk with outlooks are proposed in the managed access area along the Nisqually River and Ohop Creek. Washington State Parks has already adopted a plan to restore adjacent shoreline areas. That shoreline restoration plan is shown on the enclosed mitigation plan (Appendix A).

5.1.2 Mitigation Sequencing

The project followed mitigation sequencing requirements per PCC 18E.30.050 (wetlands) and 18E.40.050 (FWHCAs).

Avoid

The site plan has gone through several iterations to avoid critical area impacts where feasible. This includes considering multiple locations for the campground and configuring site buildings and infrastructure as far from identified wetlands as practical. Some preliminary sites were deemed unacceptable due to the extent and configuration of wetland areas identified in the 2019 reconnaissance and the current study findings. Unavoidable impacts will be limited to buffer zones for onsite critical areas (Appendix A, Sheets W2.0 – W2.11).

Minimize

Consistent with WSPRC stewardship goals, unavoidable critical area buffer impacts are minimized in the site planning. As feasible, site plan elements were shifted to keep permanent buffer impacts within the outer 25 percent of the standard buffers. Additionally, new ADA trails were overlayed with existing trails where practical to reduce new impacts.

Shoreline impacts at the Nisqually River area are minimized by establishing clear paths and limiting access. This portion of the park is gated and access will be managed.

Mitigate / Rectify

To maintain buffer protections in the park, proposed wetland buffer mitigation focuses on buffer addition to replace lost square footage. Buffer impact and addition areas are presumed to be similar in character based on site screening to-date. Buffer mitigation is proposed at a 1:1 ratio. Additionally, any temporary buffer impacts within the project work limits will be restored in-place at 1:1 (Appendix A, Sheets W3.1, W3.2, W3.5-W3.8).

Shoreline mitigation overlaps with planned restoration and management of invasive plants. This restoration plan far exceeds mitigation requirements for proposed site improvements (Appendix A, Sheets W3.3 and W3.4).

6 IMPACT ASSESSMENT

6.1.1 Buffer Functions

The site plan and associated impact assessment are preliminary (Appendix A, Sheets W2.0 – W2.11). The project team continues to update the site plan to refine details in a 60 percent to 90 percent progression. Per our communication with the

office of Robert W. Droll Landscape Architect, impacts have been reduced in the 90 percent site plan relative to the assessment provided here. Primary changes anticipated in the next iteration of the impact assessment is 1) complete avoidance of any direct wetland impacts, either temporary or permanent; and 2) shifting of project elements to concentrate impacts in the outer 25 percent of wetland buffers. The intent is to meet buffer averaging criteria per PCC 18E.30.060.B(2).

Buffer impacts proposed within the shoreline along the Nisqually River and Ohop Creek are discussed under no-net-loss below.

6.1.2 No-Net-Loss Analysis

Proposed shoreline impacts are within a natural Shoreline Environment Designation (SED). Therefore, management policies for natural SED must be followed (PCC 18S.20.030.B). The proposed recreational improvements must not result in a net loss of existing ecological functions. The shoreline area between the access road and the confluence of Ohop Creek and the Nisqually River is currently degraded and invasive plants such as Scotch broom and non-native blackberry are common (see Figure 10 above). The proposed restoration plan will improve shoreline ecological functions by removing invasive plants and restoring a dense and diverse native plant community. Permanent impacts in the stream/wetland buffers total 13,705 square feet (0.3-acre). Restoration will span 280,100 square feet (6.4-acres) of shoreline and buffer areas. The proposed restoration area is over 20 times larger than the impact area. An overlapping invasive plant management area in the shoreline spans 623,700 square feet (14.3-acres). The resulting increase in native trees, shrubs and groundcover plants will improve shoreline buffer functions.

Additionally, the trails, boardwalk, and outlooks will encourage visitors to stay on the paths and manage recreational use of the site.

7 MITIGATION PLAN

The Nisqually State Park – New Full Service Park project was designed in accordance with mitigation sequencing requirements and WSPRC stewardship goals. Unavoidable project impacts and proposed mitigation area summarized in Table # below. Wetland buffer impacts will be mitigated through buffer averaging in accord with PCC 18E.30. Managed recreational use within the shoreline will be mitigated through planned restoration and invasive plant management far exceeding the impact footprint.

The site plan used for this impact assessment and mitigation plan is preliminary. An updated mitigation plan will be issued once final site plan updates are completed by the design team. Based on our correspondence with Bob Droll Landscape Architect's office staff, the critical area impacts will be reduced relative to this preliminary conceptual plan set. In particular, as noted on our mitigation plan, all direct wetland impacts will be avoided. Also, buffer impacts will be shifted to the outer 25 percent in most cases. This will be verified in the final mitigation plan set.

The final mitigation plan set will include the necessary maintenance and monitoring notes, including performance standards and contingency measures.

Table 3. Impact and Mitigation Summary Table.

Ref. #	Park Improvement	Permanent buffer impact (SF)	Temporary Buffer Impact (SF)*	Impact Area	Buffer Addition	Other Mitigation Action
1A		0	0		-	-
1B	Maintenance & admin	1,360	1,135	Wetland FF buffer	1,360	
2	Round about	0	0		-	-
3	Boat trailer parking lot	1,875	unknown	Wetand H buffer	1,875	-
4A		5,770	5,845	Ohop Creek buffer, Nisqually River buffer, Wetland GG buffer	-	280,100[A]
4B	Nisqually River trail and overlooks	7,935	8,465	Nisqually River buffer, Mashel River buffer		623,700[B]
5	MBR drainfield	0	0		-	-
6	Campground	10,370	7,030	Wetland VV buffer	3,855[C]	-
6/7	Campground and Loop trail	16,700	15,015	Wetland B buffer, Wetland C buffer, Wetland NN buffer, Wetland WW buffer, Wetland XX buffer	16,700	-
7A	Loop trail	1,600	1,980	Wetland VV buffer, Wetland YY buffer	8,115[C]	-
7B	Loop trail & Mashel River overlook	6,415	4,550	Wetland Z buffer, Wetland ZZ buffer	6,415	-

* - All temporary buffer impacts will be restored in-place at a 1:1 ratio.
A – Shoreline buffer restoration and enhancement with native vegetation. Voluntary planned action, crediting toward mitigation requirements (Appendix A – Sheet W3.3).
B – Invasive plant control area, overlaps with shoreline buffer restoration area. Voluntary planned action, crediting toward mitigation requirements (Appendix A – Sheets W3.3 and W3.4).
C – Buffer addition to mitigate for permanent impacts for the Wetland VV buffer are proposed at 1:1. Wetland VV spans areas 6 and 7A. 6,515 SF of the 8,115 SF reported for Area 7A is added to the 3,855 SF of buffer mitigation for area 6 for a total of 10,370 SF. (Appendix A – Sheets W3.5 and W3.7)

8 REPORT INFORMATION

The information contained in this report is based on the application of technical guidelines currently accepted as the best available science and in conjunction with the manuals and criteria outlined in the methods section. All discussions, conclusions, and recommendations reflect the best professional judgment of the author(s) and are based upon information available to us at the time the study was conducted. All work was completed within the constraints of budget, scope, and timing. The findings of this report are subject to verification and agreement by the appropriate local, state, and federal regulatory authorities. No other warranty, expressed or implied, is made.

Please call if you have any questions or if we can provide you with any additional information.