



# Salt Spring Island Watershed Protection Authority

## Regular Meeting Draft Agenda

**Date of Meeting:** Friday June 23, 2017 10:30 am - 12:30 pm

**Location:** School District 64 portable, 112 Rainbow Rd., Salt Spring Island BC

**Acronyms:**

AGRI - Ministry of Agriculture

CEWG - SSIWPA Conservation and Efficiency Working Group

CRD - Capital Regional District

FLNRO - Ministry of Forests, Lands and Natural Resource Operations

NSSWD - North Salt Spring Waterworks District

MOE (ENV) - Ministry of Environment

SSIWPA - Salt Spring Island Watershed Protection Authority

TWG - SSIWPA Technical Working Group

**1. CALL TO ORDER**

**2. APPROVAL OF AGENDA**

**3. MINUTES**

- 3.1 Draft minutes of the may 19, 2017 steering committee regular meeting -  
*attached for approval*

**4. BUSINESS ITEMS**

4.1 **Chair's report** - G. Grams

4.2 **St. Mary Lake water quality update** – NSSWD Board Representative

4.3 **Cusheon Lake water quality update** – Beddis Water Commissioner

4.4 **Coordinator's report** – *attached*

4.5 **Technical Working Group update** – TWG Co-Chair

**4.6 Conservation and Efficiency Working Group update** - CEWG Chair

**4.7 Approve Scope of Work Memos** - CEWG Chair, Sandra Ungerson

4.7.1 IWM Task 8 “Compare Water Conservation and Efficiency Technologies” -  
*attached*

4.7.2 IWM Task 8a “Rain Harvesting Alternatives” - *attached*

4.7.3 IWM Task 8b “Reclaimed Water Feasibility” - *attached*

**4.8 SSIWPA IWM Budget requests to Local Trust Committee** - Planner Starke

**4.9 REFBC Application for funding - IWM Task 5b** - Coordinator

**4.10 Revised TWG Terms of Reference** - Chair Grams

**4.12 Correspondence**

4.12.1 08Jun17 Letter to Steering Committee re: proposed new regulations related to watershed protection and agriculture in Rural Watershed zones 1 and 2 - *attached*, for information

4.12.2 May17 Royal Roads University “SSI Rain-Harvesting Survey and Assessment” project quarterly progress report - *attached*, for information

**4.13 Events and Announcements**

4.13.1 Well Owner Workshop -  
Friday, June 30, 2017. 10am - 12:30pm. Lion’s Hall 133 Bonnet Ave.

**5. OTHER BUSINESS**

5.1 Questions and Comments from Public

**6. UPCOMING MEETING** Friday, July 21, 2017 at 10:30 am  
@ School District 112 Rainbow Rd.

**7. ADJOURNMENT**



# Salt Spring Island Watershed Protection Authority

Minutes of a Regular Meeting

**Date of Meeting:** Friday, May 19, 2017  
**Location:** School District Boardroom, 112 Rainbow Road  
Salt Spring Island

**Members Present:** George Grams, Chair, Islands Trust Local Trustee  
Dale Green, Capital Regional District, Integrated Watershed (via telephone conferencing)  
Doreen Hewitt, Beddis Water Service Area Commissioner  
Lorrie Hunt, Fernwood Water Service Area Commissioner  
Pat Lapcevic, Ministry of Forests, Lands and Natural Resource Operations (FLNRO) (via telephone conferencing)  
Wayne McIntyre, Deputy Chair, Capital Regional District (CRD) Director

**Regrets:** Derek Masselink, Ministry of Agriculture  
Ron Stepaniuk, District Manager, North Salt Spring Waterworks District (NSSWD)

**Staff Present:** Shannon Cowan, Coordinator  
Justine Starke, Island Planner (North Pender Island)  
Sarah Shugar, Recorder

**Technical Working Group Liaison:** Don Hodgins, Co-chair, SSIWPA Technical Working Group

**Conservation Working Group:** Sandra Ungerson, Chair, SSIWPA Conservation and Efficiency Working Group

**Media and Others Present:** 1 member of the public; Driftwood Reporter

These minutes follow the order of the agenda although the sequence may have varied.

## 1. CALL TO ORDER

Chair Grams called the meeting to order at 10:37 a.m. and welcomed Committee Member Hunt following an absence due to illness.

## 2. APPROVAL OF AGENDA

**By general consent**, the agenda was adopted.

### **3. MINUTES**

#### **3.1 Draft Minutes of the April 21, 2017 Salt Spring Island Watershed Protection Authority Regular Meeting**

**By general consent**, the Salt Spring Island Watershed Protection Authority Minutes of April 21, 2017 were adopted.

### **4. BUSINESS ITEMS**

#### **4.1 Chair's Report**

Chair Grams reported he has rebuilt the SSIWPA website due to another security breach and additional security software has been purchased for \$9.00 per month. The Watermark newsletter will be redesigned to be consistent with other SSIWPA materials. Chair Grams met with North Salt Spring Waterworks District (NSSWD) Trustee Robert Steinbach regarding the work of SSIWPA. It was noted all the data on the SSIWPA website is public information.

#### **4.2 St. Mary Lake Water Quality Update – NSSWD Board Representative – none**

#### **4.3 Cusheon Lake Water Quality Update – Beddis Water Commissioner**

Committee Member Hewitt presented an update regarding the Cusheon Lake Watershed and the following highlights were presented:

- The lake level was 1.173 metres on May 4, 2017. In 2016 the lake level was 1.226 metres. The lake level was 1.224 metres on May 18, 2017. In 2016 it was 1.194m. This shows that the lake level has gone up just a little and is controlled by the beaver dam even though the dam is small right now.
- The creek level out flow was 0.13 metres on May 18, 2017. There is evidence that the beavers are slowly building a dam but the water is still flowing out. Tyler Brook is still flowing.
- Precipitation received at Salt Spring Elementary: April 2017: 79.5 mm. The comparison for May is as follows: May 2015: 5.3 mm; May 2016: 6.3 mm; May 2017: 31.5 mm.
- There has been considerable rain in May but this does not accumulate very much in the lake.
- A report has been received about the dead beaver. The report indicated that the beaver died of staphylococcus and pneumonia.
- On May 1, 2017, Committee Member Hewitt met with Rosie Barlak at the Ministry of the Environment (MOE) in Nanaimo. She checked the instrumentation that the CLSC uses. It was noted there would be no water quality monitoring done on Salt Spring Lakes by the Ministry over the next 18 months, as they have no staff. She was going on maternity leave for 18 months and would then return. The MOE has not replaced Michelle Hawryluk's position.

#### **4.4 Coordinator's Report**

Coordinator Cowan presented the Coordinator's Report for the period of April 1, 2017 to May 12, 2017 and highlighted the following items:

- The community well data project is underway. There are nine community wells: two are complete, three are in process and 4 are pending more discussion. The data that has been received has been aggregate, by user and will be useful for updating the wells database.
- There is a new stream monitoring initiative led by FLNRO that will align with a SML work plan task. A Fish and Wildlife aquatic ecologist will install water level data loggers at Cusheon Creek at the outflow of Cusheon Lake and Fulford Creek near its source at Ford Lake as well as some of the feeder creeks. Fulford Creek has been identified as one of the most sensitive salmon bearing streams in BC. McFadden Creek, Ganges Creek and Bullock Creek will also be monitored.

There was question regarding creek accesses on private land. A property owner will monitor Bullock Creek and volunteer(s) will monitor Reid Creek. There was question regarding liability protection for fieldwork. There was question regarding whether the Squires/Bodaly report regarding the Blackburn Watershed has been shared with SSIWPA.

It was noted that Committee Member Lapcevic would look into liability protection for fieldwork for the stream flow citizen science project. It was noted that the Squires/Bodaly report had been shared with SSIWPA via email.

#### **4.5 Technical Working Group Report**

Technical Working Group Co-chair Hodgins presented the following report:

- D. Hodgins met with Francis Zwiers Executive Director of the Pacific Climate Impacts Consortium at UVIC regarding the global climate models that TWG proposed could be applied to specific watershed datasets for workplan task 2. The feedback was positive and the analysis will begin July/August 2017.
- The TWG is reviewing the external review of SML water quantity study by Weijis and a written response is expected within a week and will go to TWG for review and assessment. D. Hodgins will present the response at the next TWG meeting. The TWG recommendations would be presented to SSIWPA in June.
- The scope of work has been completed for the groundwater tasks.
- The next Technical Working Group meeting is tentatively scheduled for June 13, 2017.

#### **4.6 Conservation and Efficiency Working Group update - CEWG Chair**

Conservation and Efficiency Working Group Chair Ungerson presented an update. It was noted the draft scope of work will be circulated to SSIWPA and will be on the next SSIWPA meeting agenda.

#### **4.7 Golder Phase 1 - IWM Workplan Task #7a - Update**

Committee Member Lapcevic reported Golder Associates has completed phase one and FLNRO has completed review and comment of phase one. The Golder phase one report and FLNRO review of phase one will likely remain in draft form

until phase two is complete. The Ministry of Environment is in the process of allocating funding for phase two – from the groundwater science program.

There was question regarding whether the Golder Associates draft report of phase one can be forwarded to SSIWPA and shared with the public. It was noted the draft phase one report by Golder Associates was shared with the Technical Working Group, who did not provide any comments to FLNRO or to the consultants, and since the report is in draft form it is not a public document at this stage.

Committee Member McIntyre reported the CRD is conducting drilling for water in Ganges and has requested data from the Ministry (FLNRO). It was noted that the Ministry staff had corresponded with project managers for this CRD initiative and that staff member Sylvia Barroso (also SSIWPA-TWG member) had offered assistance and follow up with CRD project managers, as necessary. Committee Member McIntyre and Committee Member Green would contact the project manager to discuss recent well activity and sharing of data between the Ministry and the CRD.

**By general consent**, the Salt Spring Island Watershed Protection Authority requested that TWG Co-chair Hodgins and Committee Member McIntyre would discuss recent CRD well activity in the Ganges area.

#### **4.8 CRD Bylaw Amendment No. 4178 re: Extension of Stormwater Service on SSI**

Committee Member McIntyre and Committee Member Green reported the CRD Bylaw amendment No. 4178 is in process and will provide more flexibility for participation in the SSIWPA mandate. The CRD has no plans to bring in a groundwater specialist at this time.

Committee Member McIntyre reported the CRD has commissioned a report regarding the potential for water reclamation for processed water in the Ganges Harbour area and the report is available online. There was question regarding whether the report includes a feasibility analysis. It was noted the report does not address feasibility and it may be useful to refer the report for CEWG review and comment.

**By general consent**, the Salt Spring Island Watershed Protection Authority agreed Coordinator Cowan would circulate the CRD report regarding Ganges Wastewater to SSIWPA members.

#### **4.9 Budget**

##### **4.9.1 Year End Report 2016-17**

Coordinator Cowan presented the SSIWPA Year End Report 2016-17 to March 31, 2017. It was noted there is a surplus that could be used for an existing SSIWPA program. If SSIWPA would like to use the surplus for a new program, it would need SSI Local Trust Committee approval.

#### 4.9.2 Budget for IWM Workplan Tasks - Draft

Coordinator Cowan presented the Draft SSIWPA Budget for IWM Workplan Tasks.

#### 4.9.3 Budget Categorization for IWM Workplan Tasks - Draft

Coordinator Cowan presented the Working budget – SSIWPA Integrated Watershed Management Program.

Planner Starke reported that the existing referendum funds can be used for coordinating the work of the member agencies of SSIWPA, and cannot be used for assisting the work of the agencies. There was question regarding (1) whether the matching cash needs to be “cash” or can be “in kind”; (2) whether FLNRO can administer a REFBC grant.

**By general consent,** the Salt Spring Island Watershed Protection Authority agreed Planner Starke would discuss funding options with Islands Trust Local Planning Services.

### 4.10 Scope of Work Memos for Approval

#### 4.10.1 IWM Task 5a “Wells Inventory - Phase 1”

Coordinator Cowan presented a memorandum dated April 24, 2017 regarding the Work scope for Objective 1: safe supply from groundwater – Wells Inventory Task 5a.

There was question regarding (1) whether the \$12,000 required cash in the Task 5a draft budget could fall within the constituency fund (2) whether the CRD could provide funding for this project and (3) what are the management responsibilities for the activity.

Planner Starke reported the constituency fund could be used for this project. It was noted the wells monitoring program is not a time sensitive program and the groundwater monitoring estimated cash cost is \$3,060.00 per well.

**By general consent,** the Salt Spring Island Watershed Protection Authority agreed to approve the Integrated Watershed Management Task 5a “Wells Inventory - Phase 1” Scope of Work as presented, subject to the acquisition of funding.

#### 4.10.2 IWM Task 5b “Well Monitoring Program”

Coordinator Cowan presented a memorandum dated April 24, 2017 regarding IWM Task 5b “Well Monitoring Program”.

**By general consent**, the Salt Spring Island Watershed Protection Authority agreed to approve the Integrated Watershed Management Task 5b “Well Monitoring Program” as presented, subject to acquisition of funding.

**By general consent**, the Salt Spring Island Watershed Protection Authority agreed Coordinator Cowan would proceed with drafting the content of the REFBC grant for IWM Task 5b.

#### **4.11 TWG Terms of Reference**

Coordinator Cowan presented the TWG Terms of Reference and reported the document is out of date.

**By general consent**, the Salt Spring Island Watershed Protection Authority agreed Coordinator Cowan and Chair Grams would update the TWG Terms of Reference.

#### **4.12 SSIWPA Materials, Outreach products for approval**

##### 4.11.1 IWM Project Charter Updated Version for approval

**By general consent**, the Salt Spring Island Watershed Protection Authority agreed to approve the IWM Project Charter Updated Version and the document will be posted to the SSIWPA website.

##### 4.11.2 Best Management Practices Draft version 2

The draft Living With Water: Information Links to Policy, Regulations and Best Practices for Water Resource Stewardship on Salt Spring Island was presented. It was noted this could be a resource to be distributed for new property owners.

**By general consent**, the Salt Spring Island Watershed Protection Authority agreed to add the “Living With Water: Information Links to Policy, Regulations and Best Practices for Water Resource Stewardship on Salt Spring Island” to the SSIWPA website and to refer the document to the CEWG to explore how to integrate the information.

##### 4.11.3 IWM Workplan (public) Final

The IWM Workplan (public) was presented.

#### **4.13 Correspondence**

##### 4.13.1 Letter to Steering Committee from Lorrie Hunt in his capacity as Water Council Treasurer

The correspondence was received. Chair Grams reported the Salt

Spring Island Watershed Protection Authority is not authorized to cover the expense.

**4.14 Events and Announcements**

- 4.14.1 Well Owner Workshop - Friday, June 30, 2017 – the Hart Bradley Hall 10:00 to 12:30 p.m.
- 4.14.2 Islands Trust posts Senior Freshwater Specialist Position

Chair Grams reported the Islands Trust posts Senior Freshwater Specialist Position is posted on the website and in the Watermark Newsletter. The application deadline is May 25, 2017.

**5. OTHER BUSINESS**

**5.1 Questions and Comments from Public**

One member of the public (1) asked for clarification regarding the CEWG technology categories (municipal, agricultural, industrial/commercial, residential) and whether the categories collectively represent the total water consumption on Salt Spring Island and (2) commented that realtors are the front line entry point for people coming to and leaving Salt Spring Island and this information needs to be in realtors hands so that people who are considering living on Salt Spring Island do not pay the price of not knowing the information regarding water.

**6. NEXT MEETING**

The next regular meeting is scheduled for Friday, June 16, 2017 at 10:30 a.m. to 12:30 p.m. at the School District 64 Boardroom Portable, 112 Rainbow Road.

**7. ADJOURNMENT**

**By general consent** the meeting adjourned at p 12:22 p.m.

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George Grams, Chair

**CERTIFIED CORRECT:**

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Sarah Shugar, Recorder



## **Coordinator's Report**

**For the period: May 13 – June 16, 2017**

### **Meeting Admin:**

- Created agenda for steering committee meeting June 23, 2017
- Draft May 19/17 minutes received from minute-taker, edited and circulated revised minutes (draft) to Steering Committee
- Adopted steering committee minutes for April 21, 2017 created and sent for signature
- Facilitated, created and circulated agendas, and recorded TWG quarterly meeting June 13
- Draft minutes of quarterly TWG June 13, 2017 created and circulated
- Coordinated rescheduling and changed meeting venue booking for TWG quarterly from May 30, 2017 to June 13, 2017 at request of TWG members

### **Project Management/Facilitation:**

#### ***Integrated Water Management Program***

- Correspondence with water service area “community wells” (ongoing)
  - Interview complete and data shared (Reginald Hill, Scott Point, Maracaibo, Mt. Belcher, Merchant Mews, Swan Point)
  - Agreed to share, but interview, signed agreement form or data still outstanding (Erskine Water Board, Harbour View, High Hill)
- Stream Monitoring
  - Data from notebook to excel
  - coordinated volunteers for stream monitoring data collection
  - received photo data by volunteers, archived
  - tracking equipment in stream locations, communications with landowners (2)
  - Organize second visit by FLNRO staff with TWG members

- Coordinating and networking for AGRI's ALUI and AWDM
  - on behalf of Member Masselink: seeking accommodation and driver/navigators for July ALUI; sourced contact list for current farmers
- 5-19-2017 Action 4.10.2 REFBC Grant Application (in process)
  - writing of grant application draft, with S Barroso (TWG) (in process)
  - determine potential for FLNRO or MOE or both to administer portions of the funding for the two projects Inventory and Monitoring
- coordinating action 5-19-2017 4.9 Planner Starke would discuss funding options with Islands Trust Local Planning Services.
- 5-19-2017 Action 4.11 Revise TWG Terms of ref (in process) (w Chair Grams)
- 5-19-2017 action 4.8 COMPLETED. Ganges Wastewater Report by CRD circulated to SSIWPA (Due May 22, 2017)
- IWM Project Charter updated version placed on SSIWPA website
- Internal correspondence – SSIWPA member agencies:
  - Met with NSSWD and IT Planning Staff May 19, 2017
    - Meeting notes drafted and follow up
  - CRD matching funds
  - FLNRO REFBC and project management for groundwater IWM task items

### ***Budget***

- Ongoing revisions to versions of budget for IWM program costs for project charter with Local Trust Committee, and REFBC grant development
- Correspondence with CRD staff about matching funds for 2018 fiscal in REFBC budget.

### ***Conservation and Efficiency Working Group Projects Coordination***

- RRU project (Royal Roads) weekly correspondence
- CEWG informal meeting agendas, notes, facilitation
- Assisted with inaccessible research article procurement
- Assisted with document revision and consensus for Scope of Work proposals to steering committee

### ***Technical Working Group Projects Coordination***

- Assisted with access to research articles and documents from library sources, document printing and delivery liaison

- printed and delivered for TWG member (4 papers)
- Coordinate TWG response to Weijs review (in process)
- ACTION 5-19-17 item 4.7: COMPLETED. Correspondence with affordable housing projects about well driller's records (providing information requested by TWG co-Chair Hodgins for this action item)

### ***Outreach and Educational Event Planning and Coordination***

- 5-19-2017 4.11.1 – IWMP charter update version posted to web
- 5-19-2017 4.11.2 a – in process (adding the BMP Links to website)
- Rainwater tour invitations: (letter writing in process)
- Follow up on queries by member of public informally regarding ability for watershed regulations/local government to regulate land clearing activities. Gained clarification of limits of Local Trust Committee from IT staff re: ability to regulate harvesting of native timber by landowners. (Tree cutting bylaw not within jurisdiction of LTC under parts of Local Gov Act that apply to Islands Trust LTC, DPA tools are feasible)
- FN outreach (in process)
- 4.11.2b - Referred Information and BMP links document to the CEWG
- June 30<sup>th</sup> well workshop promotion (newsletter, emails)
- Liaised with Serena Klaver, Trust office, re Market in the Park (ongoing)
- responded to inquiry about SSIWPA funding by Regional District of Kootenay Boundary
- Public workplan laminated and printed for outreach use
- reading water e-news by Partnerships for Water Sustainability BC, POLIS, etc.
- responded to query about water resources and mapping in Ruckle Park by member of the public

### ***Watermark newsletter***

- Edited June template and added links of interest, agenda links and referred to news posts about topics in content
- Sent June watermark (date of send Jun 19)

### ***Website:***

- rebuild: steering minutes from past years added  
(in process work items)

update the faqs misc page, set new BMPs and links page and populate, plugin research...

# **SSIWPA Integrated Water Management Program Workplan**

## **Scope of Work Memoranda**

### **Tasks**

**8 - Assessment of technologies  
and alternatives for water conservation and efficiency**

**8a - Rain harvesting alternatives**

**8b - Reclaimed water feasibility**

**Presented to Steering Committee**

**by Conservation and Efficiency Working Group  
June 13, 2017**

## WORK SCOPE MEMORANDUM TASK 8

To: SSIWPA, Steering Committee  
 Date: May 17<sup>th</sup>, 2017  
 Subject: Work scope – Objective 3; List and compare technologies  
 Project: SSIWPA CEWG, IWM Work Plan Task 8  
 Submitted by: SSIWPA Contact: Shannon Cowan CEWG Contact: Sandra Ungerson

### **List and compare technologies and techniques for water conservation and efficiency**

**Purpose:** Develop a resource scoping document that has considered technological innovations and methods suitable for Salt Spring Island, and which lists and compares technologies and techniques for improving water conservation and efficiency.

**Reason:** This is a structured assessment of the state of the technology for water conservation and efficiency. The intended audience is the Salt Spring Island Watershed Protection Authority and its member agencies. The steps listed in this Task area will lead to outcomes for the SSIWPA Integrated Water Management Program, to meet some of the IWM Program Charter Conservation and Efficiency objectives.

**Scope of Work:** This project will be jointly managed by the project lead and the SSIWPA Coordinator. Data gathering will be done by the member(s) assigned to the specific tasks. Project leads will report to the CEWG subcommittee on a regular basis and a final report will be submitted to the Steering Committee for review. In detail, Task 8 will include the following steps:

1. Make an exhaustive list of technologies by category: (Appendix A)
2. Develop screening tools, categories and criteria for cost comparison. (Completed. See steps, below.)<sup>1</sup>
3. Develop a comprehensive list of relevant terminology definitions and references (ongoing).
4. Develop broad list of general technologies and alternatives within categories agreed by CEWG.
  - a. Get CEWG agreement on general list
  - b. Perform basic Strengths, Weaknesses, Opportunities and Threats (S.W.O.T.) analysis on the broad list of technology types.
  - c. Develop refined list of specific technologies.

The categories have been determined to be: Municipal, Agriculture, Industrial & Commercial, Residential.

Municipal	Agriculture	Industrial & Commercial	Residential
District level	See table below	High water consumption	Single family
Civic buildings		Normal water consumption	
Parks & Recreation		High environmental impacts (construction)	Home based business
Emergency Response		Minimal water use impacts	

<sup>1</sup> Categories are the same as those described in Work Scope Memo to Steering Committee for IWM Workplan Task 8a “Research and Report on Rain-harvesting Alternatives”

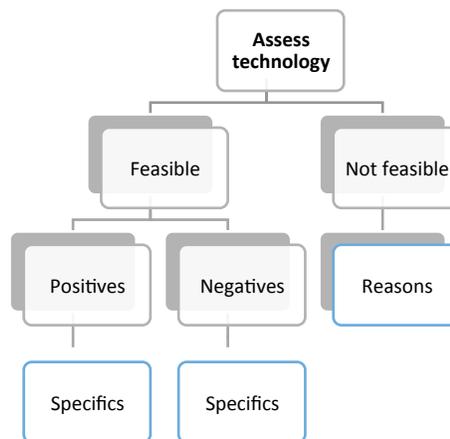
Refer to Appendix A specific technologies to be considered.

**Table 1 Agricultural detail**

ProductionTypes	Technologies	Management	Conservation & Efficiencies
<ul style="list-style-type: none"> <li>•Vegetables</li> <li>•Small Fruits &amp; Berries</li> <li>•Tree Fruits &amp; Nuts</li> <li>•Forage Crops</li> <li>•Field Crops</li> <li>•Vine Crops</li> <li>•Livestock</li> <li>•Greenhouses &amp; Nurseries</li> </ul>	<ul style="list-style-type: none"> <li>•Irrigation (flood, spray, drip)</li> <li>•Storage - (ground&amp; surface)</li> <li>•Monitoring (moisture and weather)</li> </ul>	<ul style="list-style-type: none"> <li>•Crop Mulch</li> <li>•Lo Till</li> <li>•No Till</li> <li>•Keyline</li> </ul>	<ul style="list-style-type: none"> <li>•0-15% Low</li> <li>•16-29% Low</li> <li>•30-50% Low</li> <li>•51-60% MHigh</li> <li>•61-70% MHigh</li> <li>•71-90% High</li> <li>•91%+ V High</li> </ul>

5. Compile a summary of strengths, weaknesses, and opportunities for the screened technologies.
  
6. Compare technology selected against demonstrated international best practices including, but not limited to: ISO (International Standards); ICC (International Code Council); CSA (Canadian Standards Association); definitions, standards, best practices or limits published by government agencies, such as: B.C. government, Health Canada, Water Research Australia, U.S. Environmental Protection Agency (EPA), U. S. Geological Services (USGS), commonwealth government’s cooperative research centre programme –Cooperative Research Centre for Water Sensitive Cities (watersensitivecities.org.au), and others; non-governmental technical associations like ARCSA (American Rainwater Catchment Association), CWQA (Canadian Water Quality Association), CEBR assessment tool (Centre for Economic and Business Research), and similar bodies.
  
7. Review technological practice against British Columbia regulations (including the building code and plumbing code) and health standards (Health Canada, 2017).

*Figure 1 Technology Best Practice & Compliance Assessment Tool*



8. Cost comparison step for each of the technologies on the refined list:

Price to produce 1 m <sup>2</sup> of finished water	Annualized cost to operate	Water conservation achieved over life of the technology	Ranking
\$			Hi
\$			Lo

9. Prepare a report on results of above steps, and recommendations from the working group to steering committee.

**CEWG Internal Timeline for Deliverables:**

Step #	Description	Date	Responsibility
1	List of Technologies – presented to CEWG	May 19, 2017	Sandra
4, 8	List of Categories and Cost Criteria – agreed by CEWG	May 26, 2017	CEWG
4b. and 5.	Assessment Matrix prepared and completed – presented to CEWG	July 15, 2017	CEWG
	Present Scope of Work to SSIWPA	June 23, 2017	Sandra
	Complete remaining steps	June and July, 2017	CEWG
	Preliminary Report – presented to CEWG	July 30, 2017	CEWG
	<b>Preliminary report on most suitable, assessed technologies for water conservation to Steering Committee</b>	September 15, 2017	CEWG - Chair
	Final Report – presented to CEWG	October 1, 2017	Sandra, Coordinator
	Final Report – presented to SSIWPA <b>Final report on suitable technologies to Steering Committee</b>	November 24, 2017	CEWG - Chair

**Resources Required: Cash request \$370.00**

Labour – Sandra (Agricultural water technologies will be screen by Rob Kline)

Labour Cost – \$0

Equipment Rental – \$200 – reference material online access and/or library fees

Computer support – \$0 (SSIWPA coordinator, other working group members)

Data requirements – survey results from RRU, data from the groundwater and surface water districts on Salt Spring Island (Tasks 4b, 4c, and 5c).

Expenses – printing (\$70) & travel (RRU final presentation for two people - August, 2017) – \$100.00

**CEWG Task Manager:** Sandra Ungerson, [AloPluvia.info@gmail.com](mailto:AloPluvia.info@gmail.com)

**Time Frame:** March – November 2017

## APPENDIX A

### Preliminary broad list of water conservation and efficiency technologies and alternatives, categorized by source:

1. Atmospheric Moisture Technologies
  - Rainwater harvesting, including dual piping, potable and non-potable
  - Stormwater Collection including drainage transitioning into a whole water cycle management system
  - Fog Collection
  
2. Surface Water Technologies
  - Agricultural water conservation practices
  - Industrial and Commercial Water Conservation Practices
  - Construction Technologies and techniques that save water resources, green building techniques according to the Canadian LEED standards and the Green Building Council
  - Residential technology including plumbing devices
  - LID (Low Impact Development) Techniques and green technology specifically rain gardens, ponds, wetlands, natural infrastructure and recognized Integrated Water Management Techniques
  
3. Reclaimed Water Alternatives
  - For re-use of existing effluent from the Ganges Wastewater Treatment Plant
  - For re-use of drinking-water quality effluent from the Ganges Wastewater Treatment Plant (which would only be possible if CRD were to perform upgrades to wastewater treatment that would result in standards of effluent water quality higher than tertiary stage treatment).
  
4. Process Water Technologies
  - Water Treatment Techniques, specifically Bio Treatment, nutrient recovery and water quality improvement techniques and sewage optimization & management techniques
  - Desalination
  
5. Ground Water Technologies
  - Water volume and storage alternatives not covered elsewhere (well stimulation, fracking, dams, centralized infrastructure)
  - Decentralized Green Infrastructure, specifically Green Roofs and Permeable Pavement
  - Landscaping & Xeriscaping with soil and moisture management technologies, evaporation and evapotranspiration mitigation management techniques
  - Bottled/Trucked Water

The broad list will be refined further after SWOT analysis, according to feasibility under the following best practices and standard measures:

- a. ARCSA/ASPE/ANSI 63-2013,
- b. ARCSA/ASPE/ANSI 78-2015,
- c. Lifecycle Costing<sup>2</sup>,
- d. Best Practice Tools such as Publication 1571 Guideline by Environmental Protection Authority in Victoria, South Australia
- e. Canadian Green Building Council.

In addition, Canadian regulations and guidelines will be considered when identifying suitable techniques including but not limited to Federal, Provincial and Municipal Acts and related Regulations, Canadian Standards Association, Health Canada.

## References

- BC Assessment. (2016). *Farm Classification in British Columbia*. BC Assessment.
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## WORK SCOPE MEMORANDUM TASK 8A

To: SSIWPA, Steering Committee  
 Date: June 7th, 2017  
 Subject: Work scope – Objective 3; Research and Report on Rain-harvesting Alternatives  
 Project: SSIWPA CEWG, Integrated Water Management Program Work Plan Task 8a  
 Submitted by: SSIWPA Contact: Shannon Cowan CEWG Contact: Sandra Ungerson

### Research and Report on Rain-harvesting Alternatives

**Purpose:** Develop a document that considers existing technological innovations and methods suitable for Salt Spring Island, and in place at this time, which have potential to improve water resource conservation and efficiency utilizing rainwater..

**Reason.** Rainwater harvesting and utilization practices are currently taking place on Salt Spring Island. There is little information or analysis of the scope and success of such techniques and practices The intended audience is the Salt Spring Island Watershed Protection Authority and its member agencies. The steps listed in this Task area will lead to outcomes for the SSIWPA Integrated Water Management Program, to meet objective 3 of the IWM Program Charter.

**Scope of Work:** This project will be jointly managed by the SSIWPA Coordinator, Royal Roads University (RRU) students (using the company pseudonym “Dromedary Environmental”) and the CEWG. The project data gathering and analysis (steps 1 – 8 inclusive below, as time allows) will be done by the RRU student group.. Royal Roads students will report to the CEWG on a regular basis and a final report will be submitted to the Steering Committee..

**Steps:**

1. Develop and electronic survey that will ask participants specific questions about their existing utilization of rainwater on Salt Spring Island. (Completed, survey in progress.)
2. Uses will be broken down into the following categories:

*Table 1- Rainwater User Categories*

Municipal	Agriculture	Industrial & Commercial	Residential
Schools , Hospital, Clinics	All uses	High water consumption	Single family
Civic buildings		Normal water consumption	Multi-Family Small Tourist Resort
Parks & Recreation		High environmental impacts (construction)	Home based business (bed & breakfast)
Emergency Response		Minimal water use impacts	

3. Once the data is obtained, selected projects will be identified to develop case studies. The criteria will include having an existing operational system, water augmentation with groundwater, surface water and knowingly stressed sources of water.
  - a. A number of case studies will be determined by the RRU group, and the results will be assessed by CEWG in August and September, 2017 to determine if there are data gaps in the case studies completed that require more assessment through further study, after the RRU final report. (RRU, in process)

- b. Filling data gaps in the categories (Step #2) to complete other case studies across all categories of user type on the island. (Sandra, fall 2017)
4. The report will consider nine case studies, distributed across the categories noted in Table 1.
5. Data collected will include participant examples, quantity of rainwater harvested, uses for the rainwater and the average consumption of that rainwater based on the end-use. The students will also look at the breakout of water consumed between ground, surface, water utility and rainwater.
6. Questions to be asked include: How effective are the systems? Are there opportunities to expand the use of rainwater? Are there barriers or options to consider for expanding the rainwater collection? Would incentives help? If so what kind of incentives?
7. Identify the theoretical optimal rainwater harvesting system for each system considered in the case studies. Criteria will be developed that assess the success of case studies. Does anyone currently optimize their rainwater harvesting? If so how?
8. Compare installations against demonstrated international best practices noted in ARCSA/ASPE/ANSI Technical Standard 63. ARCSA (American Rainwater Catchment Association), CWQA (Canadian Water Quality Association), and CANARM (Canadian Association for Rainwater Management).
9. Review case studies for compliance with British Columbia building code and plumbing code) and health standards (Health Canada, 2017).

**CEWG Internal Timeline for Deliverables:**

#	Description	Date	Responsibility
	RRU Project proposal – presented to CEWG, SSIWPA	March, 2017 (Complete)	RRU
	Survey – presented to CEWG, SSIWPA, disseminated to public on SSI	May 1 – June 20, 2017 (in process)	RRU
	Present completed Scope to SSIWPA	May 19, 2017 (complete, in writing May 25, 2017)	Sandra
	RRU Final Report and Presentation – presented to RRU supervisors, CEWG and SSIWPA delegates	August 28, 2017	RRU
	Royal Roads findings will be integrated with Task 8 Final Report	October 1, 2017	CEWG all

**The final deliverable will be presented to Steering Committee in October, 2017.**

**Resources Required:**

Labour – Sandra, Coordinator – data and information support to RRU students

Labour Cost – 0\$ Volunteer

Data requirements – survey results from RRU, data from the water districts on Salt Spring Island and data from TWG.

Expenses – RRU budget was already approved by SSIWPA Steering Committee in February 17, 2017 meeting (~\$700 from Community Events and Communications budget category). There is no other expense associated with CEWG work on this Work Scope Task 8a.

**CEWG Task Manager:** Sandra Ungerson, [AloPluvia.info@gmail.com](mailto:AloPluvia.info@gmail.com)

**Time Frame:** February – November 2017

## APPENDIX A

### Project Terms of Reference: Assessment of Water Supply and Demand Opportunities to Optimize Rainwater Use, on Salt Spring Island, B.C.

Dromedary Environmental

Kendra Anderson, Angela LeBlanc, Charlene Lloyd, Derek Wilcox,

Faculty Advisor: Mickie Noble

Sponsor: Shannon Cowan, Salt Spring Island Watershed Protection Authority

#### Introduction

Dromedary Environmental is a student research group working with the Salt Spring Island Watershed Protection Authority (SSIWPA). SSIWPA is an ensemble of representatives from government and local stakeholders. They are leading an initiative to manage freshwater resources, assess water conservation strategies, and explore alternative water sources such as rainwater harvesting.

The project will be focused on conducting an electronic survey to determine rainwater harvesting and usage for year-round occupants of residential and commercial properties across water districts on Salt Spring Island (SSI). Case studies will be developed based on example properties in three of the eight scenarios. Scenarios include: bed & breakfast operations, small resorts, medium sized single family dwellings, multi-family dwellings, small business that require above average water supplies, civic buildings, hospital/clinics, and schools. Properties for case studies will have existing rainwater harvesting systems and come from one of three water sources: groundwater, surface water and 'knowingly stressed' sources, as stated by SSIWPA. Survey and case study data can then be used to further identify successes in existing rainwater harvesting practices, or downfalls and barriers that can be improved. Survey respondents will provide a pool from which case study participants will be recruited. SSIWPA will provide Dromedary Environmental with a list of potential study participants to approach and to invite directly to participate.

Salt Spring Islanders are accustomed to conserving water due to the sub-Mediterranean climate experiencing regular summer droughts (Green, van Vliet, & Kenney, 1989). Rainwater harvesting is an important alternative source to relieve groundwater demand, especially with regular and occasionally more severe droughts (Barron, 2009). SSIWPA has stated that existing volumes stored through rainwater harvesting are insufficient to support the water requirements for the remainder of the year. SSI receives 80% of its total rainfall between October 1st and March 31st, leaving six months of relatively dry weather to ration water collected during the rainy season (The Weather Network, 2017). Dromedary Environmental will investigate current rainwater harvesting practices on SSI for comparison to an optimal rainwater system. Optimal rainwater systems collect and store volumes sufficient to offset conventional water consumption and/or capture maximum rainfall. Storage methods can include cisterns, ponds, rain barrels, etc. Conventional water is supplied through groundwater, municipal water, and surface water sources. Dromedary Environmental believes there are many opportunities to expand and improve rainwater harvesting and use on SSI.

#### Objectives and Research Questions

The following objectives and guiding research questions will govern the project for its duration. Objectives will be completed to provide SSIWPA with data to guide water related decisions. Nine case studies evenly distributed among three scenarios will be performed through site visits to benefit SSI as a whole.

Objective 1: Conduct a survey of SSI residents and businesses to compile rainwater harvesting information, which will be used by SSIWPA to guide further decision making. Information will include, but is not limited to: water usage, collection system details, the amount of rainwater harvested and its uses, and any other relevant information. Research questions relating to objective 1:

- What local examples of rainwater harvesting exist on SSI?
- What quantity of rainwater is harvested on SSI?
- What is this harvested rainwater used for?
- Based on survey response from year-round users, what is the average water consumption in each scenario?
- What balance for water use exists between rainwater harvesting techniques and conventional water sources (groundwater, municipal water supply, and surface water)?
- For each scenario, how much rainwater can be acquired in a typical year?

Objective 2: For three scenarios, develop case studies based on information provided by property owners currently harvesting rainwater. Make comparisons between groundwater, surface water or 'knowingly stressed' water sources. Scenarios include: bed & breakfast operations, small resorts, medium sized single family dwellings, multi-family dwellings, small business that require above average water supplies, civic buildings, hospital/clinics, and schools. Survey response will dictate which properties are selected to be involved in case studies. Research questions relating to objective 2:

- How effective are current systems and what barriers are preventing more efficient use of current systems?
- What opportunities exist for improvements regarding new rainwater harvesting systems and more efficient use of existing infrastructure?
- What options exist to overcome barriers to rainwater harvesting?
- How might incentives engage the community and its members to increase rainwater harvesting?

Objective 3: Define a theoretically optimal rainwater harvesting system that applies to each of the case studies representing three scenarios. Research questions relating to objective 3:

- Which rainwater harvesting and use systems have optimal storage and collection options that meet the defined needs of each scenario?

Results may vary depending on survey response, and case studies will be developed based on survey participants' willingness to be further involved.

#### Approach and Methodology

Based on the nature of this project, Dromedary Environmental will focus on conducting a survey to gather information on existing rainwater harvesting systems and use. Convenience sampling will be used to select survey recipients, and survey response will be dependent upon willingness to participate. Criterion-based selection will be used to determine case study participants based on presence of existing rainwater harvesting systems and the type of conventional water source used (groundwater, surface water, knowingly stressed). To encourage maximum participation, a free inspection and consultation by Sandra Ungerson (Conservation and Efficiency Working Group Chairperson) will be offered to one random participant. The survey will be distributed electronically, and case studies will be selected based on response, as stated

above. An ethical review by Royal Roads University is required because interviews and a survey will be conducted.

Objective 1: Conduct a survey of SSI residents and businesses to compile rainwater harvesting information, which will be used by SSIWPA to guide further decision making.

- Contact the Chamber of Commerce, Tourist Information Centre, on-island agencies, and other civic centers to obtain a list of scenario contacts. These properties will be contacted and a survey will be delivered electronically.
- Create an online survey and distribute for all scenario properties.
- Use water consumption data from billing records, survey results, and user knowledge to determine conventional water use compared to use of rainwater.
- Analyze survey results to define current rainwater harvesting systems, determine water usage, understand behaviors around water use and conservation, and identify what barriers are the most influential.

Objective 2: Perform case studies for property owners currently harvesting rainwater, to make comparisons between groundwater, surface water or 'knowingly stressed' water sources.

- Investigate examples of current residential and commercial systems on SSI to illustrate the feasibility and efficiency of rainwater harvesting systems.
- Develop a more in-depth understanding on how conservation, barriers, and incentives affects decision making.
- Identify barriers and further opportunities for rainwater harvesting on SSI.

Objective 3: Define a theoretically ideal rainwater harvesting system that can be compared to each of the eight scenarios.

- Use rain gauge data, recent local precipitation, and historic climate data from Environment Canada and other such sources, to calculate average rainfall for different regions across SSI.
- Research a theoretically optimal system for rainwater harvesting and use in typical scenarios by contacting companies specific to the island, industry professionals, and through general research.

#### Expectations and Request for Approval

To allow the completion of all objectives as well as deliverables, Dromedary Environmental requests a timely response to questions posed to SSIWPA, most commonly via email. The main expectation of SSIWPA is to provide historic data and guidance to ensure work that has been previously completed can be built upon and not repeated.

Deliverables to sponsor include a final report submitted by email, video copy of interim and final presentations, survey data and recommendations based off gathered results.

## Draft Scoping M E M O R A N D U M Task 8b

To: SSIWPA, Steering Committee  
Date: June 7, 2017  
Subject: Work scope – reclaimed water feasibility  
Project: SSIWPA CEWG, Task 8b in IWM Work Plan  
Submitted by: CEWG

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**Purpose:** To flesh out the technical, economic and social feasibility of reclaiming wastewater from the Ganges Waste Water Treatment Plant.

**Method:** The method is mainly to reference jurisdictions where wastewater reclamation techniques are already in place.

**Problem Statement:** If reclamation of Ganges Wastewater Treatment Plant outflow is a viable option for use on Salt Spring Island, then what barriers and opportunities are likely to emerge?

**Scope of Work:** An assessment of the feasibility and potential for reuse of Ganges Waste Water Treatment Plant effluent.

Proposed steps in the assessment:

1. A literature review to confirm technical feasibility of direct to potable and indirect to potable experiences at large-scale, long-established commissioned projects.
2. A more refined literature review will evaluate economic feasibility of small to medium scale direct and indirect-to-potable wastewater reclamation projects. In order to account for the future value of engineering works, the focus will be on recently commissioned projects.<sup>1</sup>
3. Develop an assessment tool to evaluate economic feasibility of these types of civic-scale projects in relation to other drinking water, alternative technologies like, conservation techniques, rainwater collection, and drilling a water well. The intent of the assessment tool is to screen a variety of sources with reasonably accurate estimates of the cost to produce or conserve an additional cubic metre of drinking water.
4. A literature review of the social factors required to achieve sufficient public acceptance of reclaimed wastewater. The focus is to determine what other jurisdictions learned about achieving public acceptance of direct and indirect-to-potable for reuse as drinking water.
5. Who wants how much of each type; potable and non-potable? Using techniques of environmental economics, explore theoretical demand for two potential reclaimed water qualities on Salt Spring Island; Potable and non-potable.

The deliverables are a short report to address each step. After the 5 steps are complete, recommendation(s) may be appropriate.

Budget needs:

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<sup>1</sup> The recent May 17, 2017 CRD Staff Report “Subject: Reuse of Salt Spring Island Ganges Wastewater Treatment Plant Effluent to Supplement St. Mary Lake Water Levels” will be considered in this step.

- Access to academic journal articles should continue as previously without cost to CEWG or, SSIWPA.

**CEWG Task Manager:** Ian Peace, [airtime@agt.net](mailto:airtime@agt.net)

**Time frame for delivery to CEWG:** Completed by July 31, 2017.

CEWG will consider the results of this Project area “8b” in July, 2017, with intent to integrate the findings into the overall Task 8, and to report out to Steering Committee by the fall, 2017.



## Salt Spring Island Watershed Protection Authority TECHNICAL WORKING GROUP TERMS OF REFERENCE

Adopted August 29, 2013  
Amended March 3, 2014  
Amended February 2, 2015  
Amended September 14, 2015  
Amended January 29, 2016

**Draft Proposed Amendments December 8, 2016**  
**Coordinator suggestions May 30, 2017**

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### Background

The Salt Spring Island Watershed Protection Authority (SSIWPA) was created in 2012 to provide a coordinated approach to watershed management and the protection of fresh water resources on Salt Spring Island. SSIWPA is comprised of agencies and government organizations with responsibility and authority for the use and management of the water and the watershed.

SSIWPA identified the need for a Technical Working Group (TWG) to assist by providing SSIWPA with objective assessment of scientific research to date, identifying information gaps, researching solutions, and making recommendations of a technical nature to SSIWPA. The SSIWPA is responsible for governing the process and making decisions about contracting, work planning, and milestones.

These Terms of Reference (ToR) outline the roles and responsibilities of the Technical Working Group for the Salt Spring Island Watershed Protection Authority.

Please refer to the Terms of Reference for the Salt Spring Island Watershed Protection Authority. The TWG ToR may be amended by the SSIWPA **Steering Committee (SC)** if required by changes to scope of work, membership, timeline, or other matters.

### Purpose

The purpose of the TWG is to provide balanced and science-based, technical advice to the SSIWPA, and through it, to its member agencies. The advice of the TWG is to be impartial and objective, drawing on collective expertise to identify watershed issues and to develop workable solutions that reflect the best available science, innovative technologies and consensus approaches.

### Mission

[www.ssiwatersheds.ca](http://www.ssiwatersheds.ca)

c/o SSI Islands Trust ~ 1-500- Lower Ganges Road, Salt Spring Island V8K 2N8

Coordinator Shannon Cowan [ssiwpacoord@gmail.com](mailto:ssiwpacoord@gmail.com) 250-537-4847

The TWG exists to provide science-based, technical advice about water and watershed science to the SSIWPA, and through it, to its member agencies. It aims to be a trusted source of scientific expertise and knowledge on Salt Spring Island for sustainable watershed management and source water quality and quantity assessment. As directed by SSIWPA Steering Committee, TWG may be called on to generate and analyze scientific data, and/or to peer review existing technical information.

## Objectives

The TWG's approach is to be science based. The following tasks are among its duties:

1. To assemble and collate existing information and data on causes of the deterioration of source water quality in general, and in Salt Spring Island's drinking water sources in particular.
2. To identify critical information gaps and fill them. **(This is a source of conflict at steering level)**
3. To assess priorities for watershed projects/programs according to technical rationale.
4. To advise on the technical costs, benefits and timetables for water management/remediation projects.
5. To advise on stewardship practices to protect water quality, quantity and other interests, including seasonal flow or contamination issues.
6. To advise on technical aspects of existing or proposed water-related legislation and policies.
7. To integrate **(May not be TWG role to integrate or to implement – suggest wording could be “Review” or “Evaluate”)** research that supports watershed management recommendations including:
  - a. Proposals to remediate surface water quality and address root causes of watershed ecosystem decline;
  - b. Needs assessment for fisheries, wildlife and other environmental resources;
  - c. Reported ecological limits of surface water and ground water watersheds;
  - d. Emerging research on climate change impacts;
  - e. New technologies and approaches;
8. To assess the value of programs and other implementation tools that conserve or enhance water quality and supply.
9. To submit to SSIWPA as directed, position papers, briefing notes or verbal presentations.
10. To make its reports and its recommendations available to SSIWPA and to the community by means of a digital online library, to be contained within the SSIWPA web site.
11. Changes to these Terms of Reference or to the TWG's scope of work, membership, timeline, or other matters may be made by SSIWPA as it considers appropriate.

## Scope and Geographical Areas

Initially, the work of the TWG was peer review, and updating the St. Mary Lake Watershed Management Plan (Schedule A), focusing on a robust assessment of actions that will serve to remediate the raw water and on the protection of the St. Mary Lake watershed. Review of Cusheon Watershed Management Plan (2007), and new recommendations, was added in 2015-16 (Schedule B). In 2017 with an approved Integrated Water Management Program workplan, SSIWPA added new project task areas to the TWG scope of work (Schedule C).

## Membership

SSIWPA TWG membership will be comprised of not more than nine members at any time. Membership will be determined by consensus of the SSIWPA, in consultation with each member organization.

Member appointed by SSIWPA will have experience or expertise in one or more of the following areas:

- Limnology
- Aquatic Biology
- Soil science
- Environmental Restoration
- Environmental Science
- Hydrology
- Chemistry
- Toxicology
- Watershed protection
- Water resources Engineering
- Civil Engineering
- Mathematics
- Environmental Engineering

As positions become available, invitations to apply will be extended, but not limited, to representatives from Environment Canada, Fisheries and Oceans Canada, Provincial Ministry of Environment, Ministry of Forest, Lands, and Natural Resource Operations, Capital Regional District, Vancouver Island Health Authority, North Salt Spring Waterworks District, Salt Spring Island resident experts, and academic institutions.

Four of the members shall be appointed to terms of twelve months and three of the members shall be appointed for terms of two years, as specified by SSIWPA at the time of appointment. Thereafter, membership is for a two-year term, with the possibility of renewal.

Members are to serve without remuneration.

## Chair

At the initial meeting of the TWG, and then every 3 to 6 months, as determined by general consensus of the TWG, a Chair of the committee will be elected. The chair may serve additional terms, up to a maximum of six consecutive years. The chair is to serve without remuneration.

The Role of the TWG Chair is to include:

1. Liaise with the SSIWPA Steering Committee Chair, Coordinator and TWG members to set agenda topics.
2. Ensure distribution of TWG meeting notes to TWG members through the SSIWPA Coordinator.
3. Liaise with SSIWPA Coordinator, SSIWPA Steering Committee, and Islands Trust to effectively facilitate and coordinate the TWG.
4. Provide TWG progress reports in SSIWPA meetings, with TWG approval of messaging content.

SSIWPA Coordinator will act as facilitator and recorder for formal TWG meetings, unless otherwise arranged and agreed to by both SSIWPA Steering Committee and TWG. TWG Chair and Coordinator may agree to work together to facilitate TWG meetings, to better allow the TWG Chair to participate in the discussions and technical proposals. The SSIWPA Coordinator assists TWG with its group process functions within and outside of TWG regular meetings, to the extent that coordination resources allow.

## Guidelines for Decision-making

Decision-making is by consensus. Consensus is defined as agreement by each member, and is achieved through an iterative process: a) proposal, b) clarification and discussion stage, c) proposal modification (with assistance by those suggesting change; as necessary), and finally, d) agreement by consensus, or withdrawal of proposal, by consensus.

There are two levels of Consensus, Full and Working:

Full consensus – all representatives agree and support the decision;

Working consensus – not all members support the decision, but all can agree to respect the decision. Those standing aside note their reasons for the record.

Where Consensus is not reached on the first go-round, issues/proposals may be tabled at subsequent meetings of the TWG, but no more than three times for a single proposal/issue. If Consensus cannot be achieved at the third tabling, a majority and a minority opinion statement will be recorded in writing in the meeting notes. Every effort will be made to explore, understand and accommodate the interests of dissenting viewpoints.

## Meetings

TWG will hold public meetings a minimum of four times per calendar year. TWG Chair will report monthly on TWG progress and current activities in SSIWPA monthly meetings, which are open to the public. Some or all of the TWG members may meet informally to discuss science and technical matters, but not to make decisions or recommendations to SSIWPA, as frequently as required, at a location mutually agreed to by TWG committee members.

## Notice of Meetings and Minutes

Notice of the date, time and location of all **formal** TWG meetings will be posted by the Coordinator to the TWG and SSIWPA Steering Committee Chair by email, and will be posted publicly on the SSIWPA website. Agendas and **adopted** minutes will also be posted to the SSIWPA website under the TWG agendas and minutes page.

## Conduct

TWG members and observers will be expected to behave with due decorum. That is to say:

Meetings will be conducted with decorum, and generally follow Robert's Rules of Order as interpreted by the Chair and/or Facilitator;

Communications at all meetings will be respectful, considerate, honest, and issue-focused;

All viewpoints will be encouraged, respected, and considered;

Participants will make every effort to resolve issues at the table, and will avoid seeking alternative decisions outside this process;

Participants should have a common understanding of the mandate of SSIWPA and the TWG, and demonstrate mutual respect to other participants.

## Funding

It is anticipated that the representative agencies of the SSIWPA will contribute funding for a SSIWPA Coordinator, to work with the TWG, as well as the SSIWPA. As appropriate, the representative agencies

will also provide additional funding in support of agreed to initiatives for SSIWPA TWG, and in-kind administrative support like meeting rooms, communications, and secretarial services.

Other funding will be pursued opportunistically and as required.

It is anticipated that some of the work cited under “Objectives” will be accomplished by contractors.

## Conflict of Interest

TWG members must take a precautionary approach to ensure that issues of potential or perceived conflict of interest are clearly identified as part of the process.

## Publication Protocol

1. Raw data (from SSIWPA member agencies, from collaborators, and/or from any SSIWPA-TWG monitoring programs ) will be shared amongst all TWG members as they become available, as and if requested.
2. Raw data (SSIWPA-generated) will be logged and stored in hardcopy form and/or electronic form by the Program Manager, or working group members and will be delivered to SSIWPA Steering Committee at the end of the project, in the form of a deliverable for the specific SSIWPA monitoring program.
3. Raw data (generated by SSIWPA member agency or collaborating group or individual) will be stored in hardcopy and/or electronic form by the working group members who have permission to use it, and by the SSIWPA Coordinator (as backup and future reference only). If appropriate, some raw data will be marked sensitive/confidential (e.g. data pertaining to water consumption that is directly related to identifiable individuals or businesses), for SSIWPA use only. It will not be shared with outside groups or individuals, and will be accessed only in reference to a specific SSIWPA project, program or use, as designated by a written memorandum of agreement with the data-generating agency.
4. Data analysis results and working spreadsheets for SSIWPA projects are to be shared amongst working group members at the sole discretion of the person who created them. Once distributed, data contained in such spreadsheets may then be used by the recipients for SSIWPA project-related interpretation, analysis or scientific purposes.
5. Reports dealing with interpretation of the data for SSIWPA project-related purposes will (ideally) be written to acceptable scientific standard and will be authored by the person(s) who create them. Authorship can be worked out on a case-by-case basis.
6. Selection of subject matter and scope of such reports will be determined by the person(s) who write(s) the report, but will generally follow direction by SSIWPA Steering Committee in approved SSIWPA working group project workplans.
7. Reports created under 5 & 6 above may be distributed to working group members for information and/or request for comment, at the discretion of the author. Subject to correction or editing, such reports may be forwarded to the SSIWPA steering committee and published on the SSIWPA website with permission of the author.
8. Reports requested by SSIWPA steering committee, by consultants working for SSIWPA, or required as a deliverable of a SSIWPA monitoring program, will be authored by the person(s) preparing them, or will be considered working group-authored (if collaborative and agreed by

all working group authors). Authorship will be worked out on a case-by-case basis in advance of report preparation and/or publication.

9. Copyright for authored reports will remain with the author(s).
10. Any raw data shared with SSIWPA or its' working groups will not be shared publicly without prior consent and written permission from the agency that generated the data.
11. Published reports/ papers will acknowledge all contributions of data, financial support and expertise from others.
12. Scientific papers prepared under 5 & 6 above may be submitted for peer-reviewed publication without permission of SSIWPA, as long as all authors are in agreement. Such papers will acknowledge all contributions of data, financial support and expertise from others.

### *Schedule A: Role of TWG 2013-15: St. Mary Lake Focus*

- In the short term, the TWG will be requested to assess the “Review of St. Mary Lake Restoration Options,” by Ken Ashley (2008) that was prepared for Deborah Epps (Ministry of Environment), and add consideration of any potentially viable solutions that may have been omitted. The TWG will be asked to undertake a cost-benefit analysis of each option, identifying and attempting to fill any information gaps that may exist.
  - Subject to funding, assistance from consultants may be required to assist with analyzing data and information that is beyond the capacity of the TWG as a committee of volunteers.
  - A major role for the TWG will be to participate in a structured decision-making process and evaluate the recommended options, with stakeholders, in a systematic and thorough way that builds consensus in the process. The final result will be a short list of peer reviewed, community generated actions that can be used to update the St. Mary Lake Watershed Management Plan and that the SSIWPA can seek to implement.
  - Other tasks may be assigned as the process unfolds and water quality issues in St. Mary Lake are better understood.
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### *Schedule B: Role of TWG: 2015+: Cusheon Lake Focus*

- In the short term, review and assess technical papers and other resources regarding the Cusheon Lake Watershed. Reports include:
    - “Apparent sources of P affecting Cusheon Lake Salt Spring Island, BC, by J. Sprague (2007). Available at <http://ssiwatersheds.ca/technical-and-other/>;
    - “Cusheon Watershed Management Plan” by Cusheon Watershed Management Plan Steering Committee, (2007). Available at:  
<http://www.islandstrust.bc.ca/lrc/ss/pdf/sscusheonlkwatershedplan.pdf>
  - Attendance **to** and consideration of scientific and community values/issues or concerns regarding the Cusheon watershed, as presented to the SSIWPA
  - The TWG will be asked to undertake a cost-benefit analysis of each option, identifying and attempting to fill any information gaps that may exist.
  - Subject to funding, assistance from consultants may be required to assist with analyzing data and information that is beyond the capacity of the TWG as a **group** of volunteers.
  - Other tasks may be assigned as the process unfolds and water quality issues in Cusheon Lake are better understood.
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*Schedule C: See documents attached.*

*C-1: Integrated Water Management Program Charter (adopted August 19, 2016; latest version May 19, 2017),*

*C-2: SSIWPA 2017-18 IWM Workplan.*

# Draft

## **Schedule C-1**

**Integrated Water Management Program**  
Purpose, Objectives & Tasks



**Program Background**

The Integrated Watershed Management Program was initiated by SSIWPA in recognition of a concern that freshwater sources on Salt Spring Island are stressed, and at or near the sustainable limits of their capacity.

Those concerns are mainly focused on the north end of the island where, for example, North Salt Spring Waterworks District (NSSWD), which supplies one of the most densely populated parts of the island including all of Ganges village, has introduced a moratorium on new water connections due to source capacity issues.

The IWM program addresses the need to:

- quantify the volume of freshwater available (in a renewable manner) for human use;
- measure and optimize the efficiency of potable water resource uses/demand;
- if necessary, adjust bylaws and regulations to limit further densification in areas where water quantity sensitivities exist to sustainable levels.

**Program Purpose**

The primary purpose of the Integrated Water Management Program is to ensure a sustainable supply of fresh water for human use, and to protect against over-demand and degradation of the resource and the natural systems that depend on it.

**Program Objectives**

1	Assess and determine renewable quantity of freshwater from:	surface sources
		groundwater
		precipitation
2	Assess and determine sustainable freshwater demand for human uses over time:	domestic
		agricultural
		industrial

**Integrated Water Management Program**  
Purpose, Objectives & Tasks



		recreational
3	Promote efficient water use and build supply capacity through research, testing and policy development for:	water conservation distribution efficiencies assessment of new potential water sources rainwater harvesting & grey water recycling incentivization measures
4	Apply a Risk Analysis Framework to Program findings, and develop an Integrated Water Management Plan for Salt Spring Island	
5	Assess the Integrated Water Management Plan for compatibility with the Official Community Plan (OCP), Land Use Bylaws and other local/regional legislation (and provide recommendations to local government, as required).	
6	Audit the IWM Program for compliance with the Water Sustainability Act and other relevant provincial legislation and, where appropriate, provide recommendations that reconcile any conflicts.	

**Program Tasks**

<b>1 Steering committee tasks</b>		
1.1	Coordinated development of an Integrated Water Management Program for the island	
1.1.1	Make decisions about project scope and priorities	
1.1.2	Coordinate and manage workplans for working groups	

**Integrated Water Management Program**  
Purpose, Objectives & Tasks



1.1.3	Fundraising (with member agencies, others)	
1.1.4	Communicate with provincial government re potential legislative obstacles	
1.1.5	Consider impacts of water consumption of increased agricultural activity	
1.1.6	Communicate with SSIWPA member agencies	
1.1.7	Policy review and development together with member agencies	
1.1.8	Manage and plan for strategic and process issues	
<b>2 Coordinator tasks</b>		
2.1	Administer and facilitate (Logistics, agendas, minutes, effective conversations and decision making)	
2.2	Assist in preparation of project workplans and budgets	
2.3	Assist in developing and evaluating proposals for external funding and QP service contracts (Islands Trust Policy 6.5 iv Grants Admin)	
2.4	Assist with oversight and communications with consultants for IWM-related projects, following guidelines and protocols of member agency entering into contract	
2.5	Monitor progress and facilitate inter-group and intra-group reporting	
2.6	Assist with writing of funding proposals	
2.7	Organize and facilitate public outreach and public consultation on IWM projects/program	

**Integrated Water Management Program**  
Purpose, Objectives & Tasks



2.8	Coordinate the development of written materials and public outreach	
<b>3 TWG tasks</b>		
3.1	SSI Water Budget (Supply and Demand)	
3.1.1		Quantify freshwater supply source volumes
3.1.1.1		Supply estimates for new and existing surface water sources
3.1.1.1.1		Ganges treatment plant output potential (agriculture, fire, other)
3.1.1.1.2		Modifications to surface water storage (diffuse runoff/ stream to lake input management)
3.1.1.2		Supply estimates for new & existing SSI groundwater sources (wells, aquifers, GIS)
3.1.1.2.1		Potential community new well developments (e.g. Maxwell aquifer, other)
3.1.1.3		Climate change impacts on supply estimates - plan for uncertainty
3.1.1.4		Identify critical info gaps or data inconsistencies in supply estimates
3.1.1.5		Quantify/estimate environmental impacts of supply source usage volumes/scenarios (ie. environmental flows for wildlife, etc.)
3.1.1.6		Peer review the work of CEWG on the state of technology wrt alternative supplies

**Integrated Water Management Program**  
Purpose, Objectives & Tasks



3.1.2		Quantify demand scenarios
3.1.2.1		Analyze field data and benchmark consumption (water systems, residential, agricultural/commercial, industrial)
3.1.2.2		Quantify total SSI consumption within a range
3.1.2.3		Determine implications/relationships between consumption scenarios and source management
<hr/>		
3.2	SSI Water Quality	
3.2.1		Provide technical review of water quality science to inform watershed management plan development and implementation (in some cases collect and analyze datasets)
3.2.2		Technical assessment of stewardship actions and best management practices (e.g. prevention of contamination, lower or eliminate nutrient loads, etc.)
<hr/>		
3.3	Assess technical cost/benefit ratio for SSI Water Budget & watershed management planning and actions	
<hr/>		
3.4	Advise SC on policy and legislation from technical/scientific perspective	
<hr/>		
<b>4 CEWG tasks</b>		
4.1	Assess existing delivery systems of freshwater against current best practices and available technology and provide recommendations and advice regarding feasibility, cost/benefit, environmental and social implications of implementing upgrades:	

**Integrated Water Management Program**  
Purpose, Objectives & Tasks



4.1.1		Audit water delivery and distribution systems, and recommend possible efficiencies
4.1.1.1		Assess and report on cost: benefits (\$, environmental, personal/societal, etc.) of implementing efficiencies in specific SSI water delivery systems.
4.1.2		Assess best practices and alternative technologies available for: <ul style="list-style-type: none"> <li>• rainwater</li> <li>• grey water</li> <li>• wastewater reuse</li> <li>• desalination</li> <li>• others</li> </ul>
4.1.2.1		Assess and report on cost: benefits (\$, environmental, personal/societal, etc.) of implementing alternative technologies in specific SSI areas.
4.1.3		explore incentives used in other localities to manage demand, increase conservation, etc. (i.e. subsidies, building code, zoning changes, tiered rates, etc.)
4.2	Advise SC about existing or new local or provincial legislation from conservation and efficiency perspective	

**Draft List of Program Deliverables:**

- Integrated Water Management Plan or Water Sustainability Plan (see new [Water Sustainability Act](#))
- Safe Yield Model, as applied to St. Mary, Maxwell and Cusheon watersheds (possibly others, and groundwater units)
- Groundwater monitoring program (expansion of current provincial program)
- Agricultural water demand report (updated 2017 Land Use Inventory)
- Updated aquifer mapping and groundwater “budget” report (2017-18)
- Comprehensive report on conservation technologies and methods, specific to existing demand types

**Integrated Water Management Program**  
Purpose, Objectives & Tasks



- Comprehensive rainwater harvesting report for SSI

**Outcomes:**

- Changes to Land Use Bylaws, implementation of additional bylaws to promote water use efficiency
- Changes to Demand/Consumption Practices
- Public Education
- A system for IWM Program Outcomes to be implemented by each SSIWPA Agency
- Publicly-accessible groundwater information records for Salt Spring Island

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**A1 Steering Committee -SC- Focus**

- A1.1** integrated water governance
  - A1.1.1 formulate strategies and make decisions based on recommended actions (TWG and CEWG work)
  - A1.1.2 policy development
  - A1.1.3 coordinated management

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**A2 Conservation and Efficiency Working Group -CEWG- Focus**

- A2.1** assess state of technology for conservation and efficiency by water consumers on SSI
- A2.2 assess state of technology for conservation and efficiency by water suppliers/delivery on SSI
- A2.3 supply-side capacity-building (Review and assess feasibility of alternative strategies for SSI source water supplies, and methods to make current supply sources more efficient. Work with TWG, who will assess technical cost: benefits of supply-side recommendations by CEWG.)

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**A3 Technical Working Group -WG- Focus**

- A3.1** supply side quantification (review of data on hydrology, hydrogeology; mapping and modelling)
- A3.2** supply side capacity-building (Review and assess technical cost: benefits of CEWG recommended supply conservation and efficiency strategies, as well as new supply alternative technologies. Work with CEWG prior to making recommendations to Steering Committee.)

**Integrated Water Management Program**  
Purpose, Objectives & Tasks



A3.3 raw water quality (review and assess data, provide technical recommendations)

**Plain Language Summary**

SSIWPA Steering Committee will coordinate the IWM Program described here above. Steering Committee will be advised by two working groups: the Technical Working Group - TWG and Conservation and Efficiency Working Group - CEWG. The working groups will report to Steering Committee monthly, at the public SSIWPA meetings.

TWG will supervise technical studies that will quantify renewable SSI freshwater supplies (including climate change trends) and consumer demands (current and projected) through data collection, and/or modelling. The CEWG will assess conservation and efficiency technologies, legislation and commercially-available systems for their feasibility to serve as strategies that could be effective on SSI. CEWG and TWG will interface for data-sharing and review of recommendations through the SSIWPA Coordinator, and monthly SSIWPA Steering Committee meetings.

Document Revisions

Date	Revision
08 Aug 2016	Background added. Clauses 4.1 and 4.2 combined.  Added "in renewable manner" to background. CEWG: Added sub-tasks 4.1.1.1 and 4.1.2.1. Fixed typos, spelling. Added plain language summary to end of doc.
May, 2017	<ul style="list-style-type: none"><li>- removed from deliverables: 'enhanced bylaw enforcement'</li><li>- created "outcomes"</li><li>- added deliverables from adopted "Workplan Master 2017"</li></ul>

## **Schedule C-2**

IWM Obj.	IWM Task	Workplan Task	Watershed / District	Agencies Cooperating	Working Groups	Consultant	Timeline	Funding	Deliverable	Notes
1&2	<b>Quantify renewable resource -supply</b>									<b>Notes</b>
1	3.1	1a- Sustainable yield analysis	SML	FLNRO, LTC	TWG		Mar-17		sust. yield report	run sustainable yield models; compare consumption (obj 2) with renewable supply (obj 1) by watershed; assess uncertainty
1	3.1	1b - Sustainable yield analysis	MAX	FLNRO, LTC	TWG		summer 2017 - 2018		sust. yield report	Maxwell sustainable yield model. Data from KWL hydrology of MAX will be necessary to begin.
1	3.1.1.3	2 - Climate impacts assessment for SML sustainable yield report	SML	FLNRO, LTC	TWG		2017 - 2018		climate impact report	
<b>surface - supply quantity</b>										
1	3.1.1.1	3.a)i) supply source hydrology	SML	FLNRO, LTC	TWG	KWL	2017			NSSWD to contract Kerr-Wood Leidal
1	3.1.1.1	3.a)ii) supply source hydrology	MAX	FLNRO, LTC	TWG	KWL	2018			NSSWD to contract Kerr-Wood Leidal
1	3.1.1.5	3.b)i) levels, flows (data compilation)	SML, MAX	FLNRO, LTC	TWG	share with Golder	2017		hydrology, meteo data files	have data at TWG & NSSWD
1	3.1.1.5	3.b)ii) levels, flows, meteorology (new data)	CLW	FLNRO, LTC	TWG	share with Golder	2017-2018	grant	hydrology, meteo data files	Fill data gaps for CLW. TWG design and methods/analysis. Data collect by local contractor (environmental scientist); funding for equipment and data contract. Share with Golder for Ph 2. Outflow only May-Jul. WW as well?
<b>groundwater - supply quantity</b>										
1	3.1.1.2	5.a) wells inventory (active, inactive)	island	FLNRO, LTC	TWG		2017, part complete		GIS dBase	A map product is already complete for Wells Database sites by FLNRO. TWG to undertake community outreach to identify, map (possibly register) other active wells not in registry, and inactive wells.
1	3.1.1.2	5.b) groundwater monitoring program	island	FLNRO, LTC	TWG	?	2017-ongoing	grant	data files, reports	Grant possible: down hole monitoring at inactive wells; if non-domestic active wells are included to measure stress then incentive: provide onsite inspections for well head protection, cross-reference and correlate to well records in the WELLS database; student or contractor complete work; FLNRO/MOE support for training
1	3.1.1.2	5.c) compile existing supply data, and literature review	GW Comm. Systems	FLNRO, LTC	COORD, TWG to review		2017		data files, reports	Data compilation. Analysis of supply volumes and characteristics of source areas, by gw district. Parameters TBD (groundwater table in wells, etc.). Cedar Ln, Cedars of Tuam, Reginald hill, Maracaibo, Scott Pt, Swan Pt, High Hill, Mt Belcher, Erskine, Merchant Mews.
1	3.1	7.a) aquifer yield: geospatial analysis, literature review	island	FLNRO (ENV)	TWG to review	Golder Ph 1	spring 2017		aquifer delineation, model	Conceptual geological model and groundwater model: by aquifer units from usage data and supply data for aquifers (uncertainty, sensitivity analysis, id areas of risk)

IWM Obj.	IWM Task	Workplan Task	Watershed / District	Agencies Cooperating	Working Groups	Consultant	Timeline	Funding	Deliverable	Notes
2	<b>Quantify renewable resource - demand</b>									<b>Notes</b>
<i>surface sources - demand</i>										
2	3.1.2.1	4.a) compile usage data: surface districts	Beddis, Fulford	FLNRO, LTC	COORD, TWG		2017		usage data files	compile by watershed, multiple parameters (peak day distributions, high users, etc.). Have data: NSSWD (SML, MAX), FHWD. To get: Cusheon (Beddis), Fulford (Weston)
2	3.1.2.1	4.b) water supply & utilization: correlate sfw usage with supply and zoning/ land use	SML, MAX, CLW	FLNRO, LTC	TWG		after task 5 (Oct 17-Feb18)		supply-utilization analysis report	Useful deliverable for land use planning, OCP, zoning. Other watersheds - this action is in the parking lot for future plan
<i>agricultural demand</i>										
2	3.1.2.1	6. agricultural water use (new dataset - sfw, gw)	island	AGRI, FLNRO	COORD		2017		Inventory report, data files	WU Survey Design MAL. SHARE SSIWPA, FLNRO, ENV, Golder. Agrologist Masselink.
<i>groundwater - demand</i>										
	3.1.2.1	4.c) compile usage data: groundwater districts	GW districts	FLNRO, LTC	COORD, TWG		2017		usage data files	DEMAND data, by gw district. Parameters TBD (groundwater table in wells, etc.).
2	3.1.2.1	4.d) water supply & utilization: correlate gw usage with supply and zoning/ land use	GW units	Islands Trust	TWG		late 2017		supply-utilization analysis report	For community wells and gw recharge units/areas as defined by prioritization with FLNRO, Golder collab. Data needs: item 4b SHARE with Golder.
1	3.1	7.b) aquifer water budgets	island	FLNRO (ENV)	TWG to review	Golder Ph2	2018 - spring 2019		aquifer supply potential	Analysis and characterization of GW (Estimates of volumes and flows between sfw-gw). Reporting out to FLNRO, MOE, SSIWPA. Might include safety factor.

IWM Obj.	IWM Task	Workplan Task	Watershed	Agencies Cooperating	Working Groups	Consultant	Timeline	Funding	Deliverable		
<b>3 Assess conservation technology, efficiency of existing systems</b>									<b>Notes</b>	<b>Questions for steering to consider</b>	
3	4.1.1	8. List and compare technologies and techniques for conservation and efficiency (In three phases, see notes)	island	LTC, CRD	CEWG		01/2017-09/2017		report	Table top exercise. Look at technologies, and assess how they might be feasible for SSI. How? Characterize technological options and create assessment matrix of technology options by criteria.	Compare usage data of different user types (see core list of 9 types <sup>1</sup> , updated by CEWG Feb. 9 2017)
3	4.1.2 (a)	8.a) Research and report on rain harvesting alternatives	island	LTC, CRD	RRU, CEWG		03/2017 - 08/2017		case reports	Assess for multiple scales (domestic, multi-family domestic, commercial, institutional, agricultural) - specific examples and calculations for SSI-based field eg. Sandra.	
3	4.1.2 (b)	8.b) Research and report on reclaimed greywater recycling alternatives	North island	LTC, CRD	CEWG		2017		case reports	Assess feasibility and potential for re-use of Ganges Harbour Treated Sewage as reclaimed (poss. engineering study) Ian P.	
4	4.1.3	8.c) Assess policies and incentives	island	LTC, CRD	CEWG		Summer-fall 2017		overall conservation and efficiency report	Not fully assigned. Ian P. - to analyse how Development Permit Areas could be deployed as mechanism for reclaimed water for certain uses on new builds (etc.) Analyse existing SSI bylaws/policies, compare with other water-stressed communities. (DPAs, building code, tourism-driven, rates). Explore specific incentives for conservation and potable demand management.	
<b>3 3.2 Water Quality</b>									<b>Notes</b>	<b>Questions for steering to consider</b>	
	3.2.1	9. a) quality monitoring	CLW	CRD-Beddis	TWG		2017 start or pilot			drinking water lakes and inflows (nutrients, toxins, other parameters tbd)	
	3.2.1, 3.2.2	9.b) review water quality reports	all	all	TWG		ongoing			Focus: drinking watersheds (SML, MAX, CLW, WW). Reports by agencies or consultants	
<b>1,2,3,4 SSI Integrated Water Planning</b>									<b>Notes</b>	<b>Questions for steering to consider</b>	
		10 - Island-scale water budget and Water Sustainability Plan		LTC	SSIWPA		late 2018		Island Lens: water budget	Conduct cost-benefit analysis and include risk assessment, application within OCP/ need for OCP review, etc.	At appropriate time, agencies of SSIWPA will be requested to contribute to plan under WSA, and to form agreements for implementing Plan.
<b>1,2,3,4 Peer review</b>									<b>Notes</b>	<b>Questions for steering to consider</b>	
							ongoing			outputs reviewed within SSIWPA agencies; where feasible, SSIWPA to discuss an agency to contract external review	

<sup>1</sup>Cases: 1. bed and breakfast operation; 2. small resort; 3. median-sized single family dwelling; 4. multi-family dwelling; 5. small business that requires higher than average water; 6. civic building (recreation facility/library); 7. hospita/clinic/lab; 8. school; 9. small agricultural operation. Seasonal or year-round occupancy will be considered for each.

Water Conservation Outreach in Elementary Schools was moved to the "Workplan task parking lot", as a future possible task for SSIWPA to assign. The addition of a school under 4.1.1 (above) addresses some of the consumption information and specific needs of this user type.

The impact of bottled water use on offsetting demand for other potable sources is being considered through "consumption data collection", which is included above under phase 2 of CEWG 4.1.1 task area.

Data-sharing protocol will be addressed by memoranda of agreement between agency/organization acting as source of data, and SSIWPA steering committee. Use by working group members, SSIWPA agencies, notably FLNRO, Islands Trust, CRD and any private water district member agencies will be delineated. Sharing data with contract consulting firms should also be included where feasible (eg. Golder Associates, Waterline, OPUS, Kerr-Wood Leidal, etc.).

<b>Watershed acronyms</b>	<b>Agencies</b>
SML - St Mary lake watershed (incl Duck Crk outflow)	NSSWD - North Salt Spring Water District
MAX- Maxwell lake watershed,	Beddis - Beddis Water Service Area (Capital Regional District)
CLW - Cusheon lk watershed, (incl outflow)	CRD - Capital Regional District
WW - Weston lake watershed	FLNRO - Ministry of Forests, Lands and Natural Resource Operations
STW- Stowel lake watershed	AGRI - Ministry of Agriculture
BLW - Bullock Lke watershed	LTC - Local Trust Committee of Islands Trust
FLW - Ford lake and Fulford Creek watershed	

This is for information only. Each member agency will get a referral request, individually.

Received from Claire Olivier, Islands Trust Legislative Clerk  
Via Email dated June 8, 2017

Dear Referral Coordinator:

**Proposed Land Use Amendment Bylaw No. 487**, given second reading by the Salt Spring Island Local Trust Committee at its June 1, 2017 regular meeting, introduces new regulations related to the practice of agriculture in the Island's Rural Watershed 1 and 2 Zones. In sum, the bylaw does the following:

- prohibits "intensive agriculture" as defined in Salt Spring Island Land Use Bylaw No. 355 from being practiced in the Rural Watershed 1 and 2 zones;
- establishes a 15 metre setback from the natural boundary of all water bodies in the Rural Watershed 1 and 2 zones for "agriculture" as defined in Salt Spring Island Land Use Bylaw No. 355;
- establishes a 15 metre setback from the natural boundary of all water bodies in the Rural Watershed 1 and 2 zones for the keeping of livestock and poultry;
- establishes a 30 metre setback from the natural boundary of all water bodies in the Rural Watershed 1 and 2 zones for the keeping of fuel products associated with agriculture;
- introduces two new information notes into Land Use Bylaw No. 355 about best practices for land use in watersheds.

**Proposed Official Community Plan Amendment Bylaw No. 496**, given second reading by the Salt Spring Island Local Trust Committee at its June 1, 2017 regular meeting, introduces text changes concerning policies related to agriculture on lands outside of the Agricultural Land Reserve (ALR). These changes provide the Local Trust Committee with relaxed legislation to introduce additional regulations on farming outside of the Agricultural Land Reserve. This is necessary to ensure the Land Use Bylaw changes contained in Bylaw 487 (summarized above) are consistent with the Island's Official Community Plan.

For clarity, of the approximately 500 properties zoned Rural Watershed 1 and 2 (RW1 and RW2) on Salt Spring Island, only one is in the Agricultural Land Reserve. Bylaw No. 487 is not intended to regulate farming on ALR land. Rather it is intended to protect water quality in Salt Spring's drinking water lakes against the potentially negative impacts of farm activities on non-ALR land, given that farming is permitted by zoning throughout all watersheds draining into those lakes.

Copies of our referral form and of Proposed Bylaws No. 487 and 496 are attached. Staff reports including the most recent, dated June 1, 2017, can be found at the following link:

<http://www.islandstrust.bc.ca/islands/local-trust-areas/salt-spring/projects-initiatives/rural-watershed-uses/>

Please provide your response **by July 10, 2017** to the bylaw referral form to [ssiinfo@islandstrust.bc.ca](mailto:ssiinfo@islandstrust.bc.ca) and to the attention of Planner Jason Youmans.

Should you have any questions, Jason can be reached at the c.c. above.

Thank you

Claire Olivier  
Legislative Clerk/Deputy Secretary  
Islands Trust  
1-500 Lower Ganges Road  
Salt Spring Island, BC V8K 2N8  
On Salt Spring Island [250-538-5606](tel:250-538-5606)

# PROPOSED

## SALT SPRING ISLAND LOCAL TRUST COMMITTEE BYLAW NO. 487

### A BYLAW TO AMEND SALT SPRING ISLAND LAND USE BYLAW, 1999

The Salt Spring Island Local Trust Committee, being the Trust Committee having jurisdiction in respect of the Salt Spring Island Local Trust Area under the *Islands Trust Act*, enacts as follows:

1. Citation

This bylaw may be cited for all purposes as “Salt Spring Island Land Use Bylaw, 1999, Amendment No. 5, 2015”.

2. Salt Spring Island Local Trust Committee Bylaw No. 355, cited as “Salt Spring Island Land Use Bylaw, 1999,” is amended as follows:

2.1 The table in Subsection 9.10.1 – Permitted Uses of Land, Buildings and Structures is deleted in its entirety and replaced with:

(1) In addition to the *uses* permitted in the Subsection 3.1.1 of this Bylaw, the following *principal* and *accessory uses, buildings* and *structures* and no others are permitted in the Rural Zones indicated:

	R	RU1	RU2	RU3	RW1	RW2	Ri
<b>Principal Uses, Buildings and Structures</b>							
<i>Single-family dwellings</i>	♦	♦	♦	♦	♦	♦	♦
<i>Two family dwellings</i> constructed before July 31, 1990	♦	♦					
Dental and medical offices for a maximum of two medical practitioners	♦						
<i>Elementary schools, pre-schools and child day care</i>	♦	♦					
<i>Public health care facilities</i>	♦	♦					
<i>Community halls</i>	♦	♦					
<i>Churches and cemeteries</i>	♦	♦					
<i>Veterinarian clinics and animal hospitals</i>	♦	♦					
<i>Pet boarding services and kennels</i>	♦	♦					
<i>Pounds</i>	♦	♦					
<i>Active outdoor non-commercial</i> recreation, excluding <i>golf courses</i> and activities primarily involving the use of power-driven means of conveyance	♦	♦					
Lighthouse stations							♦
<i>Agriculture</i>	♦	♦	♦	♦			♦
<i>Agriculture, excluding intensive agriculture</i>					♦	♦	
<i>Public service uses</i>	♦	♦	♦	♦			♦
<b>Accessory Uses</b>							
<i>Seasonal cottages</i> subject to Section 3.14	♦	♦		♦			♦
<i>Home-based business use</i> , subject to Section 3.13	♦	♦	♦	♦	♦	♦	♦
<i>Information Note: See Section 3.3.1, which indicates that where land is in the Agricultural Land Reserve, agriculture, farm buildings and farm structures are permitted in a manner similar to the Agriculture 1 zone.</i>							

*Information Note: All activities in the Rural Watershed 1 (RW1) and Rural Watershed 2 (RW2) zones must be carried out in accordance with the applicable regulations of Salt Spring Island Land Use Bylaw No. 355, Salt Spring Island Official Community Plan Bylaw No. 434, the Agricultural Waste Control Regulation (Environmental Management Act), the Drinking Water Protection Act, and the Fisheries Act.*

*Information Note: Land owners in the Rural Watershed 1 (RW1) and Rural Watershed 2 (RW2) zones are encouraged to adopt best management practices that protect water quality (e.g. British Columbia Environmental Farm Plan Program).*

2.2 The table in Subsection 9.10.2 Size, Siting and Density of Land, Buildings, and Structures, is deleted in its entirety and replaced with:

(1) Subject to Part 4, *buildings, structures and uses* in the Rural, Rural Uplands, Rural Watershed and Rural Islet Zones must comply with the following regulations regarding size, siting and density:

	R	RU1	RU2	RU3	RW1	RW2	Ri
<b>Lot Coverage and Floor Area</b>							
Maximum combined <i>lot coverage</i> of all <i>buildings and structures</i> (per cent)	33	33	5	10	33	33	10
Maximum <i>floor area</i> of a <i>building</i> used for a <i>community hall, church, pre-school or day care centre</i> (square metres)	930	930	N/A	N/A	N/A	N/A	N/A
Maximum total <i>floor area</i> of <i>farm buildings and farm structures</i> (square metres)	465	465	465	465	465	465	465
<b>Number of Units and Minimum Site Areas</b>							
Maximum number of <i>dwelling units</i> per 8 ha with the exception of <i>secondary suites</i> , where permitted	N/A	N/A	1	N/A	N/A	N/A	N/A
Maximum number of <i>seasonal cottages</i> per 8 ha	N/A	N/A	1	N/A	N/A	N/A	N/A
Minimum <i>lot area</i> required for a <i>day care centre</i> (ha)	2	2	N/A	N/A	N/A	N/A	N/A
Minimum <i>lot area</i> required for pet boarding facilities, including <i>kennels</i> (ha)	4	4	N/A	N/A	N/A	N/A	N/A
Minimum <i>lot area</i> required for a <i>pound</i> (ha)	2	2	N/A	N/A	N/A	N/A	N/A
<b>Setbacks of Uses, Buildings and Structures</b>							
Despite Subsection 4.3.1, the following <i>lot line</i> setbacks apply for the specific <i>zone</i> indicated:							
Minimum <i>Front lot line</i> setback (metres)	*	*	15	*	*	*	*
Minimum <i>Rear lot line</i> setback (metres)	*	*	15	*	*	*	*
Minimum <i>Interior side lot line</i> setback (metres)	*	*	15	*	*	*	*
Minimum <i>Exterior side lot line</i> setback (metres)	*	*	15	*	*	*	*
In addition to Section 4.5 (Setbacks from Water Bodies – Water Quality Protection), the following <i>water body</i> setbacks apply for the <i>zone</i> indicated:							
Minimum setback for <i>agriculture</i> from the natural boundary of any <i>water body</i>	N/A	N/A	N/A	N/A	15	15	N/A
Minimum setback for the keeping of livestock or poultry from the natural boundary of any <i>water body</i>	N/A	N/A	N/A	N/A	15	15	N/A

\* indicates provisions of Section 4.3 apply

2.3 The first paragraph of subsection 4.5.3 is deleted in its entirety and replaced with the following:

Commercial, institutional, or agricultural production, storage, or manufacture of the following products is to be setback 30 metres from the natural boundary of any water body, except where these uses take place indoors within the Ganges Village Core:

2.4 The mass of livestock, poultry or farmed game referenced in Subsection 4.3.6 is amended from 4500 kg to 4550 kg.

READ A FIRST TIME THIS            1ST            DAY OF            SEPTEMBER 2016

READ A SECOND TIME THIS        1ST            DAY OF            JUNE            2017

PUBLIC HEARING HELD THIS        \_\_\_\_\_      DAY OF            \_\_\_\_\_ 20\_\_\_\_

READ A THIRD TIME THIS         \_\_\_\_\_      DAY OF            \_\_\_\_\_ 20\_\_\_\_

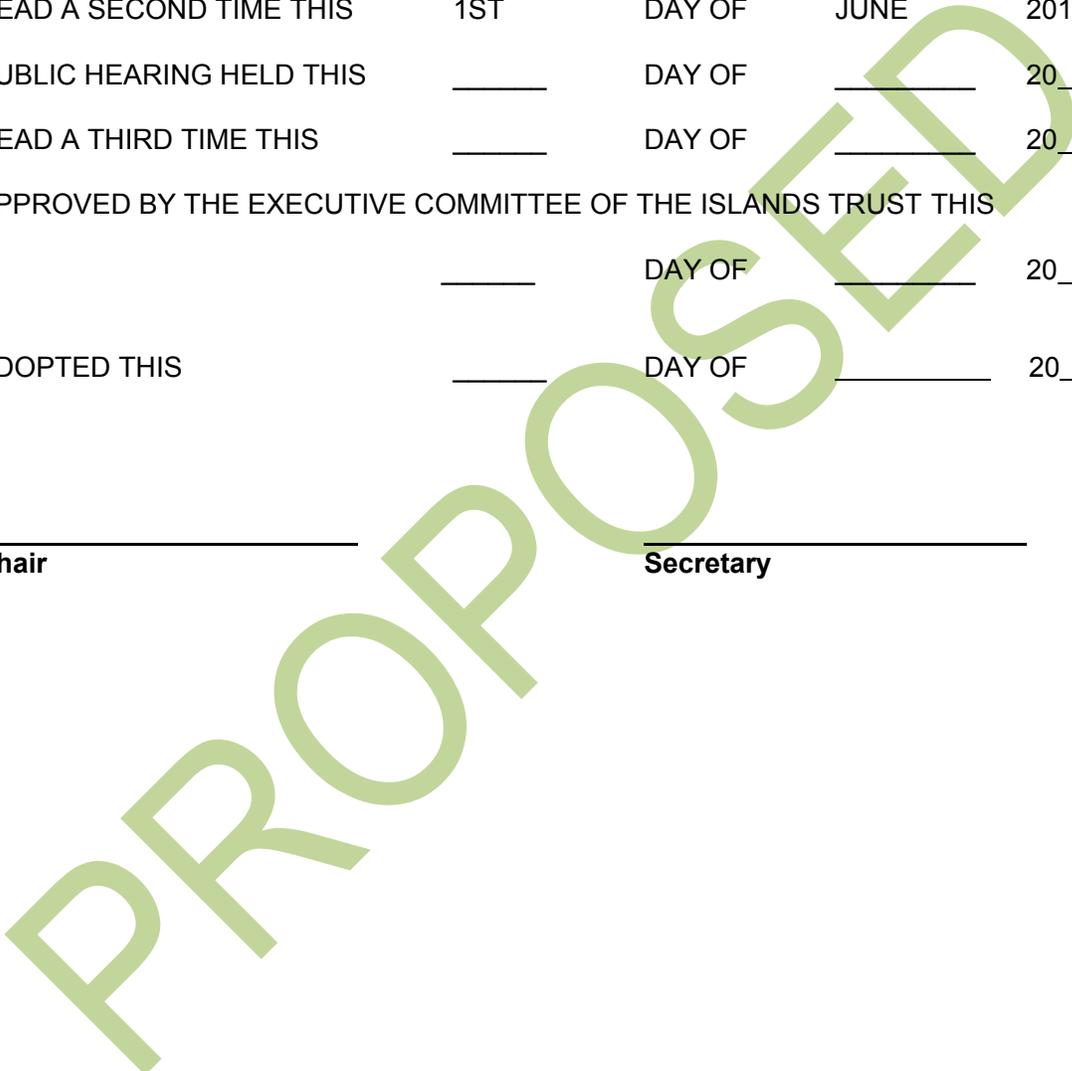
APPROVED BY THE EXECUTIVE COMMITTEE OF THE ISLANDS TRUST THIS

   \_\_\_\_\_      DAY OF            \_\_\_\_\_ 20\_\_\_\_

ADOPTED THIS                        \_\_\_\_\_      DAY OF            \_\_\_\_\_ 20\_\_\_\_

\_\_\_\_\_  
**Chair**

\_\_\_\_\_  
**Secretary**





**SALT SPRING ISLAND LOCAL TRUST COMMITTEE  
BYLAW NO 496**

**SCHEDULE NO. 1**

1. Schedule “A”, Volume 1 is amended as follows:
  - 1.1 Section B 6.2 – Agricultural Land Uses – Article B.6.2.2.5 is deleted in its entirety and replaced with the following:

“Farming activities and necessary structures should continue to be allowed by zoning in other Designations on all properties where they are currently allowed.”
  - 1.2 Section B 6.2 – Agricultural Land Uses – Article B.6.2.2.6 is deleted in its entirety and replaced with the following:

“The Local Trust Committee will not make changes to local bylaws to prohibit or restrict farming in the Agricultural Land Reserve or that are obstacles to the creation of local abattoirs, cold storage facilities, or other facilities that would improve local food security.”
  - 1.3 Section B 6.2 – Agricultural Land Uses – Article B.6.2.2.7 Clause (i) is amended by removing the word “all.”
  - 1.4 By making such consequential numbering alterations to effect these changes.

Royal Roads University  
Student Project: Rainwater Harvesting Alternatives for SSIWPA

Progress Report by the RRU Group  
pseudonym for the project:  
“Dromedary Environmental”

May 2017

This was submitted in partial fulfillment for the Royal Roads University  
course requirements

It is shared with SSIWPA as a courtesy.

NEXT STEPS: RRU team is in data analysis mode.

The final report and presentation will be delivered August 28/29th, 2017.

## **Progress Report - Group 2: Dromedary Environmental - 3rd Quarter**

To date, Dromedary Environmental has functioned efficiently and successfully as a team. The initial research stage of the project was completed early in the 3rd quarter, as planned, facilitating the scheduling of our first trip to Salt Spring Island (SSI) for the weekend of Earth Day; April 21 - 23, 2017. Over the course of the weekend, we completed 8 case studies, some as planned prior to arrival on the island, while other opportunities presented themselves because we were present, available to talk with interested parties. The group also attended Earth Day festivities as well as the Saturday 'market in the park', setting up a booth to interact with residents, providing the opportunity for them to ask questions or to complete our survey. Through interacting with the variety of attendees, previously unknown perspectives were gathered.

Our appreciation for water and the power of human connection was expanded during a water blessing ceremony that occurred on Earth Day.

Continual recruitment of participants occurred through the entire weekend, resulting in survey participation doubling compared to responses received before visiting SSI. To further spread the information about our project, flyers were distributed around the town of Ganges, placing them on bulletin boards, in shops and with willing businesses to increase the reaches of our recruitment. Windsor plywood was discovered as a valuable resource, and is known to locals as the source for expertise on rainwater harvesting (RWH) systems and equipment. Not only helpful as a mode of dispersing our information, this contact provided us with details on what is available to residents looking to install RWH systems.

The budget we determined has proved to be sufficient for the trips we have planned. After completing the first of two trips, we still have over half of our budget remaining and are on track to come in under budget. Logging of hours has been successful, and projected hours as set out at the beginning of the project are more than enough to cover the amount of time we will be required to commit, should the project continue to progress as it is.

With the majority of the data gathering completed, the fourth quarter will be heavily focused on report writing and data analysis, drawing conclusions between collected information from case studies of RWH systems, the perspectives of participants, and survey information from all different residents of SSI. This plan is in accordance with our timeline that was established early in second quarter, and with the team functioning well, the final portion of the project is on track.

While the work completed so far has been rewarding, some challenges encountered include communicating with residents using email addresses and phone numbers that are no longer in service, lacking understanding of water districts and vulnerability classifications, and the different workstyles of team members. This has been addressed by altering our daily schedule, having time for individual work. During team building activities, we developed intra-team relationships through the playing, suspected cheating, and intense strategy involved in card games.

Having the opportunity to visit SSI was beneficial in multiple ways. Gathering data was an obvious benefit, while the ability to talk with residents and hear their perspectives was an unexpected but quite important aspect. Prior to visiting SSI, the impact of our project was not as well understood by the team, nor were the variety of issues that are encountered. With so many different situations, whether it be the property type or availability or quality of water, every case study participant brought with them new topics and areas of interest. Being able to speak with people who are invested in their way of life, but unfortunately limited by what before seemed to be small obstacles was beneficial to the development of our project and its perspective. Our ability to inform not only residents but also local authorities and people of influence, as well as the impact we could have made the research we are doing of that much more importance. Visiting SSI, seeing the differences in culture, and getting a glimpse into how life works for a wide variety of people made our possible impact so much greater.