



Lasqueti Island Local Trust Committee Regular Meeting Revised Agenda

Date: April 23, 2018
Time: 11:00 am
Location: Judith Fisher Centre
 #1 China Cloud Bay Road
 Lasqueti Island, BC

Pages

- | | | |
|-----|--|---------------------|
| 1. | CALL TO ORDER | 11:00 AM - 11:00 AM |
| | Please note, the order of agenda items may be modified during the meeting. Times are provided for convenience only and are subject to change." | |
| 2. | APPROVAL OF AGENDA | 11:00 AM - 11:05 AM |
| 3. | TOWN HALL AND QUESTIONS | 11:05 AM - 11:20 AM |
| 4. | COMMUNITY INFORMATION MEETING - None | |
| 5. | PUBLIC HEARING - None | |
| 6. | MINUTES | 11:20 AM - 11:30 AM |
| 6.1 | Local Trust Committee Minutes dated February 19, 2018 for Adoption | 4 - 12 |
| 6.2 | Local Trust Committee Special Meeting Minutes dated March 28, 2018 for Adoption | 13 - 16 |
| 6.3 | Section 26 Resolutions-Without-Meeting Report dated April 12, 2018 | 17 - 17 |
| 6.4 | Advisory Planning Commission Minutes - None | |
| 7. | BUSINESS ARISING FROM MINUTES | 11:30 AM - 11:40 AM |
| 7.1 | Follow-up Action List dated April 12, 2018 | 18 - 19 |
| 7.2 | <i>Bylaw 95</i> | |
| 8. | DELEGATIONS - None | |
| 9. | CORRESPONDENCE - None | |
| | <i>(Correspondence received concerning current applications or projects is posted to the LTC webpage)</i> | |

10. APPLICATIONS AND REFERRALS - None

11. LOCAL TRUST COMMITTEE PROJECTS - None

12. REPORTS 11:40 AM - 12:10 PM

12.1 Work Program Reports

12.1.1 Top Priorities Report dated April 12, 2018 20 - 20

12.1.2 Projects List Report dated April 12, 2018 21 - 21

12.2 Applications Report dated April 12, 2018 22 - 23

12.3 Trustee and Local Expense Report dated February, 2018 24 - 24

12.4 Adopted Policies and Standing Resolutions 25 - 25

12.5 Local Trust Committee Webpage

12.6 Chair's Report

12.7 Trustee Reports

12.8 Electoral Area Director's Report - None

12.9 Trust Fund Board Report dated January, 2018 26 - 28

12.10 Trust Fund Board Report dated April 2018 29 - 30

--BREAK--12:10-12:25

13. NEW BUSINESS 12:25 PM - 12:55 PM

13.1 Zoning Regulations for Cannabis Production - for Discussion

13.2 Land-use Planning Implications of Fisheries and Oceans Canada Integrated Geoduck Management Framework 2017 - Briefing 31 - 50

13.3 Approval Process for Water Supply Systems on Salt Spring Island - Memorandum 51 - 80

13.4 *Connectivity*

14. UPCOMING MEETINGS

14.1 Special Meeting & Community Information Meeting on Saturday, April 28, 2018 at 11:30 am at the Lasqueti Island Community Hall, Lasqueti Island, BC

14.2 Next Regular Meeting Scheduled for Monday, June 4, 2018 at 11:00 am at the Judith Fisher Centre, #1 China Cloud Bay Road, Lasqueti Island, BC

15. TOWN HALL 12:55 PM - 1:10 PM

16. CLOSED MEETING

1:10 PM - 1:25 PM

16.1 Motion to Close the Meeting

That the meeting be closed to the public in accordance with the Community Charter, Part 4, Division 3, s.90(1)(a) for the purpose of considering appointments to the Advisory Planning Commission, s.90(1)(d) for adoption of in camera minutes dated February 18, 2018 AND that the recorder and staff attend the meeting.

16.2 Recall to Order

16.3 Rise and Report

17. ADJOURNMENT

1:25 PM - 1:25 PM



Lasqueti Island Local Trust Committee

Minutes of Regular Meeting

Date: February 19, 2018
Location: Judith Fisher Centre
 #1 China Cloud Bay Road
 Lasqueti Island, BC

Members Present: Laura Busheikin, Chair
 Susan Morrison, Local Trustee
 Timothy Peterson, Local Trustee

Staff Present: Sonja Zupanec, Island Planner (by teleconference)
 Ann Kjerulf, Regional Planning Manager
 Dave Olsen, Recorder

Others Present: Eight (8) members of the public

1. CALL TO ORDER

Please note, the order of agenda items may be modified during the meeting. Times are provided for convenience only and are subject to change."

Chair Busheikin called the meeting to order at 11:00 am. She acknowledged that the meeting was being held in territory of the Coast Salish First Nations.

2. APPROVAL OF AGENDA

The following additions to the agenda were presented for consideration:

13.4 Proposed Agenda Items for the Powell River Regional District Meeting

By general consent the agenda was adopted as amended.

3. TOWN HALL AND QUESTIONS

Official Community Plan (OCP)/Land Use Bylaw (LUB) Review

With reference to development, it was pointed out that residents of Lasqueti Island prioritize sustainability over development.

Advisory Planning Commission (APC)

It was noted that the APC now has 8 members; before the last appointment there were 7 and there can be up to 9 members.

Land Use Bylaw Change

It was stated that the proposed LUB change (subdivision regulations) is a critical change and surprise was expressed in that it is going to first reading. It was suggested that the APC should receive a referral with respect to draft bylaw changes before consideration of first reading.

It was noted that at the bottom of page 28 of the agenda package, as part of the proposed bylaw change, that the LTC can make a waiver to exempt a proposed lot from the minimum highway frontage requirement.

Staff noted that the LTC has jurisdiction to waive the lot frontage requirement through a Development Variance Permit if this regulation is within the bylaw.

Further discussion clarified that this bylaw change was initiated by the LTC before it was decided to do a complete OCP and LUB review and that this bylaw change was made a priority to correct an error in the bylaw.

First Nations Interests

It was noted that the proposed bylaw should be referred to all First Nations with interests here.

Agenda Packages

A member of the public commented that more copies of the agenda package should be available at the meetings.

4. COMMUNITY INFORMATION MEETING - None

5. PUBLIC HEARING - None

6. MINUTES

6.1 Local Trust Committee Special Meeting Minutes dated January 8, 2018 for Adoption

The following amendments to the minutes were presented for consideration:

- On page 2, **3. Town Hall and Questions**
Under OCP/LUB Review, first bullet, there are too many “to dates”.
- On page 3, **6.1 Lasqueti Island Official Community Plan Review**
Change “Trustee Morrison asked staff what an OCP review would involve.” to “Trustee Morrison asked staff to give an overview.”
- On page 4, 2nd paragraph, delete everything after “Trustee Peterson noted that this would be different” (i.e., delete “than the CIM noted in related to the Shoreline Protection project on the Follow Up Action List.”)
- On page 6 at the top, under “Trustee Morrison reported the following:”
change 3rd bullet from “has had meetings with Minister” to “had a meeting with Minister”.
- Make changes to reflect the fact that Trustee Morrison chaired the meeting.

By general consent the minutes were adopted as amended.

6.2 Section 26 Resolutions-Without-Meeting Report dated February 8, 2018

Received

6.3 Advisory Planning Commission Minutes dated December 5, 2017 for Receipt

Received

7. BUSINESS ARISING FROM MINUTES

7.1 Follow-up Action List dated February 8, 2018

Received

8. DELEGATIONS - None

9. CORRESPONDENCE

(Correspondence received concerning current applications or projects is posted to the LTC webpage)

Trustee Morrison read an email from Aileen Collings and Zbigniew Wierzbicki, the proponents for application LA-SUB-2014.1 (correspondence added to Late Items agenda). In summary, the email asked that the Local Trust Committee rescind the motion passed at the previous LTC meeting to write a letter to the Ministry of Transportation and Infrastructure regarding the safety concerns about the potential increase in traffic on Weldon Road.

Chair Busheikin advised that the letter had not yet been sent, and therefore rescinding was possible.

Trustee Peterson noted that he understood that the applicants feel singled out. At the same time, the major complaint that he heard about their application is road safety and taking out their application from the letter waters it down because he believes that the letter should be tied to existing applications and future population density.

LA-2018-007

It was MOVED and SECONDED,

that resolution LA-2018-005 (that the Lasqueti Island Local Trust Committee request the Chair to write a letter to the Ministry of Transportation and Infrastructure (MOTI) regarding road safety issues in relation to Application LA-SUB-2014.1) be rescinded.

CARRIED

LA-2018-008

It was MOVED and SECONDED,

that Lasqueti Island Local Trust Committee Chair write a letter to the Ministry of Transportation and Infrastructure (MOTI) to highlight road safety issues concerning Weldon Road.

CARRIED

10. APPLICATIONS AND REFERRALS - None

11. LOCAL TRUST COMMITTEE PROJECTS

11.1 Subdivision Regulations - Staff Report

Staff introduced the report by noting that their review of the Land Use Bylaws (LUB) found that the current LUB subdivision regulations do not accurately reflect the intent of the Official Community Plan (OCP). The proposed bylaw change will remedy this. Staff noted that a recent legal opinion indicated that the existing bylaw is not effective in meeting that goal of the OCP with respect to the minimum lot size resulting from subdivision.

LA-2018-009

It was MOVED and SECONDED,

that Lasqueti Island Local Trust Committee Bylaw No. 95, cited as “Lasqueti Island Land Use Bylaw No. 78, 2005, Amendment No. 1, 2017”, be read a first time.

CARRIED

LA-2018-010

It was MOVED and SECONDED,

that the Lasqueti Island Local Trust Committee has reviewed the Islands Trust Policy Statement Directives Only Checklist and determined that Bylaw No. 95, cited as “Lasqueti Island Land Use Bylaw No. 78, 2005, Amendment No. 1, 2017” is not contrary to or at variance with the Islands Trust Policy Statement.

CARRIED

LA-2018-011

It was MOVED and SECONDED,

that Lasqueti Island Local Trust Committee Bylaw No. 95, cited as “Lasqueti Island Land Use Bylaw No. 78, 2005, Amendment No. 1, 2017”, be referred to the following for comment: First Nations with an interest in Lasqueti Island, Agricultural Land Commission, BC Assessment Authority, Ministry of Agriculture, Islands Trust Fund, School District 69, Ministry of Transportation and Infrastructure, Powell River Regional District and the Lasqueti Island Advisory Planning Commission.

CARRIED

11.2 Official Community Plan Review

11.2.1 OCP Discussion

Staff reported that information material is being assembled and will be forwarded to Trustees for comment within the next week or so, with the intent that it can go out to the public well in advance of the Community Information Meeting (CIM).

Trustees noted the following:

- The CIM is scheduled for March 29 at 1pm, a Thursday afternoon, which could be difficult for many people to attend.
- There is still \$2800 in the OCP/LUB review budget for the current fiscal year.
- Staff advised that the Community Hall is heavily booked

- The LTC requested that staff reschedule to a more convenient date, with a weekend daytime as the priority.

11.2.2 Community Information Meeting Facilitation

Discussion continued and the following was noted:

- David Slik and Andrew Fall offered to help gather ideas from the community and facilitate discussion. The Open Space method was identified as a potential format for the CIM. APC members could assist with recording.
- The CIM should help people understand what an OCP is and why people should care.
- Trustee Morrison noted that there is now a new approach to budgeting for local trust committee projects where local trust committees apply for project funding as needed. A special tax levy on Lasqueti Island properties could also be used to raise money, if needed.
- Staff were requested to bring the following to the CIM: pens, maps, pencils, sticky notes, fat marking pens, paper, bound copies of current OCP, other island OCPs.

LA-2018-012

It was MOVED and SECONDED,

that the Lasqueti Island Local Trust Committee allocate funds from the Official Community Plan/Land Use Bylaw budget to provide refreshments at the upcoming Community meeting and send a notice of the meeting by mail.

CARRIED

12. REPORTS

12.3 Work Program Reports

12.1.1 Top Priorities Report dated February 8, 2018

Received

12.1.2 Projects List Report dated February 8, 2018

Staff noted that the Aging at Home Project is postponed until the Housing Needs Assessment (HNA) is completed; the HNA is currently in draft form.

12.4 Applications Report dated February 8, 2018

Trustees noted that the Grant Road Application (LA-SUB-2018.1) is a lot line adjustment.

12.5 Trustee and Local Expense Report dated December, 2017

Received

12.6 Adopted Policies and Standing Resolutions

Received

12.5 Local Trust Committee Webpage

It was noted that the LTC webpage says “**February 2018 | 2018 Thetis Island Local Trust Committee Meeting Schedule**”, not Lasqueti Island.

It was also noted that a link on the webpage created a server error message for an eight page report that had been on the website for years.

12.2 Chair's Report

Chair Busheikin reported on the following:

- The Water Workshop that will be at the Lasqueti Island Community Hall on Friday has been travelling around to other islands with very specific info for each island; it has received very good feedback.
- Trust Council next month is on Salt Spring Island and will have a session about climate change. We will also be looking at our budget for the upcoming year. Right now, there is no budget to help create more affordable housing.

12.1 Trustee Reports

Trustee Morrison reported on the following:

- A meeting with the Powell River Regional District (PRRD) is scheduled for March 2, 2018. The LTC members, Electoral Area Director and Chair of the PRRD are planning to attend along with respective PRRD and Islands Trust staff. Trustee Morrison contacted PRRD Board members to invite them to attend the meeting so that there could be greater board representation.
- The Water Workshop on Friday is from 10am-3pm; a Community Mailer is coming out today.

Trustee Peterson reported on the following:

- He held an Open House in January and about a half dozen people dropped in throughout the day.
- He received good comments, with a wide variety of opinions about the OCP/LUB review, ranging from “don’t change anything” to many changes are wanted.
- He is happy to host another Open House.
- He has been talking with Denise Smith of the Tla’amin Nation about doing a non-governmental gathering, potentially a clam and oyster feast.

12.8 Electoral Area Director's Report - None

12.9 Trust Fund Board Report - None

--BREAK-- 12:45 - 1:05

13. NEW BUSINESS

13.1 Advisory Planning Commission Appointments and Updated Bylaw - Staff Report

Staff opened discussion and noted the following:

- The current APC appointments are expiring and there is a need to advertise for applicants.
- The proposed Bylaw change would be consistent with the current *Local Government Act* [RSBC 2015], format of APC Bylaws recently adopted by other local trust committees, which more clearly articulate the roles and responsibilities of APC members and procedures for APC meetings, and the new 4-year election cycle.
- The proposed Bylaw also provides for a professional minute-taker; however, if a professional minute-taker is unable to attend, the APC secretary would be responsible for the minutes.

LA-2018-013

It was MOVED and SECONDED,

that the Lasqueti Island Local Trust Committee request staff to advertise for expressions of interest for the Lasqueti Island Advisory Planning Commission.

CARRIED

LA-2018-014

It was MOVED and SECONDED,

that the Lasqueti Island Local Trust Committee request staff to send letters to members of the Advisory Planning Commission whose terms will expire on April 9, 2018, inviting their expressions of interest for reappointment to the Advisory Planning Commission.

CARRIED

LA-2018-015

It was MOVED and SECONDED,

that Lasqueti Island Local Trust Committee Bylaw No. 96 cited as the "Lasqueti Island Local Trust Committee Advisory Planning Commission Bylaw, 2018", be read a first time.

CARRIED

LA-2018-016

It was MOVED and SECONDED,

that Lasqueti Island Local Trust Committee Bylaw No. 96 cited as the "Lasqueti Island Local Trust Committee Advisory Planning Commission Bylaw, 2018", be read a second time.

CARRIED

LA-2018-017

It was MOVED and SECONDED,

that Lasqueti Island Local Trust Committee Bylaw No. 96 cited as the "Lasqueti Island Local Trust Committee Advisory Planning Commission Bylaw, 2018", be read a third time.

CARRIED

LA-2018-018

It was MOVED and SECONDED,

that Lasqueti Island Local Trust Committee Bylaw No. 96 cited as "Lasqueti Island Local Trust Committee Advisory Planning Commission Bylaw, 2018" be forwarded to the Secretary of the Islands Trust for approval by the Executive Committee.

CARRIED

The Trustees expressed their appreciation for the work that the APC does.

LA-2018-019

It was MOVED and SECONDED,

that the Lasqueti Island Local Trust Committee request the Advisory Planning Commission to make suggestions about the process for a Community-led Official Community Plan process.

Chair Busheikin expressed concern about raising expectations before the CIM and suggested passing this motion after that meeting.

Trustees responded by stating that the motion is open ended in that if suggestions can't be received before the first CIM, we are still open to receiving suggestions for the rest of the process. They noted that some APC members were not at this meeting so this motion will allow them to have an opportunity to provide suggestions at a later date.

CARRIED

13.2 Housing Agreement Administration - Briefing

13.3 Farm Industry Review Board - Memorandum - For Information

Received

13.4 Proposed Agenda Items for the Powell River Regional District Meeting

Discussion ensued and the following was noted:

- A protocol agreement for this meeting was proposed.
- When the PRRD Board are on Lasqueti Island for a Board Meeting, we want them to meet with us at the same time.
- This meeting is a Board to LTC meeting.
- These meetings need to happen yearly or at least once per LTC term.
- They should have an understanding of how the LTC works.
- Do we want staff to do a PowerPoint presentation for the meeting?
- If only our Director and the Chair are there, we could present on why it is important for all Board members to attend.
- Scheduled meetings are preferred.

14. UPCOMING MEETINGS

14.1 Next Regular Meeting Scheduled for Monday, April 23, 2018 at 11:00 am at the Judith Fisher Centre, #1 China Cloud Bay Road, Lasqueti Island, BC

15. TOWN HALL

Regarding a Protocol Agreement with the PRRD Board

It was suggested that the LTC ask to have a formal commitment from the PRRD Board in that when they have a meeting on Lasqueti, they strive to have a meeting with the LTC. If they make that motion at the Board level, then it gets into their log and is more likely to happen.

It was reported that the Director for Lasqueti offered to include the LTC in their yearly meetings with First Nations.

16. CLOSED MEETING

16.1 Motion to Close the Meeting

LA-2018-020

It was MOVED and SECONDED,

that the meeting be closed to the public in accordance with the Community Charter, Part 4, Division 3, s.90(1)(d) for the purpose of adoption of In-Camera Meeting Minutes Dated September 18, 2017 and January 8, 2018 AND that the recorder and staff attend the meeting.

CARRIED

16.2 Recall to Order

16.3 Rise and Report

17. ADJOURNMENT

By general consent the meeting was adjourned at 1:32 pm.

Laura Busheikin, Chair

Certified Correct:

Dave Olsen, Recorder



Lasqueti Island Local Trust Committee Minutes of Special Meeting

Date: March 28, 2018
Location: Judith Fisher Centre
 #1 China Cloud Bay Road
 Lasqueti Island, BC

Members Present: Laura Busheikin, Chair - via teleconference
 Susan Morrison, Local Trustee
 Timothy Peterson, Local Trustee, Acting Chair

Staff Present: Sonja Zupanec, Island Planner - via teleconference
 Dave Olsen, Recorder

Others Present: There were eight (8) members of the public in attendance.

1. CALL TO ORDER

Acting Chair Peterson called the meeting to order at 10:01 am. He acknowledged that the meeting was being held in territory of the Coast Salish First Nations. He introduced the Staff and Trustees.

2. APPROVAL OF AGENDA

The following additions to the agenda were presented for consideration:

3. TOWN HALL

5. TOWN HALL

By general consent the agenda was adopted as amended.

3. TOWN HALL

A number of questions were asked and the following exchanges were noted:

- What are the requirements to hold a meeting?
 - 48 hours notice, with the standard notifications: Islands Trust website update and physical postings. Sending to the email list is optional but usually done.
 - Will cluster housing still be possible after this bylaw change?
 - There is no amendment on the table. The point of the meeting is for the LTC to consider next steps.
 - If you do this amendment, can we do cluster housing? Average lot size allowed for that.
 - Bylaw 95 did not include any conservation measures for subdivision regulations; those were part of the Shoreline Protection Project.
- Staff continued the discussion by noting the following:

- The current Land Use Bylaw (LUB) with “average lot size” allows someone to lop off 1 acre many times until there are lots of small lots.
- Based on the legal opinion, there is no provision to prevent that. This could be severely abused.
- The existing subdivision regulations allow for cluster housing. What it does not do is protect that large piece, which can still be subdivided.

The following comments were then noted:

- The possibility of cluster housing should be included in any future bylaw.
- If we divide the whole island into 10 acre lots, there won't be any forest left. We need cluster housing to keep the viability of forest ecosystems.

Trustees responded with the following:

- Because average lot size was brought to our attention, we took this piece out.
- We currently don't have any protection; there is nothing in the bylaw that would prevent further subdivision of large pieces.
- We've singled this out because most people thought we had a 10 acre minimum.
- If we are going to do cluster housing, we need to protect those large pieces in perpetuity.
- Generally covenants prevent tree cutting but those lots are often meant for firewood.
- In favour of including the options for clustering and conservation purposes.

The following comments were also noted:

- At least 3 strata development examples of cluster housing on Lasqueti: one has 8 very small lots and retain the rest of the 160 acres in common.
- One of the difficulties with the process is that the Ministry of Transportation and Infrastructure (MoTI) deals with the subdivision, not the Islands Trust.
- There is no reason why having a minimum lot size of 10 acres should preclude cluster housing.
- Surely it's possible to prevent 1 acre lots and allow cluster housing.

4. BUSINESS ITEMS

4.1 Amendments to the Lasqueti Island Land Use Bylaw Subdivision Regulations – Discussion

Staff introduced the discussion and the following was noted:

- Staff review subdivision applications only via referral from MoTI and can only state whether the application meets or does not meet Land Use Bylaw regulations.
- If the regulations do not specify that lots can be clustered without covenants, we cannot ask for that. It must be spelled out in the Bylaw.
- Cluster housing is great in theory if the developer is sensitive to layout, protecting ecological function and features, archaeological sites. However, there can be many unintended impacts to adjacent properties who never anticipated cluster housing next door accessing the same aquifer or disposing of sewage in the vicinity.
- Suggest that we use planning tools to prevent problems; there are pros and cons to leaving it open as this can be misused.
- This bylaw amendment was considered to be a simple fix.

Trustees noted the following:

- A fully finished amendment may not be accomplished today; it is reasonable to investigate what we want.
- A report from staff would help us find out what options are available.
- There is concern that if this is not done swiftly, there could be subdivisions that we don't want. Other people are aware that this loophole exists.
- A bigger process is about to begin; we want to stay on track.

Members of the public noted the following:

- That there needs to be a review process to ensure that there are measures in place, with citizens from Lasqueti.
- The proposed bylaw did address the loophole but also included two other aspects that are not wanted.
- If the amended bylaw doesn't address cluster housing for a couple of months, it won't be the end of the world.

Staff explained that the other provisions in the proposed bylaw were carryovers from the Shoreline Protection Project: one is a standard piece regarding the Agricultural Land Reserve (ALR), while the other piece is an updated lot ratio.

LA-2018-021

It was MOVED and SECONDED,

that the Lasqueti Island Local Trust Committee request Staff to bring back rescinded draft Bylaw 95 and remove from 3.11 Subdivision Regulations, sections:

(1) The minimum area of a parcel that is created by subdivision wholly or partially within the Agricultural Land Reserve is 8 hectares, and

(6) No parcel having a depth greater than three times its width may be created by subdivision, and for this purpose the width of a panhandle parcel shall be measured at the point where the panhandle connects with the main portion of the parcel.

Trustees explained that they received a letter that states that the 8 hectare minimum for the ALR limits the potential for adding smaller pieces of land to the ALR and that 20 acre parcels are more suitable to animal husbandry, which is not typically appropriate for a Gulf Island.

Section 6 was removed because a similar regulation already exists and we want to save this for the larger OCP discussion. Also, 10 acre lots are different than smaller lots.

CARRIED

Staff noted that there is currently no project charter for this amendment and asked whether it is related to Bylaw 95 or the upcoming OCP review.

Trustees responded with the following points:

- That it should be part of the OCP review but want to just deal with Bylaw 95 for now.
- This is a small change plugging a loophole. We don't want it to get in the way of the OCP review.
- Want to make sure the report doesn't confuse the public, and that when we do bring it forward, that we are upfront about being aware that it potentially limits cluster housing and that this is only temporary.

Staff explained that there isn't a project charter for the OCP review yet, and a Community Information Meeting (CIM) is being held at the end of April. That meeting should help identify what is in scope and out of scope for an OCP review project. That project charter will be developed after the CIM.

LA-2018-022

It was MOVED and SECONDED,

that the Lasqueti Island Local Trust Committee request Staff to draft a Project Charter to consider options regarding cluster housing and conservation subdivisions.

Staff commented that this might be confusing to your constituents, advised that it be very transparent, and offered to prepare an analysis of subdivision options.

CARRIED

5. TOWN HALL

The following comments were noted:

Regarding the lot shape; the intention was for the ratio to apply to smaller pieces. A 40 acre piece was too big to comply and is not relevant.

There are 2 subdivision applications pending now. One is water access only. Does that go through MoTI as well?

Trustees responded with the following points:

- We get a referral from MoTI and look at the density and send it back to MoTI.
- Staff handle the referrals. The application log is important to keep your eyes on. Staff did not send that out nine years ago.
- The next LTC Meeting is April 23, 2018.

6. ADJOURNMENT

By general consent the meeting was adjourned at 11:08 am.

Timothy Peterson, Acting Chair

Certified Correct:

Dave Olsen, Recorder



Islands Trust

Print Date: April 12, 2018

Resolutions Without Meeting

Lasqueti Island

Resolution #	Action	Resolution Description	Resolution Date
2018-03	In Favour	"That first reading of Bylaw No. 95, cited as "Lasqueti Island Land Use Bylaw No. 78, 2005, Amendment No. 1, 2017", be rescinded".	23-Feb-2018
2018-04	In Favour	"That the Lasqueti Island Local Trust Committee requests staff to schedule a Special Meeting to discuss amendments to the Lasqueti Island Land Use Bylaw subdivision regulations".	01-Mar-2018
2018-05	In Favour	"That the Lasqueti Island Local Trust Committee request staff to mail a notice of the April 28th 2018 Community Information Meeting to all residents and property owners of Lasqueti Island, and that the notice indicate a change in time of the meeting from 1:00 pm-3:00 pm to 11:30 am-2:30 pm."	12-Apr-2018

Follow Up Action Report

Lasqueti Island

26-Jun-2017

Activity	Responsibility	Target Date	Status
Staff to follow up with MOTI and discuss feasibility of expanding the M9 zone upland to allow for the loading and unloading of commercial goods and report back to the LTC.	Miles Drew Sonja Zupanec	31-Jul-2017	On Going

08-Jan-2018

Activity	Responsibility	Target Date	Status
Community information meeting to be held February/March 2018 to discuss a review of the Official Community Plan and Land Use Bylaw. Staff to prepare an OCP/LUB Backgrounder for distribution in advance of the meeting.	Sonja Zupanec Ann Kjerulf Ian Cox		On Going

19-Feb-2018

Activity	Responsibility	Target Date	Status
Look at availability of CIM venue on a Saturday (March 17, 31 or April) for a the CIM. Re-check with Trustees for availability and book hall or False Bay school if available.	Wil Cottingham		Done
LTC resolution re: allocating funds for refreshments and mail out for OCP CIM (date to be confirmed). Staff to supply standard community meeting supplies (flip chart/markers/sticky notes etc).	Sonja Zupanec Wil Cottingham		On Going
Proposed Bylaw 95 given First Reading. Send referrals and include all FN with land/marine interests. First Reading rescinded via RWM, referrals not sent.	Becky McErlean Sonja Zupanec		On Going
That the LTC rescind resolution LA-2018-005.	Penny Hawley	05-Mar-2018	Done

Follow Up Action Report

That the LTC request the Chair to write a letter to the Ministry of Transportation and Infrastructure regarding the safety of Weldon Road in regard to all subdivisions.

Ann Kjerulf

05-Mar-2018

On Going

28-Mar-2018

Activity	Responsibility	Target Date	Status
Subdivision Regulation Review: -staff to bring back draft bylaw 95 with amendments to remove section 1 re: subdivision of the ALR and replace section 6 to retain existing 1:5 ratio; -staff to prepare a draft project charter for a subdivision review project that to review conservation based and cluster subdivision options.	Sonja Zupanec		On Going



Top Priorities

Lasqueti Island

No.	Description	Activity	R/Initiated	Responsibility	Target Date
1	Review of Lasqueti subdivision regulations	-review minimum and minimum average parcel size regulations for each subdivision district	23-Oct-2017	Sonja Zupanec	
1	OCP/LUB Review	A comprehensive review of the Lasqueti Island Official Community Plan and Land Use Bylaw.	08-Jan-2018	Sonja Zupanec	
3	Community to Community Forum	Establish relationships with First Nations that have interests in the Lasqueti Local Trust Area.	09-Jun-2016	Sonja Zupanec	31-Mar-2017

**Lasqueti Island**

Description	Activity	R/Initiated
Lasqueti OCP Update	1. adding policy requiring all marinas applying for rezoning or a development permit to provide pump out facilities; and 2. adding advocacy policy encouraging neighbouring local governments to require that marinas servicing vessels traveling within the Trust Area install pump-out facilities when applying for rezoning or a development permit (Recommendations from Trust Council to all LTCs) 3. Update with Intertidal zone policies using specific recommendations from the Greenshores Project 4. Update with policies and applicable regulations to support Food Security (Trust Council 2010)	
Aging at home implementation project	-targeted OCP and LUB review -review options to implement Aging at Home on Lasqueti report recommendations #3, 4,5,6,7,9, and 11. -on projects list pending completion of Northern Housing Needs Assessment (spring 2018)	23-Oct-2017
Marine Shoreline Protection Project	Targeted OCP/LUB review and First Nations engagement; Review policies and regulations to support eelgrass and forage fish habitat protection; Work with Coastal Douglas-fir Conservation Partnership to draft recommendations regarding land use planning tools that will effectively conserve Coastal Douglas-fir forest ecosystems	08-Jan-2018



Development Variance Permit

File Number	Applicant Name	Date Received	Purpose
LA-DVP-2018.1	Fern Road Consulting	09-Mar-2018	PIDs: 017-312-183 & 017-115-736 Variance required for lot line adjustment Civic addresses: 2 Grant Road, Lasqueti Island, BC
Planner: Ian Cox			
Planning Status			
<u>Status Date:</u>			

Subdivision

File Number	Applicant Name	Date Received	Purpose
LA-SUB-2014.1	Collings, Aileen	18-Mar-2014	Boundary Adjustment and then a 9 lot strata subdivision
Planner: Teresa Rittemann			
Planning Status			
<u>Status Date:</u> 04-Apr-2018			
No change in status.			
<u>Status Date:</u> 09-Jan-2018			
PLA received from MOTI.			
<u>Status Date:</u> 21-Nov-2017			
Amended subdivision plan received. Proposal shows dimensions and lot frontage and depth-width ratio requirements.			
Revised referral report sent to MOTI.			
File Number	Applicant Name	Date Received	Purpose
LA-SUB-2016.1	Mystic Ridge Farm	29-Feb-2016	PID: 004-248-163 Create three residential lots
Planner: Sonja Zupanec			
Planning Status			
<u>Status Date:</u> 10-Jan-2017			
Final approval letter sent on August 23, 2016.			

Applications

Status Date: 09-May-2016

Email to MOTI to confirm that applicant has submitted confirmation that conditions re: ALC and sewage have been met and non-conformity siting demonstrated on sketched plan. Waiting for final plan of subdivision prior to letter from IT that application meets Lasqueti bylaws.

Status Date: 18-Mar-2016

Referral response sent to MOTI; copied to LTC and applicant/owner. Waiting for final plan of subdivision and confirmation of conditions met prior to final approval letter.

File Number	Applicant Name	Date Received	Purpose
LA-SUB-2018.1	Fern Road Consulting	02-Jan-2018	PIDs: 017-115-736 (Cash) Civic address 2 Grant Road, Lasqueti Island BC 017-312-183 (Ross) Lot line adjustment

Planner: Ian Cox

Planning Status

Status Date:

Islands Trust
LTC EXP SUMMARY REPORT F2018
Invoices posted to Month ending February 2018

640 Lasqueti	Invoices posted to Month ending February 2018	<u>Budget</u>	<u>Spent</u>	<u>Balance</u>
65000-640	LTC "Trustee Expenses"	750.00	224.64	525.36
LTC Local				
65200-640	LTC - Local Exp - LTC Meeting Expenses	1,250.00	2,398.50	-1,148.50
65210-640	LTC - Local Exp - APC Meeting Expenses	500.00	384.57	115.43
65220-640	LTC - Local Exp - Communications	1,000.00	0.00	1,000.00
65230-640	LTC - Local Exp - Special Projects	500.00	55.00	445.00
TOTAL LTC Local Expense		<u>3,250.00</u>	<u>2,838.07</u>	<u>411.93</u>
Projects				
73001-640-2015	Lasqueti OCP/LUB	7,000.00	4,181.21	2,818.79
73001-640-4085	Lasqueti First Nations Relations	1,000.00	0.00	1,000.00
		<u>8,000.00</u>	<u>4,181.21</u>	<u>3,818.79</u>

Lasqueti Island Local Trust Committee

POLICIES AND STANDING RESOLUTIONS

No	Meeting Date	Resolution No.	Issue	Policy
1.	July 11, 2013	LA-2013-020	APC member Agenda Package	It was MOVED and SECONDED , that on request by an Advisory Planning Commission member, that they receive a Lasqueti Island Local Trust Committee Agenda package at no charge.
2.	February 28, 2017	LA-2017-006	APC to also act as TAC	It was MOVED and SECONDED , that the Lasqueti Island Local Trust Committee make a Standing Resolution to request the APC to undertake the function of a Transportation Advisory Committee.



Trust Fund Board Report to Local Trust Committees and Bowen Island Municipality January 2018



Election of the Trust Fund Board Chair

Trustee Tony Law was nominated and elected by acclamation as the Trust Fund Board (TFB) Chair for 2018.

Re-appointment of Robin Williams

The Minister has approved the re-appointment of Robin Williams to the TFB for two years. Trustee Williams will continue to represent the TFB on the Financial Planning Committee.

New 'Salish View' Conservation Proposal, Lasqueti Island

The TFB received and accepted a conservation proposal submitted by the Lasqueti Island Nature Conservancy, (LINC) regarding the acquisition of the property known as 'Salish View'. The TFB agreed to contribute \$32,000 from the Lasqueti Island Acquisition Fund to purchase Salish View, on the condition that the primary donors to this Fund support the use of the funds for this project. Staff will be working with LINC on fundraising and communications for the campaign, and if the campaign is successful, the land will be protected by the TFB as a nature reserve, with a covenant held by LINC.

Regional Conservation Plan (RCP)

The TFB approved the final 2018-2027 Regional Conservation Plan (RCP). The Board is referring the RCP to Trust Council for endorsement at the March Trust Council meeting. The TFB also reviewed a three-year work plan that builds on the approved RCP. The RCP will be used by the TFB to evaluate conservation proposals, to direct communications and fundraising efforts and to guide property management work. The three-year work plans will be used by staff and board members to guide their work and measure progress towards achieving the larger goals of the ten-year RCP. The final RCP will be posted on the Islands Trust Fund (ITF) website after the March Trust Council meeting and a news release will be issued.

Fairyslipper Forest campaign

Fairyslipper Forest is now protected as a TFB nature reserve. A board-to-board celebration event will be held in Cowichan Valley on February 24, 2018 to celebrate the successful completion and protection of Fairyslipper Forest Nature Reserve on Thetis Island. Public celebration events will be held on Thetis Island on April 21-22, 2018.

Report on Islands Trust Meeting with the Minister

The TFB discussed possible follow-up actions emerging from the recent Islands Trust meeting with the Minister of Municipal Affairs and Housing regarding the requested change to the Islands Trust Act to change the name of the Islands Trust Fund.

Agricultural Land Commission (ALC) Review

Trustee Tony Law attended the a regional stakeholder meeting held by the Minister of Agriculture's Advisory Committee on the Revitalization of the Agricultural Land Reserve and Agricultural Land Commission on February 6, 2018 in Nanaimo.

Summary of Current Island-by-Island Activities

Denman

Staff attended an open house on January 27, for public consultation on the revised management plan for Morrison Marsh Nature Reserve, to be completed by April 2018. Invasive species removal and trail clearing, sign installation, tree caging for forest restoration continues at all three TFB nature reserves.

Gabriola

Construction is almost complete on the boardwalk around the large western redcedar tree. Notice of the work went into the local paper and social media, and the RCMP was notified to deter vandalism. Construction of boardwalk over a wet area on one section of the existing trail will begin in February.

Galiano

Invasive species removal and trail clearing is in progress on the Laughlin Lake and Vanilla Leaf Nature Reserves. The Board received and approved a request from a

Please feel free to contact members of the Trust Fund Board or Islands Trust Fund staff for more details.

Tony Law, Chair tlaw@islandstrust.bc.ca
Islands Trust Fund itfmail@islandstrust.bc.ca

Master's student to perform research on pollinators and microclimates on Retreat Island Covenant provided that conditions for ecological integrity and stakeholder approval are met.

Lasqueti

Riparian restoration and nesting box maintenance is in progress at the John Osland Nature Reserve.

North Pender

Public consultation, including a questionnaire and open house scheduled for February 17, 2018, are underway for a revised management plan for the Medicine Beach Nature Sanctuary, to be completed by April 2018.

Please feel free to contact members of the Trust Fund Board or Islands Trust Fund staff for more details.

Tony Law, Chair tlaw@islandstrust.bc.ca
Islands Trust Fund itfmail@islandstrust.bc.ca



**Trust Fund Board Report
to Local Trust Committees
and Bowen Island Municipality
April 2018**



‘Salish View’ Acquisition Project, Lasqueti Island

Following the successful conclusion of the Fairyslipper Forest acquisition partnership on Thetis Island, our next joint campaign is underway on Lasqueti Island. The Trust Fund Board and Lasqueti Island Nature Conservancy have signed an agreement to frame the campaign to purchase and protect “Salish View”, an 11.6 hectare property contiguous to Squitty Bay Provincial Park. Look out for the upcoming official launch of this campaign and visit the Lasqueti Island Nature Conservancy website (<http://www.lasqueti.ca/LINC>) to learn how you can support this small community’s ambitious project.

Opportunity Fund Grant for Saturna Wetland Conservation Project

The Trust Fund Board is contributing a grant from the Opportunity Fund to support a phase one environmental assessment for a property containing wetland ecosystems on Saturna Island. This is the first step towards the possible securement of this land, which supports valuable biodiversity. The project is being spearheaded by neighbourhood residents.

Dragonfly Commons Conservation Proposal, Salt Spring Island

There are times when the Trust Fund Board makes the difficult decision to decline a conservation proposal. The Trust Fund Board decisions must balance the protection of biodiversity values in accordance with the Regional Conservation Plan, with potential risks and long-term costs, such as property management challenges. TFB considered a proposal to covenant approximately half of a property to be developed as a high density affordable housing project. The small size, landscape context and complexity of eventual ownership were factors that led to a TFB decision to decline this proposal

Fairyslipper Forest Nature Reserve, Thetis Island

Negotiations are beginning with Thetis Island Nature Conservancy and Cowichan Community Land Trust to establish a conservation covenant on Fairyslipper Forest.

Medicine Beach Nature Sanctuary, North Pender Island

Public consultation for the Medicine Beach nature reserve is now complete and the management plan for this nature reserve is being finalized.

Morrison Marsh Nature Reserve, Denman Island

Public consultation for the Medicine Beach nature reserve is now complete and the management plan for this nature reserve is also being finalized.

First Nations – Regional Conservation Plan

A goal of our new Regional Conservation Plan (RCP) is to strengthen relationships with First Nations to identify and collaborate on shared conservation goals. Letters are being sent to all First Nations with traditional territory in the Trust Area to provide information about the RCP and offer available mapping for sharing. The Islands Trust Fund would like to connect with First Nations that might have an interest in the RCP. If local trust committees or Bowen Island Municipality are developing relationships with First Nations, it would be helpful to explore how ITF can use this opportunity to connect.

Regional Conservation Plan and Local Trust Committees and BIM

The RCP contains a lot of valuable information for local trust committees and Bowen Island Municipality, but it is a large, comprehensive document. Islands Trust Fund will be extracting information and maps pertinent to each local trust area and BIM that can be included on local website pages. The Trust Fund Board encourages LTCs and BIMs to identify how Official Community Plans can be updated to reflect new information contained in the RCP and associated data and mapping. ITF will also be producing a summary brochure on the RCP.

Please feel free to contact members of the Trust Fund Board or Islands Trust Fund staff for more details.

Tony Law, Chair tlaw@islandstrust.bc.ca
Islands Trust Fund itfmail@islandstrust.bc.ca

To:	Local Trust Committees	For the Meeting of:	Various
From:	David Marlor, LPS Karen Hurley, TAS	Date Prepared:	March 2, 2018
SUBJECT:	Land-use planning implications of Fisheries and Oceans Canada <i>Integrated Geoduck Management Framework 2017</i>		

PURPOSE: To inform local trust committees about the land-use implications of the of Fisheries and Oceans Canada *Integrated Geoduck Management Framework 2017*

BACKGROUND:

At the November 2, 2017 meeting the Executive Committee requested that:

Local Planning Services and Trust Area Services staff collaborate on the preparation of a briefing for local trust committees about the land-use planning implications of the DFO 2017 Integrated Geoduck Management Framework.

The Fisheries and Oceans Canada (DFO) *Integrated Geoduck Management Framework 2017* (IGMF) guides the management of geoduck clam aquaculture, including siting guidelines for new applications for inter-tidal and sub-tidal geoduck aquaculture, as well as for applications for size increases to existing shellfish aquaculture operations.

Currently in the Islands Trust Area, most shellfish aquaculture tenures are limited to Baynes Sound because this area has the best conditions for the raising of these types of shellfish. Wild geoduck clams are more widespread in the Islands Trust marine areas, and, under the IGMF, there is potential for geoduck clam aquaculture operations to be installed in wild geoduck habitats. As a result, staff expects that Geoduck clam aquaculture tenures could be applied for in many other locations throughout the Trust Area but would be influenced and/or limited by:

- appropriate ecological/substrate conditions;
- zoning; and
- the DFO IGMF 2017, which identifies areas available for geoduck clam aquaculture applications.

With release of the DFO Integrated Geoduck Management Framework 2017, applicants are now able to apply for aquaculture licenses throughout the B.C. coast, including the Trust Area. Shellfish aquaculture is now under the exclusive jurisdiction of DFO to manage the fishery and provide licenses to operators. The province issues tenures for the sites and manages the harmonized application process.

There are existing aquaculture licenses that include geoduck clams among many possible species that could be implemented at this time on many Gulf Islands, including: Lasqueti, Hornby, Salt Spring, and Denman. There are also many islands that have existing aquaculture licenses that do not currently include geoduck clams; however, operators could apply to have them added to the license, including: Thetis (5), Gabriola (1), Salt Spring (4 including one at Burgoyne Bay) and many near Denman.

Attached are maps of the Islands Trust Area, indicating areas that currently permit aquaculture and/or limited aquaculture.

Under IGMF 2017, there is also the potential for the opening up of wild geoduck areas to DFO applications for both intertidal and subtidal geoduck clam aquaculture licenses in various sites in the Trust Area by First Nations (red zones) and all operators (yellow and non-colour areas on attached maps).

DFO staff, however, is not expecting a large number of new or amendment applications for geoduck clam aquaculture and have advised that throughout BC there “are currently 57 facilities licensed for geoduck. Of this, 25 are licensed for intertidal, of which only 6 have approved harvest plans, and only 2 have ever reported production, the last being in 2015.” DFO staff has also confirmed that “the addition of geoduck to an existing licence requires an amendment with full DFO review. Any proposed addition of non-standard infrastructure (including geoduck tubes) would also trigger a review of the application by the BC government.

Implications of the IGMF

In British Columbia, the province has responsibility for issuing tenures for aquaculture and the federal government has responsibility for issuing licenses for the operation and management of aquaculture.

Under s.479 of the *Local Government Act*, local trust committees have the authority to zone the surface of the marine areas. However, aquaculture is a federally regulated industry and local zoning cannot infringe on the federal authority. Therefore, local trust committees are limited to determining the location that it deems suitable for aquaculture operations but cannot restrict the species grown in the tenure area. Local trust committees could regulate siting and size of buildings and structures as part of its s.479 authority, provided that such regulations do not restrict the aquaculture operations as licensed by the federal government.

Any areas suitable for geoduck clam aquaculture that are already zoned for aquaculture uses could be used to grow and harvest geoduck. Operator licenses may already include geoduck clams, or they could be added to the aquaculture license, likely without a referral process.

Areas that are not zoned for aquaculture would require a rezoning application before they could be used for aquaculture (including geoduck clams).

ATTACHMENT(S):

1. 2018 Island Trust water zoning maps (with index map)
2. Staff report on potential impacts associated with geoduck clam aquaculture in the Islands Trust Area, November 12, 2017
3. Fisheries and Oceans Canada *Integrated Geoduck Management Framework 2017* (IGMF)
4. IGMF Maps associated with Islands Trust Area -- Pacific Fisheries Management Areas: attached and at DFO website
 - a. 14 South - Denman, Hornby, Lasqueti, N. Thormanby Islands
 - b. 16 - Denman, Hornby, Lasqueti, N. Thormanby Islands
 - c. 17 - Gabriola, Galiano, Mudge and Thetis Islands
 - d. 18 - Saturna, Salt Spring Islands (all SSI Conditional Closure)
 - e. 19 - James, Sidney Islands

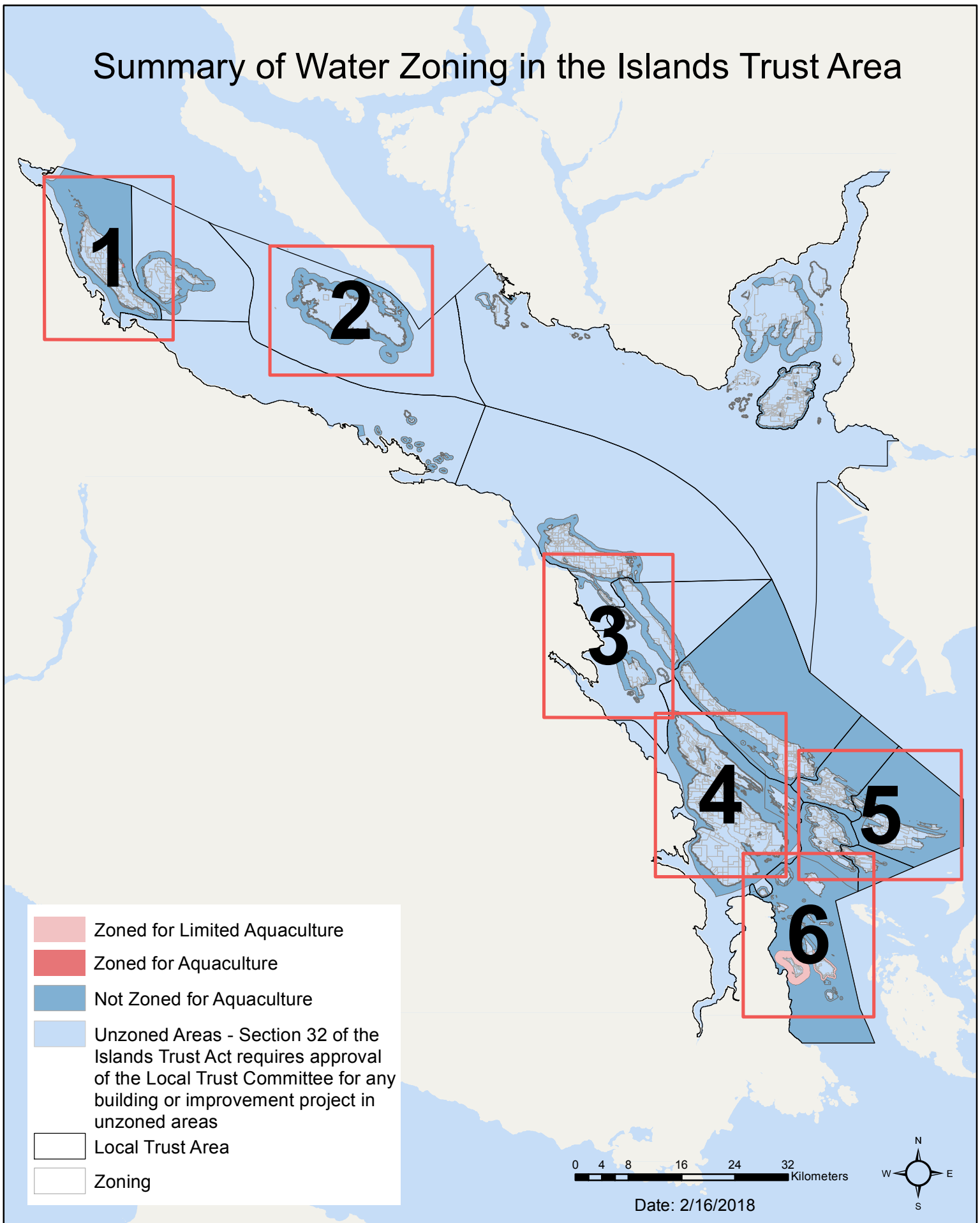
FOLLOW-UP:

TAS staff will continue to monitor any new information on geoduck clam aquaculture. Further follow-up at the direction of Local Trust Committees.

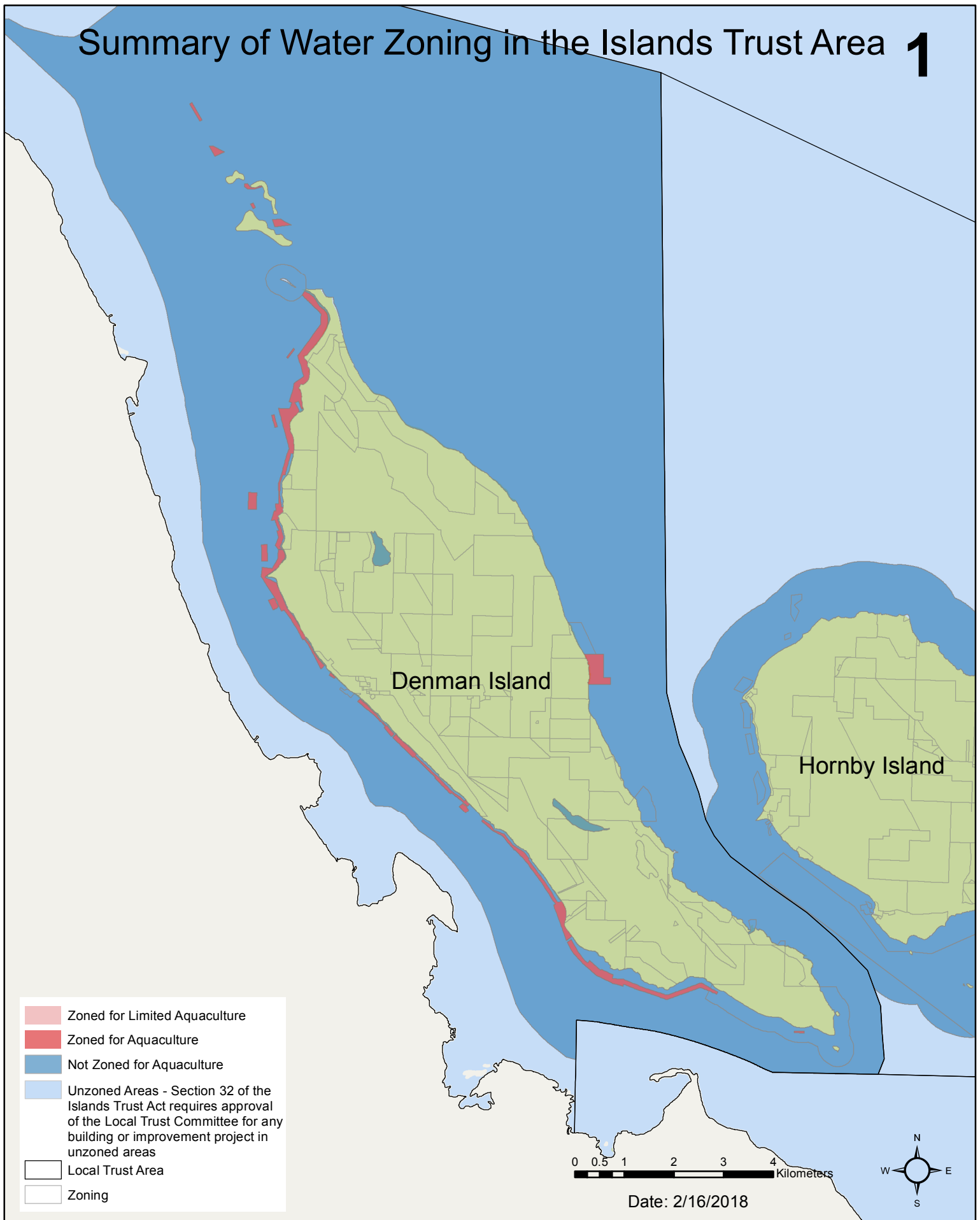
Prepared By: David Marlor, Local Planning Services
Karen Hurley, Trust Area Services

Reviewed By/Date: Clare Frater, Trust Area Services, March 5, 2018

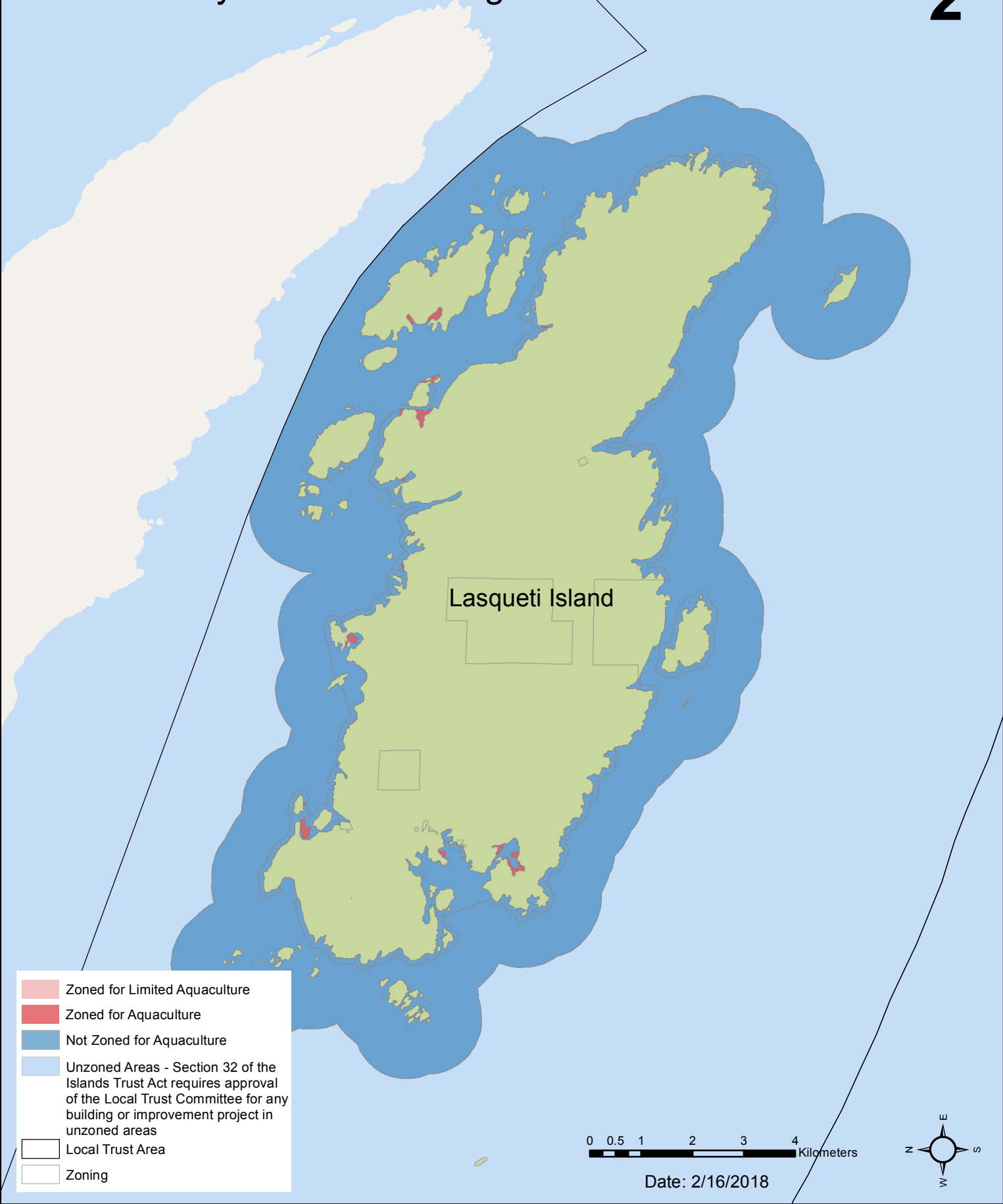
Summary of Water Zoning in the Islands Trust Area



Summary of Water Zoning in the Islands Trust Area 1



Summary of Water Zoning in the Islands Trust Area **2**



Summary of Water Zoning in the Islands Trust Area **3**

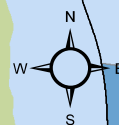
Gabriola Island

Thetis Island

- Zoned for Limited Aquaculture
- Zoned for Aquaculture
- Not Zoned for Aquaculture
- Unzoned Areas - Section 32 of the Islands Trust Act requires approval of the Local Trust Committee for any building or improvement project in unzoned areas
- Local Trust Area
- Zoning

0 0.5 1 2 3 4 Kilometers

Date: 2/16/2018



Staff report on potential impacts associated with geoduck clam aquaculture in the Islands Trust Area

**By Karen Hurley, PhD, Senior Policy Advisor
November 12, 2017**

On June 21, 2017, the Islands Trust Council requested Executive Committee to investigate the potential impacts associated with geoduck aquaculture in the Islands Trust Area and, as appropriate, initiate advocacy.

This report has been produced using review of the latest scientific peer-reviewed research on impacts from geoduck clam aquaculture, as well as conversations and meetings with staff from the Department of Fisheries and Oceans (DFO), the BC Ministry of Agriculture, the BC Ministry of Forests, Lands and Natural Resources Operations and Rural Development (FLNRORD), Vancouver Aquarium and members of the Association of Denman Island Marine Stewards. *Given the limited staff time available for this project, and the lack of definitive science, this report offers only an overview of potential impacts and highlights area worthy of further study.*

During a review of the issue, two major themes emerged: there is uncertainty as to the expected scale of the industry now that DFO's 2017 Geoduck Integrated Management Framework is in force and therefore there is uncertainty about the, scale of the potential impacts. There is also uncertainty about the extent to which geoduck aquaculture might occur in the intertidal zone.

The potential impacts discussed in this report include damage to habitat vital to other species including herring, reduced bird foraging, microplastic contamination, human health, chemical contamination, garbage and ocean acidification.

It is worth noting at the outset that, to date, there are no studies that evaluate the potential impacts of geoduck aquaculture at the ecosystem level or the cumulative impacts of an expanded industry in the Salish Sea, though most researchers call for this level of study to be done.

A description of geoduck clam aquaculture practice is attached as Appendix 1.

Geoduck aquaculture has taken place in British Columbia since the early 1990s. In that time, interest in geoduck aquaculture has continued to grow as demand for the giant clam, especially in China, has sent prices soaring. Many, including Trust Area First Nations, see the emerging geoduck aquaculture industry as a significant opportunity for economic development and long-term employment for local residents. Compared to Washington State the industry in BC is at an early stage, but with the recent approval of a DFO Integrated Geoduck Management Framework 2017 (IGMF) is poised to expand.

There are concerns in island communities that DFO has insufficiently considered ecosystem and cumulative impacts. In creating the IGMF, DFO chose to limit their consideration and scientific analysis geoduck aquaculture at the policy level to the principle of 'conservation', which was narrowly defined: "conservation and long-term sustainability of wild geoduck stocks is the first priority." No mention is made in the IGMF of protection of the marine environment, fish habitat or human health. DFO staff advises that broader ecological impacts will be assessed at the licence application level. This raises concern that assessment at the individual licence will result in insufficient consideration of cumulative impacts regionally.

Concerns about geoduck aquaculture impacts are not new. In 2007, the BC Legislature's Special Committee on Sustainable Aquaculture [recommended](#) that:

"No new species are to be approved for commercial aquaculture without a consensus of independent peer-reviewed science demonstrating that the potential impact on the marine environment is minimal". (7.5)

Recently approved geoduck clam tenures must be rescinded until conditions in Recommendation 7.5 are met". (7.6)

Staff's review of the available science did not result in an impression that there is scientific consensus that the potential impacts of intensive aquaculture in the Trust Area, including geoduck aquaculture, are certain to be minimal. Staff noted that many articles conclude with calls for additional research. As far as staff knows at this time, the 2007 recommendation to rescind the approved geoduck clam tenures was not acted on.

There are also strong feelings in island communities about aquaculture impacts generally. Residents are concerned that, in the past, aquaculture operators have not taken responsibility for lost equipment/garbage and that DFO is insufficiently monitoring and enforcing conditions of the licenses. Residents also seem to have a lack of trust in the adequacy of the federal government's oversight of aquaculture, due to changes to the *Fisheries Act* in 2012 that significantly [weakened](#) the federal government's role in fish habitat protection. There also appears to be a lack of clarity with members of the public regarding the respective roles and authorities of DFO, FLNRORD and Islands Trust.

Potential impacts of geoduck clam aquaculture

A summary of potential impacts identified by staff is below:

1. Potential damage to habitat vital to other species, including herring

There is limited local data available about habitat impacts associated with the geoduck industry so staff reviewed articles about impacts in Puget Sound, a nearby region that has more experience with intensive geoduck clam aquaculture. A review of the scientific literature related to geoduck aquaculture in Puget Sound reveals that there is an active debate among scientists as to the severity of the impacts or potential impacts. That said, most of the scientific reports call for additional research on ecological impacts even as geoduck aquaculture intensifies. Key among these are:

- *MacDonald et al.* (2013) report negative impacts on fish and snail habitat by geoduck aquaculture gear and suggest further research to understand impacts to forage fish populations.
- *Dethier et al.* (2007), marine scientists, raised [concerns and questions](#) about geoduck aquaculture impacts to habitat, marine species and ecosystem functions. Staff understands these questions remain unanswered.

In 2013, DFO scientists conducted a one-year study on potential impacts of geoduck clam intertidal aquaculture in a small study area (not a large commercial operation) near Nanoose, BC. This study concluded that there are limited ecologically-significant effects of intertidal geoduck aquaculture. The exceptions found were that after liquefaction of the geoduck site during harvesting the sediment structure took 123 days to recover, and that there was a lack of seasonal increase in infaunal (beings that live in the sand such as forage fish) abundance and richness after harvesting. The study recommended more research on a larger scale.

Robinson et al. (2013) describe how Pacific sand lance do not have a swim bladder, so when they are not foraging they bury into the intertidal or subtidal sand and they also aestivate in the sand (like hibernation) when food is scarce. A reduced number of forage fish and invertebrates living in the sand and finer ocean floor sediments after liquefaction from the stingers (inserted to a one metre depth) is not surprising because their habitat has been significantly changed. As *Dethier et al. (2007)* write: organisms in the intertidal zone are adapted to small scale disturbances – this large scale disturbance with stingers is not part of their evolutionary history.

Staff notes that it remains unclear whether geoduck aquaculture will occur in the intertidal zone. Although not specific to the geoduck industry's activities, a 2002 review of BC shellfish aquaculture in Baynes Sound assigned the impacts of site clearing with a rake and other harvesting activity as High Severity on forage fish intertidal habitat.

Doug Hay, PhD, who spent most of his career as a research scientist with DFO, and who continues to serve as scientist emeritus addressing issues related to herring and other forage fish, cautions that pertinent environmental impact analysis of risks to forage fish species have never been done. He suggests that nobody knows if geoduck aquaculture could jeopardize the amount and quality of spawning habitat for herring or other forage fish species such as surf smelt or sand lance, but that, the loss of vital spawning habitat could lead to declines in abundance of forage fish species, including herring, which in turn could impact other species, especially seabirds. Within the Trust Area, forage fish provide up to 50% of the diet of Chinook salmon that are the primary food of the Southern Resident orcas. Using spawning records back to 1928, Dr. Hay explains that the most important herring spawning areas occur on only 10% of the total BC coastline. *Lambert Channel, between Denman and Hornby Islands, is the largest area of herring habitat in BC with 35% of BC's total herring spawning area.* In addition, Dr. Doug Hay cautions that, collectively, we are all taking herring for granted, especially in the Strait of Georgia, and taking big risks with geoduck aquaculture in herring spawning areas. He recommends additional research on this topic.

The IGMF permits geoduck aquaculture in many parts of the herring spawning area of Baynes Sound and Lambert Channel (Denman and Hornby Islands). This is herring habitat that is defined as Vital by DFO.

2. Potential impacts to species due to reduced foraging

There is also concern that intensive intertidal geoduck aquaculture may negatively impact birds through alienation of foraging habitat in the inter-tidal zone as well as birds being caught in the predator netting. Baynes Sound and other marine areas within the Trust Area are important bird habitats. .

Ferriss et al. (2016) undertook modelling for Puget Sound that found that the gear associated with geoduck aquaculture including PVC pipes and anti- predator nets may, if the already intensive industry more that doubles in that region, have an impact on the Puget Sound food web because of changing forage opportunities including a substantial decrease of most resident birds including great blue herons and reduction in wild salmon.

There is widespread use of netting in the aquaculture industry. Given this, staff was interested to read studies that the anti-predator nets (APN), which were created to reduce bird and crab predation of aquaculture clams, have not been effective in reducing bird foraging behavior or crab predation. In fact, the nets have increased the number of small predatory crabs in Baynes Sound to the point that Dr. Leah Bendell (2014) suggests that “it is likely that maximum bivalve productivity within Baynes Sound has been reached in that any further gains hoped to be achieved through seeding will not be realized as a consequence of predation.”

Staff also learned that in a 2015 study, also focused on Baynes Sound, Dr. Bendell, documents how the anti-predator nets degrades the sediment geochemical characteristics, are hazards to wildlife and humans, and provides a place for sea lettuce to take hold, which contributes to poor water quality and a likely loss of ecological function on the sea bed. More research is recommended by the author.

3. Microplastic contamination

The plastic anti-predator netting and PVC pipes used in inter-tidal geoduck aquaculture may impact the marine environment as they break down in the saltwater and sun exposure. A recent research paper from Washington State explains that the “contribution from larger marine plastic debris to microplastic formation is greatest on beaches where UV light and wave action can enhance degradation.” According to Feldman (2002) PVC is a poorly photostable polymer especially the matt finish PVC, like the ones used in geoduck aquaculture, and can be severely weathered in outdoor uses where weathering is caused by heat, mechanical action (waves), algae and their enzymes (biodegradation). During a visit to Baynes Sound in early August, staff observed abandoned and in-place anti-predator netting and PVC pipe sections that were exposed to wave action and sunlight and, as a result, were in various states of weathering.

A 2014 paper by Jean-Pierre Desforges, Peter Ross, Vancouver Aquarium researcher, and others, documented extremely high levels of microplastics in the Strait of Georgia, of which 80% is fibrous plastics. In a 2015 paper by the same researchers found that zooplankton are eating these microplastic particles. Dr. Ross also explained to staff that researchers have found that the type of microplastic differs according to where you are looking. For example PVC microplastic is denser than water and therefore tends to be found in the sediments, while fibres are more buoyant and are found in the water column. Dr. Bendell argues that aquaculture plastic gear including ‘oyster blue’ rope, netting, and plastic net bags are contributing to the highly fibrous composition of microplastics in Baynes Sound. All of the researchers suggest that additional research is required, especially in terms of ecological consequences.

DFO and the BC Shellfish Growers Association also recognise that aquaculture gear may be a source of microplastics. In 2016 they initiated a collaboratively funded research project to investigate: *Microplastics and Shellfish Aquaculture: Presence, Extent, Potential Impacts and Mitigation Measures* including the type of microplastics and potential sources. The research is expected to be completed by December 31, 2017.

4. Human health

If undertaken, intertidal geoduck clam installations would involve anti-predator nets to protect the juvenile geoducks. There is a human health concern associated with the rebar used to hold the anti-predator nets (APN) in place because it tends to erode quickly at the bend and then break off, forming a point. These points are hazardous if stepped or fallen on – as happened on Denman Island twice in the summer of 2017 in clam tenures.

5. Chemical contamination

Lead line is a product used to attempt to hold the netting in place. This product is used throughout the fishing industry. It is made of a loosely braided nylon with lead balls inside. In the intertidal zone, if the nylon braid erodes there is a risk of [animals or birds ingesting](#) the lead balls. Future research is warranted.

6. Garbage

Garbage and gear abandonment is a long standing aquaculture issue, acknowledged by provincial staff and addressed in the BC Shellfish Growers *Environmental Code of Practice*. Staff observed an unsuccessful geoduck operation intertidal zone on the south end of Denman Island where the gear was obviously abandoned and causing potential danger to humans, marine species and birds.



Abandoned geoduck aquaculture gear in the intertidal zone of Denman Island.



Lead line with anti-predator netting (APN)



APN: a hazard to humans and other species

All images Denman Island. Photo credit: Karen Hurley

7. Ocean Acidification

Marine research by *Bendell et al.* (2014) in Baynes Sound suggests that increased number of clams, including geoduck clams, could further increase acidification of the ocean. Climate change is increasing the [acidification of the ocean](#). Lower pH levels in the ocean threaten sea life, including shellfish, and in turn, acidification of the ocean may speed up climate change.

Emerging activities that will increase understanding of impacts:

On August 10th, 2017 the US Center for Food Safety launched a [lawsuit](#) against the US Army Corp of Engineers for approving a massive expansion of aquaculture, predominantly geoduck aquaculture, in Puget Sound without fully considering cumulative impacts across the state, including the use of pesticides.

As an outcome of the Herring forum hosted in February 2017 by the Association for Denman Island Marine Stewards, various stakeholders are considering possible methods to investigate the cumulative impacts of aquaculture on Baynes Sound. In November 2017, the Trust Programs Committee approved a project charter for a Baynes Sound/Lambert Channel forum project charter. It is expected that geoduck aquaculture will be one of the topics discussed.

There are upcoming opportunities for those involved in geoduck and other aquaculture to work in partnership for the health of marine ecosystems. These include a DFO working group on use of plastics in aquaculture and a planned 2018 Islands Trust/World Wildlife Fund Baynes Sound/Lambert Channel Forum that will bring together First Nations and other governments as well as industry and community stakeholders to identify issues and recommend solutions that will contribute to improving the health of the marine ecosystem.(Project charter attached).

It is possible that new research on this topic may be presented at the 2017 Salish Sea Ecosystem Conference in Seattle in April 2017.

Conclusion:

Staff's initial review of this topic reveals that, although as in any scientific topic there is ongoing debate, there are potential impacts associated with an expanded geoduck industry worthy of further study, particularly if there is to be farming in the inter-tidal zone. These include: negative impacts to herring spawning habitat, bird forage opportunities, contributions to the microplastics load, human health, contamination and garbage. There are also many long-standing requests for research into the potential ecosystem level and cumulative effects of geoduck clam aquaculture.

Attachments:

1. Appendix 1: How does geoduck clam aquaculture work?
2. Appendix 2: What part of the Trust is, or could be, available for geoduck aquaculture?
3. Appendix 3: Baynes Sound/Lambert Channel 2018 forum project charter
4. Link: [Integrated Geoduck Management Framework 2017](#)
5. Link: [Maps: Integrated Geoduck Management Framework](#)
6. Link: [Herring Spawning Map Lambert Channel and Baynes Sound](#)
7. Link: [April 2014 letter from Islands Trust Chair to DFO re draft Integrated Geoduck Management Framework](#)

Appendix 1

How does geoduck clam aquaculture work?

The geoduck is the world's largest burrowing clam and one of the longest lived species: maximum age recorded is over 140 year. It is now a lucrative wild fishery in the luxury food market. It is generally not consumed locally, but predominantly flown to consumers in China, and therefore, is expected to have a very high carbon footprint.

Aquaculture trials have been underway in BC for 18 years and geoduck hatcheries exist in BC, including Baynes Sound. It is unknown at this time what type of geoduck aquaculture will be conducted within the Islands Trust Area. DFO and FLNRO staff have indicated that there will likely not be much intertidal geoduck aquaculture, especially on the large scale conducted in Puget Sound but that small intertidal areas are possible, and subtidal aquaculture could be conducted. Both are untried methods in the Islands Trust Area and staff observed a failed and abandoned geoduck intertidal installation on Denman Island.

Geoduck aquaculture in the intertidal zone involves placing hatchery-raised juvenile geoduck clams into PVC pipes (that have been inserted into the sand with an auger), sometimes each PVC pipe is covered with a fine net under a rubber band, and then the entire area is covered with anti-predator nets (APN). Attempts are made to hold the APN in place with bent rebar and sometimes with lead line. The intertidal PVC pipes and predator nets are kept in place for 18 months to two years. Subtidal geoduck aquaculture, involves divers placing the hatchery juvenile geoducks in the sand and then installing a mesh 'canopy net' over the area. Industry standards do not exist yet for subtidal geoduck aquaculture as it is a new method.

The geoducks are then left to grow for five to seven years. During this time the site should be maintained to ensure that the netting is intact and not covered with algae or seaweed. In both intertidal and subtidal geoduck aquaculture (and similar to wild geoduck), once they reach suitable maturity the geoducks are removed by liquefying the sand with high pressure water from a 'wand' or 'stinger' and then removing the geoducks alive by hand. Adult geoducks may be buried to a depth of 1m and sediment liquefaction may occur down to such depths.

In Puget Sound, Washington geoduck clam aquaculture has been financially successful resulting in large areas of the intertidal zone being used by aquaculture companies.



Puget Sound geoduck aquaculture. Photo from *Aquaculture North America* magazine. February 4, 2014

At this time, BC does not have a large geoduck aquaculture industry and according to staff at DFO and in the geoduck industry, most geoduck aquaculture trials in BC have not been successful. A 2012 report prepared for DFO includes a profitability ratio that indicates a -2.5% rate of return after 10 years and 1.7% rate of return after 15 years. A BC Ministry of Agriculture and Lands 2005 report assessed the economics of subtidal geoduck aquaculture and concluded that because of the high costs of the juvenile geoducks and the placement and removals by divers "the results could range from highly successful businesses to unfortunate business failures. Prospective geoduck farmers [operators] will need to carefully consider the opportunities and risks associated with developing a sub-tidal geoduck enterprise."

Appendix 2

What part of the Trust Area is, or could be, available for geoduck aquaculture?

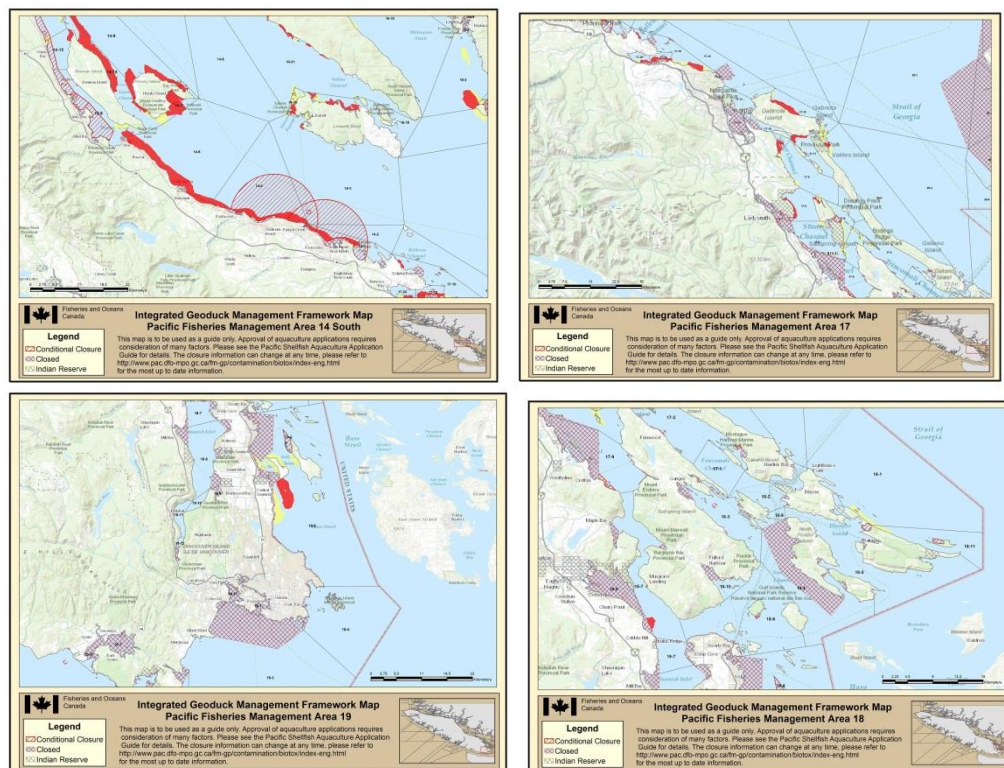
Although aquaculture impacts are now felt most strongly on Denman Island, geoduck aquaculture has the potential to be more prevalent Trust Area wide. Geoduck aquaculture could occur in various places throughout the Trust Area but would be influenced and/or limited by:

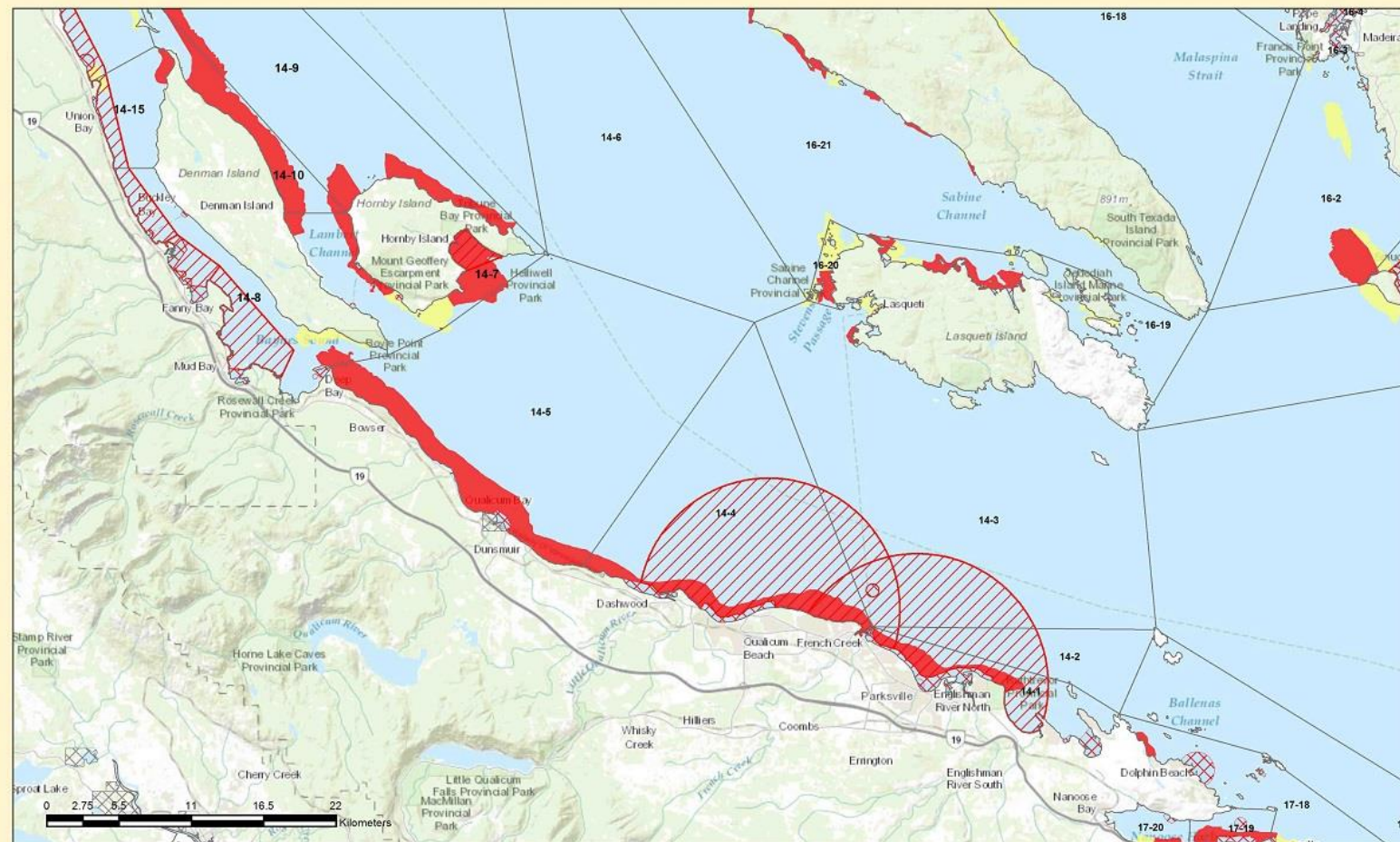
- appropriate ecological/substrate conditions;
- zoning; and
- the DFO IGMF 2017, which identifies areas available for geoduck aquaculture applications.

With release of the DFO Integrated Geoduck Management Framework (IGMF) 2017, applicants are now able to apply for aquaculture licenses throughout the BC coast, including the Trust Area. Shellfish aquaculture is now under the exclusive jurisdiction of DFO to manage the fishery and provide licenses to operators. The Province issues tenures for the sites and manages the harmonized application process.

There are existing aquaculture licenses that include geoduck among many possible species that could be implemented at this time on many Gulf Islands, including Lasqueti, Hornby, Salt Spring and Denman. There are also many islands that have existing aquaculture licenses that do not currently include geoduck; however, operators could apply to have them added to the license. These islands include Thetis (5), Gabriola, (1), Salt Spring (4 including one at Burgoyne Bay) and many near Denman. April 2014 letter from Islands Trust Chair to DFO re draft Integrated Geoduck Management Framework (attached) includes mapping Islands Trust Area that indicates current zoning in the permits aquaculture and/or limited aquaculture.

Under DFO's IGMF 2017 there is also the potential for the opening up of wild geoduck areas for both intertidal and subtidal geoduck aquaculture zones throughout the Trust Area by First Nations (red zones) and all operators (yellow and non-colour areas). [IGMF maps](#).





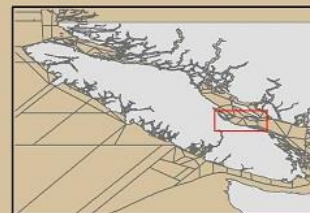
Fisheries and Oceans
Canada

Legend

- Conditional Closure
- Closed
- Indian Reserve

Integrated Geoduck Management Framework Map Pacific Fisheries Management Area 14 South

This map is to be used as a guide only. Approval of aquaculture applications requires consideration of many factors. Please see the Pacific Shellfish Aquaculture Application Guide for details. The closure information can change at any time, please refer to <http://www.pac.dfo-mpo.gc.ca/fm-gp/contamination/biotox/index-eng.html> for the most up to date information.





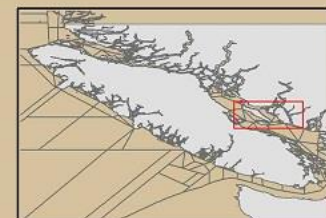
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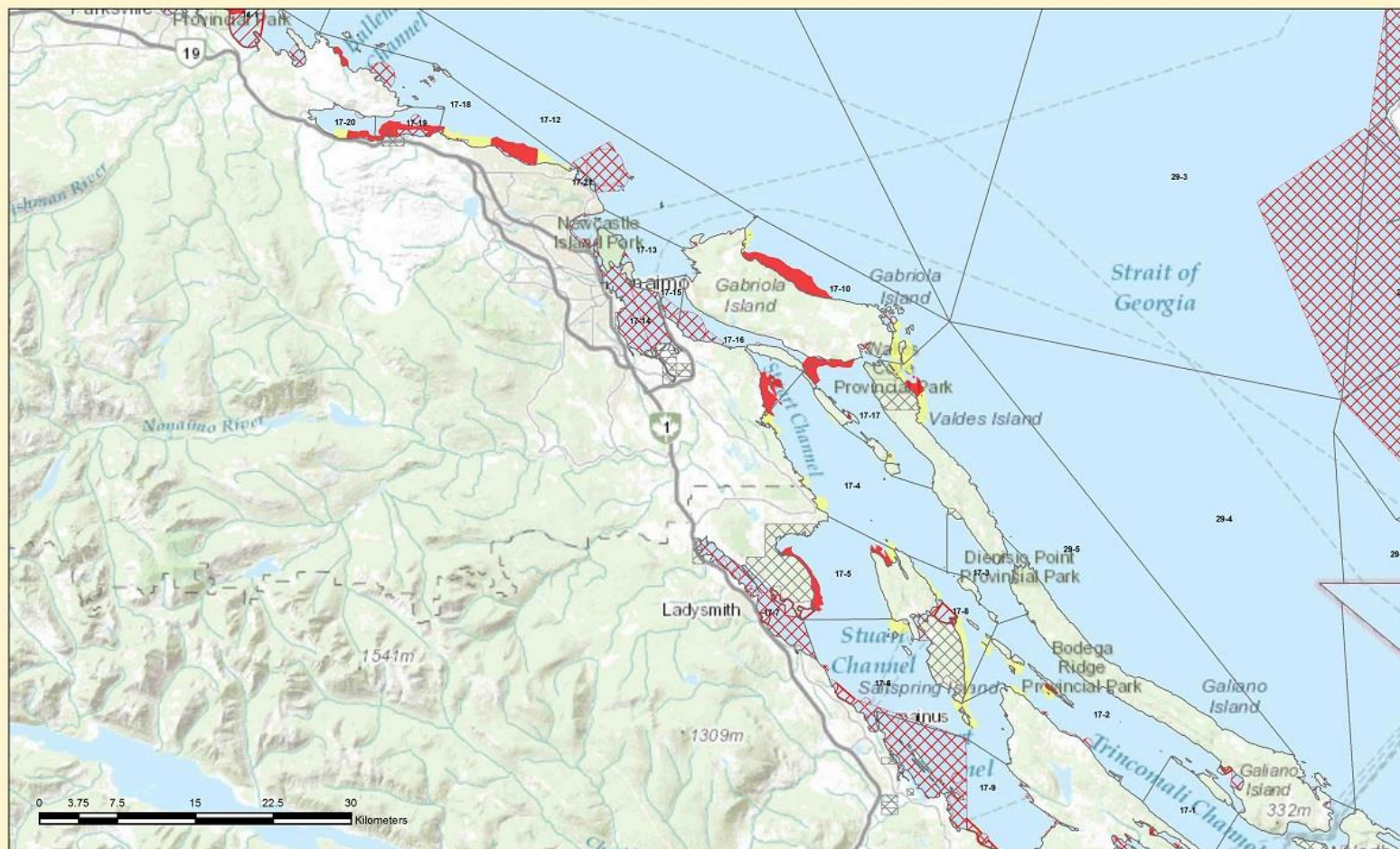
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- Conditional Closure
- Closed
- Indian Reserve

Integrated Geoduck Management Framework Map Pacific Fisheries Management Area 16

This map is to be used as a guide only. Approval of aquaculture applications requires consideration of many factors. Please see the Pacific Shellfish Aquaculture Application Guide for details. The closure information can change at any time, please refer to <http://www.pac.dfo-mpo.gc.ca/fm-gp/contamination/biotox/index-eng.html> for the most up to date information.





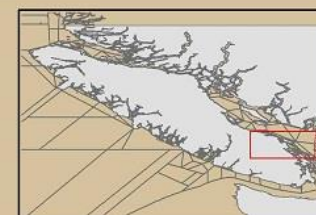
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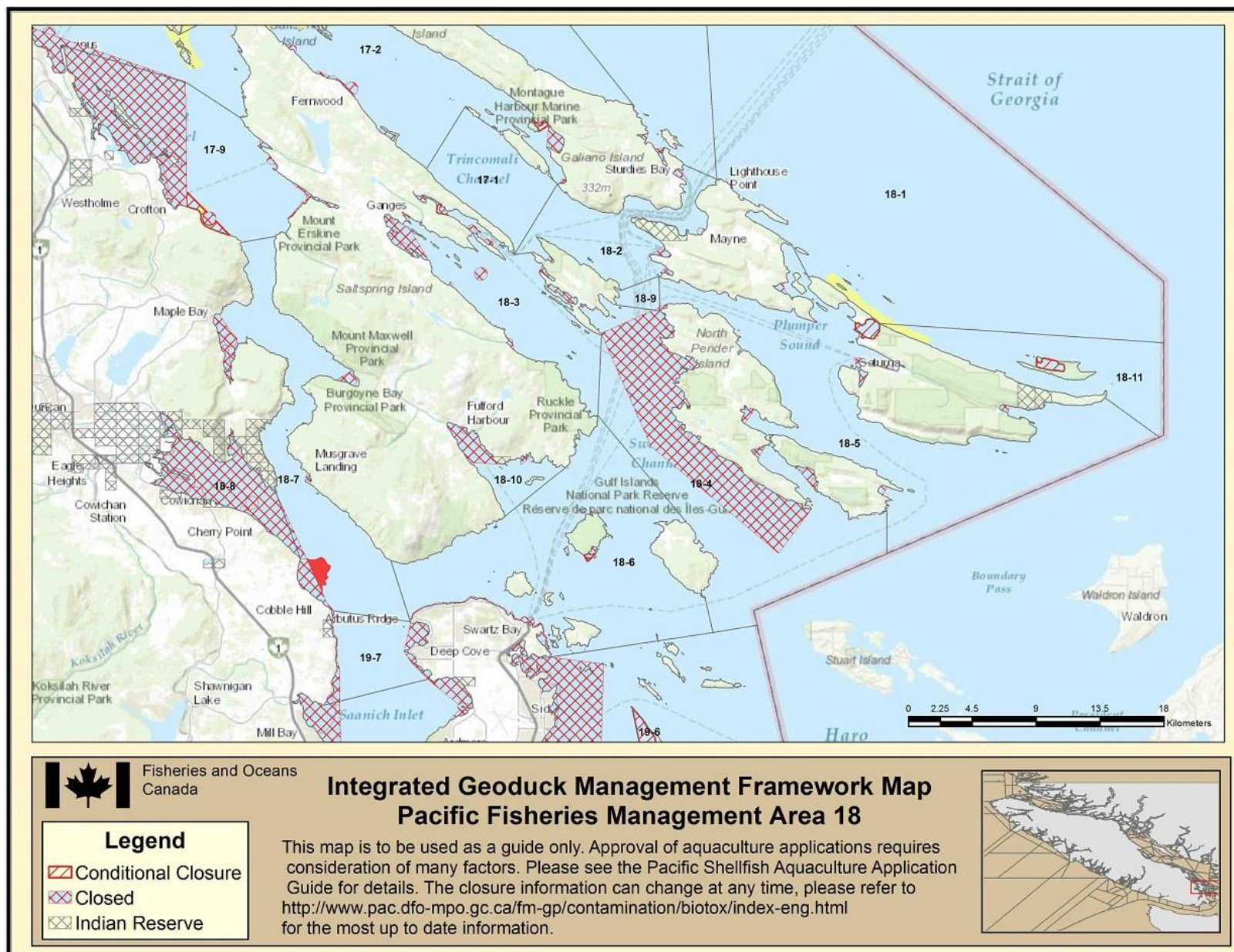
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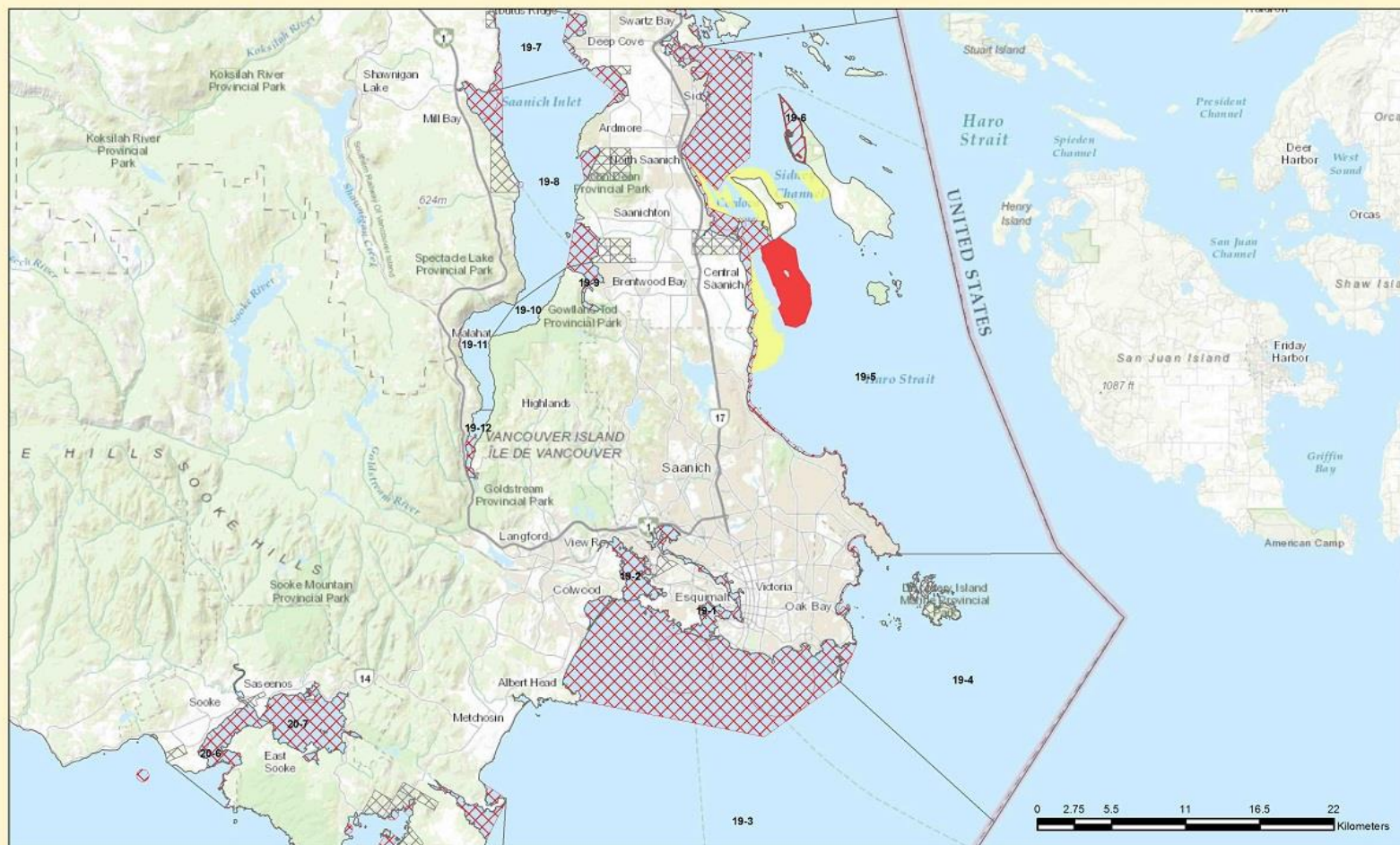
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-  Indian Reserve

Integrated Geoduck Management Framework Map Pacific Fisheries Management Area 17

This map is to be used as a guide only. Approval of aquaculture applications requires consideration of many factors. Please see the Pacific Shellfish Aquaculture Application Guide for details. The closure information can change at any time, please refer to <http://www.pac.dfo-mpo.gc.ca/fm-gp/contamination/biotox/index-eng.html> for the most up to date information.







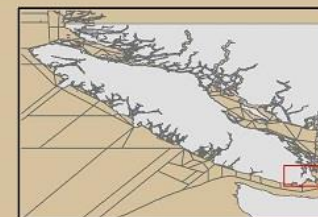
Fisheries and Oceans
Canada

Legend

-  Conditional Closure
-  Closed
-  Indian Reserve

Integrated Geoduck Management Framework Map Pacific Fisheries Management Area 19

This map is to be used as a guide only. Approval of aquaculture applications requires consideration of many factors. Please see the Pacific Shellfish Aquaculture Application Guide for details. The closure information can change at any time, please refer to <http://www.pac.dfo-mpo.gc.ca/fm-gp/contamination/biotox/index-eng.html> for the most up to date information.





File No.:

DATE OF MEETING: April 23, 2018 Lasqueti Local Trust Committee
TO: Local Trust Committees and Bowen Island Municipality
FROM: David Marlor, Director of Local Planning Services
SUBJECT: Approval Process for Water Supply Systems on Salt Spring Island

PURPOSE

At its regular business meeting on February 7, 2018, the Executive Committee received the report “Approval Process for Water Supply Systems on Salt Spring” from the Salt Spring Island Local Trust Committee. The Executive Committee passed the following resolution:

that staff forward the report on approval processes for water supply systems on Salt Spring Island to local trust committees and Bowen Island Municipality.

ATTACHMENTS

1. Attachment 1: Approval Process for Community Water Systems on Salt Spring Island

BRIEFING

To: Executive Committee **For the Meeting of:** February 7, 2018

From: Susan Palmer, MCIP, RPP **Date Prepared:** January 11, 2018
SLP Consulting
Salt Spring Island Team

SUBJECT: Issue Paper: Approval Processes for Water Supply Systems on Salt Spring Island, January 11, 2018, amended

PURPOSE:

Salt Spring Island Local Trust Committee (SSI LTC) referred the attached report (*Approval Processes for Water Supply Systems on Salt Spring Island*) at its meeting on January 18, 2018 to the Executive Committee for information. The key purpose of the report was to inform the SSI LTC of the agencies involved in approving water supply systems and to propose options for implementing Official Community Plan policy regarding water supply and the following Islands Trust Policy Statement policy that:

neither the density or intensity of land use is increased in areas known to have a problem with the quality or quantity of the supply of freshwater.

It was MOVED and SECONDED,

that the Salt Spring Island Local Trust Committee forward the “Approval Process for Water Supply Systems on Salt Spring Island” report to Executive Committee for information.

ATTACHMENT(S):

1. Report: Approval Process for Water Supply Systems on Salt Spring Island

Prepared By: Susan Palmer

Reviewed By/Date: David Marlor, Director of Local Planning Services/Jan 31, 2018

V3 Water Paper.docx

SLP Consulting

1/18/2018 – including amendment submitted at the Salt Spring Island Local Trust Committee Meeting

EXECUTIVE SUMMARY

In response to an application to rezone land to allow for a multi-family residential project, the Salt Spring Island Local Trust Committee (LTC) directed staff at its meeting on October 5, 2017 to:

Report back regarding the findings of an investigation of the approval process for water supply and water quantity requirements for multi-unit residential developments.

Key findings of the investigation are:

- Islands Trust Policy Statement Policy 4.4.2 stipulates the importance of ensuring an adequate supply of water prior to increasing the density or intensity of land use ('neither the density or 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')
- the Salt Spring Island Official Community Plan (OCP) reinforces the importance of ensuring an adequate supply of water to support proposed increases in density; the OCP supports the use of alternative water sources such as groundwater, rainwater and greywater
- Islands Trust does not have a role in approving water supply systems
- the approval process(es) for water supply systems involves several provincial and local government agencies (Ministry of Forests, Lands, Natural Resource Operations and Rural Development (MFLNRORD), Vancouver Island Health Authority (VIHA) and Capital Regional District Building Inspections (CRD))
- different sources of water may be used to meet demand for different types of water use (e.g., rainwater may be used for irrigation)
- indoor water use (potable water) may be met through groundwater or surface water sources approved by VIH
- demand for indoor water use is calculated on a per capita basis and the approving agencies (VIHA and CRD) have guidelines and/or regulations that stipulate the occupancy rates used to calculate water demand. Both agencies have the ability to exercise discretion in the application of the guidelines and/or regulations to address situations where the occupancy rates may not be typical
- generally, approval of a water supply system would occur after zoning is in place due to the level of detail needed and the high cost of preparing the application (e.g., engineered design of the water supply system)
- housing for special needs populations may have different occupancy rates than those set out in provincial guidelines and may require VIHA to exercise discretion in determining an appropriate occupancy rate from which to assess the proposed water supply system.

Six options for implementing Islands Trust and Salt Spring Island Official Community Plan policy regarding land use and water supply were evaluated. Five options are consistent with Islands Trust

mandate (land use planning) and the tools available to implement policy and enforce bylaws. All five options require that the water supply system be capable of supporting the proposed number of dwelling units prior to adoption of the rezoning bylaw. An option to cap occupancy rates through a legal mechanism such as an affordable housing agreement or a restrictive covenant is not recommended because Islands Trust does not have a legislative tool to enforce occupancy. That is, occupancy cannot be enforced through the land use bylaw.

APPROVAL PROCESSES FOR COMMUNITY WATER SYSTEMS ON SALT SPRING ISLAND

Due to the moratorium placed by North Salt Spring Water District (NSSWD) on adding new connections to their water system, the Salt Spring Island Local Trust Committee (LTC) has received numerous rezoning applications for multi-unit housing projects that rely on alternative water sources to service the proposed developments. All of the proposed projects include affordable housing either for the entire project or as an amenity bonus. The LTC has identified provision of affordable housing as a priority issue and therefore has indicated its desire to give serious consideration to these proposals.

Providing water to multi-unit housing developments using alternative water sources (groundwater, rainwater and water conservation) is treading into new territory for the LTC and raises numerous questions about how such applications should be assessed. In addition to Trust and OCP policies, there are numerous provincial guidelines and regulations that regulate water source and the design, construction, operation and maintenance of a water supply system.

On October 5, 2017, the LTC directed staff to:

Report back regarding the findings of an investigation of the approval process for water supply and water quantity requirements for multi-unit residential developments.

The purpose of this report is to:

- clarify the approval process for an independent water supply system and the approval agencies involved
- review Official Community Plan (OCP) policy regarding the use of groundwater, rainwater and water conservation (e.g. greywater) as it relates to the determination of density
- identify the criteria used by approval agencies to determine demand for water for multi-unit residential developments
- propose options for implementing OCP water supply policy
- assess proposed options
- make recommendations for a consistent approach to assessing rezoning applications based on new water supply systems and the use of alternative water sources
- test the proposed approach using the Croftonbrook rezoning application (SS-RZ-2017.4) as an example.

1. APPROVING AGENCIES AND SEQUENCE OF WATER SUPPLY SYSTEM APPROVALS

Development proposals that require rezoning based on a community water supply system using groundwater must receive approval from four different agencies before they can proceed to the construction phase. First, approval of a groundwater license from the Ministry of Forest, Lands Natural Resource Operations and Rural Development (MFLNRORD) is required to support the rezoning application. Rezoning is the next phase of the approval process and decisions on rezonings are made by the LTC. The third phase involves Vancouver Island Health Authority (VIHA) which is responsible for issuing construction and operating permits for water supply systems. The final phase of a project requires issuance of a building permit from CRD Building. Table 1 elaborates on the mandate for each

agency and provides an overview of the criteria and conditions considered before a license or permit is approved. Figure 1 illustrates the approval sequence for rezoning based on a rural residential community water supply system and the approving agencies involved.

A. Well Water License (MFLNRORD)

Application to the Water Authorization Section of the MFLNRORD for a well water license is a first step for approval of a water supply system. This determines the amount of groundwater that may be withdrawn without impacting long-term sustainability of the water supply for the proposed development as well as supply to neighbouring wells and water sources that support fish habitat. The SSI OCP also requires that agricultural activities not be impacted.

Water quality is also determined at this stage and any measures required to ensure the water supply meets Canadian drinking water guidelines are identified.

B. Zoning (LTC)

The rezoning phase is a preliminary design phase that sets the basic parameters for the development – primarily land use, density and/or intensity of use, built form, access and traffic circulation among other things. The rezoning application is assessed in terms of how well it addresses Trust Policy Statement directives and OCP policy. Applicants must demonstrate that there is sufficient water to support the proposed development based on provincial regulations. As well, community input is invited and the LTC considers all of the relevant information at a public hearing before proceeding with third reading of a bylaw. A schematic plan is often provided at this stage to assess whether the site is suitable for the proposed land use.

C. Community Water Supply System (VIHA)

VIHA defines a water supply system as a system which services more than one dwelling unit.

Water supply systems must be designed and operated to ensure that there is sufficient water to service the proposed development and that the quality of water meets the Guidelines for Canadian Drinking Water Quality. The focus is on ensuring a safe drinking water supply.

There are two main considerations regarding water supply systems – water demand and water source.

i. Water Supply System Construction Permit

The Drinking Water Protection Regulation requires that a construction permit be obtained from a Public Health Engineer or Drinking Water Officer prior to construction of the water supply system (VIHA). The Guidelines for the Approval of Water Supply Systems recommend that application for a construction permit should be made at least 60 days before construction is anticipated to begin. Applicants are advised to refer to the

MFLNRORD Design Guidelines for Rural Residential Community Water Systems, 2012 (Design Guidelines) prior to designing the system and applying for a construction permit.

ii. **Water Supply System Operating Permit**

The Drinking Water Protection Regulation requires that an operating permit be obtained from a local Environmental Health Officer or the Drinking Water Officer before the water source(s) can be used. This permit would be issued after a water supply system has been constructed.

D. Building Permit (CRD Building)

Before the Building Inspector can issue a building permit they must ensure a sufficient supply of water to meet all water demand requirements of the specific project. This includes water for indoor use, irrigation and fire protection. If a community water supply system is proposed, issuance of a construction permit by VIHA must be confirmed. In the event that water for fire protection is being provided by a water district, confirmation from the relevant agency (i.e., North Salt Spring Water District – NSSWD) must also be received.

The BC Building Code makes provision for consideration of alternative solutions including:

- the use of greywater for toilet flushing
- the use of rainwater for irrigation
- alternative occupancy rates for determining indoor use water demand
- enhanced water conservation features.

Alternative solutions must be supported by evidence provided by a code consultant and/or a report from a professional engineer certifying that the alternative proposal is appropriate for the specific situation.

2. TRUST AND OCP POLICY

Broad land use policy is established in the entire Trust area in the Islands Trust Policy Statement. Policy (4.4.2) requires that Official Community Plans (OCP) and regulatory bylaws (e.g. zoning bylaws) ensure that:

‘neither the density or 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’.

This statement is reinforced by OCP objectives and policies aimed at protection of water resources (Policy A.4.2.2) and ensuring that proposed developments have an adequate supply of potable water and water for fire protection (Policy B.2.2.3.b). The SSI Official Community Plan (OCP) supports the use of rainwater and water conservation programs to supplement the use of groundwater to meet the demand for water for proposed projects (Policies C.3.2.2.1 and C.3.3.2.2). (See Attachment 1 for OCP

Policies) That is, the policy supports using greywater and rainwater catchment in order to achieve higher densities than would otherwise be possible.

3. CRITERIA USED BY APPROVING AGENCIES FOR ASSESSING WATER SUPPLY

Criteria used in determining water demand for a project varies dependent on the mandate of each agency and the stage of the proposal. Different agencies also have different roles in evaluating the appropriateness and capacity of the proposed supply. Following is an overview of agency mandate, evaluation criteria and conditions.

A. Water Demand

i. LTC

Land Use Bylaw 355 does not specifically address standards for water supply unless a subdivision is involved. In that context, it notes that a proposed water supply system is subject to provisions of VIHA regulations (LUB Sec 5.5.2) (See Attachment 2). Trust and SSI OCP policy require that the SSI LTC ensure an adequate supply of water at the rezoning stage. Options for establishing criteria for a rezoning application are provided in the following section (Section 4).

ii. VIHA (Water Supply System – Construction)

MFLNRORD's *Design Guidelines for Rural Residential Community Water Systems* (2012) identify four basic demand parameters for the design of a new water system:

- a. Average Day Demand (ADD) is used *"to verify source capacity in form of license limitations; to derive peak demands from metering data"*
- b. Maximum Day Demand (MDD) is a *"critical design parameter for sizing reservoirs, pumps and treatment works between source and balancing storage..."*
- c. Peak Hour Demand is used to size *"pipes, pumps and treatment works between balancing storage and customers"*
- d. Fire Flow Demand is a *"critical design parameter for determining maximum network flows, verifying minimum system pressures, sizing pipes/pumps/treatment works between fire storage and customers/fire hydrants."*

MDD is the *"single highest total 24 hour daily consumption occurring over a one year period"* and is comprised of the following components:

- a. Indoor demand – is calculated based on a **per capita demand of 230 Litre/day and occupancy rates based on the BC census (e.g., 2.5 persons per multi-family dwelling)**

Indoor water demand is further broken down as follows:

- Drinking
 - Sanitary
 - Toilets
 - Showers/bathwater
 - Dishwashing, household cleaning
 - Laundry
- b. Irrigation demand – is dependent on a number of factors such as climatic zone, evapotranspiration, size of area, soil type, type of crop, etc.
- c. Water loss allowance- is calculated based on physical design parameters such as length of mains, number of service connections, average operating pressure
- d. Fire flow demand - is based on the Fire Underwriters Survey.

The *Design Guidelines* state that when groundwater is the proposed source, the **Maximum Day Demand (MDD) must not exceed total developed groundwater capacity or the dependable yield of the well**. Total water demand for a project is determined in accordance with Table 2: Water Demand.

iii. CRD Building

BC Building Code bases all design parameters on two persons per bedroom. An applicant can propose alternative solutions (e.g., different occupancy rates per bedroom) under seal of a professional engineer (civil).

B. Water Source

If not connected to a public water utility, groundwater is typically the major source for supplying water to service a development. A well water license is issued by MFLNRORD which will specify how much water may be withdrawn on a daily basis. If the availability of groundwater is not sufficient to meet the needs of the development, supply may be supplemented by water from a water district for fire protection and/or the use of rainwater and/or greywater as allowed by provincial regulations. However, use of these latter two water sources is limited as follows:

- Rainwater – irrigation
- Greywater – toilet flushing.

Demand for water can also be reduced through other water conservation measures such as metering, low- flush toilets, composting toilets, low-flow plumbing fixtures, and water efficient appliances (washing machines and dishwashers).

Highlights of the approval process for the use of a water source are outlined in Table 3: Water Source.

4. OPTIONS FOR IMPLEMENTING OCP POLICY

Islands Trust mandate is land use planning and Trust policy is clear that proposals must have sufficient water to support proposed density and intensity of land use. Tools available to Islands Trust for managing density and intensity relate to the built form and include factors such as number of dwelling units, floor area, site coverage, building height, and building envelope. Proposals that require more water than is available through groundwater sources alone (e.g., rainwater, greywater, etc.), pose a dilemma at the zoning stage since approval of a water supply system is granted by other agencies after zoning is in place. It is generally not feasible to design a water supply system until zoning is secured due to the level of detail the design entails and the costs involved in engineering the design of the system.

VIHA and CRD Building play important roles in ensuring a sufficient supply of water for developments that propose to service the development through a community water supply system. At a minimum, an approved water construction permit will take into account indoor use based on the number of dwelling units and water loss allowance. A building permit cannot be issued unless there is a proven supply of water sufficient to meet all water demands generated by a specific project design (e.g. indoor use, water loss allowance, irrigation and fire protection). Both agencies use occupancy rates as the basis for determining water demand for indoor use for residential projects. Occupancy rate refers to the number of people per dwelling unit or bedroom.

If the well water license authorizes daily withdrawal that is less than that required in the Subdivision Regulations for dwelling units, submission of a preliminary water study by a civil engineer is needed in order to confirm that the Maximum Day Demand (MFLNRORD *Design Guidelines*) will not exceed the dependable yield of the well. The content recommended for the water report is outlined in Section 6 (Recommendations for Implementing Trust and OCP Policy).

5. ASSESSMENT OF OPTIONS

Assessment of rezoning applications that rely on alternative water sources requires the following information in addition to a hydrogeological report:

- Confirmation that a well water license has been issued from MFLNRORD
- submission of a preliminary water study prepared by a civil engineer that:
 - confirms there is sufficient groundwater available to support all water demand types for the proposal (i.e., Maximum Day Demand does not exceed the licensed daily withdrawal amounts), or
 - where MDD would exceed the sustainable yield as set out in the well water license, the preliminary water study shall:
 - identify all proposed water sources

- identify how each type of water demand will be serviced (i.e., which water source will service which water demand type)
- estimate the total number of residents the available groundwater will support based on the sustainable yield of the well (as approved in the well water license) and use of supplementary water sources (e.g., greywater, rainwater)
- estimate how many dwelling units the proposed water supply system would service based on occupancy rates set out in MFLNRORD's *Design Guidelines for Rural Residential Community Water Systems*.

Six options were developed to test how Trust and OCP policy regarding density and the adequacy of water supply could be satisfied under different conditions (Table 4: Assessing Alternative Options for Implementing Trust and OCP Water Policy). The options were developed during discussions with the applicant for the Croftonbrook proposal. Analysis of the options was prepared by SSI Islands Trust staff and planning consultant. Two key situations were tested:

- occupancy rates are based on those set out in provincial guidelines and regulations
- occupancy rates are lower than those set out in provincial guidelines and regulations.

Options One to Three rely on occupancy rates set out in provincial guidelines and regulations (MFLNRORD Design Guidelines and BC Building Code) as the basis for determining how many dwelling units (density) the supply of water can support. **These options are all consistent with the Trust mandate, the number of dwelling units there is sufficient water for would be known or confirmed prior to bylaw adoption.** All of these options can be enforced through the bylaw. Options Four to Six are based on occupancy rates that relate to a specific project design and/or target occupant type (e.g., those at risk of homelessness).

Options Four and Five are proposed in order to allow consideration of proposals that have unique household and water supply characteristics (e.g., small household size and use of alternative water sources). Option Four sets density based on built form parameters (e.g. dwelling unit size) intended to limit total occupancy. The number of dwelling units there is sufficient water for would be known at the public hearing stage.

Option Five proposes that third reading be given to the bylaw and that final bylaw adoption be withheld until confirmation has been received from VIHA that a water supply system construction permit has been issued that would support the proposed density. This option has the advantage of providing the applicant with the comfort that the rezoning will proceed provided the condition for proof of sufficient water supply has been met. It further ensures that density would not be increased unless the water supply system construction permit verifies a sufficient supply of water to service the proposed development. If a permit is issued for a lower density, the applicant would need to request that third reading be rescinded and re-read with the lower density consistent with the approved water supply system construction permit.

6. RECOMMENDATIONS FOR IMPLEMENTING OCP POLICY

Trust and OCP policy require the applicant to demonstrate there is sufficient water for the density (number of dwelling units) they are seeking approval for. In situations where there is insufficient groundwater to meet all water demand types in accordance with the Subdivision Regulations, then consideration of the use of rainwater for irrigation and greywater for toilet flushing would be consistent with OCP policy. As well, water for fire protection purposes may, subject to their approval, be supplied by NSSWD for proposals that are within the service area. Use of these other water sources reduces the demand for groundwater so that only drinking water and sanitary requirements (except potentially for toilet flushing) need be provided for.

It is *recommended* that rezoning proposals that rely on alternative water sources be assessed based on information that can be confirmed at the time of public hearing (Options 1-4). Alternatively, LTC could consider giving third reading of a bylaw and withhold final adoption pending confirmation from VIHA that there is a sufficient supply of water to support the proposed development. In all cases, information required prior to public hearing would include a preliminary water study submitted by a professional engineer (civil). The study should:

- identify all proposed water supply sources
- identify the amount of water available from each water supply source
 - if the proposal relies on NSSWD to supply water for fire protection purposes, written confirmation of the agreement is required from the District
- identify which water source will supply each type of water demand
- estimate how much water is required to service each type of water demand
- estimate how many residents the net water supply will support based on demand for indoor use (VIHA standards - 230 l/person/day)
- calculate how many dwelling units the proposed water supply system would support based on occupancy rates set out in MFNLORD Design Guidelines.

Note: The MDD must not exceed total developed groundwater capacity as set out in the well water license.

It is noted that preparation of a preliminary water study by a professional engineer does not guarantee that the approving agencies would accept it without modification. However, SSI Islands Trust staff is comfortable that it is reasonable to rely on the conclusions of such a report at the public hearing stage based on reliance on professional standards. If the LTC wants to consider situations where there is insufficient water to meet MDD based on MFLNRORD occupancy rates, there are two recommended options for advancing a bylaw.

- i. The bylaw would be drafted with specific parameters defining the maximum number of dwelling units, maximum floor areas for specific unit types and the maximum number of dwelling units based on floor area (Option 4). The number and size of units should be calculated based on an occupancy rate of 2 persons per bedroom as per the BC Building Code. This approach is consistent with the Trust mandate for land use and would be enforceable through the bylaw. It poses a slight risk that overcrowding may occur that may lead to overuse of the groundwater. This approach limits the applicant's flexibility to vary the design of the project as they get into the more detailed design phases of the project.
- ii. Final adoption of the bylaw is withheld until a water supply system construction permit has been issued by VIHA (Option 5). This option has the advantage of providing assurance to the applicant that the rezoning will be finalized pending confirmation from VIHA that the water supply system is sufficient to meet the water demands of the proposal. It also gives LTC the tools to implement ITPS and OCP policy by withholding final bylaw adoption if confirmation of sufficient water supply for the proposed density is not confirmed through the VIHA approval process. In this event, LTC has the option to rescind third reading of the bylaw and, subject to the applicant's consent, to re-read it with a density consistent with that set out in the VIHA water supply construction permit.

7. CROFTONBROOK: HOW MUCH DENSITY CAN THE WATER SUPPLY SUPPORT

The Croftonbrook proposal for the provision of water is relatively complex – it relies on a combination of groundwater, greywater, and rainwater to meet water needs for indoor use, toilet flushing and irrigation respectively. NSSWD has confirmed that they will provide water for fire fighting and suppression – i.e., a sprinkler system as well as fire hydrants. With respect to supply, the MFLNRORD *Design Guidelines for Rural Residential Community Water Systems* stipulate that the “total developed groundwater capacity or dependable yield of well(s) must equal or exceed the Maximum Day Demand”.

A. Supply:

A preliminary water study prepared by Stantec is based on the following information and assumptions for water supply:

- A maximum of 19.2 cubic metres of water per day or 19,180 litres per day may be withdrawn per day in accordance with the well water license issued by MFLNRORD
- Greywater use for toilet flushing based on LEED Canada data
- Rainwater use for irrigation.

B. Demand:

The Stantec study calculates water demand based on assumptions provided by the applicant (78 residents in 54 dwelling units) and applies MFLNRORD Operations Design Guidelines design parameters to determine Maximum Day Demand (MDD). The calculation for MDD is based on:

- Estimate of water loss allowance based on project design assumptions (e.g., number of connections, pipe length, etc.)
- Groundwater use for all indoor uses except for toilet flushing (assuming 78 residents)
- Greywater use for toilet flushing
- Irrigation demand is met solely through rainwater catchment
- NSSWD provides water for sprinklers and fire hydrants (NSSWD has confirmed they will provide the necessary hook-ups).

Accordingly, the MDD for the project equals 18,240 litres per day. Based on these assumptions, the Stantec preliminary report indicates that there is sufficient water to support 78 residents assuming that greywater is used for toilet flushing.

C. Analysis

The occupancy rates assumed in the Stantec study were provided by the applicant based on the housing director's experience to date managing Salt Spring subsidized housing and the small size of the proposed dwelling units.

These rates are not consistent with those set out in the MFLNRORD's *Design Guidelines* (e.g., 2.5 persons per multi-family dwelling).

i. MFLNRORD's *Design Guidelines*

Using MFLNRORD's occupancy rates, 78 residents would result in the equivalent of 31 dwelling units. Conversely, 54 dwelling units would be assumed to support 135 people.

The Stantec study did not consider how many residents there is sufficient water for if greywater is not used. The following calculations indicate that 71 residents could be supported if greywater is not used for toilet flushing:

Total amount of groundwater available (approved groundwater license): 19,180 L/day
Estimate of water loss (Stantec study): 2,640 L/day

Amount of water available for indoor use: 16,540 L/day

VIHA per capita demand for indoor use: 230 L/day

There is enough water for $(16,540/230)$: 71 residents

ii. CRD Building Code Requirements

The BC Building Code establishes an occupancy rate of 2 persons per bedroom for all design parameters. Based on this criterion, the unit mix in the Croftonbrook proposal would require water for 144 residents.

iii. Alternatives

VIHA and CRD Building both have discretion in applying design parameters related to occupancy rates. With respect to VIHA approvals for a water supply construction permit, it is feasible that the applicant may receive approval for more dwelling units than the usual occupancy rates would yield based on small unit sizes proposed (especially for units less than 400 sq.ft.) and submission of supporting information acceptable to the agency. In this event, the actual number of dwelling units VIHA deems the water system is suitable for would not be determined until after third reading has occurred— when the water construction permit is approved.

Similarly, the applicant can submit an alternative solutions report to CRD Building to support the proposal for a reduced occupancy rate based on the relatively small unit sizes. It would not be known at the public hearing stage whether or not the Building Inspector would approve a building permit based on alternative occupancy rates since a permit cannot be applied for until zoning is in place.

A proposal based on land use planning tools that LTC can employ for converting occupancy rates into dwelling unit density is set out in Attachment 1.

8. CONCLUSIONS

This paper provides an overview of the approval process for water supply systems and examines the various methods for addressing Trust and SSI OCP policy aimed at ensuring there is a sufficient supply of freshwater to support proposed land use density. The tools available to the Trust and LTC to ensure this policy is addressed appropriately are limited to land use and built form parameters and do not include the ability to control occupancy rates. VIHA and CRD Building both play important roles in ensuring that proposed projects have a sufficient supply of water to meet demand. Further, VIHA is also charged with ensuring that water supply systems comply with limits on the amount of groundwater that may be withdrawn on a daily basis.

Six options were assessed for addressing Trust and OCP water policy when a new water supply system is proposed types (Table 4: Assessment of Options for Implementing Trust and OCP Water Policy). Five options explore the situation when there is insufficient groundwater to meet all water demand types. The assessment indicates that there are five viable options (Options 1-5) under the Trust mandate – all rely on submission of a preliminary water study by a professional engineer (civil) that estimates how many residents that water supply will support and converts that number into dwelling units.

The fact that both VIHA and CRD Building must also ensure the sufficiency of water supply for a specific project, does not relieve the Trust and LTC from the obligation to address the Trust Policy Statement directive that:

‘neither the density or 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’.

As previously identified in this paper, these agencies have specific mandates to fulfill that are distinct from land use planning. They use design parameters suitable to their mandate, such as occupancy rates, for ensuring that water supply is sufficient. The Trust and LTC must rely on the tools available to them under the *Islands Trust* and *Local Government Acts* for implementing the mandate and policies of the Trust (land use, density, built form, etc.). This has implications for how rezoning proposals that rely on the approval of a water supply system by VIHA can be evaluated by the Trust and LTC. In summary, this means that either:

- the proposal demonstrates a sufficient supply of water for the proposed number of dwelling units based on provincial occupancy rates, or
- final adoption of the bylaw is withheld pending issuance of a water supply system construction permit from VIHA confirming sufficient water supply to service the proposed development.

Figure 1: Sequence of Water Supply Approvals and Approving Agencies

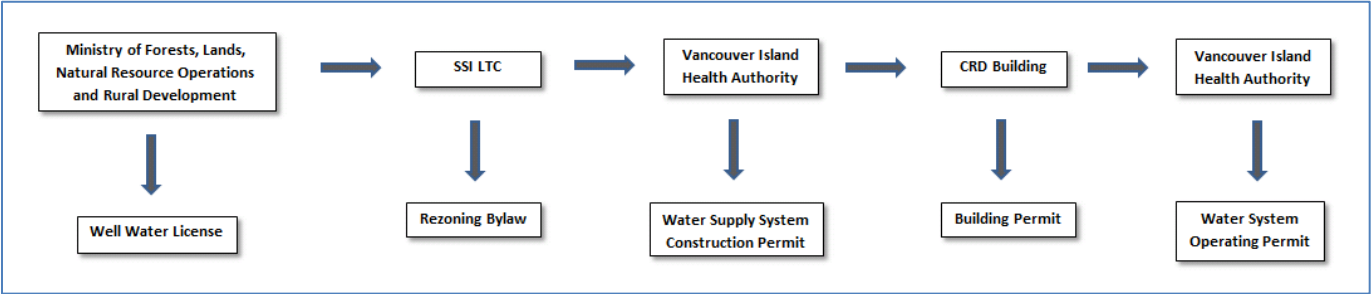


Table 1: Water Supply Systems Approval Process

License/Permit	Approving Agency	Mandate	Considerations and Conditions
Well Water License	MFNRORD – Water Authorization Branch	1. Protect quality and quantity of groundwater source 2. Approve groundwater use for drinking water, irrigation, firefighting, water loss allowance, agriculture, industry, etc.	1. Results of hydrogeological report and drill tests 2. Specifies how much water may be withdrawn on a daily basis 3. Specifies treatment to make water potable (if necessary)
Water Supply System Construction Permit	VIHA-Water Supply Systems Construction	1. Ensure safety of drinking water supply from source to tap	1. Water Quantity: Based on Maximum Day Demand (MDD) a. Indoor Use: Based on per capita demand for drinking water, showers, laundry, household cleaning, toilet flushing b. Average Day Demand (ADD): Used to derive peak demands and to verify source capacity for lake sources c. Water Loss Allowance: Based on specifics of system design and construction d. Irrigation: Based on specifics of land area, climatic zone, soil type, etc. e. Firefighting: Fire Underwriters Survey <i>Note: MDD cannot exceed dependable yield of well.</i> 2. Water Quality: Treatment based on Canadian guidelines for safe drinking water 3. Other: a. Must approve water source b. VIHA requires confirmation from a water district that it will agree to independent system w/l their service area before moving ahead with the application

License/Permit	Approving Agency	Mandate	Considerations and Conditions
Building Permit	CRD	Ensures building code requirements are met for drinking water quality and water quantity needs for indoor, irrigation, and firefighting purposes	1. Requires confirmation from VIHA re water system construction permit. 2. Requires confirmation from NSSWD that water will be provided for firefighting purposes. 3. Determines if greywater can be used for toilet flushing.
Water System Operating Permit	VIHA-Water System Operations	Ensures water supply system is operated according to provincial regulations for safe drinking water	1. Certifies operator – annual renewal required 2. Monitors system operation

Table 2: Water Demand

Water Demand Type	Approval Authority	Permit	Legislation, Regulations and Guidelines	Water Quantity
Indoor Use • Drinking • Sanitary ○ Showers/bathwater ○ Toilet Laundry, dishwashing, etc.	VIHA -Water Supply System	Construction permit for water supply system	Drinking Water Protection Act and Regulations	230L/person/day
	CRD – Building Permit	Building permit	BC Building Code	230 L/day based on 2 persons /bedroom
Water Loss Allowance	Water Supply System – VIHA	Construction permit for water supply system	Drinking Water Protection Act and Regulations	Variable*
Irrigation	Water Supply System – VIHA	Construction permit for water supply system	Drinking Water Protection Act and Regulations	Variable**
	CRD Building	Building permit	BC Building Code	
Fire Protection	CRD Building	Building permit	BC Building Code	NSSWD***
Total	MOTI		Subdivision Regulations	1600L/DU/day

*Factors that determine the water loss allowance relate to specifics of water system design and construction – length of pipes, etc.

**Factors that determine water demand for irrigation include area of land to be irrigated, climatic zone and evapotranspiration rates, crop or planting types, etc.

*** NSSWD has confirmed a commitment to provide water for fire protection purposes (sprinklers and fire hydrant for the Croftonbrook proposal).

Table 3: Potential Water Sources

Water Source	Approval Authority	Legislation, Regulations and Guidelines	Water Demand Type	License/Permit Required
Groundwater	MFLNRORD - Water Authorizations Section	Water Sustainability Act and Regulations	Potentially all	Well water license
Rainwater	Drinking Water Protection Act and Regulations	Drinking Water Protection Act and Regulations	Irrigation	Construction permit for water supply system
	CRD Building	BC Building Code		
Greywater	CRD Building Inspections	BC Building Code	Toilet flushing	Building permit
Water Conservation	Water Supply System – VIHA	Drinking Water Protection Act and Regulations	All	Construction permit for water supply system
	Water Supply Operating – VIHA	Drinking Water Protection Act and Regulations	All	Operating permit for water supply system
	CRD Building Inspections	BC Building Code		Building Permit
Water District	NSSWD	Letters patent	Fire Protection	N/A

Table 4: Assessment of Options for Implementing Trust and OCP Water Policy

All options are for proposals that require construction of a new water supply system in order to provide sufficient water to service a proposed development. In all cases, the proposal would require submission of a preliminary water study prepared by a civil engineer. The options were developed in consultation with the applicant for the Croftonbrook application. The analysis was conducted by SSI Islands Trust staff and planning consultant.

Option 1: There is sufficient groundwater to meet all water demand types – the exception may be that NSSWD has confirmed they will supply water for fire protection (sprinklers and hydrant).

Occupancy rates are as set out in MFLRORD *Design Guidelines for Rural Residential Community Water Systems*.

Option 2: Greywater use is needed in order to supplement groundwater use for indoor water demand. Rainwater is used for irrigation. NSSWD has confirmed they will supply water for fire protection (sprinklers and hydrant) Occupancy rates are as set out in MFLRORD *Design Guidelines*.

Option 3: The engineer's preliminary water study indicates there is not sufficient water (groundwater with or without greywater) available to support the proposed number of dwelling units. The applicant chooses to either drill for more water and/or reduce the density so that there is sufficient water to support the proposed number of dwelling units. If another well is drilled, the new proposal shall be supported by issuance of another well water license and a revised preliminary water study.

Options 5-6: Occupancy rates are lower than those set out in provincial guidelines and regulations. This scenario can be adapted to include the potential use of greywater, rainwater and water from NSSWD for fire protection.

Option	Timeliness	Enforceability	Flexibility	Feasibility
Option 1: Proposed bylaw establishes maximum number of DUs based on preliminary water study	The number or dwelling units there is sufficient water for would be known at PH stage as per professional engineer's report.	Islands Trust would enforce any land use violations. VIHA would enforce regulations regarding water supply.	N/A	Fits well with Trust mandate Clear and transparent with respect to density considered at third reading
Option 2: Proposed bylaw establishes maximum number of DUs based on water supplied with and without use of greywater as per preliminary water study	The number of dwelling units there is sufficient water for would be known at PH stage as per professional engineer's report. Two densities would be proposed based on whether greywater was used.	As above. The number of DUs built would be confirmed at the building permit stage depending on whether greywater was used or not.	Provides flexibility to applicant.	As above.
Option 3: Drill another well and/or reduce the density to align with the supply of water	Application for a wellwater license takes 6-8 months. This may affect project funding.	As above for Islands Trust and VIHA.	This provides another option for applicants to consider.	As above.
Occupancy Rates are Lower than set out in Provincial Guidelines and Regulations				
Option	Timeliness	Enforceability	Flexibility	Feasibility
Option 4: Convert occupancy rates to DUs* (as per Attachment 3)	The number of dwelling units the proposed development is for would be known at public hearing stage.	As above.	Limited – the applicant needs to be confident of the size and type of units they intend to build	As above
Option 4: Convert occupancy rates to DUs* (as per Attachment 3)	The number of dwelling units the proposed development is for would be known at public hearing stage.	As above.	Limited – the applicant needs to be confident of the size and type of units they intend to build	As above
Option 5: Withhold final adoption of bylaw pending VIHA confirmation there is	Confirmation that there is there is sufficient water for the proposed number of dwelling units would not be known at the PH	As above. The construction permit for the water system should clearly indicate the number of dwelling	Reduces risk for the applicant to undertake detailed design of water supply system.	A conditional approval of the bylaw is consistent with normal practice provided the condition is

Option	Timeliness	Enforceability	Flexibility	Feasibility
sufficient water** if VIHA approval is for a lesser density, third reading could be rescinded and re-read with a density consistent with VIHA permit.	stage.	units the approval is for.		identified at the public hearing stage.
Option 6: Occupancy caps written into housing agreement or restrictive covenant	The number of dwelling units there is sufficient water for would not be confirmed at the public hearing stage. Occupancy would be determined by public hearing stage based on the preliminary water study.	Islands Trust does not have a mandate to enforce occupancy. Enforcement would require court action. CRD Building would be required to enforce any Building Code violations.	Islands Trust enforcement options would be limited to court action.	This is not feasible for Islands Trust as it extends beyond the land use planning mandate.

*Converting occupancy rates to dwelling units: This option provides a method for converting the number of occupants into physical design parameters that can be written in a land use bylaw – i.e., maximum number of total units, maximum floor areas per unit type (e.g., studio, one bedroom, 2 bedroom), and the maximum number for each unit type (Attachment 3). The purpose of capping dwelling unit size is to place a zoning bylaw control on the number of occupants each dwelling unit can accommodate.

**After third reading of the bylaw, the applicant would submit an application for a water supply system construction permit based on occupancy rates that are lower than those set out in MFLNRORD's *Design Guidelines*. VIHA would exercise their discretion in determining if the water supply was adequate to meet the water demand for the proposed number of dwelling units.

Final adoption of the bylaw would be withheld until confirmation is received from VIHA that a water supply system construction permit has been issued and that the number of dwelling units serviced is consistent with the proposed bylaw. This process is based on the premise that the Trust and OCP water policy would be satisfied because final adoption of the bylaw would not occur until after the project has been approved for a water construction permit and building permit.

Attachment 1: SSI Official Community Plan Policies

A.4.2.2 To maintain and restore the community's natural capital as represented by such items as our agricultural and forest land base, our potable water supplies, and primary value of our natural and unspoiled rural character.

B.2.2.2.3.b All rezoning applications for affordable housing projects should include evidence of

- a. need for housing
- b. an adequate water supply for potability and fire protection
- c. means of sewage disposal
- d. energy and water efficient building design
- e. not degrading a sensitive ecosystem
- f. not being sited in an area subject to hazardous conditions.

C.3.2.2.1 When the Local Trust Committee receives rezoning applications for land use inside the boundaries of a community water system, it will refer the application to the operators of the affected system. They will ask if water could be supplied to the new development, considering the needs of their existing customers and the provision of water for firefighting, and any properties already zoned for further development. When it considers zoning changes within a community water system, the Local Trust Committee will also consider the amount and percentage of any remaining supply capacity that would be used by the proposed new use. The Committee will not make zoning changes within a community water supply system if the change would mean water could not be supplied (under the existing license) to existing customers. It should not normally make zoning changes if the change would mean water could not also be supplied to vacant or underdeveloped properties already zoned for further development. Should such zoning changes be proposed, the applicant could be encouraged to supplant other water supplies so that the application should be considered. Examples are rainwater catchment, groundwater use or a water conservation program.

The Local Trust Committee should make an exception to the above policy within the North Salt Spring Waterworks District to allow community facilities or affordable housing projects to proceed. However such changes should only be made if the Committee is satisfied that the District is likely to receive a sufficiently larger water license.

C.3.3.2.2 In addition to Policy C.3.2.2.1, the Local Trust Committee should not make zoning changes within the North Salt Spring Waterworks District that could mean that water will not be available (under the District's existing license) for the following projects (in order of priority):

- a. essential services such as hospitals and schools needed within the district to serve the island's projected population
- b. special needs and affordable housing needed in the community.

Attachment 2: SSI Land Use Bylaw Excerpt

Section 5.5.2 Each lot in a proposed subdivision must be supplied with sufficient water to supply all uses, buildings, and structures permitted on the lot by this Bylaw according to the standards set out in Table 1. Where more than one use is permitted on a lot, the amount of water to be supplied is the sum of the amounts required for each permitted use, calculated separately.

Information Note: If more than one dwelling unit is connected to the same source of water, the water system is subject to Vancouver Island Health Authority regulations of water supply systems, the Drinking water Protection Act, and may be subject to the Water Utility Act.

Attachment 3: Converting Occupancy Rates into Dwelling Units

Use of this method requires submission of a preliminary water study by a professional engineer (civil) that:

1. Identifies all proposed water supply sources
2. Identifies the amount of water available from each water supply source
3. Identifies which water source will supply each type of water demand (indoor use, water loss allowance, irrigation, fire protection)
4. Estimates how much water is required to service each type of water demand (Maximum Day Demand (MDD))
5. Estimates how many residents the net water supply will support based on demand for indoor use (VIHA standards - 230 l/person/day).

Note: The MDD must not exceed total developed groundwater capacity as set out in the well water license.

Determination of Maximum Density:

Prepare a proposal based on the maximum number of residents that the water supply system can service:

1. Establish maximum floor areas based on BC Building Code occupancy rates of two persons /bedroom (e.g., two bedroom units would be a maximum of XX m²)
2. Establish the distribution of unit sizes
3. Calculate total occupancy based on the number of units and unit size
4. Total occupancy is not to exceed the number of residents there is sufficient water for as estimated in the engineer's preliminary water study.

Croftonbrook Example

The following calculations are based on the Croftonbrook rezoning proposal in order to test a method for converting occupancy rates into dwelling unit density. The application proposes a maximum of dwelling 54 units and 78 residents. The Stantec preliminary water study provides an estimate of water loss allowance and how much greywater would be used for toilet flushing (Scenario 2).

Scenario 1: Without Greywater

Total amount of groundwater available (approved groundwater license):	19,180 L/day
Estimate of water loss:	<u>2,640 L/day</u>
Amount of water available for indoor use:	16,540 L/day

VIHA per capita demand for indoor use:	230 L/day
There is enough water for (16,540/225):	71 residents

Average occupancy rate for 54 dwelling units (71/54): residents/DU	1.31
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*Single occupant units: Maximum floor area - 400 sq ft.

*Double occupancy units: Maximum floor area – 600 sq.ft.

Distribution: 37 single occupant units – 37 residents

17 double occupant units – 34 residents

Total Occupants: 71

Total Dwelling Units: 54

*These unit sizes need to be confirmed as being appropriate for one and two person occupancies.

Scenario 2: With Greywater (Stantec Study)

Total amount of groundwater available (approved groundwater license):	19,180 L/day
Indoor use (based on 230 L/day for 78 residents):	17,940 L/day
Greywater:	-2,340 L/day
Water Loss Allowance:	<u>+2,640 L/day</u>
Maximum Day Demand:	18,240 L/day

Average occupancy rate for 54 dwelling units (78/54): residents/DU	1.44
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*Single occupant units: Maximum floor area - 400 sq. ft.

*Double occupancy units: Maximum floor area – 600 sq.ft.

Distribution: 36 single occupant units – 36 residents

21 double occupant units – 42 residents

Total Occupants: 78

Total Dwelling Units: 54

*As noted above.

Sources

1. Bahman Sheikh; White Paper on Graywater, 2010
2. <http://www.env.gov.bc.ca/wat/wq/reference/glossary>
3. <http://www.frontcounterbc.gov.bc.ca/pdf/WaterPurposeUses.pdf>
4. Ministry of Forests, Lands, Natural Resource Operations and Rural Development; Design Guidelines for Rural Residential Community Water System, 2012
5. National Collaborating Centre for Environmental Health; Small Drinking Water Systems: Who Does What in British Columbia?, 2014
6. Vancouver Island Health Authority; Guidelines for Approval of Water Supply Systems