STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

APPROVED
RESERVOIR
REPORT OF EXAMINATION

TO CONSTRUCT A RESERVOIR AND STORE FOR BENEFICIAL USE
WATERS OF THE STATE OF WASHINGTON

PRIORITY DATE	APPLICATION NUMBER	PERMIT NUMBER	CERTIFICATE NUMBER
December 30, 1991	R1-26428A		

NAME
New RH L.L.C. and Roche Harbor Water System, Inc.

ADDRESS (STREET)	(CITY)	(STATE)	(ZIP CODE)
P.O. Box 4001	Roche Harbor	WA	98250

SOURCE FOR RESERVOIR SUPPLY	TRIBUTARY OF (IF SURFACE WATERS)
Surface and groundwater flow into Briggs Reservoir	Doe Creek
NUMBER OF ACRE FEET STORED WHEN RESERVOIR IS FULL	**USE(S) TO BE MADE OF IMPOUNDED WATER**
300 acre-feet of new additive storage rights (605.2 acre-feet total including certificate R1-21760C)	Community Domestic Supply

LOCATION OF IMPOUNDING STRUCTURES

LOCATED WITHIN (SMALLEST LEGAL SUBDIVISIONS)
S1/2 NW1/4 NW1/4 (aka S1/2 Government Lot 1) – Parcel number 363022002000
N1/2 SW1/4 NW1/4 (aka N1/2 Government Lot 2) – Parcel number 363023001000

SECTION	TOWNSHIP N.	RANGE, (E. OR W.) W.M.	W.R.I.A.	COUNTY
30	36	3W	2	San Juan

LEGAL SUBDIVISIONS OF LANDS IN WHICH THE SUBMERGED AREA IS TO BE LOCATED
S1/2 GL-1, N1/2 GL-2, N1/2 SE1/4 NW1/4, S1/2 GL-2, S1/2 SE1/4 NW1/4, N1/2 GL-3, N1/2 NE1/4 SE1/4, S1/2 GL-3

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED IF DIFFERENT THAN ABOVE

Within Township 35 North, Range 3 West
- N1/2 of the N1/2 of Section 6

Within Township 36 North, Range 3 West:
- W1/2 of the SW1/4 and portions of the W1/2 of the NW1/4 of Section 18
- W1/2 of the W1/2 of Section 19
- Section 30 except the NE1/4 of the NE1/4
- W1/2 and the N1/2 of the NE1/4 of Section 31
- NW1/4 of the NW1/4 of Section 32

Within Township 36 North, Range 4 West:
- Davison Head within Sections 11 and 12
- Davison Head, S1/2, NW1/4, and portions of the NE1/4 of Section 13
- Pearl Island, Davison Head, and San Juan Island within Section 14
- White Point on San Juan Island within Sections 22, 26, 27
- Section 23
- Section 24
- NE1/4 and E1/2 of the SE1/4 of Section 25

Attachment 1 shows the location of the authorized place of use and impoundment structures.

CONSTRUCTION DETAILS OF IMPOUNDING STRUCTURES

HEIGHT OF DAM (FEET)	LENGTH ON TOP (FEET)	WIDTH ON TOP (FEET)
Primary: 16-19 (crest elevation 238') Secondary: 6 (crest elevation 238')	290 100	12 10

SLOPE OF FRONT OR WATER SIDE (Number of feet horizontal to one foot vertical):	SLOPE OF BACKSIDE (Number of feet horizontal to to one foot vertical):
Primary: 3:1 Secondary: 3:1	Primary: 2:1 Secondary: 2:1

HEIGHT OF DAM ABOVE WATER LINE AT NOPL (FEET)	
Primary: 2 Secondary: 2	

TYPE OF CONSTRUCTION OF DAM AND CONSTRUCTION MATERIALS

Zoned earth dam - Soil

LOCATION AND APPROXIMATE DIMENSIONS OF SPILLWAY INCLUDING CREST LENGTH (Primary dam only)

Principal spillway: Type 3, 96-inch diameter manhole structure halfway along embankment length with a 30-inch high density polyethylene pipe encased in concrete through the embankment. Spillway rim elevation will be 236 feet.

Emergency spillway: Reinforced concrete, trapezoidal channel on the southern portion of the dam crest, 25 feet wide with side-slopes of 5H:1V, 1.4 feet high. Emergency spillway rim elevation will be 236.5 feet.

LOCATION, SIZE AND TYPE OF VALVE AND OUTLET CONDUIT STRUCTURE

Type 3, 72-inch manhole and gate valves associated with a 12-inch ductile iron water main installed through the dam.

Note: NOPL means Normal Operating Pool Level

# OF ACRES SUBMERGED WHEN RESERVOIR IS FILLED TO NOPL	MAXIMUM DEPTH (FEET) AT NOPL	AVERAGE DEPTH (FT)
50	21	10

DESCRIPTION OF PROPOSED WORKS

The proposal is to construct a new dam to replace the existing structurally unstable (approximately 100 year old) Briggs Reservoir dam. The new dam will be constructed up-basin from the existing dam at a more geologically suitable location and will be higher to increase the storage capacity of the reservoir. A smaller secondary dam will be constructed (to the east of the primary dam) to allow for the increased capacity.

DEVELOPMENT SCHEDULE

BEGIN PROJECT BY THIS DATE	COMPLETE PROJECT BY THIS DATE	WATER PUT TO FULL USE BY THIS DATE
December 31, 2010	December 31, 2011	December 31, 2017

PROVISIONS

1. MINIMUM INSTREAM FLOW

This authorization establishes two different minimum flow regimes to protect instream flows in Doe Creek. The first applies during times of normal water conditions. The second applies during times of drought conditions.

a) Definitions - "Normal Water Conditions" are defined as any time the water surface in Briggs Reservoir is at or above elevation 231.16 feet, which is the elevation of the spillway in the current Briggs Reservoir dam. "Drought Conditions" are defined as any time the water surface is below elevation 231.16 feet. "Current Minimum Flow" is the minimum instream flow (0.01 cubic feet per second) required by existing reservoir certificate R1-21670C.

b) Normal Water Conditions - During Normal Water Conditions, Roche Harbor Water System (RHWS) will release a total of at least 100 acre-feet (≈32.5 million gallons) of water from Briggs Reservoir to Doe Creek between January 1 and June 30 of each year. This total annual quantity will be reduced on a pro rata basis for any days between January 1 and June 30 during which Drought Conditions are present. Daily flows will be

spread as evenly as possible across the January 1 through June 30 period during Normal Water Conditions, at approximately 180,000 gallons per day, which is equal to an instantaneous rate of 0.28 cubic feet per second (≈125 gallons per minute). At all times during Normal Water Conditions between January 1 and June 30, instantaneous bypass flows will be at or above 0.20 cubic feet per second (≈90 gpm).

c) Drought Conditions - During Drought Conditions, RHWS will continue to provide the Current Minimum Flow as required under Reservoir Certificate R1-21670C (0.01 cfs [≈4.5 gpm] bypass whenever reservoir inflow is at or above 0.01 cfs).

d) Gauge and Flow Measurement Device - During construction of the new Briggs Reservoir dam, RHWS will install a lake level gauge in Briggs Reservoir for making the determination as to whether Normal Water Conditions or Drought Conditions are present. RHWS will also install a weir or other measuring device (e.g., in-line meter) in the new Briggs Reservoir dam for measuring the instantaneous rate of the minimum flows bypassing the dam. The gauge and instantaneous flow measurement device will both be readily readable from publicly accessible areas on the shores of Briggs Reservoir near the new dam.

e) Effective date of Minimum Flow Provisions - These minimum flow provisions become effective immediately upon RHWS' completion of construction of its enlarged reservoir.

2. RECORDING AND REPORTING

a) Data from the lake level gauge and minimum bypass flow measuring device shall be recorded weekly. This data and data on the total annual volume bypassed shall be submitted to the Department of Ecology (Northwest Regional Office) by January 31st of each year.

b) Recorded water use data shall be submitted via the Internet. To set up an Internet reporting account, access https://fortress.wa.gov/ecy/wrx/wrx/Meteringx/. If you do not have Internet access, contact the Northwest Regional Office for forms to submit your data.

c) WAC 173-173 describes the requirements for data accuracy, device installation and operation, and information reporting. It also allows a water user to petition the Department of Ecology for modifications to some of the requirements. Installation, operation and maintenance requirements are enclosed as a document titled "Water Measurement Device Installation and Operation Requirements". http://www.ecy.wa.gov/programs/wr/measuring/measuringhome.html

3. AUTHORITY TO ACCESS PROJECT

Department of Ecology personnel, upon presentation of proper credentials, shall have access at reasonable times, to the records of water use that are kept to meet the above provisions, and to inspect at reasonable times any measuring device(s) used to meet the above provisions.

4. DEPARTMENT OF HEALTH APPROVAL

Prior to any new construction or alterations of a public water supply system, the State Board of Health rules require public water supply owners to obtain written approval from the Office of Drinking Water of the Washington State Department of Health. Please contact the Office of Drinking Water at Northwest Drinking Water Operations, 20435 72nd Avenue S, Suite 200, K17-12, Kent, WA 98032-2358, (253) 396-6750, prior to beginning your project.

5. PROOF OF APPROPRIATION

RHWS shall file the notice of Proof of Appropriation of water (under which the certificate of water right is issued) when the permanent dam has been constructed and the full quantity of water required by the project has been stored. The certificate will reflect the extent of the project perfected within the limitations and provisions of the permit.

FINDINGS OF FACT AND ORDER

Upon reviewing the investigator's report, I find all facts relevant and material to the subject application have been thoroughly investigated. Furthermore, I concur with the investigator that water is available from the source in question, the purpose of use is beneficial, there will be no impairment of existing rights, and there will be no detriment to the public interest.

Therefore, I ORDER approval of Application No. R1-26428, subject to existing rights and the provisions listed above.

You have a right to appeal this ORDER. To appeal this you must:

- File your appeal with the Pollution Control Hearings Board within 30 days of the "date of receipt" of this document. Filing means actual receipt by the Board during regular office hours.
- Serve your appeal on the Department of Ecology within 30 days of the "date of receipt" of this document. Service may be accomplished by any of the procedures identified in WAC 371-08-305(10). "Date of receipt" is defined at RCW 43.21B.001(2).

Be sure to do the following:

- Include a copy of this document that you are appealing with your Notice of Appeal.
- Serve and file your appeal in paper form; electronic copies are not accepted.

1. To file your appeal with the Pollution Control Hearings Board

Mail appeal to:

The Pollution Control Hearings Board
PO Box 40903
Olympia, WA 98504-0903

OR

Deliver your appeal in person to:

The Pollution Control Hearings Board
4224 – 6th Ave SE Rowe Six, Bldg 2
Lacey, WA 98503

2. To serve your appeal on the Department of Ecology

Mail appeal to:

The Department of Ecology
Appeals Coordinator
P.O. Box 47608
Olympia, WA 98504-7608

OR

Deliver your appeal in person to:

The Department of Ecology
Appeals Coordinator
300 Desmond Dr SE
Lacey, WA 98503

3. And send a copy of your appeal to:

Andrew B. Dunn
Department of Ecology
Northwest Regional Office
3190 160th Ave SE
Bellevue WA 98008

For additional information visit the Environmental Hearings Office Website: http://www.eho.wa.gov . To find laws and agency rules visit the Washington State Legislature Website: http://www1.leg.wa.gov/CodeReviser .

Signed at Bellevue, Washington, this _____ day of_____, 2008.

_____
Andrew B. Dunn, LG, LHG
Section Manager
Water Resources Program
Northwest Regional Office

INVESTIGATOR'S REPORT

BACKGROUND

Briggs Reservoir (aka Briggs Lake or Briggs Pond) is a manmade reservoir approximately 39 acres in size located on the uplands east of Westcott Bay on San Juan Island. The reservoir is fed by surface and subsurface runoff from a 487 acre watershed. The existing reservoir impounds approximately 305.2 acre-feet (103 million gallons) of water and is the headwaters of Doe Creek, a seasonal stream that flows northwesterly for a distance of about 1 mile and discharges into Westcott Bay.

The reservoir was created in the 1890s by the construction of an earthen dam across the seasonal stream (Doe Creek) draining the watershed. The topography of the basin indicates that wetlands or a small pond may have been present at the low point of the basin prior to the construction of the original dam. Any such feature that may have been present was flooded following the construction of the dam.

In the 1950s a six-inch water line from the dam to Roche Harbor Resort was installed to provide potable water to the resort. The dam was increased in size in 1962 to its current configuration of approximately 12 feet in height, 210 feet in length, with a 26-foot crest width. The reservoir serves the potable water needs for businesses and residents at Roche Harbor and the general vicinity. The current water purveyor is Roche Harbor Water System, Inc. (RHWS), which is owned by New RH LLC, the owner of the Roche Harbor Resort.

RHWS is currently approved by the Washington State Department of Health for 468 residential connections as well as the non-residential connections at Roche Harbor Resort. In addition to Briggs Reservoir, the water system includes a water treatment plant, treatment storage tanks, and a distribution network. The main treatment and storage facilities for the water system are located outside the watershed, about 1.4 miles away.

The existing earthen dam at Briggs Reservoir is partially located on a saturated organic soil layer that poses a risk for instability and possible liquefaction in the event of a significant seismic event. The Department of Ecology Dam Safety Office has urged proactive restoration or replacement of the dam with a structure that meets current dam seismic and stability standards.

In addition to the need to replace the dam with a more stable structure, the applicant is proposing to raise the height of the new dam by about 5 feet to increase the volume and depth of the reservoir. The increase in volume will provide the additional source of water needed to support the growth anticipated in San Juan County's comprehensive plan for the service area covered by the Roche Harbor Water System, including the Roche Harbor Master Planned Resort Activity Center, and adjacent properties. The increased storage volume will also provide stored water to meet the new instream flow provisions contained in this authorization.

Legal Requirements for Application Processing

Chapter 90.03 RCW authorizes the appropriation of public water for beneficial use and describes the process for obtaining reservoir (storage) water rights. Laws governing the permitting process are contained in RCW 90.03.250 through 90.03.370.

The following legal requirements must be met prior to processing a water right application:

- Public Notice
  Public notice of the application was published in *The Journal of the San Juan Islands* on April 8 and 15, 1992. There was one written protest during the statutory 30-day protest period. This protest has since been dropped.

- State Environmental Policy Act (SEPA)
  On May 30, 2007, San Juan County (SEPA lead agency for this project) determined this dam replacement proposal will not have a probable significant adverse impact on the environment. An Environmental Impact Statement (EIS) was not required. Instead, a Mitigated Determination of Nonsignificance (MDNS) was approved. This determination was made after review of a completed environmental checklist and other information on file at San Juan Community Development and Planning. The county determined that environmental impacts can be mitigated through the substantive authority provisions of section 18.80.050H SJCC and other applicable local, state or federal laws as provided by RCW 43.31C and WAC 197-11-158. In addition, RHWS will establish a 200 foot (100 feet on both sides of the stream channel) protective conservation easement along Doe Creek on property owned by Roche Harbor and will manage the reservoir outflow as required by this authorization.

INVESTIGATION

In the course of investigating this application, my work included research, review, and obtaining information directly from the following:

- USGS Roche Harbor and Friday Harbor 7.5 minute topographic maps
- Geologic Map of the Washington Portion of the Roche Harbor 1:100,000 Quadrangle, Washington Department of Natural Resources, 2003
- Water Supply Bulletin No. 46, Geology and Water Resources of the San Juan Islands, Dept. of Ecology, 1975
- Roche Harbor Water Company, Water System Comprehensive Plan, Gray & Osborne, Inc., 2003
- San Juan County Community Development & Planning, Revised Mitigated Determination of Nonsignificance, Briggs Reservoir Dam Replacement, May 30, 2007
- San Juan County Community Development & Planning, Staff Report To Hearings Examiner, Application for Shoreline Substantial Development Permit & Conditional Use Permit, April 23, 2008
- Roche Harbor Water System, Inc. and Webb Property LLC, Water Claim Settlement Agreement, 2008
- Information packet for Pre-Application Meeting for Briggs Reservoir Dam Replacement Project, Rozewood Environmental Services, Inc., April 25, 2006
- Briggs Reservoir Dam Replacement Project, Joint Aquatic Resources Permit Application (JARPA) Form, Rozewood Environment Services, Inc., November 1, 2006
- Westcott-Garrison Bay Watershed Assessment Report, San Juan County Planning Department, January 1999
- Construction Inspection Plan, Briggs Reservoir Dam Replacement Project, Bennett Engineering, LLC, June 2008
- Roche Harbor Lake Hydrologic Report, Thomas Metke, KS&M Inc., August 14, 1990
- Roche Harbor Watershed Analysis, Dale J. McGreer, Consulting Hydrogeologist, February 1993
- Estimated Runoff to Roche Harbor Lake (June 1991 to May 1992), Thomas Metke, KS&M Inc., July 28, 1992
- Permit for Dam Construction, Briggs Reservoir Dam, Department of Ecology Dam Safety Office, August 2008
- Notes from numerous site visits
- Records of existing water rights held by Roche Harbor Water System
- Records of other water rights in the watershed

Site Description and Setting

Briggs Reservoir is a man-made storage reservoir in a relatively undisturbed natural setting. The watershed feeding the reservoir includes undeveloped woodlands and meadows. The existing reservoir covers an area of about 39 acres and is fringed by a mix of woodlands, grassy meadows, and wetland areas.

The watershed is bounded by Young Hill to the west with an elevation of approximately 650 feet above mean sea level. Other hills bound the watershed to the south and east with elevations of 500 and 513 feet, respectively.

Project Description

Construction of the two new dams (primary and secondary), beginning with the installation of erosion control measures and ending with the removal of equipment and restoration of the sites, is expected to take about 5 months. The dam replacement project has a number of components. The list of components and a brief description of each is provided below.

1. List of Project Elements

a) Construction of a temporary dewatering dam including new raw water intake facilities up-basin from the site of the replacement dam.

b) Dewatering of the replacement dam site.

c) Construction of the primary (replacement) dam at its new location.

d) Construction of a secondary dam at a saddle between the Briggs Reservoir watershed and the watershed to the east.

e) Removal of the existing dam and temporary dewatering dam.

f) Restoration of the area below the new dam, including the area where the existing dam was removed, in a manner consistent with a final approved mitigation plan for that area.

g) Monitoring of the restoration effort over a number of years to be sure that disturbed areas recover and that the wetland functions and values in the basin are restored.

2. General Description of Project Elements

a) Temporary Dewatering Dam - The temporary dewatering dam will be constructed less than 100 feet upgradient (southeast) of the site of the new primary dam in order to dewater the northern tip of Briggs Reservoir and allow for construction of the primary dam. This places the dewatering dam about 300 feet upgradient from the existing Briggs Reservoir dam. The applicants are proposing that the temporary dewatering dam be constructed of pit run gravel and sheet pile.

A new raw water intake and 12-inch water main will be installed prior to the construction of the dewatering dam to allow for uninterrupted water supply to the system.

The footprint of the temporary dam will cover 8,000 square feet. The sheet pile and gravel fill will be removed from the reservoir upon completion of the replacement dam and the reservoir bottom restored as near as practicable to its original contour.

b) Dewatering Facilities - Upon completion of the temporary dewatering dam, the area between the dewatering dam and the existing dam will be dewatered to provide a construction site for the replacement dam. Dewatering will be accomplished by pumping and conveying the reservoir water through temporary piping a distance of approximately 500 feet to a dewatering area located northwest of the dam site. The dewatering site is a wooded area with a small clearing. Water conveyed to the dewatering site will be broadcast with a large agricultural sprinkler. The sprinkler will be moved throughout the dewatering area to avoid ponding. The applicant is proposing to maintain a buffer of 200 feet between the dewatering area and the stream channel of Doe Creek.

Secondary construction phase dewatering at the primary dam site will be required to collect and remove seepage from under the temporary dam. Construction phase dewatering will be accomplished by excavating a collection trench immediately down-gradient from the temporary dam. Water collected in the trench will be pumped as frequently as necessary to a dewatering basin to be located in a clearing in the dewatering area. The proposed dewatering basin will be circular with a diameter of 20 feet and a depth of 2 feet below the existing grade. The basin will be surrounded by a four-foot high pea gravel berm.

c) Primary (Replacement) Dam - The new primary dam will be constructed approximately 200 feet upgradient from the existing dam. The new dam will be approximately 16 to 19 feet high, 290 feet in length, with a crest width of 12 feet. The retained water depth behind the dam will be 14 feet.

The reservoir impoundment water level will be raised incrementally 5 vertical feet, increasing the water surface area of the reservoir from approximately 39 to 50 acres. The existing wetland area of the reservoir, which includes open water as well as emergent, shrub scrub, and aquatic bed wetlands, will increase by about 8 acres from 44.2 acres to 52.4 acres.

Normal outflow through the dam will be via an overflow inlet manhole structure. A maintenance drainpipe will also be installed within the primary dam section. The existing dam will be removed per instructions from Ecology's Dam Safety Office.

d) Secondary Dam - A smaller secondary earthen dam will be constructed in a topographic saddle between the Briggs Reservoir drainage basin and the drainage basin to the east. Upon completion of the new primary dam and the subsequent increase in the level of the reservoir, a new ordinary high water mark will be established on the face of the secondary dam and adjacent uplands.

The secondary dam is needed because the saddle separating the two basins is lower than what the elevation of the reservoir surface will be after the construction of the replacement dam. This secondary dam will be constructed from 75 to 130 feet landward of the existing ordinary high water mark (OHWM) of Briggs Reservoir and outside of adjacent wetlands. This secondary containment dam will be about 100 feet long, 6 feet high, with a crest width of 10 feet. The retained water depth adjacent to the dam will be 2 feet.

e) Removal of Temporary Dewatering Dam and the Existing Dam - The temporary dewatering dam including the sheet pile and sand and gravel fill will be removed and hauled away from the site. The existing dam will be removed by excavation. Some of the removed soil materials may be used on site in support of the restoration effort; however the majority of the estimated 7,000 cubic yards of material will be removed from the site and disposed of outside the basin.

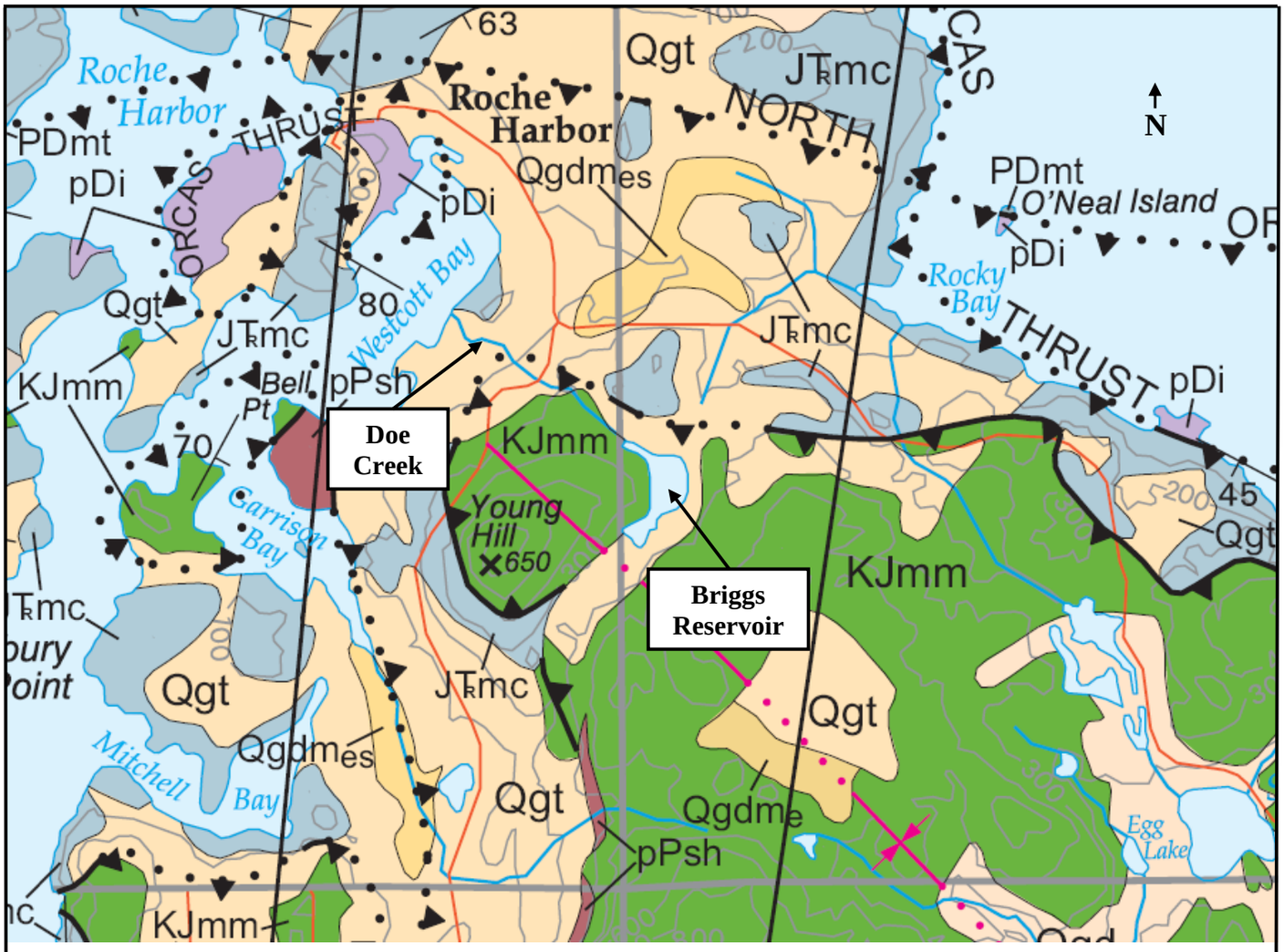
f) Dam Site Restoration - Upon removal of the old earthen dam, the area between the replacement dam and the old dam will be graded into a broad, flat terrace that will drain into an existing emergent wetland immediately downstream of the existing dam. The terrace will be developed as a mitigation site and will include 0.22 acres corresponding to the old dam footprint and an additional 0.66 acres in the area between the new dam and the footprint of the old dam for a total of 0.88 acres. This mitigation area will be planted with mixed tree, shrub, and emergent plant species to create a mixed forested, shrub-scrub wetland thicket downstream of the new dam.

Raising of the water level in the reservoir will result in the flooding of existing lacustrine emergent wetlands at several locations along the perimeter of the reservoir. The applicant anticipates that over time new lacustrine emergent wetland and lacustrine aquatic bed wetlands will naturally develop along the perimeter of the larger reservoir and will replace existing similar wetland types that will be converted to deeper water aquatic bed wetlands with the raising of the reservoir level.

Geologic/Hydrogeologic Information

The Briggs Reservoir watershed was shaped most recently by late Pleistocene Vashon glaciation. The reservoir itself is located in shallow glacial drift overlying native metasedimentary bedrock (see figure 1). Soils in the area are dominated by those formed from glacial till. The soil survey for San Juan County shows various units of Roche gravelly or stony loams, Roche rock outcrop complex, and a limited area of rock land along the uppermost slopes of Young Hill.

This watershed is highly unusual in that there is a near absence of streams that flow into the reservoir. It appears the majority of annual reservoir refill occurs by precipitation directly on the lake surface and by groundwater discharge. Reservoir outflow (either spillage or release) flows into Doe Creek.



Qgt — **Till, Vashon Stade (Pleistocene)**—Unsorted, unstratified, highly compacted mixture of clay, silt, sand, gravel, and boulders deposited by glacial ice; may contain interbedded stratified sand, silt, and gravel. Includes part of the Vashon Drift.

KJmm — **Marine metasedimentary rocks (Cretaceous–Jurassic)**—Metamorphosed sandstone, argillite, mudstone, and conglomerate; commonly dark gray-brown and highly penetrated by veinlets of secondary minerals. Consists of the Constitution Formation.

JTmc — **Metachert (Jurassic–Triassic)**—Metamorphosed gray or white ribbon chert with minor marble; locally contains quartzite, metamorphosed argillite and pillow basalt, basaltic tuff, greenstone, and phyllitic slate; commonly highly folded and locally chaotically disrupted; radiolarians from chert are early Jurassic to Triassic (Vance 1975); late Triassic conodonts found near Roche Harbor (Vance, 1975). Consists of the Orcas Formation.

Figure 1: Excerpted from the *Geologic Map of the Washington Portion of the Roche Harbor 1:100,000 Quadrangle* (Washington Department of Natural Resources, 2003) showing the geology and geologic interpretations in the Briggs Reservoir area.

Other Water Rights Held by RHWS

RHWS currently holds two certificates and one permit. Details of each are as follows:

Ground Water Certificate 4416A issued with a priority date of May 28, 1959, to the Roche Harbor Lime and Cement Company for community domestic supply. It allows for pumping from two wells at a total of 35 gallons per minute and 56 acre-feet per year. The authorized points of withdrawal are within Government Lot 1 of Section 17, Township 36 North, Range 3 West. This is a standby source of supply.

Reservoir Certificate R1-21670C issued with a priority date of May 20, 1974, to Roche Harbor Water System, Inc. for community domestic supply. It allows for the storage of 305.2 acre-feet in Briggs Reservoir. The impoundment structure (dam) is described as being within the NW¼ NW¼ of Section 30, Township 36 North, Range 3 West. This is the dam that will be replaced under this authorization. This certificate includes the following provision: *A minimum 0.01 cfs shall be bypassed from this reservoir to the stream below the spillway – whenever a rate of 0.01 cfs or greater flows into the reservoir. This water is deemed necessary to maintain the minimum instream flows required in the stream and, since these instream rights are nonconsumptive, will also provide for existing water rights under R1-20268C.*

Surface Water Permit S1-21669P issued with a priority date of May 20, 1974, to Roche Harbor Water System, Inc. for community domestic supply. It allows for the instantaneous diversion rate of 3.0 cfs (1346 gpm) and the annual diversion of 305.2 acre-feet from Briggs Reservoir. The point of diversion is within Government Lots 1 & 2 of Section 30, Township 36 North, Range 3 West. As of this date, RHWS has been diligently growing into this permit. Upon perfection, a final certificate of water right will be issued.

Conservation

RHWS has put significant conservation measures in place, such as mandatory Low Impact Development methods within the Master Plan Resort, 100% metering, and escalating rate structures for water use.

Climate

The climate in the San Juan Islands is a marine type, with cool summers and usually mild winters. The rainfall normally associated with a marine climate is reduced by the "rain shadow" effect of the Olympic Mountains to the southwest. Estimated mean annual precipitation in the Briggs Reservoir watershed is 30 inches (2.5 feet).

DETERMINATIONS

In accordance with RCW 90.03.290, determinations must be made on the following four criteria in order for an application for water rights to be approved:

- Water must be available
- There must be no impairment of existing rights
- The water use must be beneficial
- The water use must not be detrimental to the public interest

In addition, all protests must be acknowledged and the reasons for protest analyzed.

Water Availability

Legal Availability
There are currently no regulatory closures or legal restrictions affecting water availability within the Briggs Reservoir watershed.

Physical Availability
Recharge to the expanded Briggs Reservoir will occur in two ways; first by direct precipitation into the lake, and second by indirect (surface and groundwater) inflow from the surrounding watershed. Direct precipitation on the surface of the reservoir will provide 125 acre-feet [50 acres (size of reservoir) x 2.5 feet (annual precipitation)] of mean annual recharge. Indirect recharge to the reservoir is estimated (in Water Supply Bulletin No. 46) at 10.3 inches (0.86 feet) per acre per year. For the 437 acre surrounding watershed (487 acres total minus the 50 acre reservoir), inflow to the reservoir is estimated at 376 (437 acres x 0.86 feet) acre-feet per year. Total mean annual recharge to Briggs Reservoir is therefore estimated to be 501 (125 + 376) acre-feet.

Current water use by RHWS is approximately 150 acre-feet per year. Evaporation from the reservoir is estimated to be 21 inches (1.75 feet) per year, which is equivalent to 87.5 (50 acres x 1.75 feet) acre-feet per year. Total water use and evaporation from the reservoir therefore equals approximately 237.5 (150 + 87.5) acre-feet per year.

So, on average, approximately 263.5 (501 - 237.5) acre-feet per year is available for filling the reservoir, providing instream flows in Doe Creek, and future growth within the RHWS service area.

Impairment

There is only one other (non-RHWS) water right within the watershed. Reservoir Certificate R1-20268C was issued with a priority date of August 28, 1972, to Doree and William Webb, for fire protection (as required) and wildlife refuge (non-consumptive). It allows for the annual storage of 8.0 acre-feet from an unnamed stream (Doe Creek). The impoundment structure is described as being within Government Lot 5 of Section 24, Township 36 North, Range 4 West. This places it downstream of Briggs Reservoir.

I was not able to find either on the ground or aerial photographic evidence of the existence of this reservoir. But, if it does exist, the minimum bypass flow required by this authorization will allow for the annual storage of 8.0 acre-feet per year.

Beneficial Use

Community domestic supply is considered to be a beneficial use under RCW 90.54.020(1). The volume of water requested (an additional 300 acre-feet per year) for storage is reasonable for the proposed purpose of use. This additional storage volume will help to ensure the reservoir is not drawn down to extreme low water levels, which results in poor water quality. In addition, this water will provide added standby storage for fire suppression, instream flow requirements, and public health protection in the event of drought.

Public Interest

A number of factors were considered under the public interest criterion. They are as follows:

Fish and Wildlife
The applicants submitted a biological evaluation, which assesses the potential for the project to impact threatened or endangered species. The applicants also submitted a Wetland and Wildlife Assessment Report that discusses the potential impacts of the proposal on wetlands and wildlife habitat.

The biological evaluation concludes the project is unlikely to impact threatened or endangered species of fish or wildlife. The Wetland and Wildlife Assessment identifies that the construction of the new dams will minimally impact wildlife currently occupying or using these areas of the site.

The raising of the reservoir level will result in the displacement of some wildlife currently occupying or using areas of the existing shoreline that will be flooded. The report concludes however that the overall impact to wildlife will be minimal. The flooding of forest habitat will result in the creation of drowned snag trees. The applicant has stated that the resource agencies have expressed a preference that the snag trees be retained for their habitat value. The applicant has agreed to not remove snag trees with the possible exception of a few that may need to be removed for safety or other considerations.

With respect to the fisheries resource, neither the reservoir nor Doe Creek, the seasonal stream fed by the reservoir, support anadromous fish populations. The lower reach of Doe Creek contains a natural waterfall about eight feet in height that creates a barrier to anadromous fish migration.

In addition, the proposed development will result in the same passive use of the shoreline as the existing development. No residential, commercial or industrial buildings are proposed and no significant increase in the use of the site by water company personnel will result once the project is finished. After construction, human disturbance factors resulting from the operation of the new dam will be minimal and essentially the same as those resulting from the existing facility. It is anticipated that once construction is completed and the disturbed areas restored, wildlife activity in the basin will continue substantially the same as that prior to the replacement of the dam.

With respect to the protection of fish habitat, the proposal requires approval from the Washington Department of Fish and Wildlife through the Hydraulics Permit Approval (HPA) process. The requirement for Hydraulics Permit Approval and the conditions under which that approval is granted will provide programmatic mitigation of the potential impacts to fish and wildlife resources.

Impacts on Doe Creek
The potential for negative environmental impacts to instream flow in Doe Creek has been mitigated (see minimum instream flow provisions on pages 2 & 3). The existing reservoir certificate (R1-21670C) requires a minimum bypass flow of 0.01 cfs when the inflow to the reservoir is 0.01 cfs or greater. This authorization requires a much greater minimum bypass flow (at least 0.20 cfs) during normal water conditions.

In addition (as mentioned in the SEPA section on page 5), Roche Harbor will establish a 200 foot (100 feet either side of the stream channel) protective conservation easement along Doe Creek on property owned by Roche Harbor. The easement will extend from the dam to the property ownership line located just south of West Valley Road. This easement will include a limitation on tree and vegetation removal and land disturbing activities with the exception of activities related to maintaining the health of the vegetation within the easement or to buffer enhancement. This conservation easement will allow for maintenance work, as needed, related to the dam and water system components.

Wetlands

Approximately 0.49 acres of wetlands will be affected by wetland fill. Existing total acreage of all types of wetlands is approximately 44.24 acres. Future total acreage of all types with the project is estimated to be 52.04 acres, a gain of about 7.8 acres of wetlands. Of this 7.8 acre increase, approximately 6.9 acres will develop as a result of the flooding of upland areas by the new dams. An additional 0.88 acres of Palustrine wetlands will be created below the new primary dam on land that was previously the reservoir bottom and the old dam site.

The applicant has prepared and submitted a Final Mitigation Plan consistent with the wetland acreage figures provided in the 2007 updated JARPA Form. The Final Mitigation Plan provides details about how mitigation will be accomplished and establishes performance standards and a monitoring plan for determining whether mitigation goals are being achieved. All wetlands mitigation shall be performed in accordance with the mitigation requirements of any applicable Section 404 permit approved by the U.S. Army Corps of Engineers for this project and with the Section 401 consistency findings by the Department of Ecology Shorelands and Environmental Assistance Program.

Shorelands

Construction of the new dams and the removal of the old dam will result in the temporary disturbance of shoreline areas. Upon completion of construction, the applicant has stated their intent to restore the disturbed areas not part of the dam structures to their pre-development condition. Development of a new primary dam and secondary dam will result in a relatively minor increase in the amount of development in the shoreline. The primary dam is somewhat larger in footprint than the existing dam that it will replace and the secondary dam will add another 2,500 square feet of at-grade footprint. No unreasonable adverse impact to the shoreline at the location of these new dams is anticipated. Although the dams are man-made features, natural materials including fill dirt, crushed rock, and rip-rap sized rock will be used in their construction.

The existing ordinary high water mark (OHWM) of the reservoir was established in 1962 when the existing dam was raised to its current height. Upon completion of the proposal the reservoir level will be incrementally raised another five feet. The incremental rise in water level will result in the establishment of a new OHWM along the shoreline. In response, existing plant communities along the shoreline will change over time. Upland plant communities flooded by the rise in water will likely be replaced by emergent or aquatic plant species and emergent species will be replaced by aquatic species. Although the shape of the shoreline will change, after a number of years, the character of the shoreline plant communities is anticipated to be substantially the same as the existing shoreline plant communities. The applicants are proposing that this transition be monitored but allowed to occur naturally over time.

Public Access to the Reservoir

The proposal will not interfere with the use of public shorelines. Briggs Reservoir and surrounding uplands are privately owned and there are no public shorelines along the reservoir. Access to the reservoir is controlled to protect the water supply and to preserve the natural environment of the watershed. At the present time, the landowner allows public access to the reservoir and watershed for passive recreational use only including hiking, picnicking, bird watching, and similar pursuits. Motorized access by the public is restricted and the service road that provides access to the dam site for monitoring and maintenance is gated at the Roche Harbor Road entrance. Activities such as hunting, fishing, and boating are prohibited. The proposal will not change the landowner's current public access policy.

Protest

There was one protest received on this application. It was filed on May 12, 1992, by William and Doree Webb. The Webb's were concerned about the potential for negative impacts to the instream flows in Doe Creek. On August 12, 2008, the Webb Family dropped their protest as a result of entering into a Water Claims Settlement Agreement with RHWS. One of the terms of the settlement agreement was the inclusion of the "Minimum Instream Flow" provisions as an enforceable permit condition. This has been done (see pages 2 & 3).

In addition, the Webb Family and RHWS agreed to work together in good faith to design and implement a water quality monitoring program to ensure continuing high quality fresh and marine water environments in Roche Harbor and Westcott Bay.

FINDINGS

As a result of my investigation and determinations, I find the following:

- Water is both physically and legally available.
- There will be no impairment of existing rights.
- The use will be beneficial and the approved volume of water is reasonable.
- There will be no detriment to the public interest.

RECOMMENDATION

Based on the above investigation, determinations, and findings, I recommend the subject application be approved, within the limitations listed below, and subject to the provisions on pages 2 & 3.

Storage Volume

The amount of water recommended (300 acre-feet) is the maximum additional volumetric limit. Total storage of up to 605.2 acre-feet is allowed under this authorization and reservoir certificate R1-21760C.

Purpose of Use

For community domestic purposes, year-round

Location of Impoundment Structures

S½ NW¼ NW¼ and N½ SW¼ NW¼ within Section 30, Township 36 North, Range 3 West, W.M.

Place of Use

As described on page 1 and as shown in Attachment 1.

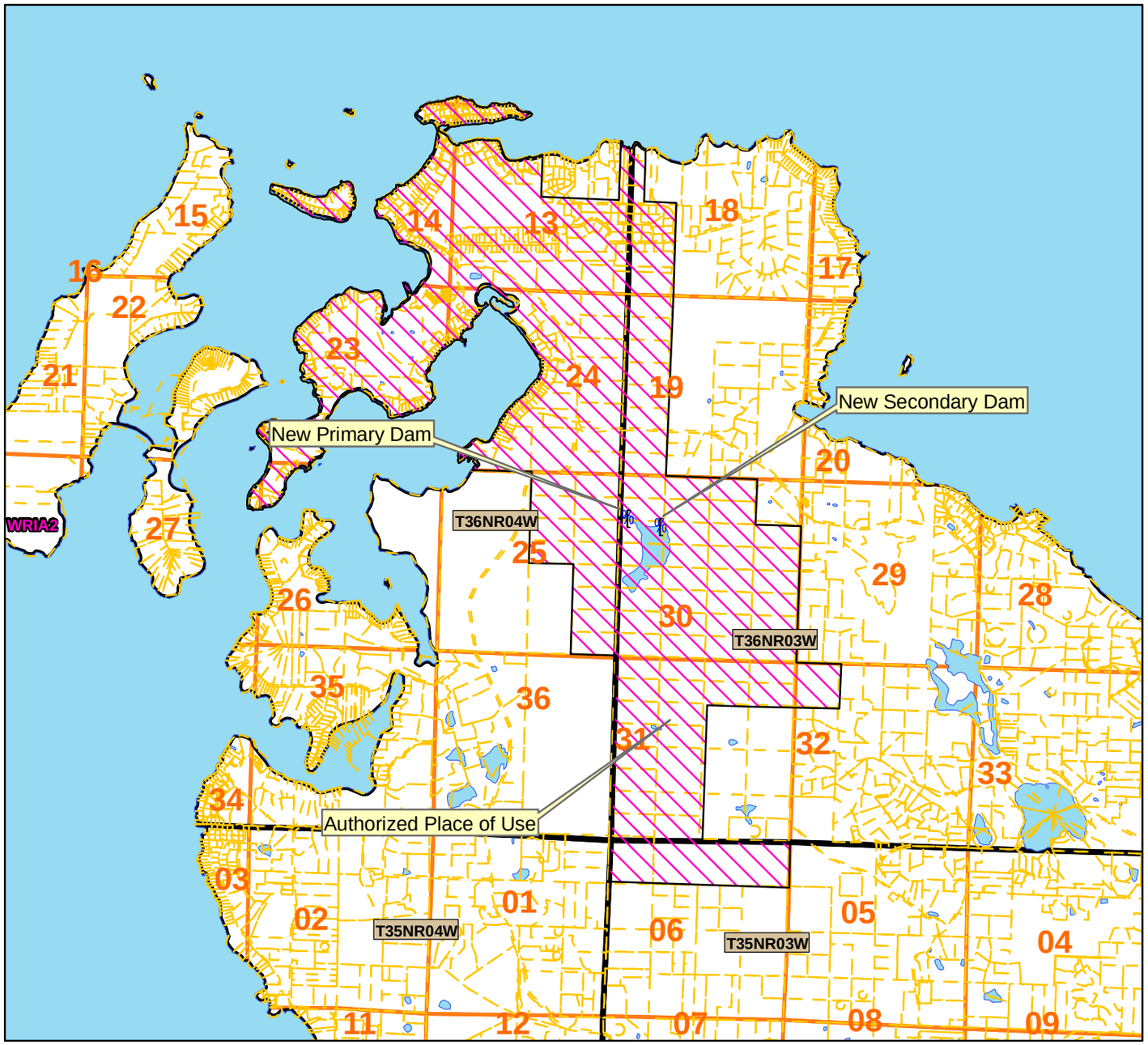
Report by: _____ _____
Buck Smith, LG, LHG Date

_____
Licensed Geologist/Hydrogeologist No. 1479

If you need this publication in an alternate format, please call the Water Resources Program at (425) 649-7000. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.

Roche Harbor Water System Inc.
Water Right Number R1-26428
Sec. 30 T 36N, R 03W. W.M.
WRIA 2 - San Juan County

DEPARTMENT OF ECOLOGY
State of Washington



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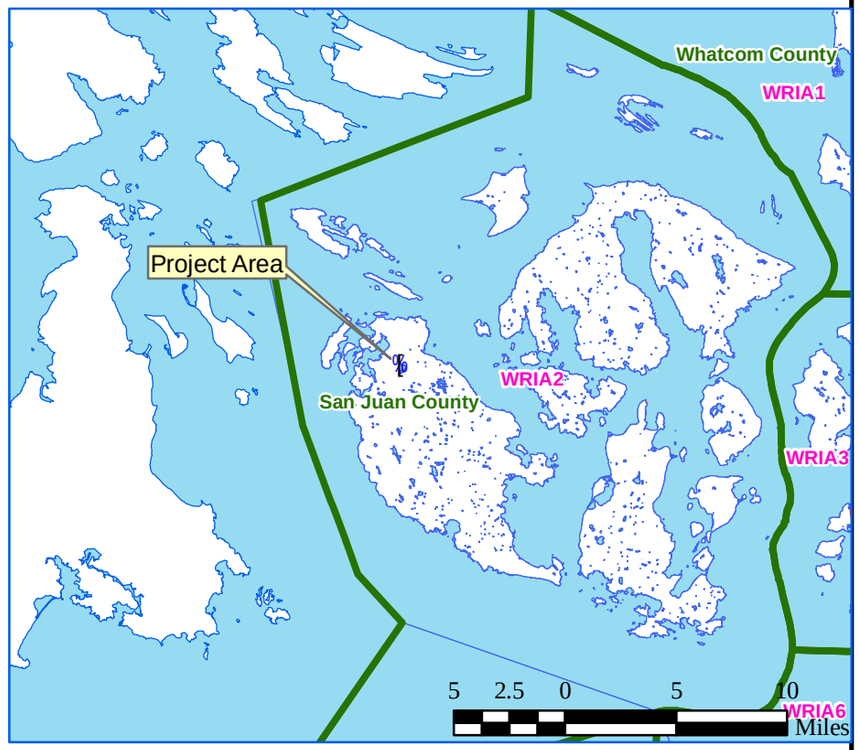

Legend

- County
- WRIA
- cities
- Highways
- Local Roads
- Townships
- Sections
- Locations of New Dams
- Authorized Place of Use

Place of use and point(s) of diversion/withdrawal are as defined on the cover sheet under the headings, 'LOCATION OF IMPOUNDMENT STRUCTURES' and 'LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED.'

Attachment 1