



File No.: NP-LTC-6500-20  
Work Program (Groundwater Sustainability)

DATE OF MEETING: April 25, 2019  
TO: North Pender Island Local Trust Committee  
FROM: William Shulba, Senior Freshwater Specialist  
Local Planning Services  
COPY: Robert Kojima – Regional Planning Manager  
SUBJECT: Groundwater Sustainability Strategy 2020-2030 Project Charter

## RECOMMENDATION

1. THAT the North Pender Island Local Trust Committee endorse the attached Groundwater Sustainability Strategy Project Charter to develop information, data, coordination, and outreach as part of a phased ecological approach to groundwater sustainability on North Pender Island.

## REPORT SUMMARY

The purpose of this report is to provide a project charter for the Groundwater Sustainability Strategy.

## BACKGROUND

The North Pender Island Local Trust Committee (LTC) has requested staff create a Groundwater Sustainability Project Charter to develop strategies for the phased ecological approach to groundwater management project. This project would including, but not be limited to, determining Community Aquifer Recharge Areas and Community Aquifer Water Budgets on North Pender Island based on a February 28, 2019 Staff Report. This project will now also include the Galiano and South Pender LTAs.

A project charter outlines the objectives of the project, the timeline and main steps, the deliverables, what is in scope and out of scope, and resources and budget. It is intended to guide staff and the LTC as the project proceeds, keeping the project on time and within scope. If timelines change, or new work is proposed to be included in the project, then the project charter is revisited and changes endorsed by the LTC.

Once the project charter is approved staff can proceed with the work. For this project the bulk of data gathering and analysis is proposed to be undertaken by a consultant or consultants; the next step is to prepare a detailed budget request and if approved commence the process to retain a consultant or consultants. Staff are estimating that the consulting budget could be up to \$50,000 for three local trust areas (North Pender, South Pender, and Galiano), but this will be determined at the next phase through the budget request and the procurement process. If the budget and procurement process results in significant changes to the scope of the project, staff would come back to the LTC with revisions to the project charter.

**RATIONALE FOR RECOMMENDATION**

The proposed Groundwater Sustainability Project as presented in this report, would advance the LTC’s Top Priority and align with the relevant policies in the Official Community Plan.

**ALTERNATIVES**

The LTC may consider the following alternatives to the staff recommendation:

1. THAT the North Pender Island Local Trust Committee not endorse the Groundwater Sustainability Strategy Project Charter and request staff to return with more information.
2. THAT the North Pender Island Local Trust Committee request staff to report back with other options to address groundwater sustainability.

**NEXT STEPS**

If the LTC chooses to endorse the proposed project charter staff will prepare and submit a detailed budget request, and if approved, commence the process to hire a consultant or consultants. As the project proceeds staff report regularly to the LTC with updates, and seek direction if necessary.

Submitted By:	William Shulba, P.Geo Senior Freshwater Specialist	April 17, 2019
Concurrence:	Robert Kojima, Regional Planning Manager	April 17, 2019

# Groundwater Sustainability Strategy Project Charter

**North Pender Local Trust Committee**  
Groundwater Sustainability Project

Date: April 15, 2019  
Version: 2019.001

## Purpose

*In March 2019 the Islands Trust Council declared a climate emergency in the Islands Trust Area and directed staff to include a central focus on equitable climate change mitigation, adaptation, and resilience into strategic planning. Groundwater resources are a metric of climate change with vulnerabilities of seasonal precipitation changes, evapotranspiration forcing, recharge alterations, and saltwater intrusion risk. Groundwater recharge protection is identified in the Islands Trust Policy Statement.*

## Background

*The North Pender Island Local Trust Committee has identified groundwater resources as a priority in its Official Community Plan and as part of land-use applications over the past decades. Groundwater is a unique amenity supporting ecosystem health and overall hydrological function of watersheds.*

*An ecosystems approach to groundwater sustainability strategy has been researched and recommended by J.D. Henderson in a master of science thesis (1998) and PhD dissertation (2008) outlining potential framework for aquifer protection and groundwater resource preservation. The recommendations and sentiments of this work resonate symbiotically with emerging scientific inquiry, technical tools, and current regulatory environment to help manage and plan groundwater use in a changing climate.*

## Objectives

<b>Information Inventory and Data Stewardship</b>	<i>Collate and synthesize existing groundwater information, data, references, and regulations into a common information dashboard providing access to information for climate change research and water use planning.</i>
<b>Monitoring and Analysis</b>	<i>Coordinate community groundwater monitoring network and determine analysis strategies to address how natural and anthropogenic changes will impact watershed hydrological function and groundwater use.</i>
<b>Policy and Planning</b>	<i>Develop groundwater sustainability options for Local Trust Committees to protect aquifers, preserve groundwater resources, and water plan for a sustainable future.</i>
<b>Coordination and Education</b>	<i>Participate in community knowledge building initiatives and coordinate with other Local Trust Committees, regional districts, improvement districts, community organizations, and the Province on aquifer protection and groundwater preservation strategies.</i>

## In Scope

<b>Information Inventory and Data Stewardship</b>	<ul style="list-style-type: none"> <li>• Consolidation of existing information and identification of knowledge gaps</li> <li>• Define Community Aquifer</li> <li>• Create an information and data dashboard for research and regulation</li> </ul>
<b>Monitoring and Analysis</b>	<ul style="list-style-type: none"> <li>• Investigation into potential funding sources for monitoring and analysis</li> <li>• Coordinate a Community Aquifer Monitoring Network</li> <li>• Define Community Aquifer Recharge Areas</li> </ul>
<b>Policy and Planning</b>	<ul style="list-style-type: none"> <li>• Review regulatory approaches to watershed protection and groundwater preservation</li> <li>• Strategy Development</li> </ul>
<b>Coordination and Education</b>	<ul style="list-style-type: none"> <li>• Community workshops and community education initiatives</li> <li>• Advocacy/Education/Consultation/Coordination with other agencies and First Nations</li> <li>• Development of Groundwater Sustainability Strategy Toolkit for Local Trust Committees</li> </ul>

## Out of Scope

- OCP or Land Use Bylaw amendments
- Preparation of a Water Sustainability Plan under the Water Sustainability Act (WSA)
- North Pender Local Trust Committee Associated Islands

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## Community Aquifer Concept

A first phase of an ecological approach to groundwater management is to identify an investigation scale that is symbiotic with ecosystem mapping. *Community Aquifers* which are regions of regional aquifers that are emerging as a groundwater management unit that takes an ecological and community approach to groundwater management.

*Community Aquifers* provide significant volumes of groundwater shared by domestic, commercial, agricultural, and water sup-

## Community Aquifer Recharge Areas

*Community Aquifer Recharge Areas* promote replenishment of water to subsurface hydrogeological networks via bedrock fractures, geological faults, and watershed ecosystems. Identifying recharge area for planning and conservation is a vital first step in an ecosystem approach to groundwater management using existing aquifer and watershed mapping in concert with ecological, geological, climatological, land-use, and water-use data and information.

Workplan	Task	Start Date	Status	Budget
Information Inventory and Data Stewardship	Information Inventory	May 2019	Proposed	TBD
	Data Gap Analysis	May 2019	Proposed	TBD
	Community Aquifer Boundary Mapping	May 2019	Proposed	TBD
Monitoring and Analysis	Community Aquifer Recharge Area Mapping	Sept 2019	Proposed	TBD
	Community Aquifer Monitoring Program	Sept 2019	Proposed	TBD
	Community Aquifer Water Balance	Sept 2019	Proposed	TBD
Policy and Planning	Regulatory and Reference Review	May 2019	Proposed	TBD
	Water Authorizations Terms of Reference	Sept 2019	Proposed	TBD
	Groundwater Sustainability Options	Sept 2019	Proposed	TBD
Coordination and Education	Community Aquifer Workshop #1	Summer 2019	Proposed	TBD
	Community Aquifer Workshop #2	Fall 2019	Proposed	TBD
	Groundwater Sustainability Strategy Options	Jan 2020	Proposed	TBD

Project Team	
William Shulba Freshwater Specialist	Project Manager
Robert Kojima, Regional Planning Manager	Project Support
Maple Hung, Office Admin Asst.	Admin Support
Mark van Bakel, Technical Analyst	Info. Coordination
TBD	Project Consultant (s)

Budget		
Budget Sources: NP LTC Special Projects (2018/19); LPS Project Budget (2019/2020)		
Fiscal	Item	Cost
2019-20	Community Workshops	\$1000
2019-20	Consultation & Communica-	\$1000
2019-20	Consulting Services	\$50,000
2019-20	Coordination Services	-
	<b>Total</b>	<b>\$52000</b>

Director Approval:  
Date:

LTC Endorsement:  
Date: