

Scott Point Waterworks District



Strategic Plan (draft approved for discussion with residents May, 2020)

Context

Scott Point Waterworks District (“the District”) is an improvement district providing potable water services to 61 properties located on Scott Point on Salt Spring Island, B.C. The District was created by Order in Council of the British Columbia legislature and received its Letters Patent in 1967.

The affairs of Scott Point Waterworks District are overseen by a Board of 3 trustees, chosen by election from among eligible property owners on Scott Point for a 3 year term. One trustee is chosen as the Chair and the duties of financial officer, administration officer, and operations management are shared between the trustees. Operation of the District’s water system, which includes routine maintenance, quality testing, leak surveillance, and meter reading is currently contracted to North Salt Spring Waterworks District.

Development of a Strategic Plan

Strategic planning is an essential exercise so that the District is aware of key operational, financial and physical risks it faces. This plan is intended to provide trustees, residents, and regulators with an understanding of the short and long term decisions to control these risks to an appropriate level. The plan then outlines the investments required to maintain water availability and quality, and the impact of these investments on reserves, tolls and taxes.

In 2017 the trustees worked to develop a comprehensive understanding of the physical risks to the District’s infrastructure and business risks of operations. Using templates provided by the B.C. Water and Waste Association and the Ministry of Health, a business resilience assessment and a physical risk assessment were developed and reviewed with a number of past trustees. The results were then discussed with all residents at the 2018 Annual General Meeting and posted on the District’s website along with a 10 Year Financial Plan.

This Strategic Plan incorporates and updates the resilience assessment and financial plan, provides clear future business objectives, and discusses issues and future investments. It is intended that trustees revisit this plan on an annual basis to see if any changed circumstances require revisions, and that trustees regularly communicate the principles and specifics of this plan with residents.

Regulatory Requirements

Three provincial regulators provide oversight of the affairs of the District and actions of the Trustees. The Ministry of Health is responsible for drinking water safety and the Vancouver Island Health Authority issues the annual operating permit and provides oversight of water quality and changes to treatment works under the Drinking Water Protection Act and its Regulations. The Ministry of

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Municipal Affairs and Housing provides oversight over the passing of by-laws, filing of financial information and other legislative requirements under the Local Government Act. The Ministry of Forests, Lands and Natural Resource Operations has issued a groundwater license and provides oversight for the protection of water sources under the Water Sustainability Act.

The Capital Regional District and Islands Trust are not regulators, but are involved with water issues on Salt Spring Island through policy development and control over zoning and the official community plan. With the exception of the Reservoir and treatment plant at Well 1 on District property, and the Well 1 waste line and the well and treatment plant at Well 4 located on private property under easement, the District's facilities are located on road allowance under the control of the Ministry of Transportation and Infrastructure under site-specific permits.

The primary risk of the District is ensuring that water delivered to residents is free of pathogens and remains potable. Compliance assurance is achieved through ensuring that the contract operator follows the Water Testing Plan filed annually with VIHA, and the employment by the contract operator of appropriately qualified personnel as required by the Operating Permit issued by VIHA. An Emergency Response Plan is filed regularly with VIHA and covers actions including the need for Boil Water Advisories.

The trustee's actions must follow the provisions of the Local Government Act and the recommended practices included in the Improvement District Trustee's Handbook. Compliance assurance is provided by the requirement to send all bylaws to the Ministry for approval and/or registration, and the filing of an Annual Report with the Ministry. Assurance is also provided through the District's key value of transparency which requires disclosure of important District information to residents through the website.

The extraction of groundwater under the Water Sustainability Act must comply with conditions of the Conditional Water Licence issued by FLNRO which has provisions for maximum annual and daily water extraction amounts. Compliance assurance is achieved through the requirement to retain flow meter records and file an Annual Water System Return with FLNRO.

Context - Physical Assets

Groundwater Resource

The District's water supply comes from 3 wells. Well 1 and 4 drilled to depths of 180 ft. and 240 ft. respectively in a fractured bedrock aquifer identified as Aquifer No. 721. This aquifer is considered to have low productivity and moderate vulnerability and demand. Well 3 is located off of Scott Point and is drilled to a depth of 44 ft. in the unconsolidated sand and gravel material above Aquifer No. 721. The recharge of groundwater across SSI is dependent on precipitation. Environment Canada data

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shows has remained relatively consistent over the last five years, with an average annual precipitation of 664mm. The aquifer and the bedrock fractures that contain groundwater appear to be finite and increased precipitation above normal does not raise groundwater levels any higher than historical maximums.

The geography of Scott Point is a long skinny peninsula in close contact with the ocean, resulting in groundwater with an elevated risk of seawater intrusion. Wells 1 and 4 are drilled to depths below sea level and are dependent on seawater interface to maintain groundwater levels. Well 1 is of particular concern as it has always been brackish and treatment through reverse osmosis is required to remove salts and TDS caused by seawater intrusion. Well 3 is not at risk of seawater intrusion, but does not produce reliable quantities of water during periods of little precipitation. Unconstrained pumping of wells caused by system or residence leaks, and the amount required during processing for water treatment is a major risk to the water resource.

The groundwater resource is finite and does not meet the current volumetric requirements of local by-laws controlling development and sub-division. However, the nature of habitation on Scott Point (average household size, percentage of full time to part time residents, limitations on commercial use of property) has been historically consistent. And close attention paid to leak detection, rainwater capture and conservation efforts by all residents result sin adequate supply amounts, but just.

Water Treatment

Each of the District's three wells has a water treatment plant utilize various filtration technologies and use chlorine (sodium hypochlorite) for disinfection to ensure product water quality meets the quality objectives of the Guidelines for Canadian Drinking Water Quality. The treatment facilities at Wells 1 and 4 were upgraded in 2018/19 and upgrades are planned for Well 3 in 2020.

While water meets the potable water standard in the Drinking Water Quality Regulations, the District is managing a few quality and aesthetic issues: elevated levels of disinfectant by-products caused by the reaction of natural elements with chlorine, higher water hardness causing aesthetic concerns over scale formation, annual variations in groundwater levels leading to changes in raw quality requiring treatment adjustments, and the volume of groundwater resource used during processing.

Distribution System

The water main consists of 2,000 meters of NPS 4 diameter asbestos-concrete pipe, now 50 years old. The District monitors the condition of the water main through leakage calculations and physical examination of the pipe when opportunities arise. While ground conditions and low main pressure are good for main longevity, there



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are risks from the number of trees growing over the pipe and deterioration in areas of surface water accumulation. Most of the water main valves were installed in 2002 and are well within expected lifespan. Valves are exercised annually during main flushing to ensure they remain operational.

The main and the connected fire hydrants were installed in 1967, and are undersized under current fire fighting standards. Salt Spring Fire/Rescue has indicated that the new larger hydrant installed at the Reservoir in 2012 is part of their water shuttle service accreditation and that the old hydrants remain useful to supplement fire fighting efforts. The hydrants are serviced every 2 to 3 years.

The service lines from the main to the meter servicing each residence, and the meter set itself are well beyond expected service life, and either do not meet current standards for reduced lead levels in the brass alloy, or are made of uncoated copper tubing susceptible to external corrosion. The District's plans include a program of replacement. It is noted that residents are responsible for installation and upkeep of a shut-off valve and piping connecting the meter to the residence.

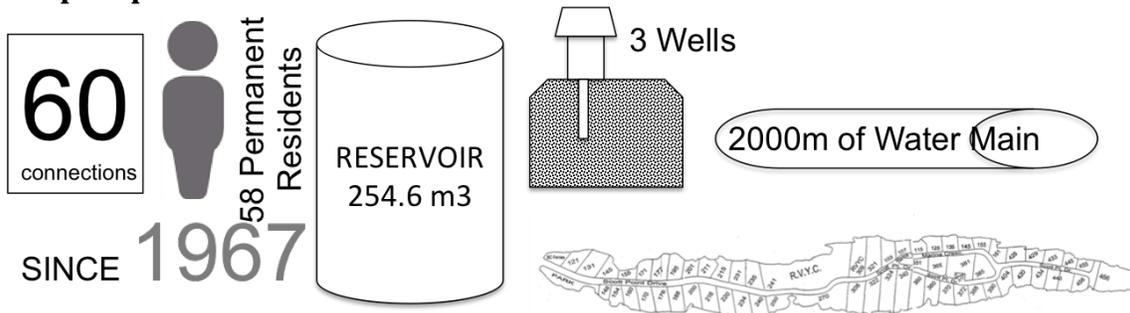
Structures

The 245,600 litre reservoir was installed in 2012 and meets the District's requirements for load balancing, fire fighting and provides the system's water pressure. The Reservoir was constructed to current seismic standards.

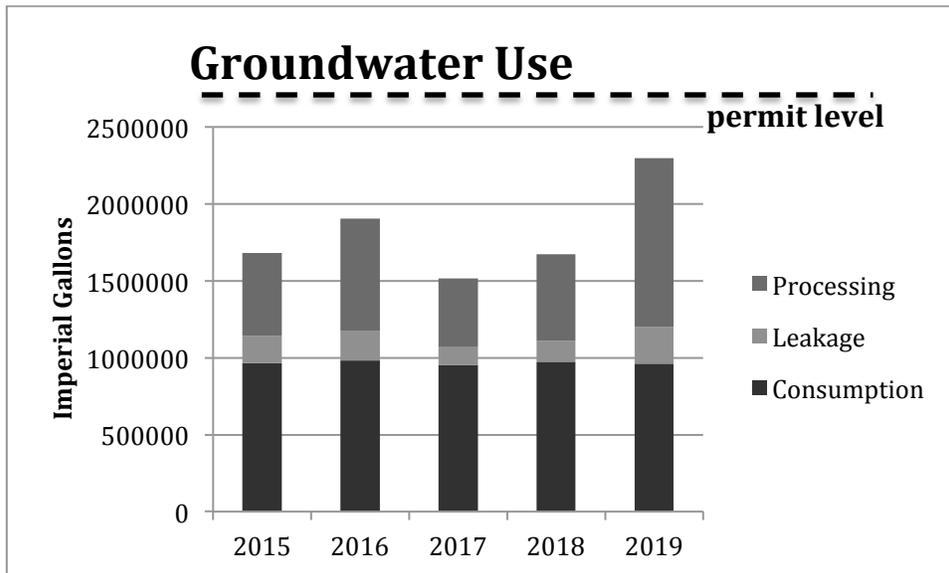
There are 4 smaller plastic storage tanks associated with water treatment at the treatment plants. Two 13,600 litre outdoor tanks at Well 1 were installed in 2018 and meet all code requirements. Older, smaller tanks are installed inside the pumphouses at Well 3 and Well 4, but remain in good shape.

The buildings housing the water treatment plants are between 40 and 20 years old and were constructed to residential standards. While the roofs have been replaced with metal, there are concerns regarding the fire resistance of the wood structure and cladding, and with impact of moisture on the inside walls and insulation.

Snapshop



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Planning Horizon

The Ministry requires that Improvement Districts maintain a five-year financial plan. In 2017, after a detailed examination of the key issues and risks facing the District, a 10 year financial plan incorporating planned capital expenditures, inflationary pressures on operating costs, forecast water tolls and parcel taxes, and anticipated financial reserves was developed, discussed with residents, and approved by the trustees. This plan, the key risks and impact on tolls and parcel taxes is updated annually and incorporated into this Strategic Plan.

Risks

The main risks faced by the District are outlined in the 2017 Resilience Assessment and the Risk Management Plan. The identified risks include:

- Contamination of groundwater from surface sources
- Contamination from treatment failures
- Water shortage caused by groundwater reduction
- Water shortage caused by excessive consumption
- Physical damage to wells or infrastructure
- Lack of financial resources
- Lack of District management capacity

Managing these risks involves a combination of education, oversight of operations, performance monitoring, physical infrastructure, and insurance. The Risk Management Plan is operationalized by development of the Strategic Objectives below.

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Omissions

There are four high impact risks that are intentionally omitted from the 10-year financial plan and this Strategic Plan:

- Within the time frame of this plan, replacement or major upgrading of the aging main is not anticipated.
- By nature of the District's location in an active seismic zone, there is risk to all elements of the water system from a major earthquake. While an earthquake is an almost certainty, the timing is very uncertain. The District considers the impact of a major earthquake as something that will have to be dealt with when it occurs with financial reserves only containing provisions for temporary repairs.
- The future impact of climate change on the District and its water resources is difficult to determine. Rising sea levels may increase saltwater intrusion into the aquifer and reduced precipitation may reduce the volume of groundwater available for production and use. Possible changes need to be monitored and actual plans developed in response to observed changes.
- At the initiative of North Salt Spring Waterworks, the Ministry of Municipal Affairs has funded a study by CRD to examine governance models for the delivery of water on Salt spring Island. Any actions stemming from this study could alter how the District is managed and operated in the future.

Mission Statement

Primary

- Deliver safe and reliable potable water to residents of Scott Point

Secondary

- Protect the interests of ratepayers and residents through good governance practices
- Proactively identify and manage water quality and groundwater resource risks
- Maintain appropriate financial reserves
- Meet the requirements of Water Sustainability Act and Local Government Act

Key Values

- Integrity – we will meet or exceed operational and financial expectations of ratepayers and regulators
- Transparency – operational and financial matters are matter of public record and easy for ratepayers to access
- Simplicity – processes will be easy for trustees and ratepayers to understand

Strategic Objectives

1. Management Capacity

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No.	Objective	Initiative	Rate
1-1	Maintain relationships with contract operator and monitor their capacity and effectiveness	Set regular meetings with NSSWD to discuss issues	
1-2	Strengthen or build internal processes, policies, and procedures to ensure regulatory compliance and to make oversight easier for current and future trustees	Complete and post a set of management policies and operating procedures.	
1-3	Educate residents on water issues to ensure responsibilities are understood, trustees' decisions are supported, and future trustees develop familiarity	Keep website current. Regular newsletters. Poll residents on information needs	

2. Financial Capacity

No.	Objective	Initiative	Rate
2-1	Maintain appropriate reserve levels to deal with future issues and needed investments	Regularly evaluate the appropriate level of operating, capital and renewal reserves	
2-2	Annually update and review the 10-Year Financial Plan for tolls, taxes, physical assets and expenditures	Share 10 Year Plan with residents	
2-3	Regularly review financial controls and insurance to limit exposure to unexpected financial challenges, and update as necessary.	Annual review by trustees, triennial review by auditor	

3. Technical Capacity

No.	Objective	Initiative	Rate
3-1	Maintain a multi-year capital plan to ensure equipment is replaced at or before end of life, and meets appropriate regulatory requirements.	Regularly review capital equipment maintenance, remaining life and replacement cost	
3-2	Monitor consumption, precipitation, water levels and source protection to ensure adequate of supplies are available to meet reasonable needs.	Maintain monthly data collection on key parameters and report to trustees and residents	
3-3	Encourage conservation through education of residents, encouragement of rainwater	Continue to inform residents of high use.	

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	harvesting for non-potable uses, opposition of growth in density, and use of rate structure to encourage further conservation	Review trailing block rate structure. Make inventory of rainwater capture by residents	
3-4	Maintain relationships with regulators, water quality and hydrogeological expertise		
3-5	Ensure operations minimize adverse effects on health, safety and environment		

4. Operational Capacity

No.	Objective	Initiative	Rate
4-1	Monitor well and treated water quality to ensure treatment meets expectations and remains effective	Maintain database. Regularly review with trustees & residents. Consult with expertise as required	
4-2	Ensure operational plans are in place to deal with expected physical risks to groundwater and facilities and take actions or make investments to reduce key risks, including leakage, to acceptable levels.	Maintain risk register and review with residents. Incorporate costs of new controls into financial plans	
4-3	Prevent abnormal operating conditions from impacting water quality or health of groundwater resource	Enhance data availability and alarm monitoring through SCADA system	
4-4	Maintain access to operators with the required skills and training	Maintain relationship with NSSWD, discuss common needs with other water systems	

Investment Plan

The following investments are contemplated in the 10-Year Plan to support the above Strategic Objectives

- Objective 3-1
 - Multi-year program to replace old meters, brass fittings, and copper service connections to properties
 - Monitor leakage rate and cause of leaks on water main to determine whether major main repairs or replacement falls into 10 Year Plan.
 - Assess condition of fire hydrants and water main valves from maintenance reports and replace as necessary

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- Objective 3-2
 - Replace well pumps with models with lower capacity to operate wells in “sipping mode”
- Objective 3-5
 - Interception of backwash water into septic tank to decant solids and reduce impact on environment
 - Building modifications to improve seismic resistance, reduce code violations, and discourage pest or mould intrusion, decrease power consumption
 - Make tanks and filter vessel modifications to make it easier to drain and clean out.
 - Review need for additional security at facilities
- Objective 4-1
 - Upgrade Well 3 Treatment and Equipment:
 - Replace unserviceable valves, renew media, install new meters and injection pump, connect to SCADA system
 - Schedule replacement of filter media at appropriate intervals
 - Water softening – investigate non ion-exchange processes
 - Consideration of LED UV technology as additional contamination barrier
- Objective 4-2
 - Trim trees along right-of-way to reduce impact on water main pipe
- Objective 4-3
 - Connect other devices to SCADA system and provide remote operation and alarm monitoring capabilities

Other investments that are possible, but not included in the 10-Year plan are:

- Objective 3-1
 - Replacement or major repair of the Water Main
- Objective 3-2
 - Construction of additional storage for use as summer seasonal supply
 - Investigate other additional supply from desalination or new wells located off Scott Point

Financial Plan

In keeping with Object 2-1 the 10-Year Financial Plan gives a view of future expenditures balanced against revenues required to ensure that the District remains financially strong with appropriate reserve levels. The 10 Year Plan starts with the approved budget for the next calendar year and extends out 9 more years. This plan incorporates inflation of operating costs at 2% and includes initiative specific costing for non-routine maintenance and capital spending.

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This 2020-2029 Plan indicates that Renewal Reserve starts at a low level, given the recent spending on Project Blend and builds to target levels within 3 years without a requirement to increase tolls or parcel taxes. Of course, these are projections and actual amounts of reserves, tolls and taxes will be re-examined each year.

10 Year Financial Plan 2020 - 2029

	2018	2019	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
	Audited	Budget	Preliminary										
REVENUE													
Toll Revenue	73,801	55,194	53,947	53,947	53,947	53,947	53,947	53,947	53,947	53,947	53,947	53,947	53,947
Parcel Tax	30,500	30,500	30,550	30,500	30,500	30,500	30,500	30,500	30,500	30,500	30,500	30,500	30,500
Interest Income	969	850	1,297	1,323	1,349	1,376	1,404	1,432	1,461	1,490	1,520	1,550	1,581
Other income	100	1,000		1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
TOTAL REVENUE	105,370	87,544	85,794	86,770	86,796	86,823	86,851	86,879	86,908	86,937	86,967	86,997	87,028
EXPENSES													
Amortization	16,313	16,314	16,314	16,314	16,314	16,314	16,314	16,314	16,314	16,314	16,314	16,314	16,314
Administration	13,932	16,284	13,039	14,768	15,063	15,364	15,671	15,985	16,305	16,631	16,963	17,303	17,649
Operations	8,379	6,369	8,518	8,688	8,862	9,039	9,220	9,405	9,593	9,785	9,980	10,180	10,383
Maintenance	23,476	36,211	29,010	32,000	32,640	33,293	33,959	34,638	35,331	36,037	36,758	37,493	38,243
EXPENSES - NON ROUTINE	-	15,000	-	12,600	5,000	3,664	3,350	5,039	9,525	13,974	2,691	900	13,430
TOTAL OPERATING EXPENSES	62,100	90,177	66,881	84,370	77,879	77,674	78,514	81,380	87,067	92,741	82,706	82,189	96,019
NET INCOME	43,270	(2,633)	18,913	2,400	8,917	9,149	8,337	5,499	(159)	(5,804)	4,260	4,808	(8,991)
CAPITAL													
Assets Under Construction		5,000	7,648										
Buildings		5,000	10,118				12,000		5,000	2,000			
Treatment Plant			6,624	5,000	1,000			2,800	1,000				
Water Distribution				8,500	4,500	7,500	4,500	4,500	4,500	4,500	4,500	4,500	4,500
Wells			8,253	2,000	2,000	2,000							
Minor Items per Plan		5,000		1,100	1,122	1,144	1,167	1,191	1,214	1,239	1,264	1,289	1,315
TOTAL CAPEX	-	15,000	32,643	16,600	8,622	10,644	17,667	8,491	11,714	7,739	5,764	5,789	5,815
Add Back Amortization	16,313	16,314	16,314	16,314	16,314	16,314	16,314	16,314	16,314	16,314	16,314	16,314	16,314
CASH FLOW	59,583	(1,319)	2,584	2,114	16,609	14,819	6,983	13,322	4,440	2,772	14,811	15,333	1,508
Available for investment	79,248	77,929	77,527	79,641	96,250	111,069	118,052	131,374	135,815	138,586	153,397	168,730	170,238
Operating flex		14,591	14,299	14,462	14,466	14,471	14,475	14,480	14,485	14,489	14,494	14,500	14,505
Operating Reserve		45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000
Capital Reserve		20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
Renewal Reserve		(1,662)	(1,772)	179	16,784	31,598	38,577	51,895	56,330	59,097	73,902	89,230	90,733