



STAFF REPORT

File No.: Long Range Planning: 09-6500-20-2021

DATE OF MEETING: February 24, 2022
TO: North Pender Island Local Trust Committee
FROM: Narissa Chadwick
Southern Team
COPY: Robert Kojima, Regional Planning Manager
Kim Stockdill, Island Planner
William Shulba, Senior Freshwater Specialist
SUBJECT: Groundwater Sustainability Project: Options for Phase 3 Implementation

RECOMMENDATION

- 1. That the North Pender Island Local Trust Committee request staff to prepare a draft bylaw to amend the “North Pender Island Official Community Plan Bylaw No. 171, 2007” to include Critical Aquifer Recharge Development Permit Area guidelines, map updates and minor updates to relevant sections as identified in the February 24, 2022 staff report.**
- 2. That the North Pender Island Local Trust Committee request staff to prepare a draft bylaw to amend the Land Use Bylaw to include updates to definitions, addition of cistern requirements for all new builds and updates to subdivision regulations related to potable water.**
- 3. That the North Pender Island Local Trust Committee request staff to identify options for changes to zoning regulations informed by GW Solutions (2021) groundwater availability assessment data.**
- 4. That the North Pender Island Local Trust Committee endorse the revised Project Charter for the Groundwater Sustainability Implementation Project.**

REPORT SUMMARY

This report presents options for Official Community Plan (OCP) amendments and Land Use Bylaw (LUB) amendments related to the implementation of the groundwater sustainability project. OCP amendment options presented include: proposed guidelines for a Critical Aquifer Recharge Development Permit Area, minor updates to relevant sections, and mapping updates. LUB amendment options presented include: updates to definitions, addition of cistern requirements for all new builds, and updates to subdivision regulations related to proof of potable water.

BACKGROUND

At the February 25, 2021 meeting the LTC endorsed a project charter for the implementation phase (Phase 3) of the Groundwater Sustainability Science Program. At the April 29, 2021 meeting the LTC, after considering a number of options, agreed to continue with this phase.

Reports and mapping related to this research phases of the project can be found here: <https://islandstrust.bc.ca/programs/freshwater-sustainability/>. This information was shared with the North Pender community in a webinar held on September 7, 2021. The slides from the presentation can be found here: <https://islandstrust.bc.ca/document/groundwater-sustainability-presentation/>.

Options for OCP and LUB amendments identified in this report are informed by the outcomes from the aquifer conceptualization, groundwater recharge potential mapping and groundwater availability assessments which were outcomes of the research phases of the Groundwater Sustainability Science Program.

ANALYSIS

Proposed OCP Amendments

1. Creation of Critical Aquifer Recharge Development Permit Area

A groundwater protection DPA will help to minimize negative impact on the quality and quantity of subsurface water supplies in areas identified to be critical to groundwater recharge. The proposed Critical Aquifer Recharge Development Permit Area policy and guidelines (see Appendix 1) is modeled after the proposed Critical Aquifer Recharge Development Permit Area for Galiano Island which is an updated version of the existing Galiano Elevated Groundwater Catchment Development Permit Area which was developed in 2014 and involved a hydrogeology consultant. The update for Galiano, as with North Pender, is informed by the Groundwater Sustainability Science Program and the development of the Islands Trust Freshwater Sustainability Strategy.

Planning staff are working with the Senior Freshwater Specialist to identify appropriate Critical Aquifer Recharge DPA boundaries. These boundaries will be informed by the groundwater recharge potential mapping completed by GW Solutions in October 2021. This mapping is based on a methodology developed specifically to understand the conditions contributing to groundwater quantity and quality on the Islands. It identifies the potential of different areas to collect groundwater into aquifers. The groundwater recharge potential maps for North Pender and South Pender are contained in Appendix 2. The most critical recharge potential areas will define the proposed DPA.

At the March 25, 2021 LTC meeting the LTC requested that staff “*suggest an altered project charter for the Groundwater Sustainability project to include consideration of Coastal Douglas Fir (CDF) and associated ecosystems’ protection*”. Staff do not recommend this approach for the following reasons:

- **CDF protection areas may relate to critical aquifer recharge areas, however they are more aligned with Mature forest and sensitive ecosystems.** Guidelines that relate specifically to groundwater protection may have differing information and applicant needs compared to protection of CDF.
- **Considering guidelines for CDF protection should be part of a larger review, update and consolidation of existing DPAs for sensitive ecosystems.** North Pender currently has ten Development Permit Areas, six of which are related to sensitive ecosystems that were adopted in 2008 and based on mapping that is currently 20 years old. The North Pender Conservancy has indicated interest in updates to mapping

related to wetlands and raptors nests. These updates should be included in a broader review of these development permit areas. This could involve the consolidation and integrating information provided by the Coastal Douglas Fir ecosystem mapping in a single sensitive ecosystems DPA.

- **A parallel but separate Critical Aquifer Recharge DPA will provide emphasis on the importance of supporting groundwater sustainability.** This is of particular importance given the uncertainties related to climate change.
- **A process that attempts to integrate CDF with groundwater protection will take longer.** More detailed mapping work and the analysis of a variety of different options and approaches would be required. Also North Pender’s groundwater implementation project currently being in step with that of Galiano provides for efficiency with respect to staff time. As such there is greater potential for this project to be considerably advanced by the end of the LTC’s term than if its focus shifts.

For the reasons above, staff encourage the LTC to focus on developing a DPA for groundwater protection and consider adding a project to review all ecosystem DPAs to the project list for next term.

2. Minor updates to relevant sections:

Staff have reviewed the OCP in detail and identified the following minor updates:

- Support for the protection of groundwater resources in land use designation objectives
- Consideration of groundwater vulnerability with respect to policies supporting additional density.
- Requiring (as opposed to considering) the incorporation of water conservation measures, including freshwater catchment and storage.
- Updating subdivision policies for water use to be included in LUB.
- Acknowledging the indigenous traditional knowledge in “best available information”.
- Recognition of and alignment with Islands Trust Freshwater Sustainability Strategy goals and objectives and advocacy policies.
- Updates to objectives for each land use designation where needed.
- Updates to definitions where needed.

If the LTC supports these minor updates, staff will proceed with drafting bylaw amendments.

3. Map Updates:

- Removal of Schedule F – Water Systems and Water Licences: This map serves limited purpose in the OCP and, given that the number of water licences is ever changing, it is currently and will continue to be frequently out of date. Up to date and relevant information can be found online in the provincially managed BC Water Resources Atlas.
- Map of Critical Aquifer Recharge DPA boundaries - Options will be presented at an upcoming LTC regular meeting.
- Addition of new map of Groundwater Regions – See Appendix 3.

Proposed LUB Amendments

1. Updated Definitions – see Appendix 4

Proposed definitions correspond with the update to the subdivision regulations and are consistent with what is being proposed for Salt Spring Island and Galiano Island.

2. Addition of Cistern Requirements –See Appendix 4

Cistern requirements correspond with what is being proposed for Galiano Island. They apply to the addition of secondary suites and all new residential buildings outside of water service areas. Staff have proposed this approach in light of increasing water challenges being experienced in the summer, the increase in fulltime residents and uncertainties related to climate change. Cisterns could be used for the collection and storage of rainwater or groundwater. The water would not be required to be potable. The use of this supply for gardens, toilets and other non potable water uses would help off set the use of potable water. Owners could use cisterns for potable water where treatment systems are installed. The minimum cistern capacity (single cistern or collection of smaller cisterns) would be 18,000 litres. This number is based on the potential for a household , in an emergency, to manage for one week. It also considers the size of cisterns that are commercially available. Staff will be encouraging consistency of cistern size requirements across the Trust Area.

3. Update to Subdivision Regulations related to Potable Water – Appendix 5

The proposed update to the proof of water subdivision regulations is based on a concurrent project for Salt Spring Island Local Trust Area under development by Island Planners in consultation with the Islands Trust’s Senior Freshwater Specialist, the Salt Spring Island Watershed Protection Alliance Technical Working Group, and provincial staff. Updates to proof of water bylaws incorporate existing subdivision regulations as well as align with new regulations in the *Water Sustainability Act Drinking Water Protection Act*, and other regulatory guidance documents. Volumes relating to proof of water for non-domestic agricultural, commercial, commercial guest accommodation, and industrial uses have been removed since this is adjudicated by provincial water authorizations staff. Domestic water volumes have been updated to align with deemed rights under the *Water Sustainability Act*.

4. Changes to zoning regulations in critical areas

Proposed changes to zoning regulations in stressed groundwater areas will be informed by the [Islands Trust Area Groundwater Availability Assessment](#) completed by GW Solutions in October 2021.

The GW Solutions (2021c) groundwater availability model estimates monthly potential evapotranspiration, soil moisture storage, actual evapotranspiration, soil moisture deficit, and soil moisture surplus (i.e., runoff and groundwater recharge). Using proxy data from a variety of sources, we also estimate surface and groundwater use across the Study Islands. Using the results from the water balance model, we estimate the percentage of groundwater use relative to aquifer recharge, per groundwater region. The results reveal the regional disparities in groundwater use across the Study Islands. Use in some areas on Mayne Island, North Pender Island and Galiano Island reaches over 10% of groundwater recharge. This likely creates stress on environmental needs and may result in water conflicts.

Based on mitigating potential groundwater sustainability risks, options to be explored include:

- Changes in zoning to reduce or transfer current density
- Changes that limit existing uses, place restrictions on size and siting
- Consideration of potable water requirements as a condition of certain uses and/or increases in density
- Further limiting impermeable surfaces

Staff are reviewing build out potential and other factors in those critical areas to determine options. These options will be presented to the LTC at a subsequent regular meeting.

ALTERNATIVES

1. Request further information

The LTC may request further information prior to making a decision. This may delay aspects of the project. Recommended wording for the resolution is as follows:

That the North Pender Island Local Trust Committee request additional information related to.....

2. Request that staff examine other options and/or aspects not identified in the staff report

The LTC may request that staff consider other types of options and/or aspects that are not covered in the staff report.

That the North Pender Island Local Trust Committee request that staff consider.....

NEXT STEPS

- Staff will present the LTC with options for DPA boundaries
- Staff will develop options for zoning regulation changes
- Staff will draft OCP amendments
- Staff will draft LUB amendments

Submitted By:	Narissa Chadwick, RPP	February 16, 2022
Concurrence:	Robert Kojima, Regional Planning Manager	February 17, 2022
Concurrence:	William Shulba, Senior Freshwater Specialist	February 16, 2022

APPENDIX

1. Draft Development Permit Area Guidelines
2. GW Solutions Groundwater Recharge Potential Mapping
3. Groundwater Regions
4. Land Use Bylaw Definitions and Cistern Requirements
5. Subdivision Standards for Potable Water
6. Groundwater Availability Assessment Map
7. Revised Project Charter

APPENDIX 1 - Draft Development Permit Area Guidelines

DEVELOPMENT PERMIT AREA ELEVEN - CRITICAL AQUIFER RECHARGE DEVELOPMENT PERMIT AREA

5.2.12.1 Description of Area

Development Permit Area Eleven includes critical groundwater recharge areas identified on Schedule xx. Critical aquifer recharge areas contain hydrogeological conditions that facilitate aquifer recharge and/or transmit contaminants to an underlying aquifer. Factors considered in the identification of critical aquifer recharge areas include topography, remote sensing, satellite multispectral analysis depth to water table, presence of highly permeable soils, land-cover analysis, structural geology, presence of flat terrain, and the presence of more permeable surficial geology.

5.2.12.2 Authority

The Critical Aquifer Recharge Development Permit Area is designated a development permit area pursuant to Section 488(1)(a) of the *Local Government Act* for the protection of the natural environment, its ecosystems and biological diversity and Section 488(1)(i) of the *Local Government Act* for the establishment of objectives to promote water conservation.

5.2.12.3 Special Conditions and Objectives that Justify the Designation

It is the Object of the Islands Trust to “Preserve and protect the Trust Area and its unique amenities and environment of the Trust Area for the benefit of the residents of the Trust Area, and of British Columbia generally, in cooperation with municipalities, regional districts, improvement districts, other persons and organizations and the government of British Columbia.”

It is Provincial legislation in Section 473(1)(d) of the *Local Government Act* that an official community plan must include statements and map designations for the area covered by the Plan respecting restrictions on the use of land that is environmentally sensitive to development.

The Islands Trust Council has committed to identifying, protecting and, where possible, restoring or rehabilitating groundwater recharge areas in the Trust Area.

It is policy of the Islands Trust Council that Local Trust Committees address measures that ensure:

- neither the density nor intensity of land use is increased in areas which are known to have a problem with the quality or quantity of the supply of freshwater, and
- the quality and quantity of drinking water sources for current and future Trust Area residents is preserved and protected, and
- the overall health of watersheds and ground water in the Islands Trust Area is protected.

Mapping of recharge and water balance completed in 2021 for North Pender Island identifies that the island has a number of areas of critical concern with respect to groundwater vulnerability.

The Objectives of the development permit area are:

- to protect and sustain access to a reliable and safe supply of drinking water for groundwater wells
- to protect and sustain the quality and supply of surface and groundwater necessary to the provision of ecological services
- to mitigate the impacts of development and climate change on groundwater supplies

5.2.12.4 Development Approval Information

The Critical Aquifer Recharge DPA is also designated an area for which development approval information (DAI) may be required according to Section 485(1) of the *Local Government Act*. The designation of these areas for this purpose is based on the special conditions or objectives supporting the designation of the DPA. Development approval information means information on the anticipated impact of the proposed activity or development on the community or the natural environment.

5.2.12.5 Applicability

A development permit is required for the subdivision of land, construction of a new residence or commercial or industrial building, land alteration, or the cutting of trees in excess of the number exempted below.

5.2.12.6 Development Permit Exemptions

The following activities are exempt from any requirement for a development permit:

- a) Impacts have been determined by the Islands Trust's Senior Freshwater Specialist or the Regional Planning Manager to be minor in nature.
- b) Repair, maintenance, alteration, additions to, or reconstruction of existing lawful buildings, structures or utilities within the existing footprint, including those that are lawfully non-conforming (a building permit may still be required).
- c) Where the subdivision does not bisect the development permit area as indicated on Schedule X.
- d) Land that is subject to a conservation covenant under section 219(4) of the *Land Title Act* in relation to natural, environmental, wildlife or plant life value relating to the land, granted to the Local Trust Committee or a covenantee designated under section 219(3)(c) of the *Land Title Act*.
- e) Repair and maintenance of existing roads, driveways, paths and trails, provided there is no expansion of the width or length of the road, driveway, path or trail,

and no creation of additional impervious surfacing, including paving asphaltting or similar surfacing.

- f) Removal of invasive species.
- g) Cutting and removal of up to 5 trees per hectare (with a trunk diameter greater than 20 centimetres measured 1.5 metres above the ground) within a 12-month period on any one lot.
- h) Removal of trees that have been examined by an arborist and certified to pose an immediate threat to life or property.
- i) Farm operations as defined in the *Farm Practices Protection (Right to Farm) Act* and farm uses as defined in Section 2(2), (3), (4) and (5) of the Agricultural Land Reserve Use, Subdivision, and Procedure Regulation.
- j) Forest management activities, as defined in the Private Managed Forest Land Regulation, on land classified as managed forest land under the *Private Managed Forest Land Act*.
- k) Land alteration that does not alter the natural contours of the land.
- l) The construction of an accessory building or structure with a lot coverage of less than 100m².
- m) Construction of trails or fences that does not alter contours of the land.
- n) Emergency actions required to prevent, control or reduce an immediate threat to human life, the natural environment or public or private property including:
 - i. Forest fire, flood and erosion protection works;
 - ii. Protection, repair or replacement of public facilities;
 - iii. Clearing of an obstruction from a bridge, culvert, dock wharf or stream; or
 - iv. Bridge repairs.
- o) Works undertaken by a local government or a body established by a local government.
- p) Works authorized under a provincial statute.

5.2.12.7 Guidelines

The *Local Government Act* prohibits construction of buildings and structures and the alteration of land and subdivision in Development Permit Area Eleven unless the owner first obtains a development permit. Development permits will be issued in accordance with the following guidelines.

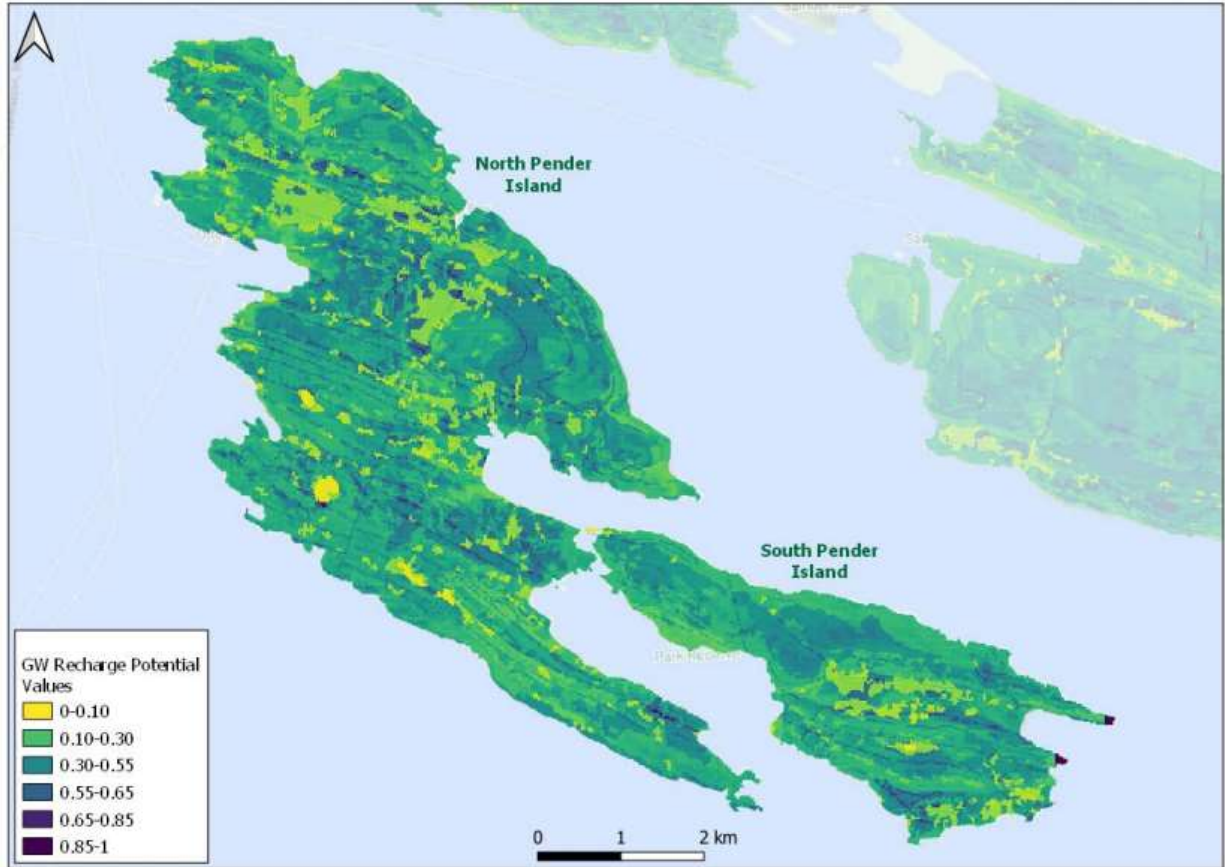
1. In general, development should minimize negative impacts on the quality and quantity of subsurface water supplies.

2. Where a qualified professional hydrogeologist or engineer has made recommendations for mitigation measures, the permit conditions may include a requirement for security in the form of an irrevocable letter of credit, to ensure the protection of groundwater supply quality or quantity consistent with the measures and recommendations described in the report.
3. Where the qualified professional hydrogeologist or engineer's report describes an area as suitable for development with special mitigating measures, the development permit should only allow the development to occur in compliance with the measures described in the report. Monitoring and regular reporting by a hydrogeologist or other professional at the applicant's expense may be required during construction and development phases, as specified in a development permit.
4. Where an application involves the subdivision of land, layout of the subdivision should be designed to:
 - a) replicate the function of a naturally vegetated watershed;
 - b) maintain the hydraulic regime of surface and groundwater pre-development flow rates;
 - c) minimize interference with groundwater recharge;
 - d) not introduce or remove material where it would cause erosion of or the filling in of natural watercourses or wetlands.
5. Where freshwater collection cisterns are required as a condition of the construction of a building impervious surfaces should be minimized.
6. The use of impervious paved driveways shall be discouraged.
7. Where tree removal which is not exempt from the requirement for a permit:
 - a. Removal of trees from steep slopes should only be allowed where necessary and where replacement vegetation / erosion control measures are established. Plans delineating extent of vegetation / tree removal and location of proposed construction, excavation and / or blasting, may be required.
 - b. All development should be undertaken and completed in such a manner as to prevent the release of sediment to any watercourse. An erosion and sediment control plan, including actions to be taken prior to land clearing and site preparation and the proposed timing of development activities to reduce the risk of erosion, may be required as part of the development permit application.
 - c. Existing, native trees should be retained wherever possible and trees to be retained near development should be clearly marked prior to development, and temporary fencing installed at the drip line to protect them during clearing, grading and other development activities.

- d. If the area has been previously cleared of trees, or is cleared during the process of development, replanting requirements may be specified in the development permit. Areas of undisturbed bedrock exposed to the surface or natural sparsely vegetated areas should not require planting.
 - e. Tree species used in replanting, restoration or enhancement should be selected to suit the soil, light and groundwater conditions of the site, should preferably be native to the area, and should be selected for erosion control and/or wildlife habitat values as needed. Suitably adapted, non-invasive, non-native trees may also be considered acceptable.
 - f. All replanting should be maintained by the property owner for a minimum of 2 years from the date of completion of the planting to ensure survival. This may require removal of invasive, non-native weeds (e.g., Himalayan blackberry, Scotch broom, English ivy) and irrigation. Unhealthy, dying or dead trees should be replaced at the owner's expense in the next regular planting season. Permits may include, as a condition, the provision of security to guarantee the performance of terms of the permit.
8. Roads, driveways, trails and pathways should follow the contours of the land and appropriately manage drainage. The construction of roads and utility corridors and other activities involving the disturbance of the soil, must be conducted in such a manner that the productivity of the local groundwater recharge area is not impaired through soil compaction, altered surface drainage patterns, siltation, erosion, or salt water intrusion.
9. Parking areas should be located and constructed so as to minimize erosion and water pollution by controlling storm runoff. Structural measures such as catch basins, oil separators, bio-filtration trenches or swales, unpaved or permeable all-weather surfaces should be considered for this purpose.
10. Permits may include minor variances to subdivision or building and structure siting or size regulations to meet the objectives of the development permit area.

APPENDIX 2 – GW Solutions Groundwater Recharge Potential Mapping

<https://islandstrust.bc.ca/document/islands-trust-area-groundwater-recharge-potential-mapping-appendices-ver-2021/>



APPENDIX 3 - Groundwater Regions

<https://islandstrust.bc.ca/document/islands-trust-area-groundwater-recharge-potential-mapping-appendices-ver-2021/>



APPENDIX 4 - Land Use Bylaw Definitions and Cistern Requirements

Definitions

“potable” means water that is safe to drink, fit for domestic purposes and meets the Health Canada Guidelines for Canadian Drinking Water Quality or any guidance documents or legislation which may be enacted in substitution.

“pumping test” means a flow test to determine the sustainable productivity of a well, conducted under supervision of a *hydrogeologist*, and that is consistent with the British Columbia Guide to Conducting Pumping Tests, Groundwater Protection Regulation Handbook, other guidance documents which may be issued, and applicable legislation, and consists of pumping groundwater from a well typically for 24 to 72 hours depending on aquifer characteristics.

“Hydrogeologist” means:

- a) an engineer or geoscientist licensed under the *Engineers and Geoscientists Act* or any legislation which may be enacted in substitution; and
- b) has competency in the field of hydrogeology.

“stream” means a stream as defined in the *Water Sustainability Act* or any legislation which may be enacted in substitution.

3.18 Secondary Suites

3.18.7 A building permit for a property outside a water service area shall not be issued for a secondary suite, nor shall a secondary suite be occupied, unless the building that is to contain the secondary suite is equipped with a freshwater catchment and storage system having a capacity of at least 18,000 litres .

3.19 Cistern Requirements

3.19.1 A building permit for a property outside a water service area shall not be issued for a new building to be used as a dwelling, including a cottage, unless the building is equipped with a cistern (or combination of cisterns) for the storage of freshwater having a capacity of at least 18,000 litres.

3.19.2 The floor area occupied by any cistern located in a building and the housing provided for such cistern is excluded from the calculation of the floor area of the building and the lot coverage of the lot on which it is located.

APPENDIX 5 -Subdivision Standards for Potable Water

SUBDIVISION REGULATIONS

4.4 POTABLE WATER

- 4.4.1 Where a subdivision is not proposed to be served by a community water system, each *lot* in a proposed subdivision must be proven to have a supply of *potable water* in accordance with the requirements of this section.
- 4.4.2 Each *lot* in a proposed *subdivision*, not proposed to be served by a community water system, must be supplied with a sufficient quantity of *potable water* to supply the uses permitted on the *lot* by this Bylaw according to the standards set out in Table 1.

TABLE 1 POTABLE WATER SUPPLY STANDARDS FOR SUBDIVISION	
USE Per Lot	VOLUME (litres per day)
<i>One dwelling unit</i>	2000
<i>Each additional dwelling unit, including a cottage</i>	2000
<i>Other uses - TBD</i>	

Information Note: If more than one dwelling unit is connected to the same source of water, the water system may be subject to the Drinking Water Protection Act, British Columbia Ministry of Health regulations of water supply systems, and may be subject to the Water Utility Act.

Information Note: Non-domestic uses serviced by groundwater or a stream may require a licence under the Water Sustainability Act.

- 4.4.4 Where *potable water* is to be supplied from a surface water source, the applicant for subdivision must provide proof of authorization (water licence) indicating the total volume of water granted to the licence holder.
- 4.4.5 Where non-domestic use exists on a lot proposed to be subdivided that requires a **licence** under the *Water Sustainability Act* the applicant must provide proof of authorization in the form of a water licence.
- 4.4.6 Where *potable water* is to be supplied by a drilled well, a *pumping test* shall be carried out on each well in a proposed subdivision by:
- pumping groundwater, at a constant rate, for a minimum period of 12 hours; and
 - withdrawing the daily required volume in accordance with Table 1 within a period of 24 hours; and
 - monitoring the recovery phase until at least 90 percent recovery has been achieved.

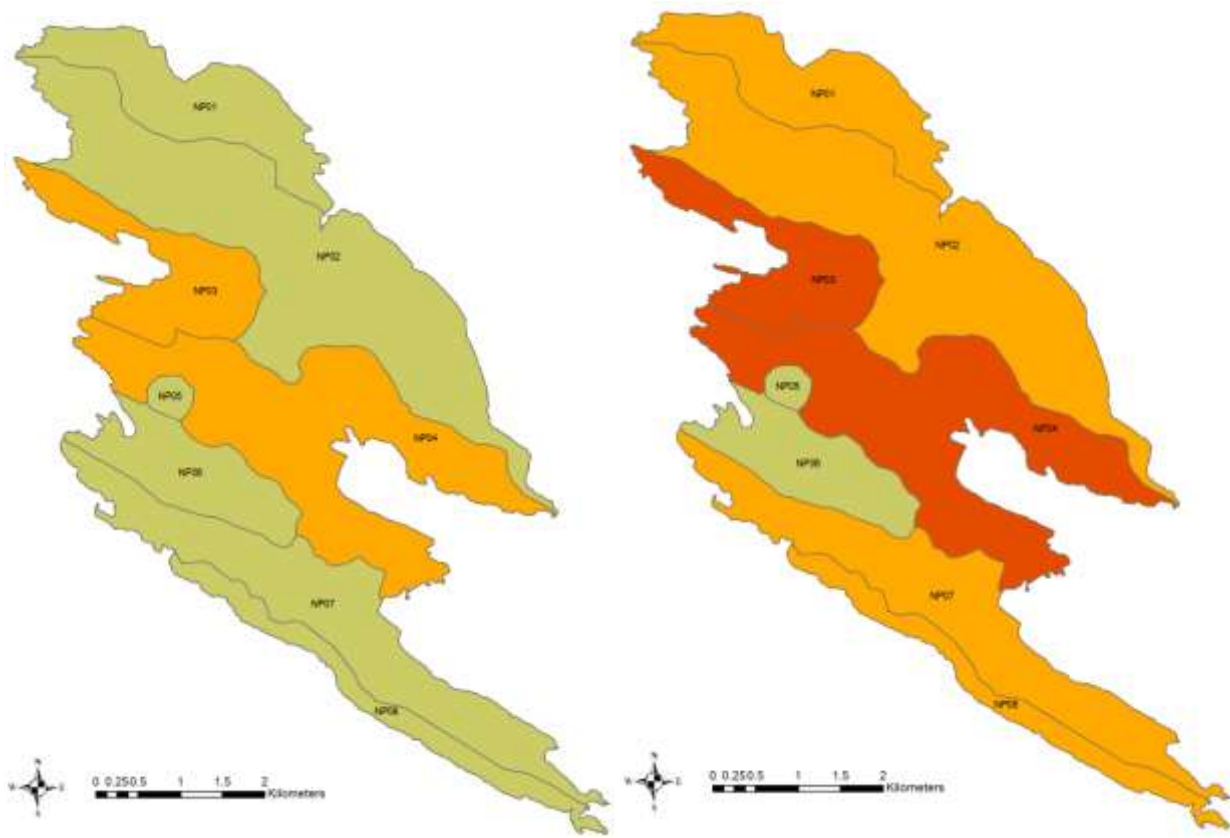
Commented [NC1]: Staff are reviewing authority related to this .

- 4.4.7 Where *potable* water is to be supplied by a drilled well a drop pipe or sounding tube and wellhead port must be installed for future water level monitoring.
- 4.4.8 Drilled wells used for the purposes of subsection 4.4.6 must not be located within 50 metres of the natural boundary of the sea.
- 4.4.9 Where *potable* water is to be supplied by a drilled well the applicant for subdivision must provide written certification under seal of a *hydrogeologist* that:
- a. Each well has been constructed in accordance with the *Groundwater Protection Regulation* or any legislation which may be enacted in substitution;
 - b. Each well has been constructed in accordance with Subsections 4.4.7 and 4.4.8;
 - c. Each well has sufficient available groundwater to provide the daily required volume of *potable* water for each lot in accordance with Table 1;
 - d. The pumping test carried out on each well was conducted in accordance with subsection 4.4.6; and
 - e. The extraction of groundwater is not likely to adversely affect the quantity or quality of any existing groundwater or streams.
- 4.4.10 If the daily required volume of *potable* water cannot be supplied in accordance with Subsections 4.2.2 or if the certification referred to in Article 4.2.9(c) cannot be made, the *Approving Officer* may nonetheless approve the *subdivision* if the applicant grants a covenant under the *Land Title Act* to the North Pender Island Local Trust Committee and the Capital Regional District that restricts the development of the subdivision to the uses for which there is a sufficient volume of water or commits the applicant to installing a water storage system capable of holding a volume equal to 30 days of the shortfall between the required and available volumes.
- 4.4.11 Where the *potable* water supply is provided through a drilled well or water licence, the applicant for subdivision must provide written certification under seal of a *hydrogeologist*:
- a. Results of a water quality analysis, completed by an accredited laboratory;
 - b. Certification, based on the accredited laboratory water quality analysis, that the proposed water supply source is *potable*, or can be made *potable*, with a treatment system that is customarily used in a *dwelling unit*;
 - c. Certification, based on the accredited laboratory water quality analysis of chloride concentrations, that each well is not likely to be affected by the intrusion of saline groundwater or sea water in accordance with Government of British Columbia guidance documents;

- d. A plan of the proposed *subdivision* indicating the location where each water sample was taken; and
 - e. A statement that the water samples upon which the water quality analysis was performed were unadulterated samples taken from the locations indicated on the plan.
- 4.4.12 If the water to be supplied is not *potable*, but can be made *potable* with a treatment system that is customarily used in a *dwelling unit*, the *Approving Officer* may nonetheless approve the *subdivision* if the applicant grants a covenant under the *Land Title Act* to the North Pender Island Local Trust Committee and the Capital Regional District that requires on-going treatment of the water to ensure that it is *potable*.
- 4.4.13 Groundwater wells under, or at risk of, saline water intrusion are not permitted sources of potable water for the purposes of subdivision.
- 4.4.14 Alternative *potable* water supplies including, but not limited to, shallow dug wells, rainwater catchment and desalination are not permitted sources of *potable* water for the purposes of subdivision.
- 4.4.15 The requirements of Section 4.4 shall not apply where the proposed subdivision is a boundary adjustment that does not result in an increase in the number of lots or permitted dwelling units provided that all lots in the subdivision are currently serviced by existing groundwater wells, community water system connection or water licence.

APPENDIX 6 - Groundwater Availability Assessment Map – Percentage of Use from Recharge

<https://islandstrust.bc.ca/document/southern-gulf-islands-groundwater-availability-assessment-report-ver-2021/>



Island	Groundwater Region ID	Groundwater Region Name	Groundwater Recharge-Normal (dam ³)	Groundwater Recharge-Driest (dam ³)	Groundwater Use (dam ³)	% of Use from Recharge-Normal	% of Use from Recharge-Driest	% of Use from Recharge (Normal-Driest)
North Pender Island	NP01	North Pender I	476	237	13	2.7%	5.4%	3-5%
	NP02	North Pender II	1486	726	44	3.0%	6.1%	3-6%
	NP03	North Pender III	481	240	41	8.5%	17.1%	9-17%
	NP04	North Pender IV	1171	575	67	5.7%	11.7%	6-12%
	NP05	North Pender V	41	21	0	0.0%	0.0%	0-0%
	NP06	North Pender VI	393	195	0.4	0.1%	0.2%	0.1-0.2%
	NP07	North Pender VII	769	375	24	3.1%	6.4%	3-6%
	NP08	North Pender VIII	256	128	7	2.7%	5.3%	3-5%

GROUNDWATER SUSTAINABILITY - IMPLEMENTATION – Project Charter v1

North Pender Island Local Trust Committee

Date: January 2021

Purpose: To implement results of Phases one and two of the Southern Gulf Islands Groundwater Sustainability Project through community engagement and education, policy, and changes to regulations.

Background: The Southern Gulf Islands Groundwater Sustainability project was initiated in early 2019 and consisted of data collection, mapping and analysis of groundwater regions in the southern gulf islands. The results of the first phases of the project will be incorporated into Islands Trust development review processes. The Local Trust Committee has identified further implementation of the results through public engagement and potential bylaw amendments as a Top Priority project.

Objectives

- Identify implementation options
- Analyze and assess options
- To update bylaws to provide to greater protection of groundwater resources

In Scope

- Analysis of options for bylaw amendments to implement groundwater protection measures based on earlier phases of the project
- Community engagement on phases I and II
- Community, First Nations, and agency consultation
- Recommendations on potential amendments
- Support for legislative process to amend bylaws

Out of Scope

- Unrelated regulatory amendments
- Unrelated amendments to the OCP

Workplan Overview

Deliverable/Milestone	Date
Preliminary report and review of Project Charter by LTC	February 2021
Staff report on implementation options, LTC direction	May 2021
Community Groundwater Workshop to present findings of Phases 1 and 2	June 2021
Early First Nations Consultation and Targeted Agency referrals	May – Sept 2021
LTC review of potential options	September 2021
Community consultation	October – Dec 2021
LTC direction to prepare draft bylaws	January 2022
LTC review of draft bylaws, First Nations referrals, agency referrals and First Reading	Feb – April 2022
Public Hearing	May 2022
Post-hearing legislative process	May – Sept 2022
Implementation: educational materials, DAI Bylaw amendments, BVN Bylaw amendments, procedure bylaw amendments, application processing procedures revised	June – Dec 2022

Project Team

Project Team		Est. Hours/annum
Robert Kojima	<i>Project sponsor</i>	50
Narissa Chadwick	<i>Project planner</i>	200
William Shulba	<i>Professional advisor</i>	200
Maple Hung	<i>Admin support</i>	30
Jas Chonk	<i>Legislative Clerk</i>	10
Jackie O'Neill	<i>IS support</i>	10
		400
RPM Approval: Name of RPM Date: Feb 25/21	LTC Endorsement: Resolution #: Date: Feb 25/21	

Budget

Budget Sources:		
Fiscal	Item	Cost
21-22	Community consultation	\$1000
21-22	Legal review contingency	\$2000
21-22	First Nations consultation	\$2000
22-23	Public Hearing	\$2000
22-23	Contingency	\$1000
	Total	\$8000