



**GABRIOLA ISLAND
VOLUNTEER REVIEW COMMITTEE
FOR THE
OFFICIAL COMMUNITY PLAN AND
LAND USE BYLAW REVIEW**

AGENDA

**Tuesday, September 7, 2010 at 7:00 p.m.
Agricultural Hall
465 South Road, Gabriola Island, BC**

		<i>Page #</i>	<i>Approx. Time*</i>
1.	CALL TO ORDER	-	7:00 pm
2.	APPROVAL OF AGENDA	-	
3.	COMMUNITY INPUT SESSION	-	7:10 pm
4.	MINUTES		
4.1	Volunteer Review Committee meeting draft minutes of July 20, 2010 – <i>for adoption</i>	1-7	
5.	GUEST SPEAKERS		7:20 pm
5.1	Local Trust Committee – Trustee Report		
5.2	Regional Planning Manager, Chris Jackson – Presentation on Islands Trust and Application Processing		
6.	BUSINESS ARISING FROM MINUTES		7:50 pm
6.1	Revised Water Supply of Gabriola Groundwater dated August 25 - <i>attached</i>	8-31	
6.2	Suggested Resolutions for Water Supply Document - <i>attached</i>	32-33	
6.3	Happiness Index Decision Tool – John Peirce Presentation		
7.	CORRESPONDENCE – <i>for receipt</i>		
8.	NEW BUSINESS		9:00 pm
8.1	Referrals from the Gabriola Island Local Trust Committee: <i>DRAFT Terms of Reference: Project Scope and Objectives</i> as endorsed in principle by the Local Trust Committee: the LTC requests VRC comments on this Draft and specifically the seven focus areas noted in #15 - <i>attached</i>	34-36	
8.2	Eco Footprint Analysis: Cover Memo and Working Document – John Peirce - <i>attached</i>	37-42	
8.3	Any more “Next Steps” for the Volunteer Review Committee?		
8.4	Chair Positions - <i>discussion</i>		
9.	COMMUNITY INPUT SESSION	-	
10.	NEXT MEETING DATE	-	
	Tuesday, October 5, 2010 at 7:00 p.m. at the Agricultural Hall, 465 South Road, Gabriola Island, BC – new schedule, first Tuesday nights of the month		
11.	ADJOURNMENT	-	10:00 pm

*Approximate time is provided for the convenience of the public only and is subject to change without notice.

opposed, and 1 abstention defeated the vote. He asked for the record of member votes. Co-chair John Peirce said that it was not the practice of the Volunteer Review Committee to record names of members voting on a resolution. He said that the resolution might be reconsidered on this agenda. Several members identified how they had voted on the resolution. Jeremy Baker provided a definition of specific aquifers for the information of the Volunteer Review Committee.

Jacinthe Eastick quoted from a 1994 report on ground faults and said that the conclusion of the report was that the location of water is not known.

4. MINUTES

4.1 Minutes from the June 15, 2010 meeting of the Volunteer Review Committee

The Volunteer Review Committee reviewed the minutes of the June 15, 2010 meeting and the following amendments were made:

Page 1, add to those present; "*Local Trustee Sheila Malcolmson attended the meeting.*"

Page 2, item 3, correct typo; "*of*" to "*or*" and add period at end of sentence.

Page 2, item 4.1, amendment for Page 3, item 4.5, delete redundant phrase; "*in which that Co-chair is not acting as chair when a report is being discussed*"

Page 3, item 5, fifth line on page; add apostrophe to "*Planner's*"

Page 4, resolution VRC-011-2010, item 14, first sentence; change "*Research*" to "*Workshop*"

Page 5, item 5.2, John Peirce's suggested corrections to the draft, Page 1; pluralize "*Recommendations*" for Water Supply...

Page 10, item 7.2; delete last sentence.

Page 10, item 7.2; add resolution:

VRC-020-2010 It was **MOVED** and **SECONDED** that the Gabriola Island Official Community Plan and Land Use Bylaw Volunteer Review Committee request that the Gabriola Island Local Trust Committee authorize two additional cohort meetings this summer for 1) residents who are under 40 years old (to be supplemented with childcare opportunities during the meeting), and 2) people with multiple physical and/or mental disabilities.

CARRIED
(unanimous)

The minutes of the June 15, 2010 meeting of the Volunteer Review Committee were adopted by consensus as amended.

5. GUEST SPEAKERS

5.1 Local Trustee Deborah Ferens

Trustee Ferens responded to the June 15th Volunteer Review Committee recommendations provided as resolutions to the Local Trust Committee. She reviewed each resolution and summarized the Local Trust Committee's discussion at the July 7, 2010 special meeting. Trustee Ferens explained that the Local Trust Committee decided to incorporate the items into its program or had considered that some items were already included in the consolidated list or project scope. She said that the Local Trust Committee appreciated the thoughtfulness and thinking around the resolutions.

5.2 Regional Planning Manager Chris Jackson on Existing Official Community Plan Density Transfer Provisions

Regional Planning Manager Chris Jackson used a PowerPoint presentation to illustrate the explanation of density transfer. He said the definition of density arises from the Local Government Act and he provided a brief history of how density has been used in the Official Community Plans from 1978 to 1998. On Gabriola Island, all density transfer proposals must go through the bylaw amendment process. Chris Jackson said that density can only be taken from Resource or Forestry zoned land and can be given to Resource zoned land elsewhere on the island. He explained the concept of donor lots and receiver lots and the intention to protect the character of the parcels in the Forestry and Resource Land zones. Chris Jackson invited question from the committee.

Lisa Webster-Gibson asked what policies are used by the Local Trust Committee to determine transferability. Chris Jackson said that the process relies heavily on the Official Community Plan and the decisions of the Local Trust Committee.

Sara Brockelhurst asked how zone suitability affects density transfer. Chris Jackson elaborated on how Resource zoned land is different in its receiver capability, however that the Forestry and Resource zones are very similar.

Bill Pope requested a further explanation of the distinction between Resource and Forestry zoning. Chris Jackson explained some of the differences.

Tom Kirchmayer asked if accessory cottages that are lost through a transfer could be transferred to community use such as community housing. Discussion of the issue continued and through the chair, Gisele Rudischer commented that the Forestry zone, that was established when the province had a Forestry Land Reserve, had lower taxes and so cottages were not added in the zone.

Co-Chair John Peirce asked Chris Jackson to forward Gisele Rudischer's submission to the Volunteer Review Committee on density transfer to the Local Trust Committee.

6. BUSINESS ARISING FROM MINUTES

6.1 Draft Water Supply Document

Co-Chair John Peirce passed the chair to Co-Chair Kathryn Malloy.

Randy Young explained to the Volunteer Review Committee that the draft report presented on this agenda had been updated reflecting the discussion from the last meeting. The Volunteer Review Committee discussed item 2 of section B. Water Supply Policies (page 7 of report) and suggested further changes to the draft. It was suggested that items a), b), c) and d) from the Reasoning of policy 1 should be moved to be included as bullets under item b) of policy 2. The Committee also reworded item b) of policy 2 to have more strength by replacing the word "should" with "shall".

Policy 3 was discussed and "Bulk Water sales" was changed to "Bulk Water groundwater extraction". Further discussion of the policy suggested that sales of water from rainwater catchments should be permitted. Randy Young said that Policy 3 could be revised and further discussion was deferred.

The Volunteer Review Committee discussed section C. Water Supply Advocacy Policies.

VRC-021-2010 It was **MOVED** and **SECONDED** that the Gabriola Island Official Community Plan and Land Use Bylaw Volunteer Review Committee request the Regional District of Nanaimo to provide a study on the feasibility of a pond in the swamp area of the 707 Community Park.

CARRIED

(10 in favor, 2 opposed, 1 abstention)

VRC-022-2010 It was **MOVED** and **SECONDED** that the Gabriola Island Official Community Plan and Land Use Bylaw Volunteer Review Committee request the Regional District of Nanaimo to modify building permit approval to require cisterns and rain catchments plumbing and filters in all new houses in water catchment areas marked on the aquifer storage map as having minimal groundwater and; to modify building permit approval to include requirements for house tanks in all new house construction not requiring cisterns.

CARRIED

(9 in favor, 1 opposed, 3 abstentions)

VRC-023-2010 It was **MOVED** and **SECONDED** that the Gabriola Island Official Community Plan and Land Use Bylaw Volunteer Review Committee encourage the Ministry of Transportation to use runoff areas called infiltration swales leading from highway ditches to allow water to soak into the aquifer.

CARRIED

(13 in favor, 0 opposed, 0 abstentions)

VRC-024-2010 It was **MOVED** and **SECONDED** that the Gabriola Island Official Community Plan and Land Use Bylaw Volunteer Review Committee discourages excessive well extensions by fracturing and the use of explosives is prohibited.

CARRIED

(13 in favor, 0 opposed, 0 abstentions)

Discussion of Liquid Waste Management Objectives and Policies contained in the report was deferred to the next meeting.

6.1.1 Recommendations to Local Trust Committee Memo

Discussion of items 6.1.1 and 6.1.2 was deferred.

6.1.2 Annotated comments by John Peirce in regard to Gisele Rudischer's water document

6.1.3 Suggested Resolutions

John Peirce's list of subjects for proposed resolutions was considered during earlier discussion.

6.2 Hydrogeology of Gabriola Groundwater by John Peirce and Nick Doe

John Peirce presented a background paper for information on groundwater aquifers on Gabriola Island.

VRC-025-2010 It was **MOVED** and **SECONDED** that the Gabriola Island Official Community Plan and Land Use Bylaw Volunteer Review Committee forward to the Local Trust Committee for information, the document titled The Hydrogeology of Gabriola Groundwater by John Peirce, P.Geo. and Nick Doe, P.Eng.

CARRIED

6.3 Terms Defined in Both the Official Community Plan and the Land Use Bylaw

Kees Langereis explained the document that reviews defined terms used in both the Official Community Plan and the Land Use Bylaw. He drew attention to his comments identified as key distinctions of the defined terms. Acting Island Planner Chris Jackson thanked Kees Langereis for the document saying that it is a useful document and has saved a lot of staff time.

VRC-026-2010 It was **MOVED** and **SECONDED** that the Gabriola Island Official Community Plan and Land Use Bylaw Volunteer Review Committee forward to the Local Trust Committee for information, the document titled Terms Defined in Both the OCP and LUB prepared by Kees Langereis.

CARRIED

7. CORRESPONDENCE

There was no correspondence for receipt.

8. NEW BUSINESS

8.1 Referrals from the Gabriola Island Local Trust Committee

8.1.1 Summary of Cohort Meetings Staff Report dated June 10, 2010

Island Planner Pat Maloney's June 10, 2010 Staff Report and Memoranda dated May 17 and 27, 2010 regarding cohort meetings for the Gabriola Island Official Community Plan were received for information.

8.1.2 Draft Terms of Reference: Project Scope and Objectives as endorsed in principle by the Local Trust Committee on July 7, 2010

Trustee Ferens explained the draft document regarding the Official Community Plan review project scope and objectives. She said that the draft document had been endorsed in principle by the Local Trust Committee and invited comment from the Volunteer Review Committee.

8.2 Community Workshop

Acting Island Planner Chris Jackson reviewed ideas discussed at the July 7th Local Trust Committee special meeting regarding the next Community Workshop. He said that the workshop could be structured with seven topic issues for discussion at seven tables with a rotation of participants every 25 minutes for three rounds. Table facilitators could provide a brief synopsis of the discussions

at the conclusion of the meeting. Chris Jackson asked the Volunteer Review Committee to provide about ten volunteers to assist in the workshop. The day and time of the workshop was further discussed and Jackson said that staff would advise on the availability of the venue.

8.3 "Next Steps" for the Volunteer Review Committee

Co-chair John Peirce asked members to submit issues for consideration on the next agenda.

Acting Island Planner Chris Jackson suggested items for the next agenda include:

- Ecological Footprint Staff Report
- Gabriola Housing Task Force Submission
- Summary of Salt Spring Island Reports on Secondary Suites for Affordable Housing provided by Trustee Malcolmson
- Happiness Index Decision Tool presented by John Peirce

9. **COMMUNITY INPUT SESSION**

There was no additional community input.

10. **NEXT MEETING DATE**

The next meeting of the Volunteer Review Committee will be held at 7:00 pm on Tuesday August 17, 2010 at the Agricultural Hall, 465 South Road, Gabriola Island.

There was discussion about changing the meeting day of upcoming Volunteer Review Committee meetings to the first Tuesday of the month beginning in September and convening a special meeting to consider the Water Report.

11. **ADJOURNMENT**

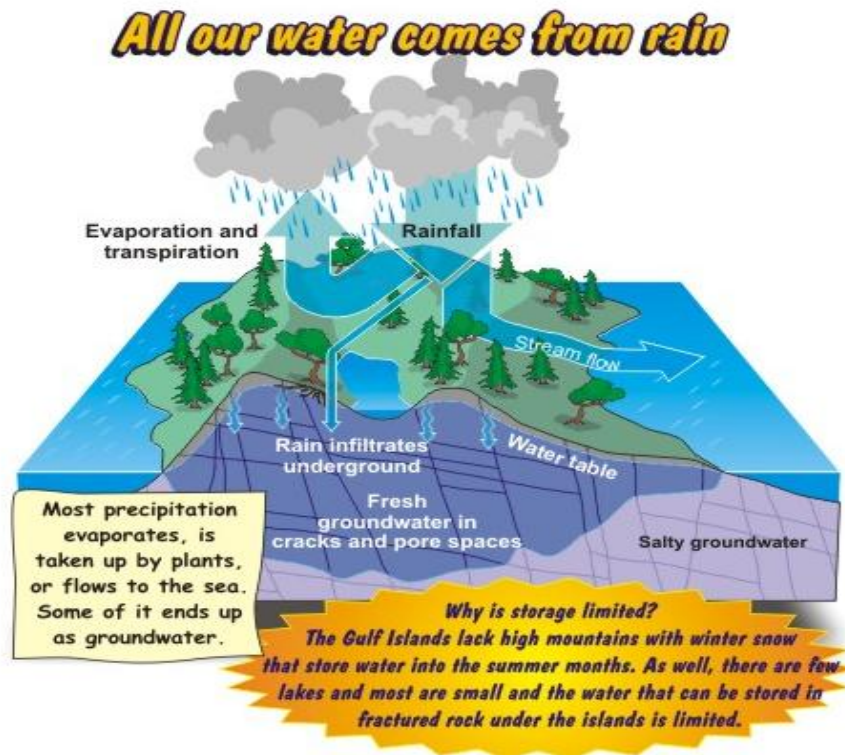
The meeting was adjourned by consensus at 10:14 pm.

Recorder

Co-Chair

Co-Chair

Context:



Source: Geoscape Canada – Waterscapes – Gulf Islands

Further Context:

Hydrology of Gabriola Groundwater

by John Peirce, P. Geo., and Nick Doe, P. Eng., June, 2010

(www.nickdoe.ca/pdfs/webp649.pdf)

A. Water Supply Objectives

1. To manage the island's water resources on a sustainable basis.

Carried 9-0-0

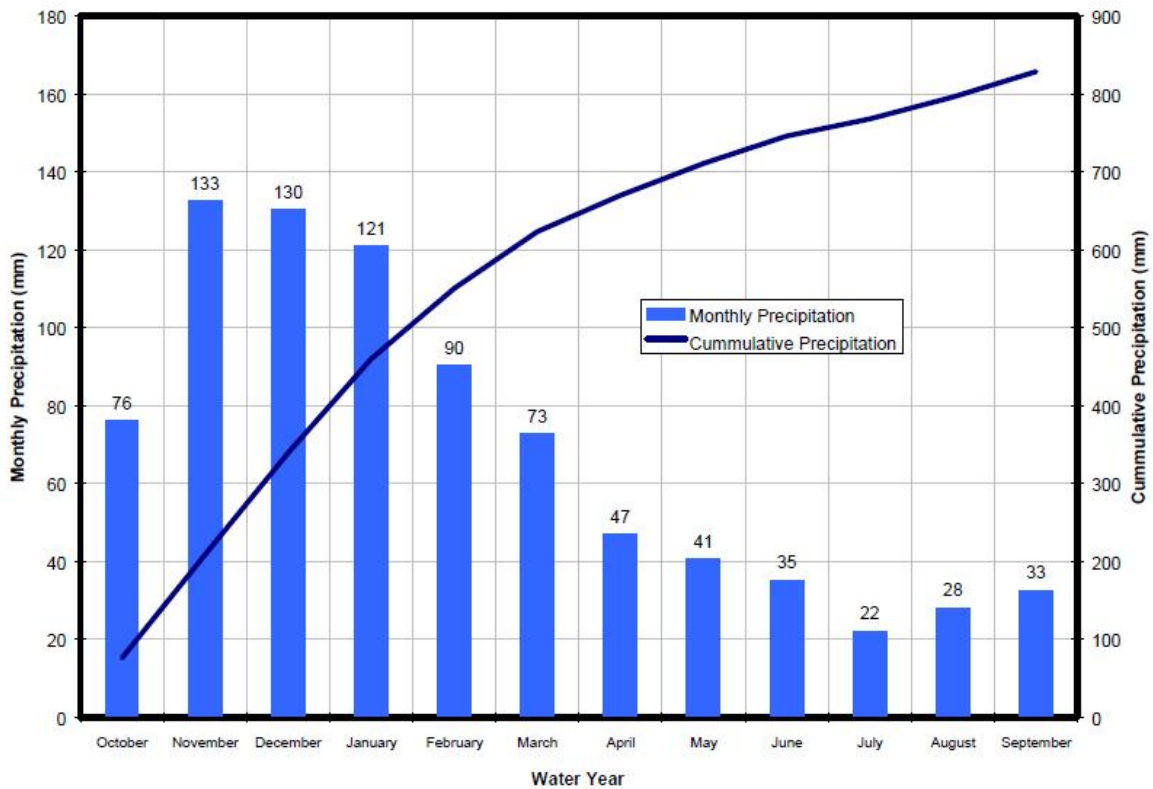
Reasoning:

A long term reliable water supply is essential for everyone. In addition some climate change models show the likelihood of warmer and somewhat

drier weather in the future. Various models do not predict drier weather with any consistency. They do predict an increase in seasonality, but there is no evidence of this at the moment. What is agreed is that there will be less groundwater. Even more important is the possibility of a longer duration of warm dry summer like weather, and a higher variability of weather.

Water supply over the dry summer period requires storage. The following chart is from “Rainfall Availability and Household Water Consumption for Mayne Island” *Ken Hughes-Adams, Madrone Environmental Services Ltd.* prepared for Islands Trust.

Figure 1. Mean Monthly Precipitation - Mayne Island Weather Station



- 2. To have a sustainable long term domestic water supply available to all individual properties sourced from within each property.**

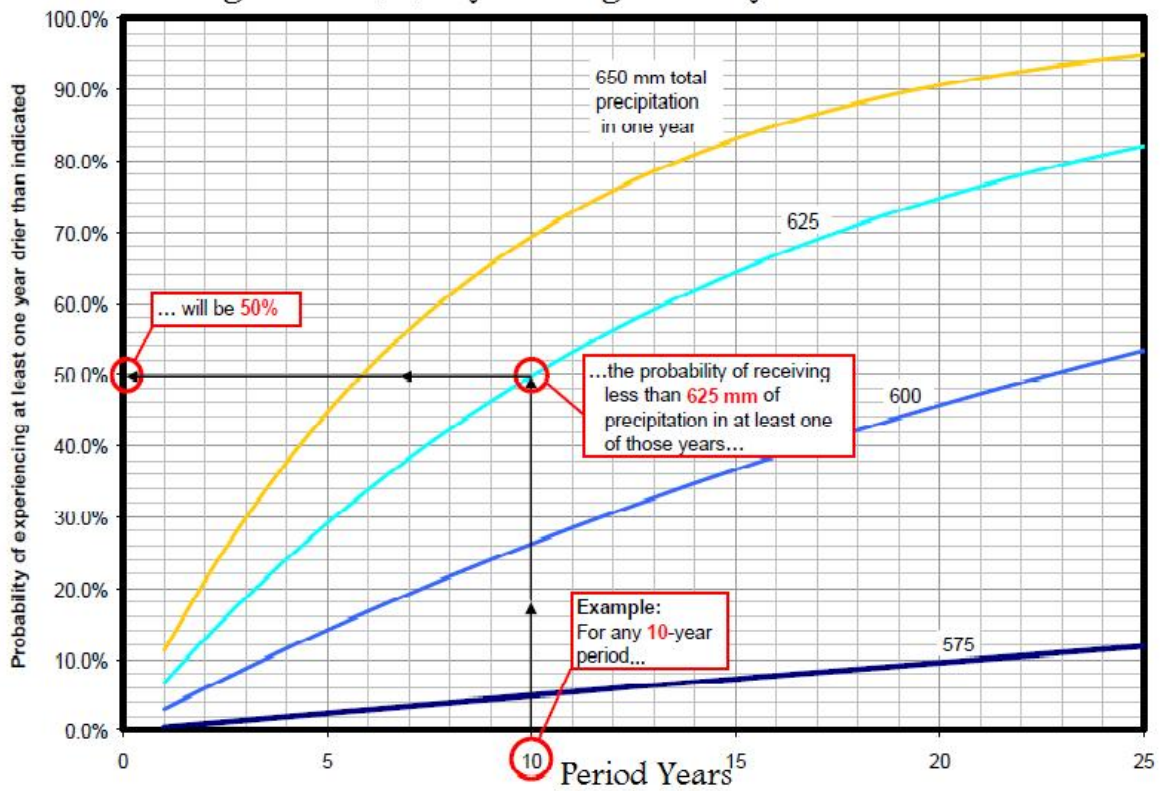
Carried 9-0-0

Reasoning:

Today every property can obtain a sustainable supply by means of rainwater collection and storage. Cisterns of 10,000 Imp. gallons (45,459 liters) are usually considered sufficient for two people to store sufficient domestic

water for the summer dry period. Groundwater resources are also available in many areas, so that existing or new wells provide a sustainable supply, but these depend on water table levels being maintained. Hence the most economic solution may be a mix of rainwater collection, groundwater usage and delivered water depending on individual preference and location. The variability of future rainfall needs to be considered. The following chart is from “Rainfall Availability and Household Water Consumption for Mayne Island” Ken Hughes-Adams, Madrone Environmental Services Ltd.

Figure 4. Probability of Drought on Mayne Island



- To promote groundwater resource conservation in order to maintain water table levels for both domestic and agricultural consumption and protection of tree canopy coverage.**

Carried 9-0-0

Reasoning:

Tree crowns connect to form a canopy covering the land. Although the trees use a great deal of water, they also keep the land cool, and contribute to micro climate precipitation. Water is stored and gradually released after a rainfall reducing runoff into the sea. We

have seen damage to both cedars and maples after dry summers, with reduced water table levels.

Domestic Consumption

Wells remove water from aquifers, and then return the water to the surface in the septic fields. Most will eventually percolate back into an aquifer, but some will be lost to evaporation. Many methods are available to reduce domestic consumption such as composting toilets, dual flush toilets, and reuse of grey water. Rainwater collection bypasses groundwater consumption.

Horticulture

Vegetable gardens and flowers are a major benefit to Gabriola. Unfortunately much of the water used for irrigation will be lost to evaporation. The volume of irrigation water used and the amount of evaporation can be significantly reduced by using drip irrigation systems rather than sprinkler systems. Responsible users will provide winter storage of water in ponds, cisterns, or tanks for use in summer gardens. A new moisture sensor that does not rust is available for irrigation systems, and has been presented on Gabriola by the RDN. Groundwater usage for horticulture should be discouraged in water table sensitive areas.

Agriculture

Significant quantities of water can evaporate because of irrigation, which is a major issue in other areas. The B.C. Agriculture Department is very sensitive to this issue, with recommendations for required usage. Agriculture numbers for open water stored for irrigation indicate a loss of 14” (35.56 cm) evaporation on Vancouver Island over the summer. Groundwater use for irrigation should be discouraged in water table sensitive areas, and monitored, where permitted, in all areas.

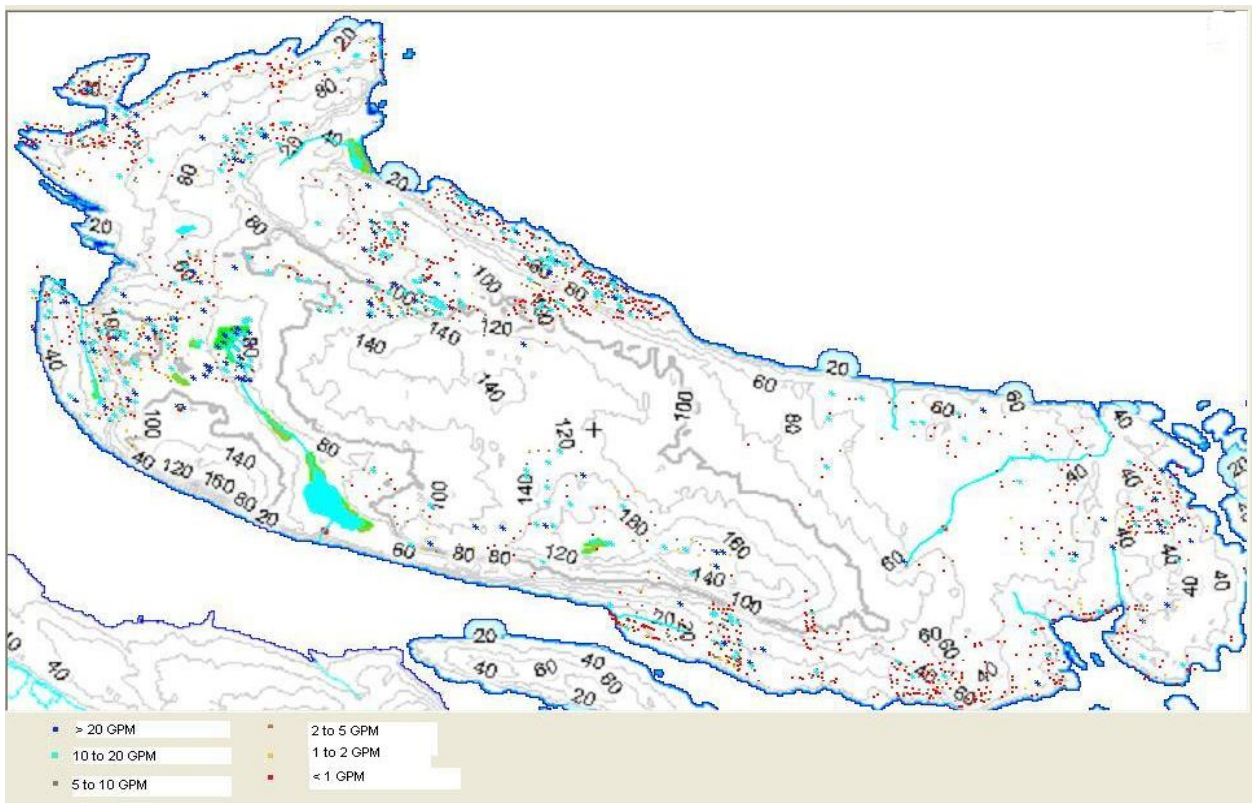
B, Water Supply Policies

Reasoning:

Many, if not most, policies can depend on community cooperation, and other off island authorities. However the use of regulation is necessary where irresponsible action results in damage to another. We have a good method in the 'danger tree letter' used by residents to inform a neighbour that a tree represents a danger. This removed the plea of not being aware of any problems in any legal action. Unfortunately, cause and effect is not as clear in cases where irresponsible use of groundwater runs a neighbour out of water. This situation can be improved by the widespread use of well watchers, which can document water table reductions, and zones of influence of heavy users.

Policies are intended to be limited to areas under the control of Islands Trust. Issues that are under control of other administrations are in the Advocacy Policy section, although the responsible authority is often not clear

The following map shows wells and flow rates when the wells were drilled as reported as reported in the well documentation which may not be repeatable.



1. To undertake a program to map groundwater availability levels on all of Gabriola.

Carried 9-0-0

Reasoning:

An aquifer groundwater availability map of Gabriola is necessary to provide guidance for development and consumption. Catchment areas usually have a considerable amount of water stored, until it either runs off, or percolates through the aquifers to the ocean. Rubble along cliff faces may store a great deal of water and the higher elevation water runs out at the cliff base. In any case wells directly adjacent to the bottom of the rubble areas can have a large supply and a large flow. The reverse is usually the case for the areas on top of the cliff, as in general, water flows downhill. There are other differences based on fracture geometry, the composition and structure of individual geological formations, and the porosity and permeability of individual layers and fractures.

One line of reasoning says that bulk groundwater removal should not be permitted anywhere on Gabriola. The difficulty with this is that bulk water transport from Nanaimo would become necessary, and ultimately Gabriola would be dependent on the continuity of the Nanaimo supply.

Careful consideration of the following suggestions by Islands Trust is necessary in order to create a reliable aquifer storage map to evaluate the suitability of bulk groundwater extraction as follows:

- a) An independent assessment of the subject location for ground water availability by an independent, registered, professional Engineer/Hydrologist who has a proven history of planning a community water supply, and who has liability insurance to cover potential errors.
- b) The perimeter limits of the subject aquifer shall be delineated by a similarly qualified professional Engineer/Hydrogeologist. Water catchment area boundaries are relevant to bulk water.
- c) A dedicated monitoring well shall be in place for a minimum of one year in the subject aquifer or as recommended by the mapping expert. The monitoring shall be capable of recording daily baseline groundwater levels or as recommended by the mapping expert.

- d) All residents living on the subject aquifer shall be notified one year in advance of application to extract bulk water, to provide existing residents an opportunity to establish pre-existing groundwater conditions in their residential wells.

2. Bulk Water sales from roof catchment shall be permitted as a home activity.

- a) **Paved roads to the property are required to prevent summer dust.**

Discussion deferred

Reasoning:

Bulk Water sales from Gabriola sources are essential as a safety factor acting as a backup to individual property supplies. The sale of roof catchment water would not affect the groundwater supply, whether the catchment is stored in tanks or storage ponds.

- a) *Alternate Views:* Road paving costs too much.

3. Bulk Water groundwater extraction (as currently permitted by a Temporary Use Permit in the OCP) as a home activity shall be limited as follows:

- b) **At least two bulk water source extraction areas on Gabriola should be necessary as a long term supply.**
- c) **Sources should be limited to high aquifer groundwater availability areas as defined in the Islands Trust Aquifer Groundwater Availability Map where the high aquifer is determined as follows:**
 - i. **By an independent assessment of the subject location for groundwater availability by an independent, registered, professional Engineer/Hydrologist who has a proven history of planning a community water supply, and who has liability insurance to cover potential errors,**
 - ii. **Where the perimeter limits of the subject aquifer is delineated by a similarly qualified professional Engineer/Hydrogeologist.**
 - iii. **A dedicated monitoring well or wells has been in place for a minimum of one year in the subject aquifer or as recommended by the mapping expert and the monitoring**

- d) Paved roads to the property are required to prevent summer dust.**
- e) Surrounding wells shall be supplied with well watchers, and pumping will cease if water table levels fall to within a reasonable safety level of the bottom of the surrounding well. For a well to continue to produce water, there must be a large enough intercept of the water table to provide sufficient flow, in addition to a working coverage of the pump.**

Discussion deferred

- f) Alternate Views:* Base line measurements for a year are irrelevant; it is similar to finding what weather is normal. The critical information is the water table level, and stopping bulk water extraction from groundwater if neighboring wells are in danger.
- g) Alternate Views:* Well safety levels are difficult to determine.
- h) Alternate Views:* Well watchers from producing wells will produce misleading readings during pumping, and until the well has recovered to the static water table level. A formal monitoring well complete with monitoring equipment is necessary.
- i) Alternate Views:* A government run well on public lands should provide water for truckers to distribute on an emergency basis.

Reasoning:

A letter from Gabriola Groundwater Management Society (GGMS) follows:

GABRIOLA GROUNDWATER MANAGEMENT SOCIETY

OCTOBER 29, 2009

ISLANDS TRUST LOCAL TRUST COMMITTEE

Trustee Gisele Rudischer

Trustee Sheila Malcolmson

Dear Sheila and Gisele:

In the recent debates on groundwater pumping of bulk water for sale on Gabriola there have been certain bits of information that do not seem to be completely understood.

First of all, well records of static levels of water in the well kept for a few years prior to the beginning of pumping of groundwater for bulk water sales are very useful. This refers to the Well Watchers we have seen installed around prospective bulk water sales operations.

These records and readings can be used to signal to the homeowner when their well is under stress and when water use should be reduced. They can signal that a well is or is not recovering quickly or if there is a slowing down of the measured recovery rate of water in the well itself.

A body of seasonal records can be used to establish a benchmark level below which the static level of groundwater in the well should not drop (in each season) as this might indicate that the level of the groundwater in the aquifer had dropped and this would indicate that the well (and the aquifer) were under stress.

There is a problem, however, in using this information legally as the well being monitored also is used by the person/family for domestic and/or horticultural and in some cases, agricultural use. It could be argued that the personal use of the water had escalated in the period of time when water levels recorded indicated a drop in the static level or recovery rate of the personal well. That increased personal use could be argued as the reason for the indicated changes in static water level or recovery rate, and the possible result of reduced water quality and/or loss of water to the well.

It can also be argued that when the Well Watcher is installed at or around the same time that the bulk water operation starts that there is no prior data, no control statistics going back a few years to indicate what the performance of the personal well was like before the bulk water extraction process commenced. Therefore there would be no way to prove the reduced or changed groundwater in a well was the result of bulk water extraction.

A true observation well must not be used for any other purpose but recording static water levels and water quality testing. Readings taken from the well would then be a more accurate indication of groundwater conditions in the aquifer.

Observation wells should ideally be placed not only next to the bulk water source but also in positions that access the same groundwater source (aquifer). This can span a distance of one or two kilometers. This situation is ideal and will give the most nearly complete picture of groundwater conditions.

I am told that to determine which wells are sourced from which aquifer can be determined by water conductivity tests. You can chart the “footprint” of water by matching the chemical components of each groundwater sample. This part of determining a “zone of influence” of the effects of pumping is simple.

To determine the complete “zone of influence” of a groundwater pumping operation would require monitoring the freshwater/saltwater interface to determine whether it was retreating inland in the dry season. This would indicate a decrease in pressure in the aquifer (groundwater) and the possible threat of saltwater intrusion in wells in that interface area.

Conductivity testing also indicates the stress an aquifer might be under. As groundwater levels in an aquifer fall the chemicals (minerals, metals, salts) in the water become more concentrated. This increase in conductivity can also indicate the threat of salt-water intrusion as the pressure within an aquifer drops because the volume of fresh water drops, or the increasing mineralization of the water makes it less than ideal for human consumption.

So we believe that observation wells and testing for bacteria (as per health regulations) should also be accompanied by conductivity testing to give a more nearly complete set of indicators of groundwater quality and volumes available and a better assessment of aquifer health.

Sincerely,
Jenny MacLeod
President
Gabriola Groundwater Management Society

4a) Recommendations for Bulk Water sales from ALR lands will be disallowed in order to sustain water table levels for agricultural uses.

Defeated 3-5-1

Alternate Views:

Bulk water extraction from wells or ponds should be based on water availability and a monitoring system to ensure that neighboring wells are not impacted. ALR lands cover large amounts of our catchment areas that are logical sources of bulk water.

4b) Bulk Water groundwater extraction (as currently permitted by a Temporary Use Permit in the OCP) as a home activity from ALR lands shall be limited as follows:

a) At least two bulk water source extraction areas on Gabriola should be necessary as a long term supply.

- b) Sources should be limited to high aquifer groundwater availability areas as defined in the Islands Trust Aquifer Groundwater Availability Map where the high aquifer is determined as follows:
 - iv. By an independent assessment of the subject location for groundwater availability by an independent, registered, professional Engineer/Hydrologist who has a proven history of planning a community water supply, and who has liability insurance to cover potential errors,
 - v. Where the perimeter limits of the subject aquifer is delineated by a similarly qualified professional Engineer/Hydrogeologist.
 - vi. A dedicated monitoring well or wells has been in place for a minimum of one year in the subject aquifer or as recommended by the mapping expert and the monitoring has recorded the daily baseline groundwater level or as recommended by the mapping expert.
- c) Paved roads to the property are required to prevent summer dust.
- d) Surrounding wells shall be supplied with well watchers, and pumping will cease if water table levels fall to within a reasonable safety level of the bottom of the surrounding well. For a well to continue to produce water, there must be a large enough intercept of the water table to provide sufficient flow, in addition to a working coverage of the pump.

Discussion deferred

- 5. Islands Trust staff will maintain a water table map and recording system, using calibrated water depth measurement systems, with records kept on a monthly basis.

Carried 9-0-0

Reasoning:

Education of new residents and summer residents is necessary in order to achieve our water supply objectives. Current Information is essential to make residents aware of their responsibilities.

The B.C. Ministry of Environment maintains several test wells that are monitored. In other areas there are many water depth measurement systems maintained by individuals. Water table levels can be obtained by calibrating

the water depth measurement systems, measuring the distance from the surface to the water table, and the elevation of the surface. Care must be taken to take measurements without pumping influencing the static water table level. From that point on the water table can be calculated from the water depth measurement systems reading. Generally the aquifer will be filled up to the surface in the winter. Monitoring the dropping water table levels in the summer will indicate problems and provide information to indicate water table sensitive areas.

Saltwater intrusion can be critical for waterfront areas. Buoyancy calculations, confirmed by saltwater intrusions, have shown that a ratio one unit above average tide can produce up to thirteen units of fresh water below the average tide level. The result is that the deeper the well, the higher the water table should be maintained in order to prevent saltwater intrusion.

- 5. Water storage in any form shall be encouraged, particularly in ponds, dugouts, cisterns and wetlands.**

Carried 9-0-0

Reasoning:

Storage of winter rainwater in cisterns for summer use reduces summer demand on the aquifers. Storage in ponds provides some recharge as water table levels drop. If pond water is used for irrigation, then there is less irrigation demand on the aquifers in summer. An attached Rainfall.xls spread sheet simulates the result of installing a rain catchment system on January 1st, for various tank sizes, roof sizes, and people in the home.

- 6. A public education program shall be encouraged to promote water conservation practices.**

Carried 9-0-0

Reasoning:

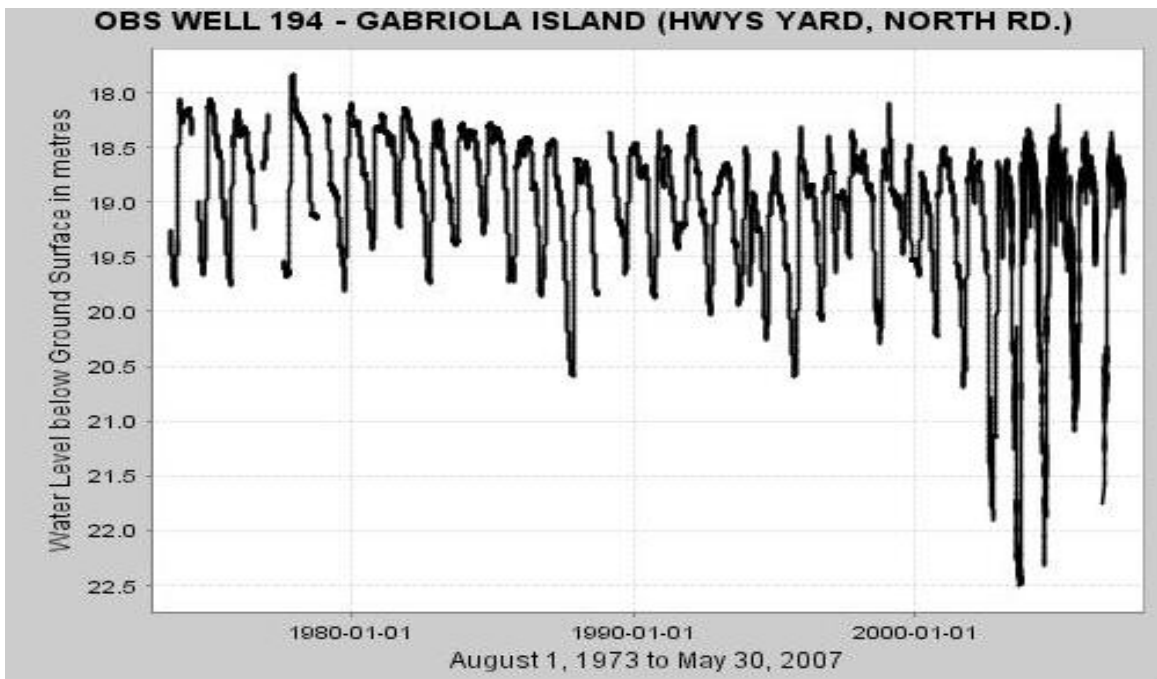
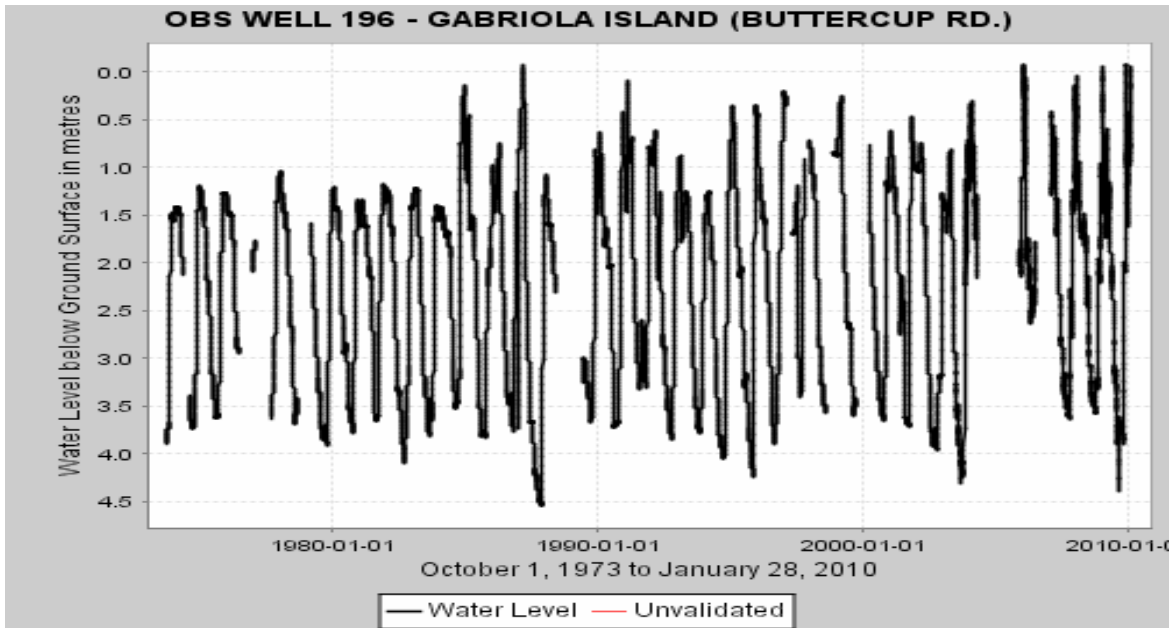
Keeping lawns green in the summer by using groundwater or purchased water is not part of the island social contract. This and quite a few other conservation methods may be the reverse of common practice in urban areas.

- 7. The Islands Trust building approval will include requests for permeable parking lot surfaces to reduce run off.**

Not voted

The following are graphs of the Ministry of Environment logs of water level from two observation wells on Gabriola. Note that there is a variation of about 1.5-4.0 m in water level between winter and summer.

At the well 196 on Buttercup Road there has been little significant change in water levels over the last 27 years, except that there is an increase in summer to winter variability. At well 194 at the Highways Yard on North Road there has been a marked decrease in summer water levels since 2001.



Reasoning:

Advocacy Policies are indented to reflect requests to other authorities. Often the scope of particular administrations is not clear, particularly when B.C. regulations are silent on a particular subject.

C. Water Supply Advocacy Policies

- 1. The RDN parks shall be requested to provide a study of the feasibility of a pond in the swamp area of the 707 Acre Wood.**

Carried 10-2-1

Reasoning:

The swamp area of the 707 would be a good location to encourage a beaver pond. The elevation would feed aquifers stretching across the central area of Gabriola.

- 2. The RDN will be requested to modify building permit approval to require cisterns and rain catchment plumbing and filters in all new houses in water catchment areas marked on the aquifer storage map as having minimal groundwater.**

Carried 9-1-3

- 3. The RDN will be requested to modify building permit approval to include requirements for house tanks in all new house construction not requiring cisterns.**

Carried 9-1-3

Reasoning #2 & #3:

A different interpretation of building requirements is necessary for rural areas without water and sewerage services, such as Gabriola. House tanks allow wells to be pumped slowly, reducing local drawdown. They also allow for hydrogen peroxide treatment of water to help with bacterial problems and also with manganese. The following is an excerpt from:

“Dissolved Manganese in Drinking Water on the Gulf Islands: Occurrence and Toxicity” *Dr. Diana Allen and Krista Pelude, Department of Earth Sciences, Simon Fraser University*

2.3 Chemical Relations

Manganese often occurs together with iron. It resembles iron in its chemical occurrence in groundwater, but is less abundant. Dissolved manganese concentrations in ground and surface water can reach several milligrams per litre under poor oxygen conditions. This often occurs in deep wells. If exposed to oxygen, manganese can form insoluble oxides that may result in the formation of deposits and colour alteration. Soluble manganese can become insoluble through the following chemical reaction:



Therefore, when soluble manganese bicarbonate dissolved in water is exposed to higher concentrations of oxygen, oxidation of the compound takes place. A new insoluble manganese oxide is formed and precipitates out of solution. Carbon dioxide is lost from the system as gas. In other words, it is expected that elevated manganese concentrations will exist in anaerobic conditions. The manganese hydroxide precipitate has the consistency of gel and may over time develop into black scale deposits.

- 4. The Ministry of Transport (Highways) shall be encouraged to use run-off areas called infiltration swales leading from highways ditches to allow water to soak into the aquifers prior to being channeled into creeks to the ocean.**

Carried 13-0-0

- 5. The Ministry of Environment should prohibit fracturing with water or explosives.**

Carried 13-0-0

Reasoning:

Fracturing can permanently change groundwater availability for surrounding wells.

- 6. The Ministry of Environment should discourage excessive well extensions.**

Carried 13-0-0

Reasoning:

The 'race to the bottom' in order to improve water recovery often does not work and may have a negative effect on surrounding wells. In coastal areas it may result in salt water intrusion which makes the well unusable.

Saltwater intrusion can be critical for waterfront areas. Buoyancy calculations, confirmed by saltwater intrusions, have shown that a ratio one unit above average tide can produce up to thirteen units of fresh water below the average tide level. Drilling wells beyond this amount will result in salt water intrusion.

Future:

- A revised B.C. Water Act is in process, currently in the proposal stage. Whether any of the above proposals are included we will have to wait to find out.
- Desalination is currently commercially viable, being used in boats and several marine installations that have access to docks and piers. Care must be taken to ensure that wells are not used for source or bypass as the saltwater intrusion will contaminate the local water table.

A. Liquid Waste Management Objectives

- 1. To ensure domestic, commercial and agricultural sewage does not produce biological contamination of groundwater, surface water, and the marine environment.**

Reasoning:

Health dangers exist not only in well water contamination, but contamination can also result from recreational activities, and affect marine products such as clams and oysters. A current indicator of such a problem is the Fisheries and Oceans closure areas for marine harvests surrounding Gabriola.

- 2. To ensure chemical and other contaminated runoff and seepage does not pollute the groundwater, surface water, and the marine environment.**

Reasoning:

Petrochemical contamination of groundwater from leaking storage tanks is frequent, particularly as the tanks age and corrode. Every year we treat our roads with chemicals for ice removal and dust suppression. . Wear from rubber tire and break pad worn out on the roads end up in ditches together with discarded plastic. Prevention of toxic chemical spills should require a permit for transport of hazardous chemicals. Do we have emergency responses able to deal with spills?

- 3. To preserve groundwater aquifers as a viable storage medium for domestic and commercial consumption.**

Reasoning:

The original Gabriola Groundwater Management Society signs at Gabriola entrances proclaiming that ‘Gabriola is a groundwater sensitive area’ were necessary because in most large urban areas groundwater quality is irrelevant. As we move to more and more rainwater collection, it is tempting to ignore groundwater contamination. ‘Out of sight, out of mind’ is tempting, but for long term sustainability we need the aquifer storage option.

Note: Some of the following Policies might be better in the Advocacy Policies section.

B. Liquid Waste Management Policies

Reasoning:

From the *Sewerage System Standard Practice Manual* the “Authorized Person planning, constructing, or maintaining an installed sewerage system, has the responsibility to ensure that all local zoning and/or bylaws are complied with”. Islands Trust, through zoning and bylaws, thus has the ability to create policy concerning sewage systems.

A much larger problem is the maintenance and operation of existing sewage systems. Often constructed many years ago, these existing systems may or may not have been maintained. The likelihood that such septic fields remain in good condition is even lower.

Islands Trust interpretations limiting to setbacks or distance from wells should be expanded.

- 1. The old pit toilet on appropriate soils conditions, should be permitted for all single family properties that do not have a well or cistern.**

Reasoning:

In spite of our wish to be modern and progressive, the old biffy is perhaps one of the most environmentally sound sewage methods. As no water is involved, sewage decomposes gradually, and seldom migrates into the aquifers. Eventually the material becomes compost. Vegetative grey water disposal is reasonable for small volumes.

- 2. Farms with intensive livestock operations located on sloping properties or containing winter running streams should be required to install ponds and vegetative buffering systems to process agricultural runoff. An exception for closed feeding systems such as chicken farms, where all waste is removed to a second location should be allowed.**

Reasoning:

Agricultural runoff can range from nothing at all to enough to turn the Black Sea into a dead zone. Living fish in a runoff pond are proof of viable biological oxygen demand in the water.

- 3. Runoff from the Village area should be sampled by having a sampling sump downstream of the Village area. Samples should be tested by the BC Ministry of Environment in the same manner as industrial areas, and the results published on a regular basis.**

Reasoning:

Education of island residents requires hard data rather than appeals to motherhood. Many industrial areas have run off water sampling and testing, usually by using trout fingerlings. ‘The fish died’ has a direct incentive to do better on all of the various things we can control.

- 4. Plowing and sanding the winter snow on our roads is much appreciated. Highways should be encouraged to use sand rather than salt wherever possible.**

Reasoning:

Winter rural roads have been traditionally a challenge. We have gradually moved into the assumption that we would not install winter tires and chains, but would expect the roads to be maintained to a summer level. Not driving in snow is an option, but eventually people get caught with changing weather conditions.

Summer dust remediation involves adding salts to the carbonate dust embedded in ‘Texada Aggregate’. While paving is expensive, a chip seal program should be established to eventually replace the rural gravel roads.

Reasoning:

Chip seal road surfaces have lasted for many years on low traffic roads, depending on the quality of the base. Gravel roads have a much higher maintenance cost with gravel additions, grading, and summer dust remission. Driver’s costs for damaged brake linings are significant.

- 5. Property transfer is an ideal time to bring sewage maintenance up to a reasonable standard. Islands Trust should obtain from appropriate experts, a recommended check list for new property purchasers which would include building inspections, septic tank inspections, and septic**

Reasoning:

Although sellers are responsible for full disclosure of defects prior to sale, the more frequent response is that they were unaware of any problems. Although the process is voluntary on both parties, Real estate sales include many pieces of paper, and often some of the warnings go unheeded in the fine print. A more up front, coloured, recommendation from Islands Trust is necessary for the many factors that are different from other areas with Gabriola purchases.

- 6. Pump and haul septic systems should have the property address and quantity recorded at the RDN dump site. In the event of a reasonable lapse of activity, based on historical quantities, the RDN should then make a direct purchase of a pump and haul removal for that address. Costs would be added to taxes. A record of pumping at the RDN could help buyers.**

Reasoning:

Pump and haul systems will overflow into the environment without the benefit of a field. Although there may not be active use for some summer residents, problems have surfaced with property transfers when the responsibilities are not clear.

- 7. Septic systems involving an accumulation sump, and pumping to a higher field should have a record of inspection verified by the RDN on a regular basis. Newer septic treatment systems also involve pumping to process the sewage and prevent overflow into the environment. A more frequent check, such as every 3 years would be appropriate.**

Reasoning:

Power supplies on Gabriola frequently brown out during the fuse blowing sequence as a tree shorts out the high tension line. Although these pumps are highly reliable, and have a warning system, it is a more complex system than the standard flow septic system.

- 8. Traditional Septic systems tanks can last as long as 20 years without requiring pumping, but can clog up in a few years depending on the**

Reasoning:

More as a process of education, existing property owners should be aware that their septic tank can plug up mostly from float or sediment. The primary tank outlet is 24 inches below the tank top and 24 inches above the bottom. Float tends to dome and is deeper at the boundaries, so 16 inches of float will be very close to plugging the outlet. Inspection is not difficult, but requires finding and removing the septic tank main cover, and pushing a stick into the float and sediment to measure the thickness. Unfortunately many property owners would prefer to ignore the whole process.

C. Liquid Waste Management Advocacy Policies

Reasoning:

Sewage installations for either domestic or small commercial new construction are the responsibility of the Ministry of Healthy Living and Sport under the *Health Authorities Act*. As detailed in the Sewage System Standard Practice Manual Version 2 the statutory authority includes:

- Administer and enforce the Sewage System Regulation
- Carry out legal remedies such as orders or tickets
- Accept documents for filing and certification of systems, providing record of filing and letters of acknowledgement of certification
- Ensure documents meet the Sewage System Regulation
- Ensure that only Authorized Persons plan, construct or maintain installed sewage systems
- Inspect and take corrective action to alleviate health hazards related to onsite wastewater system

Recent procedure changes apparently have reduced this responsibility to filing of the application, with action only taken in the event of a contamination problem.

Property owners have the responsibility to:

- Ensure that the system is maintained in accordance with the maintenance plan
- Keep a record of all maintenance service performed on the system

- 1. The Ministry of Healthy Living and Sport shall be requested to allow a vegetative grey water treatment in single family housing construction. Given an approved vegetative grey water treatment system, The Ministry of Healthy Living and Sport shall be requested to allow composting toilets without a septic system.**
- 2. Composting toilets operate without sending contamination into the aquifer. Nanaimo Regional District should allow these facilities without a septic system installed, provided there is a functional grey water cleaning system. Power back up sources (i.e. generators) would obviate the issue of operability during a power outage.**

Reasoning:

An existing septic system is still required to handle kitchen sinks, bath tubs and showers, unless there is an alternative grey water system. Vegetative systems have been developed and do work for grey water. They have not been proven for sewage.

The British Columbia Plumbing Code, section 4.2.1.(1) “Every fixture shall be directly connected to a sanitary drainage system...” followed by exceptions. “Fixture means a receptacle, appliance, apparatus or other device that discharges sewage or clear-water waste, and includes a floor drain.” Whether a vegetative grey water system is an approved sanitary drainage system may be the responsibility of the Nanaimo Regional District. A composting toilet is clearly not a sewage fixture.

- 3. The Ministry of Environment will be requested to install runoff sampling systems located at the request of Islands Trust. In the event of systematic failure of agricultural runoff, the Ministry of Agriculture and Lands will be requested to enforce ponds or vegetative buffering systems to process agricultural runoff.**
- 4. The Ministry of Transportation and Infrastructure will be requested to encourage sand instead of salt for winter road maintenance.**

- 5. The Ministry of Transportation and Infrastructure will be requested to produce a long term cost/benefit study for replacement of gravel residential roads with chip seal roads.**
- 6. The British Columbia Real Estate Association will be requested to provide a due diligence inspection requirement for septic systems, including tanks, treatment systems and fields, specifically targeted to the Islands Trust mandated area.**
- 7. The Regional District of Nanaimo Wastewater Services Division will be requested to actively monitor all pump and haul septic systems on Gabriola by the means of recording the address of the source of all pump and haul disposals into the RDN wastewater systems. Given a lapse in the regular disposal, the RDN will be requested to initiate pump and haul sewage removals from that address, and will charge the property owner with the cost.**
- 8. The Regional District of Nanaimo Wastewater Services Division will be requested to institute an inspection system of septic treatment systems and accumulation sump pumping systems, by qualified inspectors to ensure that the active pumping systems are still operational.**
- 9. The Regional District of Nanaimo Wastewater Services Division will be requested to institute an inspection system of all traditional septic tank systems, recording either the address of septic tank pumping when disposed in the RDN wastewater system, or by means of an inspection report not signed by the property owner or residents of the property.**
- 10. The Ministry of Healthy Living and Sport shall be requested to provide septic system installation reports for all waterfront properties on Gabriola Island. The Islands Trust will then request that any properties not having a valid septic system installed should have their habitation permit cancelled.**

Reasoning:

Summer properties evolve from tents to campers to cabins to year round residents. Sometimes things do not get upgraded in the process.

- 11. Local volunteer biological water testing should be supported.**

Reasoning:

Current testing procedure limits the knowledge of test location and test results to one person in order to keep them strictly confidential. Often

questions are asked as to why results should not be released for general areas as a public service. Unfortunately this would have a deviating impact on individual property owners and values without any clear legal proof of a problem.

Future:

- Energuard and grey water regulations are expected in the future. How far these go is not clear at this time, and should not delay changes that are worthwhile.
- Reverse osmosis for drinking water is an accepted system, with the four to one bypass being easily stored for irrigation. Whole house systems have also been demonstrated, suitable for brackish or contaminated water. Some systems also include bypass recirculation which greatly reduces bypass volumes.

Contributors:

Jeremy Baker

Steven Earle

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Melanie Mamoser

Jenny MacLeod

John Peirce

Randy Young

Suggested resolutions for VRC to deal with Water Document at its Sept. 7 meeting.

Please review these resolutions and the revised document before the meeting. Please forward any suggestions for changes in wording to Randy Young and John Peirce so that the most current version is presented to the group at the meeting.

The water part of the document has been updated and rewritten to reflect discussion and voting at the last meeting. As before, the suggested grouping of resolutions below has been chosen to try to separate groups of resolutions with similar concepts in order to expedite the voting process. If anyone wishes to suggest an alternative way of grouping or separating resolutions so that we can vote more accurately, please suggest same at the meeting.

You have Gisele Rudischer's detailed email regarding an earlier version of this document in your July agenda package.


Advocacy policies are for those topics where the Islands Trust does not have direct authority to change regulations. This is the area where we can lay out visions for future change that go beyond Islands Trust control.

1. The bulk water issue has been split into two resolutions to reflect the discussion at the last meeting. The write up on alternative views has been expanded.
 - **The VRC supports Water Supply Policy #2 (Bulk water sales from roof catchment).**
Note: Because it is not specified, bulk water sales from roof catchment on ALR land would be also supported by this motion, as written.
 - **The VRC supports Water Supply Policy #3 (Bulk water sales groundwater extraction, with conditions).**
2. *Does the VRC wish to revote on the Water Supply Policy #4 (Disallowing bulk water sales from ALR lands, previously #3), perhaps with some rewording?*
 - *If not revisited, then the previous vote stands, defeating the motion to disallow, meaning that no policy is adopted, except whatever vote is taken on Policy #2 (allowing bulk water sales from roof catchment everywhere).*
 - *There was some discussion about possibly separating out bulk water sales from surface water catchment on ALR land. As surface water use is licensed by the Province, we have not addressed this, but we could recommend an additional policy for the Islands Trust.*
 - *Policy 4b has been rewritten to be specific to bulk water sales from groundwater extraction on ALR land with the same conditions as in Policy #3, above. If we wish to consider Policy 4b, then I suggest the following two resolutions:*
 1. The VRC rescinds its previous vote defeating a recommended policy to disallow bulk water sales from ALR land, voted on at its June meeting.
 2. **assuming the above motion passes, then ... The VRC supports Water Policy 4b allowing bulk water sales from ALR land under**

the same conditions as for general bulk water sales from groundwater extraction.

3. **The VRC supports Water Policy #7 (requesting permeable surfaces on parking lot surfaces).** *This policy was inadvertently dropped from the version considered at our last meeting. Although not said explicitly, this refers to approval of commercial developments with parking lots.*
4. **The VRC supports the Liquid Waste Management Objectives #1-3.**
5. **The VRC supports Liquid Waste Management Policies #1-8.**
6. **The VRC supports Liquid Waste Management Advocacy Policies #1-11.**
7. **The VRC forwards the entire RWSLM document and covering memo to the LTC so that they have the supporting rationale for each resolution.** *In this motion it is understood that the final document will be updated to include any changes made at this meeting and the votes taken at this meeting. The final version of the document will be circulated to all VRC members.*

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	<p>DRAFT TERMS OF REFERENCE: PROJECT SCOPE AND OBJECTIVES FOR THE GABRIOLA ISLAND OFFICIAL COMMUNITY PLAN AND LAND USE BYLAW REVIEW DRAFT – July 7, 2010</p>
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*Draft endorsed **in principle** by the Gabriola Island Local Trust Committee **July 7, 2010***

Preamble:

- In light of the Gabriola Island Local Trust Committee (LTC) Strategic Plan and Public Consultation Strategy;
- With the intention that this is a targeted review and that many aspects of the Official Community Plan (OCP) remain true & relevant;
- Considered achievable given the limits of resources, budgets and time; and,
- In recognition that several of the following items are in progress (iterative & sequential)

Project Scope:

The following actions endorsed by the LTC shall determine the scope of the Review:

1. Confirm the areas of focus for the review (as per GB-009-2010; Staff Report April 20, GB-/04-1-i.a –Consolidated List of Issues);
2. Technical and housekeeping amendments, consolidations & edits conducted by staff;
3. Completion of mapping and incorporation into the OCP;
4. Compliance with Riparian Area Regulations;
5. Recognize the roles and interests of First Nations;
6. Separate OCP drafting from Land Use Bylaw (LUB) drafting in timeline (as per GB-009-2010);
7. Proceed with work on the LUB to align with OCP amendments;
8. Review comprehensive list of proposed OCP policy revisions prepared by staff based on LTC endorsed principles and provide direction to staff to draft amending bylaws;
9. Caution that OCP amendment applications may not be processed during the course of the Review [*under review*];
10. Any proposed amendments will be compatible with the objectives and policies to address Greenhouse Gas emission reductions; and,
11. Existing density provisions and build-out for the planning area shall not be increased.

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Specific Objectives:

The following objectives endorsed by the LTC shall guide the process of the targeted review. The LTC may:

12. Confirm elements of the Plan Principles and Goals (OCP 1.1 and 1.2) which have been identified and supported by the community;
13. Determine inclusion of a vision statement within the OCP;
14. Commission further research and topic papers as required (as per GB-009-2010);
15. Consider amendments, revisions, and/or additions to objectives, policies <and regulations> to the following areas of focus:
 - Affordable Housing, including density transfer/clustering development
 - Watershed and groundwater protection
 - Protection and enhancement of agriculture and food security
 - Renewable energy
 - Protection of sensitive lands and ecosystems
 - Economic activities (Tourist Commercial, Village core, Silva Bay plan and Twin Beaches plan)
 - Land Transportation (ZEV, cycle route, public transit)
16. Determine new or revised Development Permit Areas to reflect findings from the Review Hazard Land and Steep Slope Assessment (as per LTC Resolution & funding); and,
17. Consider organizational & structural changes to the Plan;

General Principles:

18. Recommendations are not binding on the LTC. By law, the LTC maintains unfettered discretion to amend bylaws and considers advisory recommendations, community viewpoints, along with technical advice from staff and other agencies;
19. Any changes during the course of the project review would necessarily entail a change to the scope of the project resulting in changes to timelines, costs or both;
20. An OCP is a broad policy document intended to guide future LTC decision-making and which is implemented by other tools, principally zoning *[under review]*;
21. Advocacy policies may only state the broad objectives, not specifics; *[under review]*
22. An OCP should not include specifics that are beyond the jurisdiction of the local government nor policies that cannot be implemented;

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23. The OCP adopted within the Trust Area must not be contrary to or at variance with the Islands Trust Policy Statement or the Islands Trust Act; and,
24. Although the policies in an OCP are legally binding on the LTC in the sense that a bylaw that is contrary to an OCP policy cannot be subsequently adopted, there is no compulsion on an LTC to implement particular policies in an OCP.

DRAFT

To: Volunteer Review Committee
 From: Fay Weller and John Peirce
 Date: August 15, 2010
 Subj.: Some pragmatic ideas on implementing Ecological Footprint Analysis (EFA)

Please find attached some ideas that we have developed on applying an ecological footprint analysis (EFA) to the secondary suites issue. It seems clear to us that people need to see a concrete example to understand how this might work. This is not an endorsement or recommendation but rather an opportunity to explore whether or not the concept can work.

Please consider these ideas and forward them to the LTC with whatever comments you deem appropriate.

Some thoughts, questions in point form that we have thought about, but not developed further yet:

- Would legalizing secondary suites result in the “same” population on the island because people moving into secondary suites would be moving from illegal to legal housing?
- Should enforcement of rules against illegal housing units be tightened, and if so, how?
- Should there be an EFA process for many policy decisions on the island, e.g., density transfers, sub-division applications requiring LTC approval, secondary suites, etc. One approach would be to have several tools designed for each class of decision. Perhaps there is a way to develop a sieve approach, whereby the answers to initial questions lead to more specific subsets of questions within the same lens tool.
- In Gisele’s proposal regarding density transfer, she introduces the concept of “cottage density units”. It seems to us that an approach that could include secondary suites and cottages as “accessory density units” should be considered. For example, allowing people on parcels of 5 acres or more to build either a secondary suite (an “accessory density unit”) or a cottage (a “detached accessory density unit”) might make sense in the context of an overall allowance to allow secondary suites on smaller lots near the village. The extra flexibility might be welcomed in rural areas, particularly as separate septic systems would not be required. Also this would allow the possibility of accessory dwelling units on ALR land where ALR rules allow secondary suites, but second detached residences are not allowed except under very specific circumstances.
- We have not considered any possible impacts on the insurance ratings for the island. The information supplied by the Fire District Trustees to date amounts to opinion and has not been backed up with any information from the insurance rating agency. This is critically needed information – otherwise innuendo and scare tactics will be used to kill the concept of secondary suites.
- The process options developed above are very preliminary. Some of the possible requirements of Option B (TUP’s) could be added to other options, particularly

- option D. If we are trying to develop additional long term housing options, it seems counter-intuitive to have “Temporary Use Permits”. However, there is a need for continued monitoring and compliance. We can’t see an easy way out of this conundrum.
- When we circulated the EFA tool for comment, the feedback was that people liked the approach very much, but the wording was too technical for the average person to understand. So, if this approach were to be adopted, some effort at removing jargon and/or providing a glossary and some explanatory notes is needed.

We would be glad to work further on this once some clear directions are established.

WORKING DOCUMENT FOR ECOLOGICAL FOOTPRINT ANALYSIS

Objectives:

- 1 To design a tool to assist in creating affordable living situations for lower income islanders that does not entail an increase in population beyond the present zoning bylaws, but rather makes use of unused capacity in existing residences.
- 2 To get feedback from the community regarding whether or not the tool will accomplish objective (1).

To this end the following has been drawn up to help to explain and visualize how an Ecological Footprint Analysis (EFA) might be defined. A homeowner with a house occupied by fewer people than the septic capacity allows may wish to know if they are eligible to offer a potential Accessory Dwelling Unit (ADU).

Separate EFA tools should be considered for different situations where an approval decision by the Islands Trust is needed.

Additional factors could be added that are applicable to decisions made by the LTC include:

- 1) Ecological sensitivity of plants and wildlife on the property
- 2) Opportunities for allotment gardens

Assumptions

The following tool is for accessory dwelling units in houses that are already built, not for newly constructed buildings. It is written in the form of a questionnaire for the homeowner, which will then be evaluated for points by the Planner. In some cases the assignment of points will be somewhat subjective so the system needs to be kept as simple as possible to minimize subjective decisions. The LTC could choose to have the ability to review the Planner's calculation, or not.

It is proposed that accessory dwelling units are permitted in buildings that already exist on Gabriola Island and already have the sewage disposal capacity for the total number of people that will be living on the property. It is recommended that expansion of the house or of the septic system for the purposes of adding an accessory dwelling unit will not be considered.

New houses - the rationale for not including new homes in this process is three-fold:

- 1) The reason for the use of existing homes for accessory dwelling units is to use space and materials that already exist (re-use of materials).
- 2) This approach discourages the building of larger homes for the purpose of establishing accessory dwelling units and thus increasing the potential population on Gabriola Island.
- 3) This approach limits the maximum population to the number that is possible under the current zoning.

Building Code Requirements & Fire Protection required

The Regional District of Nanaimo criteria for a Secondary Suite are as follows and would apply in this process:

- a) Secondary suite no more than 40% of the size of the house
- b) Separate entrance required for secondary suite

Landowner should have written proof from a qualified professional that the dwelling meets the fire code.

Questions and Criteria

There are four broad categories in the EFA outlining the criteria for a secondary suite. The “points” column (grey) is to be filled out by Islands Trust staff. The applicant must satisfy the baseline requirements (in italics).

General

1. What is the maximum number of people that will be living in your primary residential unit? _____
2. What is the maximum number of people that will be living in your secondary residential unit? _____
3. What is the maximum number that will be living on your property at any one time? _____
4. What is the year your house was granted occupancy status _____ *Baseline Criteria: Only houses 5 years old or older will be considered*
5. Does the owner live on Gabriola Y N *Baseline Criteria: Owner is required to reside on Gabriola Island*

Sewage Disposal System

1. What type of sewage disposal system do you have? _____ *Baseline Criteria: Equivalent or better than (environmentally) a septic field system*
2. What is the current # of bedrooms? _____

3. What is the square footage of house? _____
4. What year was the septic system built? _____
5. What capacity was your sewage disposal system designed for? _____ (indicate either # of people or # of bedrooms plus square footage). *Baseline Criteria: Capacity of septic system must not exceed planned # of people living on property.*
6. What type of monitoring of your system is in place? _____ *Baseline Criteria Monitoring must be appropriate for system.*

Transportation

As the crow flies, what is the distance from your home to:

- a) The ferry _____
- b) The village _____
- c) Closest grocery store _____

Baseline Criteria: Total of a), b) and c) is less than 4.5 km

If and when a transit system is in place then distance from property to bus stop would be considered.

Water

1. Where does your household water come from? *Baseline Criteria: Property not considered if water is purchased.*

a) Well only	Y	N	if yes	___%
b) Well and cistern	Y	N	if yes	___% Cistern size _____
c) Rainwater storage	Y	N	if yes	___% Cistern size _____
d) Purchased water	Y	N	if yes	___%
2. Do you monitor your well? Y N N/A
 If yes – what do you use? Well watcher? Y N Flow-meter Y N Other Y N
3. How much water is used in one year? _____
Baseline Criteria: Use is equal to or lower than # of people in household x 35 Imperial Gallons per day. If current use of water with proposed # of people is unknown then flow meter put in place and monitoring occurs. Amount checked after one year (possible with TUP renewal process).
4. How deep is your well?
5. What is the level in your well in summer after a few hours rest? _____
6. Do you water your garden or landscaping? Y N

If yes what is the source of your water? _____

Baseline Criteria: Well, rain water or grey water allowable for food garden. Only grey water allowable for landscaping

Building

1. What type of energy is used to heat your house? *Baseline Criteria: 0 points or better (points are indicated in brackets beside each source and if more than one source would be weighted based on %)*

- a. Electricity
 - i. Baseboard (1) _____ %
 - ii. Air to air heat pump (2) _____ %
 - iii. Geothermal and heat pump (3) _____ %
- b. Wood heat (If wood heat – describe type of stove used)
 - i. Open hearth (-1) _____ %
 - ii. Airtight (0) _____ %
 - iii. Masonry/high efficiency (1) _____ %
- c. Propane (-1) _____ %
- d. Heating/Furnace Oil (-2) _____ %
- e. Other (i.e. solar): Describe _____ (points dependent on type) _____ %

2. What is the extra energy required due to the secondary suite? *Baseline Criteria: At least 5 points total for this section plus at least R20 insulation in walls and floor and R40 in ceiling. (may be difficult for homeowner to determine without going into wall so this one could be considered optional).*

- a. Are you already heating the space the tenants would be occupying? Y N (2 pts for yes)
- b. Will you have a clothesline available to tenants? Y N (2 pts for yes)
- c. Are the appliances energy efficient? Y N Some (2 pts for yes, 1 pt for some)
- d. Is the space well-insulated? Y N Don't Know (2 pts for yes)

Process for applying an Ecological Footprint Analysis to approval of Accessory Dwelling Units

Key to the effectiveness of applying the Ecological Footprint Analysis to approval of Accessory Dwelling Units is the process that is used to determine eligibility. Listed below are four potential options:

Option A: Application process using Ecological Footprint Tool and Islands Trust staff approved application process for Temporary Use Permits for Secondary Suites.

Addition to Land Use By-law required:

When considering the issuance of a temporary use permit for an accessory dwelling unit within single family residential zoning, the following guidelines apply:

- i) The Local Trust Committee will establish the baseline requirements of the Ecological Footprint for Accessory Dwelling Units*
- ii) The Local Trust Committee will require landowners to indicate their compliance with the baseline requirements of the Ecological Footprint for Accessory Dwelling Units*

The process is as follows:

- a. Ecological Footprint Tool Application be completed and signed by landowner
- b. Islands Trust staff review and approve if applicant meets all criteria listed.
- c. Local Trust Committee may ask to review applicants and approvals
- d. Temporary Use permit is provided to landowner for initial one year term (fee of \$50)
- e. Reapplication for permit after one year for three year term (fee \$25). If landowner has been compliant with all of the requirements staff approve application.

Pros

- ongoing commitment on the part of the landowner to comply with baseline requirements for secondary suite through signature on application
- Is responsive to the capacity of water, septic and energy systems for each property
- Relatively simple to administrate, doesn't require LTC approval for each application, just for baseline requirements.
- Limits to homes within walking distance of village centre.
- Gabriola population remains within what is possible under current zoning

Cons

- Landowner may have difficulty in accessing information about septic systems as well as potential water use
- Application process and fee may be barrier to landowners applying for permit

Option B: Process for Temporary use permits for vacation rentals is used for Temporary Use Permits for Secondary Suites

Use the following sections of By-law No. 166, 3.8 (wording for the vacation rentals) for the secondary suites/ecological footprint and would follow the same process for application. The fee would be \$50, reapplication fee would be \$25.

- i) the Local Trust Committee should consider the cumulative effects on the neighbourhood and Island of all the temporary use permits issued for secondary suite rentals;
- iii) a temporary use permit respecting a parcel in the Agricultural Land Reserve shall require the approval of the Agriculture Land Commission prior to the permit being issued;
- iv) the landowner should be required to provide a written plan for the supply of water for the duration of the permit in the amount of (35 imperial gallons) per individual tenant per day.
- v) the landowner should be required to provide documentation from a qualified professional septic tank has been inspected to show it is working properly and capable of supporting the proposed occupancy load;
- vi) the property must be within 1.5 kilometres of the “Village Centre” or, when a public transit system is in place, within 1 km of a bus stop.
- vii) the landowner should be required to provide proof of an occupancy permit and written proof from a qualified professional that the dwelling meets the fire code;
- viii) the owner should be required to reside on Gabriola Island;
- viii) a condition of the permit should require that the landowner posts for tenants information on noise bylaws, water conservation, fire safety, storage of garbage, septic care and control of pets (if pets are permitted);
- ix) a condition of the permit should restrict the maximum number to a maximum of two tenants per bedroom;
- x) the Local Trust Committee may require water metering; and
- xi) the Local Trust Committee may consider a professionally registered house inspector report if an occupancy permit is not available, indicating that the house is safe and appropriate for the proposed use and activities.

Pros

- System is already in place and is understood by Islands Trust staff
- Is responsive to the capacity of water, septic and energy systems for each property
- Limits to homes within walking distance of village centre.
- Population remains within what is possible under current zoning

Cons

- Landowner may have difficulty in accessing information about septic systems as well as potential water use
- Application process and fee may be barrier to landowners applying for permit
- Requires approval by LTC for each application
- Subjective decision required as no absolute baseline requirements

Option C: Provide all islanders with option of putting in secondary suite. Revise the current definition of dwelling unit and add optional application process for secondary suites that would support ecological footprint commitments.

Current definitions (found in Appendix 1 of By-law No. 166):

"dwelling unit" means a self-contained set of habitable rooms, with one set of cooking facilities, capable of being occupied year round with living facilities for one or more persons including provision for living, sleeping, sanitation, food storage and preparation;

"family" means (a) two or more persons related by blood, marriage, adoption or foster parenthood sharing one dwelling unit; or
(b) not more than five unrelated persons sharing one dwelling unit

Process

- a) Revise definition by eliminating the following words in the definition of "dwelling unit":
"with one set of cooking facilities"
- b) Landowner applies using ecological footprint analysis and commits to certain baseline requirements. They would then be eligible for certain benefits such as reduced or no cost for gray water systems, water systems, septic upgrade, etc (RDN supports costs)

Pros

- No additional costs to landowner
- Population remains within what is possible under current zoning
- Increases likelihood of improved septic and water systems on properties

Cons

- Is not responsive to the capacity of water, septic and energy systems for each property establishing a secondary suite
- Is not responsive to the requirements for transportation for each property establishing a secondary suite
- Requires the RDN (or another government body) to provide the funds for incentives
- Requires administration for granting program

Option D. Use the RDN Building Inspection Process to apply the ecological footprint analysis

The RDN is currently responsible for building inspections on Gabriola Island, including the approval of secondary suites as described under the BC Building Code. They are strongly supportive of the concept of secondary suites as a strategy for affordable housing (as stated on their website). The process would include:

When a Gabriola landowner decided to establish an accessory dwelling unit on their property they would fill out the ecological footprint analysis and provide it to the RDN Building Inspector. The RDN Building Inspector would only approve those accessory dwelling units that were compliant with the ecological footprint baseline requirements.

Pros

- Is responsive to the capacity of water, septic and energy systems for each property
- Limits to homes within walking distance of village centre.
- Population remains within what is possible under current zoning (no net increase in “density”)

Cons

- Landowner may have difficulty in accessing information about septic systems as well as potential water use
- No ongoing commitment on the part of the landowner to comply with baseline requirements for accessory dwelling unit through signature on application
- Application process may be barrier to landowners applying for permit
- RDN needs to agree to administer additional list of criteria.