

June 25, 2016

To the Salt Spring Island Local Trust Committee

Re—SS-RZ-2013.7 and Staff Report

Dear Trustees,

Unfortunately I have to [REDACTED] and will be unable to be present at the LTC meeting to speak to Staff's report on my rezoning application.

Since I wish to try and avoid any further and unnecessary delays with this application, please accept this as my response to Staff's recommendations.

As outlined in the Staff Report there appears to be internal conflict within Islands Trust Policy and our OCP Policies regarding the availability of freshwater on Salt Spring.

Our OCP Policy C.3.2.2.1, related to Community Water Systems, states that the LTC *"should not normally make zoning changes if the change would mean water could not also be supplied to vacant or under-developed properties already zoned for further development (in this case within the NSSWD boundaries). Should such zoning changes be proposed, the applicant could be encouraged to suggest other water supplies so that the application could be considered. Examples are rainwater catchment, groundwater use or a water conservation program."*

The intent of this addition to the OCP in 2008 did not foresee the NSSWD's recent decision to unilaterally turn off the taps to existing zoning, and/or potential rezonings. However, the OCP did allow the LTC to *"encourage...applicants...to suggest other water supplies."*

I am feeling a little less than "encouraged" at the moment. I have suggested to Staff that *rainwater catchment, groundwater use AND a water conservation program*, as well as greywater recapture, are ALL potential alternative sources of water which can be designed and incorporated into a future building permit application in order to satisfy the final authority on the subject—the CRD Building Inspection office, which requires a "level of comfort" to be met with respect to the provision of a potable water supply PRIOR to the issuance of a building permit.

It appears Trust Staff doesn't believe the OCP allows trust in the CRD to act reasonably and/or responsibly, since they are not recommending deferring the requirement for proving an alternative potable water supply to the CRD and/or the Ministry of Environment.

The "hang up" appears to be the unsubstantiated notion that because NSSWD is no longer further supplying water for multi-family developments, there is therefore no water available to be used. The NSSWD moratorium has led Staff to invoke the spectre of the Islands Trust Policy which states, *"Local trust committees and island municipalities shall, in their official community plans and regulatory bylaws, **address measures** that ensure neither the density nor intensity of land use is increased in areas which are known to have a problem with the quality or quantity of the supply of freshwater."*

I would argue the SSI LTC **"address(ed) measures"** in 2008 by amending our OCP by including C.3.2.2.1. That amendment was passed by the Islands Trust Executive Committee, and the Province, which means it has already passed through the filter of Islands Trust Policy.

An interpretation that Islands Trust Policy prohibits any rezoning based on a lack of freshwater flies in the face of the new, and accepted, realities which fall under the term *"other water supplies"* (a) rainfall catchment systems are recognized and promoted by the Islands Trust and CRD, (b) recycling of greywater is encouraged, (c) groundwater is now regulated and can be utilized, (c) water conservation measures dramatically reduce water consumption, (d) consumer awareness of water conservation has skyrocketed, (e) the use of desalination worldwide is soaring, while costs are plummeting, (f) actual consumption of water is being reduced, and (g) on Salt Spring,

the average number of people living in townhome units in Ganges is substantially less than the island average of less than 2 people.

Should the LTC rezone the property, and should a subsequent Development Permit be granted, a building permit for any permitted development will ONLY occur if I can prove to the CRD that I can provide sufficient water to meet their "level of comfort."

The CRD currently requires 78 gallons per day to issue a building permit for a 1500 sf, 3 bedroom home using a rainwater catchment system.

78 gallons per day is the equivalent of 0.054 gallons per minute of rain falling.

Thus, a well, producing a sustainable yield of 0.054 gallons per minute not only produces the exact same amount as rainwater, but, is a far more reliable source of water than reliance upon the unpredictability of weather.

Following the mathematics, 49 units x 0.054 gpm = 2.65 gpm.

If we use for example purposes, the previously approved design I submitted for the property, there is approximately 20,000 square feet of roof surface which could capture water. That is the equivalent of 0.69 gpm, which could reduce the water required from 2.65gpm to 1.94gpm.

Greywater recycling if utilized would reduce the requirement even more.

As stated by Staff, the existing well on the property was rated at 12 gpm at the time of drilling, which is about 6 times the volume required. Will the CRD require me to prove that there is at least 2.65gpm before they issue me a building permit? Yes. Will the CRD establish and demand a quantity of water storage that gives them comfort? Yes.

If the LTC requires a variance of the LUB to allow the use of alternative water supplies like rainwater, well water, recycled water, instead of the current definition of a "community water system," I would be happy to suggest/request that the required variance be included within the draft bylaw to streamline the process.

I have provided as a backgrounder a Q&A which I hope helps to explain, in greater detail, to both the LTC, and, others faced with the challenge of proposing affordable housing on Salt Spring, the state of water requirements for approval of building permits on Salt Spring.

I also recommend the LTC enter into a discussion with the Chief Building Inspector of the CRD, Mr. Robert Guterriez, with the hope that the LTC can fully realize that alternatives to piped water not only exist, but are now recognized as being real world equivalents. I believe that dialogue could open the door for other affordable housing projects like the CRD's proposed Drake Road development.

With all of the above in mind, I would ask you to move and pass the following two resolutions which Staff have provided within the Staff Report:

1) *THAT the Salt Spring Island Local Trust Committee direct staff to prepare a draft bylaw to amend Salt Spring Island Land Use Bylaw No. 355, 1999 to rezone Lot 10, Section 2, Range 3 East, North Salt Spring Island, Cowichan District, Plan 14710 from Residential 2 (R2) to a Residential zone variant.*

2) *THAT the Salt Spring Island Local Trust Committee direct staff to work with the applicant and the Capital Regional Housing Corporation on the development of a draft housing agreement related to the provision of 8 affordable housing dwelling units.*

Thank you.

Eric Booth - Salt Spring Ventures Inc.

Is the Cup Half Empty, Half Full, or Overflowing? A Reflection on “Other Water Supplies.”

Eric Booth—June 2016

Q - Does it rain on Salt Spring?

A - Yes, about 3.25 feet a year. (Average 39 inches according to Islands Trust Fund ¹)

Q—Is there any property on Salt Spring that doesn't get rain?

A—No.

Q - Does the CRD Building inspection department require proof of potable water prior to issuing a building permit for a residence on Salt Spring?

A - Yes.

Q - Do the Islands Trust, Salt Spring Island Local Trust Committee, Islands Trust Fund and CRD support the idea and promotion of rainwater catchment on Salt Spring?

A - Yes. In fact, the Trust Fund actually set up a model rainwater catchment system on the Ruby Alton property in Fulford.

Q – Can you get a building permit from the CRD using a rainwater catchment system as your proof of potable water supply?

A—Yes. To meet the BC building code, if a property owner can demonstrate a “level of comfort” to CRD building inspection regarding a water supply, be it from a well, rainwater, community water, water license, desalination, water conservation—or hybrid combination of any of the above, then a building permit will be issued.

Q—So it is possible to design a hybrid water supply system that will meet CRD requirements?

A—Yes.

Q—What water supply do the majority of Salt Spring homes rely upon?

A—Groundwater wells, followed by community water supplies, followed by water licenses, followed by rainwater catchment systems.

Q—Then development on Salt Spring is actually dependent upon the ability of a property owner to prove to the CRD Building Inspector proof of water prior to getting a building permit?

A—Yes.

Q—Then doesn't it make sense that, according to the Islands Trust, and the CRD, there is technically no place on Salt Spring which has a potable water supply problem?

A—That's correct. Because there is nowhere it doesn't rain on Salt Spring. Every property on Salt Spring has a built-in supply of 3.25 feet of average rainfall.

Q— Islands Trust Policy states that *“Local trust committees and island municipalities shall, in their official community plans and regulatory bylaws, address measures that ensure neither the density nor intensity of land use is increased in areas which are known to have a problem with the quality or quantity of the supply of freshwater.”*

However, doesn't it stand to reason that if it rains freshwater on all ‘areas’ of Salt Spring, in sufficient quantity to secure a building permit, then there are no areas on Salt Spring which are known to have a problem with the quantity of supply of freshwater?

A—Logically, yes. I'm not aware of any island, anywhere on the planet where it doesn't rain. Bermuda, which is less than 1/3 the size of Salt Spring (53.2km² vs 185km²) and has a population of more than 6 times that of Salt Spring (65,000 vs 10,000), has been totally dependent for the past 400 years on rainwater harvesting.

Q—So, the current North Salt Spring Waterworks moratorium on supplying additional water for increased uses within the District doesn't necessarily mean there is a problem with water supply within the boundaries of the District?

A—Since it rains everywhere within the District, then logically there is no problem with freshwater supply within the boundaries of the District.

Q—How many gallons per day does the Islands Trust Fund estimate an average rainwater dependent user uses?

A—25–40 gallons per day.¹

Q—How much water is that per month, per person?

A—750–1200 gallons per month.

Q—What is the average number of people living in a dwelling on Salt Spring?

A—According to the Islands Trust, just under 2 at the moment.

Q—For the average household, then, 2×1200 gallons = 2400 gallon storage container would hold an entire month's supply of water for an average family?

A—Yes.

Q—What sizes of rainwater catchment areas would be required to collect 50–80 gallons per day on Salt Spring?

A—900sf to 1500sf approximately.

Q—Hypothetically, if it rained EVERY day the equivalent of 50–80 gallons, how much water storage would you require to meet your daily needs?

A—50-80 gallons.

Q—If a well is proven to produce 1 gallon per minute (gpm), on a sustainable basis, how many gallons per day does it produce?

A— $1 \times 60 \times 24 = 1,440$ gallons per day (gpd)

Q—Then, at 50-80 gallons per day of freshwater required for a dwelling, how many dwelling units can a 1gpm, proven sustainable, groundwater well provide freshwater for?

A— $1,440\text{gpd}$ divided by 50gpd to $80\text{gpd} = 29$ to 18 dwelling units.

Q—How much storage would be required to meet one week's worth of emergency supply for 18 to 29 dwelling units?

A—10,080 gallons.

Q—What does the average well user currently have for water storage?

A—The amount of water in their pressure and hot water tanks...on average less than 80 gallons.

Q—Then a water storage system storing seven times 80 gallons would be significantly more than average?

A—Yes, about 7 times as much.

Q—Using the above criteria, what is the equivalent, in gallons per minute from a sustainable well, that 49 apartments would require?

A— 80 gallons per day $\times 49 = 3,920\text{gpd}$... $3,920/24 = 163.3\text{gph}/60 = \mathbf{2.72\text{gpm}}$.

Q—What size storage tank would hold a full week's emergency backup supply of water for 49 units?

A— $3,920\text{gpd} \times 7 = 27,440$ gallons.

Q—How much emergency backup supply of water does the average dwelling within the North Salt Spring Waterworks District have?

A—Whatever is contained in their hot water tank—30 to 40 gallons on average.

Q—Is it fair to say any dwelling with a rainwater catchment system, or any proven well water system, with virtually any size of water storage, has more emergency water supply than an average dwelling on a community water system?

A—Yes...that is the reality of being dependent upon a community water system. It creates a false sense of water security. For example, last year NSSWD estimated in the event of a forest fire in

the Lake Maxwell watershed, the entire surface water supply of the lake could be unusable for up to 5 years.

Q—If the Local Trust Committee rezones a commercial or residential property to a higher density, is it responsible for ensuring that long term the water supply is guaranteed?

A—No. It is impossible for any government entity to guarantee that ANY water supply, apart from perhaps rainfall, will be available forever.

Q—Given:

(a) the CRD Building Inspector has the final say on whether to issue a building permit based on a proposed water supply,

(b) rainfall catchment is a recognized, proven and accepted supply of potable water by the CRD and Islands Trust,

(c) wells are the most common form of approved water supply on Salt Spring,

(d) the mathematics of water supply are the ruling factor in providing a CRD Building Inspector's 'level of comfort', and

(e) regardless of what a zoning may allow a property owner to do, if the property owner cannot provide that "level of comfort" to the CRD, a building permit will not be issued,

then doesn't it make sense to place the burden of proof of potable water on the property owner at the time of building permit, not at the time of rezoning?

A—Yes. Rezoning a property should consider whether the proposed "use" of a property is reasonable and acceptable. Servicing a property with water, or sewer, after a rezoning is the owner's challenge and responsibility. As an example, a property could be subdivided or rezoned today, based on a well's current output. And yet, a year or two years from now that well could go dry. Or, a building permit could be issued today based on rainwater catchment system and next year we could go into a 5 year drought.

Development of any kind is not based on a guaranteed supply of water...because there is no such thing. It is based on whether the supply of water being proposed at the time of application for a building permit provides a "level of comfort" to the Building Inspector, regardless of what any particular Local Trust Committee Trustee thinks.

Given all of the above, and as it pertains to rezoning applications to increase the potential density of a property, it is reasonable for the LTC to leave the proof of a water supply up to property owners at the time of application for a building permit, not at the time of a rezoning.

At the working design and building permit application stage, any water conservation and/or recycling measures, along with proposed supplies, whether they be rainwater, well water, or grey water, can be measured and quantified into a proposal which creates the "level of comfort" required by both the CRD and the Ministry of Environment should groundwater be utilized.

The island has been in a housing crisis for a couple of decades and this year the issue is about reaching critical mass. There is no reason to delay the consideration of rezoning applications, or to unnecessarily complicate them.

1. "Rainwater Harvesting on the Gulf Islands"—Islands Trust Fund Board, paper funded by Vancity/Real Estate Foundation of BC Green Building Grant Program, CRD, Victoria Foundation, Rainwater Connection, The Salt Spring Foundation.