Denman Island Local Trust Committee
Special Meeting Agenda

Date: November 2, 2021
Time: 10:30 am
Location: Electronic Meeting

Pages

1. CALL TO ORDER 10:30 AM - 10:35 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

3. RISE AND REPORT - IN CAMERA MEETING SEPTEMBER 7, 2021

4. REPORTS 10:35 AM - 10:50 AM

4.1. Trustee Reports

4.2. Chair's Report

4.3. Electoral Area Director's Report

5. TOWN HALL 10:50 AM - 11:00 AM

6. DELEGATIONS - none

7. MINUTES 11:00 AM - 11:05 AM

7.1. Local Trust Committee Minutes dated September 7, 2021 - for adoption 4 - 10

8. BUSINESS ARISING FROM MINUTES 11:05 AM - 11:30 AM

8.1. Follow-up Action List dated October 25, 2021 - for discussion 11 - 15

8.2. Islands Trust Area Bylaw No. TC183 - Referral Request for Response 16 - 19

9. APPLICATIONS AND REFERRALS 11:30 AM - 12:30 PM

9.1. DE-RZ-2021.1 (Denman Housing Association - DHA) - Staff Report - for decision 20 - 150

10. LOCAL TRUST COMMITTEE PROJECTS 12:30 PM - 12:45 PM

10.1. Denman Farming Regulations Review Project - Staff Report - for decision 151 - 153

------ BREAK 12:45 pm to 1:15 pm -------

11. NEW BUSINESS 1:15 PM - 2:15 PM

11.1. William Shulba, Senior Freshwater Specialist regarding the Groundwater Recharge Potential Mapping Project and the Watershed Resilience Mapping Project - verbal update

11.2. Fees Bylaw Update - Request for Decision 154 - 170

11.3. 2022 Annual Meeting Schedule - for discussion and decision 171 - 172

11.4. Position of Rise and Report on the Local Trust Committee Agenda - for discussion

12. REPORTS 2:15 PM - 2:30 PM

12.1. Trust Conservancy Report - none

12.2. Applications Report dated October 25, 2021 173 - 176

12.3. Trusteee and Local Expense Report dated August, 2021 177 - 177

12.4. Adopted Policies and Standing Resolutions 178 - 182

13. WORK PROGRAM 2:30 PM - 2:40 PM

13.1. Top Priorities Report dated October 25, 2021 183 - 183

13.2. Projects List Report dated October 25, 2021 184 - 186

14. CLOSED MEETING 2:40 PM - 3:10 PM

14.1. Motion to Closed the Meeting

That the meeting be closed to the public in accordance with the Community Charter, Part 4, Division 3, s.90(1) (d) and (m) for the purpose of considering:(d) adoption of In-Camera Meeting minutes dated September 7, 2021 and (m) a matter that, under another enactment, is such that the public may be excluded from the meeting and that the recorder and staff attend the meeting.

14.2. Recall to Order

15. UPCOMING MEETINGS 3:10 PM - 3:15 PM

15.1. Next Regular Meeting - to be determined

16. INFORMATION ITEMS

16.1. News Release - Islands Trust to Improve Development Application Process 187 - 188

16.2. Islands Trust Council Highlights - September 21-23, 2021 189 - 190

16.3. Islands Trust to Return to In-Person Meetings 191 - 192

17. ADJOURNMENT 3:15 PM - 3:15 PM

Denman Island Local Trust Committee
Minutes of Regular Meeting

Date: September 7,2021
Location: Electronic Meeting

Members Present: Sue Ellen Fast, Chair
David Critchley, Local Trustee
Laura Busheikin, Local Trustee

Staff Present: Heather Kauer, Regional Planning Manager
Sonja Zupanec, Island Planner
Marnie Eggen, Island Planner
Wil Cottingham, Administrative Assistant
Katherine Vogt, Recorder

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 Fast called the meeting to order at 10:00 am. She introduced Trustees, staff and recorder, and 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:

- An addendum to the regular meeting agenda: 13.6 Trust Conservancy Report dated August 24, 2021.
- The addition of item 12.3 for discussion about the upcoming September 26, 2021 film screening of Dust 'n Bones regarding Covid concerns.

By general consent the agenda was approved as amended.

3. RISE AND REPORT - IN CAMERA MEETING JULY 6, 2021

Chair Fast reported that at the July 6, 2021 *In Camera* meeting, the Local Trust Committee (LTC) resolved by general consent to rise and report the following:

- The appointment of Edina Johnston, Anne de Cossen, Thomas Zawila, C. Urquhart, and George McRae to the Advisory Planning Commission.
- A standing resolution was adopted: That the LTC clarify that the reference to a 45-day limit for visitor accommodation means 45 days for one client and that otherwise there are no limits on how many days per year a visitor accommodation home occupation can operate; and that this temporary policy remain in place until this regulation is reviewed.
- Resolutions were adopted respecting First Nations: That the LTC request staff to provide a briefing and public speaking notes regarding ongoing work to protect cultural heritage sites on Denman Island; and that the LTC request staff to explore options for implementing the K'ómoks First Nation Cultural Heritage Policy on Denman Island.

- Adopted the minutes from the May 4, 2021 *In Camera* meeting.

4. REPORTS

4.1 Trustee Reports

Trustee Critchley provided a summary of activities and meetings attended:

- July Trust Council Special meeting at which the motion to give first reading to the Islands Trust Draft Policy Statement was defeated;
- A personal interview meeting with the Trust Council Select Committee-governance and management review in August;
- August Trust Programs Committee meeting at which discussion included the recent provincial government moratorium on dock building being imposed without Islands Trust input.

Trustee Busheikin provided a summary of activities and meetings attended:

- July Trust Council Special Meetings regarding the Islands Trust Draft Policy Statement;
- An August event on Hornby Island attended by the MLA for Mid Island-Pacific Rim and Minister of Municipal Affairs Josie Osborne to discuss and celebrate the recent funding announcement for fibre optic internet connectivity installations upcoming on Denman and Hornby Islands;
- Covid response electronic meetings on Denman Island;
- Financial Planning Committee Meetings for the upcoming budget cycle;
- Regional Planning Committee of Island Trustees at which the Planning Services Review was discussed;
- Presentation by Islands Trust Senior Freshwater Specialist William Shulba.

4.2 Chair's Report

Chair Fast provided a summary of activities and meetings attended:

- Chairing Hornby, Gambier and Keats Islands LTC meetings;
- Bowen Island meetings as a Municipal Councillor;
- Several Executive Committee meetings;
- Islands Trust Conservancy meetings;
- Upcoming Executive Committee meeting to prepare for the next Trust Council meeting;
- Upcoming Union of BC Municipalities electronic meetings.

4.3 Electoral Area Director's Report-None

5. TOWN HALL

There were no speakers.

6. DELEGATIONS - None

7. MINUTES

7.1 Local Trust Committee Minutes dated July 6, 2021- for adoption

It was noted that on page 5 of the minutes, third line of the last paragraph, the word "disbursed" should be corrected to "dispersed."

By general consent the minutes dated July 6,2021 were approved as amended.

7.2 Section 26 Resolutions-Without-Meeting - none

7.3 Advisory Planning Commission Minutes - none

8. BUSINESS ARISING FROM MINUTES

8.1 Follow-up Action List dated August 27, 2021

Trustees requested that Islands Trust Freshwater Specialist William Shulba attend the next LTC meeting to clarify water issues.

9. APPLICATIONS AND REFERRALS

9.1 DE-RZ-2017.1 (Denman Community Land Trust Association - DCLTA) - Staff Report for Decision

Planner Zupanec presented the Staff report addressing minor recommendation amendments to Denman Island Housing Agreement Bylaw No. 239, 2020.

DE-2021-063
It was MOVED and SECONDED,
that the Denman Island Local Trust Committee Bylaw No. 239 cited as "Denman Island Housing Agreement Bylaw No. 239, 2020", is amended as follows:

a. Terms of Instrument, Part 2 be amended to replace the Denman Community Land Trust Association address from 3900 Lacon Road to 3771 East Road.
b. Schedule B, Replace section 2. With the following text: "2. Only Seniors, that is, persons 65 years of age and over (to a maximum of 2 such persons) may apply for an Affordable Dwelling Unit. Seniors of all ethnicities and races including but not limited to all on-reserve and off-reserve, status and non-status, and self-identifying indigenous, Inuit and Metis people, as outlined in Calls for Justice #4.1 of the "Final Report of the National Inquiry into Missing and Murdered Indigenous Women and Girls and 231 Calls for Justice" (June, 2019) may become "tenants" upon entering into a tenancy agreement.
c. Schedule B, Section 9(i), 10(ii), add the words "Subject to Section 13 below" at the beginning of each subsection.
d. Schedule B, add a new section 13. That reads: "The requirements of subsections 9(1), 10(i) and 10(ii) will be waived for indigenous elders who are seniors and whose ancestry relates to those First Nations having territorial claims to Denman Island.

CARRIED

DE-2021-064
It was MOVED and SECONDED,
that Denman Island Local Trust Committee Bylaw No. 239, cited as "Denman Island Housing Agreement Bylaw No. 239, 2020", be read a second time as amended.

CARRIED

DE-2021-065
It was MOVED and SECONDED,
that Denman Island Local Trust Committee Bylaw No. 239, cited as "Denman Island Housing Agreement Bylaw No. 239, 2020", be read a third time.

CARRIED

DE-2021-066
It was MOVED and SECONDED,
that Denman Island Local Trust Committee Bylaw No. 239, cited as "Denman Island Housing Agreement Bylaw No. 239, 2020", be forwarded to the Secretary of the Islands Trust for approval by the Executive Committee.

CARRIED

9.2 Islands Trust Area Bylaw No. TC 183 - Referral Request for Response

Chair Fast raised the issue of deferment of the October 22, 2021 referral response deadline at the upcoming Executive Committee meeting; and suggested the issue could also be raised at the upcoming Trust Council meeting. Discussion ensued and the following resolution was made to defer this item pending formal process.

DE-2021-067
It was MOVED and SECONDED
that the Denman Island Local Trust Committee postpone response to the Islands 2050 Islands Trust Area Bylaw No. TC 183 referral request until its next regular meeting.

CARRIED

10. LOCAL TRUST COMMITTEE PROJECTS

10.1 Farming Regulation Review Project - Staff Report

Planner Eggen presented the staff report requesting the LTC to consider endorsing the newly revised Denman Island Farming Regulations Review Project Charter dated September 7, 2021, previously known as the Denman Farm Plan Implementation Project. Islands Trust was recently awarded a grant of $18,000.00 as a 50% contribution towards the project, from the BC Investment Agriculture Foundation (IAF), and that August 1, 2022 is the deadline for draft bylaws to be completed according to the IAF funding agreement.

DE-2021-068
It was MOVED and SECONDED,
that the Denman Island Local Trust Committee request that the Denman Island Farming Regulations Review Project Charter dated September 7, 2021 be amended to add, under "In Scope", a third bullet: consideration of new Agricultural Land Commission options for secondary dwelling units.

CARRIED

DE-2021-069
It was MOVED and SECONDED,
that the Denman Island Local Trust Committee endorse the Denman Island Farming Regulations Review Project Charter dated September 7, 2021, as amended.

CARRIED

11. CORRESPONDENCE-None

By general consent the meeting recessed at 11:20 and reconvened at 11:27.

12. NEW BUSINESS

12.1 Siting and Use Permit Bylaw Update - Staff Report

Regional Planning Manager Kauer presented the staff report that asks the LTC to consider passing Bylaw No. 240 cited as "Denman Island Local Trust Committee Siting and Use Permit Bylaw 240, 2021, to modernize the original 1990 bylaw and to add the requirement of professional site plans for all applications or just for specific situations such as setbacks from watercourses. Surveyor costs were estimated at, aside from travel costs, between $380.00 to $540.00. Historically, applicants have provided their own drawings.

DE-2021-070
It was MOVED and SECONDED,
that the Denman Island Local Trust Committee Bylaw No. 240 cited as "Denman Island Local Trust Committee Siting and Use Permit Bylaw No. 240, 2021", be read a first time.

CARRIED

DE-2021-071
It was MOVED and SECONDED,
that the Denman Island Local Trust Committee request staff post proposed Bylaw No. 240 cited as "Denman Island Local Trust Committee Siting and Use Permit Bylaw No. 240, 2021", at first reading on the Islands Trust website and advertise a six-week comment period.

CARRIED

DE-2021-072
It was MOVED and SECONDED,
that the Denman Island Local Trust Committee request that staff provide a report regarding the potential for waiving the Siting and Use Permit requirement for secondary dwellings as permitted by a Temporary Use Permit, except when those dwellings will be sited within one metre of any setback.

CARRIED

A trustee noted that it was a discretionary rather than an absolute requirement for an applicant to be requested to provide a SUP for a TUP.

12.2 Upcoming Meeting with Comox Valley Regional District for Discussion

It was noted that the meeting would be held on September 27, 2021

DE-2021-073
It was MOVED and SECONDED,
that the Denman Island Local Trust Committee invite to its upcoming meeting with the Comox Valley Regional District, all members of the Electoral Area Services Committee and the Chair of the Comox Valley Regional District.

CARRIED

Trustees discussed drought, forest health, wildfire concerns and the Comox Valley Regional District summertime events bylaws as topics to bring up.

Chair Fast noted the emerging awareness that very large trees and older mature forests were protective in terms of mitigating forest fires.

12.3 Dust 'n Bones Film Screening Event at the Denman Island Community Hall on September 26, 2021

Trustees discussed the possibility of canceling the event given the complications of Covid protocols, new requirements for vaccine passports and rising Covid cases.

By general consent the meeting recessed at 12:23 and reconvened at 12:50.

13. REPORTS

13.1 Trust Conservancy Report dated July 13, 2021

Chair Fast presented the report 'Highlights of Islands Trust Conservancy July 13, 2021 Board Meeting (Open Portion)' noting the following:

- In the most recent edition of the quarterly Islands Trust Conservancy's Heron Newsletter available online or in hard copy, it was highlighted that $47,000,000.00 worth of conserved property had been protected in the Salish Sea through Kick-start grants given to conservation partners.
- A new Species at Risk Program for the Trust area has recently been initiated and a coordinator hired through federal grant funding.

A trustee noted that the recent concerning heat dome event of late June could warrant further beach monitoring.

13.2 Applications Report dated August 27, 2021

Received.

13.3 Trustee and Local Expense Report dated June, 2021

Received.

13.4 Adopted Policies and Standing Resolutions

Received.

13.5 Local Trust Committee Webpage

Received.

13.6 Trust Conservancy Report dated August 24, 2021

Received.

14. WORK PROGRAM

14.1 Top Priorities Report dated August 27, 2021

Received.

14.2 Projects List Report dated August 27, 2021

Received.

15. INFORMATION ITEMS

15.1 Islands Trust Conservancy Newsletter - The Heron - Summer 2021

Received.

15.2 Trust Policy Statement - Islands 2050

Trust Policy Statement

Received.

15.3 September 2021 - Islands Trust Council Meeting Program

Trust Council Quarterly Meeting - September 21, 2021

Received.

16. CLOSED MEETING

16.1 Motion to Close the Meeting

DE-2021-074
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) and (m) for the purpose of considering (d) adoption of In-Camera Meeting Minutes dated July 6, 2021 and (m) under another enactment, is such that the public may be excluded from the meeting and that the recorder and staff attend the meeting.

CARRIED

The meeting was closed to the public at 1:06 pm

17. UPCOMING MEETINGS

17.1 Next Regular Meeting Scheduled for Tuesday, November 2, 2021 at 10:30 am at Denman Activity Centre, 1111 Northwest Road, Denman Island, BC

18. ADJOURNMENT

By general consent the meeting was adjourned at 1:06 pm

_____
Sue Ellen Fast, Chair

Certified Correct:

_____
Katherine Vogt, Recorder

Islands Trust

Print Date: October 25, 2021

Follow Up Action Report

Denman Island

07-Feb-2019

Activity	Responsibility	Dates	Status
1 Amend Bylaw No. 228 (OCP) by replacing item 1.15 Policy 3 (as per Feb. 7, 2019 staff report).	Becky McErlean Sonja Zupanec		In Progress

Follow Up Action Report

Denman Island

07-Feb-2019

Activity	Responsibility	Dates	Status
2 Amend Bylaw No. 229 (LUB) for LTC consideration: a. Include TUP and rainwater harvesting collection system requirements for temporary secondary dwellings for immediate family; b. Amend the agri-tourism accommodation TUP guidelines to remove the option for seasonal cabins, and continue to permit seasonal campsites and a maximum of three sleeping units, which includes home-based guest accommodation rooms; c. Reduce the lot line setback for feedlots from 50 m to 30 m. d Remove the term feedlot e. Add a new defined term, confined livestock area. f. remove agriculture as an accessory use in the R1 zone, while retaining horticulture as an accessory use in this zone; g remove the term intensive agriculture; h. amend the definition of horticulture to continue to allow the sale of products produced on the lot, and to ensure that the use is accessory to a principal residential use and not tied specifically to a landowner; i. permit the keeping of animals for personal use as an accessory use in the R1, R2, R3 zones. j. Remove horticulture as a permitted use in the A, F, and RE zones, while retaining agriculture as a principal permitted use in these zones.	Becky McErlean Sonja Zupanec		In Progress

Follow Up Action Report

Denman Island

04-Jul-2019

Activity	Responsibility	Dates	Status
1 David Marlor to bring forward draft procedures for cell tower application consultation for LTC consideration.	David Marlor		In Progress

03-Oct-2019

Activity	Responsibility	Dates	Status
1 Staff to follow up with the Farm Industry Review Board (FIRB) to arrange a meeting and a tour as per their letter dated September 25, 2019 and include invitation to the Hornby LTC. *2020-09-08 update: presentation held at Denman LTC meeting 2020-09-08. FIRB availability for Tour - summer 2021.*	Becky McErlean Penny Hawley Sonja Zupanec Wil Cottingham		In Progress

21-Jan-2020

Activity	Responsibility	Dates	Status
1 Staff to prepare a draft Water Sustainability Project Charter.	William Shulba		In Progress

08-Sep-2020

Activity	Responsibility	Dates	Status

Follow Up Action Report

Denman Island

08-Sep-2020

Activity	Responsibility	Dates	Status
1 Staff to bring back a staff report for LTC consideration regarding DE-SUP-2020.3 and the landowner's request to build in the covenanted area identified in Archaeological Covenant CA7485176.	Jaime Dubyna		In Progress

04-May-2021

Activity	Responsibility	Dates	Status
1 Affordable Housing: 1) request staff to prepare a discussion paper to list and analyze options to facilitate affordable housing and include strategies proved successful in the Trust Area and elsewhere. 2) request staff to prepare a draft business case for a review of the Denman Island Land Use Bylaw and Official Community Plan, focusing on housing, with the goal of increasing options for affordable and attainable housing while also minimizing impacts of housing generally to better protect the environment while supporting equity, diversity and inclusion, and that this business case include the use of a consultant for all or part of the work. *Update: as of September 23, 2021, staff have drafted and forwarded a business case to the Financial Planning Committee for review. A housing discussion paper is pending, dependent upon staff capacity.*	Heather Kauer		In Progress

Follow Up Action Report

Denman Island

07-Sep-2021

Activity	Responsibility	Dates	Status
1 BL 239 (Housing Agreement) amended and given 2nd/3rd readings; forward to EC for approval.	Becky McErlean Sonja Zupanec		Completed
2 Defer the Islands Trust Area Bylaw No. TC 183 to next regular meeting agenda.	Becky McErlean		Completed
3 Farm Regulation Review Project Charter endorsed as amended (add housing to in-scope).	Marnie Eggen		Completed
4 BL 240 given first reading; post to web and advertise a six week comment period and report back to LTC on waiving the SUP for TUPs for secondary dwellings (but not if within 1.0 m of a setback)	Becky McErlean Heather Kauer Wil Cottingham		In Progress
5 Invite members of Electoral Area Services Committee and Chair of Comox Valley RD to the upcoming joint annual meeting. *Decision made not to invite this year but to reconsider for future meetings.*	Wil Cottingham		Completed

ISLANDS 2050 BYLAW REFERRAL FORM

Islands Trust – Islands 2050
200 – 1627 Fort Street
Victoria, BC V8R 1H8
islands2050@islandstrust.bc.ca
www.islandstrust.bc.ca

Island: Islands Trust Area **Bylaw No.:** TC 183 **Date:** July 22, 2021

You are requested to comment on the attached Bylaw for potential effect on your agency's interests. We would appreciate your response within 90 days. If no response is received within that time, it will be assumed that your agency's interests are unaffected.

PURPOSE OF BYLAW:

The Islands Trust Act requires that Islands Trust Council adopt a Policy Statement. The current Policy Statement has not been substantively updated in over 25 years. The purpose of this bylaw is to update the Policy Statement through the lenses of reconciliation, climate change, and affordable housing.

GENERAL LOCATION:

The Islands Trust Policy Statement is a general policy that applies to all of the Islands Trust Area, including Bowen Island Municipality. For a map of the Islands Trust Area, please visit: https://islandstrust.bc.ca/mapping-resources/mapping/

YOUR RESPONSE IS RESPECTFULLY REQUESTED:

Your response to this referral will help to ensure that the Policy Statement furthers the mandate of the Islands Trust, in cooperation with the Province and other agencies. Please note that the Islands Trust Policy Statement requires the approval of the Minister of Municipal Affairs before Trust Council can adopt this bylaw.

There are many draft amendments to the Policy Statement in different locations throughout the document that may affect your agency. We would encourage you to review the Project Overview Briefing along with other resources available on the Islands 2050 webpage.

On Wednesday, July 28, 2021, from 1:00 p.m. to 3:00 p.m., Islands Trust will be hosting a Zoom webinar to provide information to referral agencies on the draft Policy Statement Bylaw and an opportunity for questions and answers.
Please register in advance for this Zoom webinar: https://islandstrust.zoom.us/webinar/register/WN_nyXptbv6RWugCwftiQyJmA
After registering, you will receive a confirmation email containing information about joining the webinar.
If you are unable to attend on this day, the session will be recorded and posted to the Islands 2050 webpage on the Islands Trust website.

Please return the response form by **Tuesday, October 22, 2021** to **islands2050@islandstrust.bc.ca**

OTHER INFORMATION:

For more information on the Islands 2050 Policy Statement Amendment Project, including the Draft New Policy Statement: https://islandstrust.bc.ca/programs/islands-2050/

Please fill out the Response Summary on the back of this form. If your agency's interests are *"Unaffected"*, no further information is necessary. In all other cases, we would appreciate receiving additional information to substantiate your position and, if necessary, outline any conditions related to your position. Please note any legislation or official government policy which would affect our consideration of this Bylaw.

(Signature)

Name: David Marlor

Title: Director, Local Planning Services

This referral has been sent to the following agencies:

Federal Agencies
Environment and Climate Change
Fisheries & Oceans, Canada (Fish Protection and Aquaculture - Pacific Region)
Transport Canada
Parks Canada

Regional Agencies
Capital Regional District
Comox Valley Regional District
Cowichan Valley Regional District
Metro Vancouver Regional District
Nanaimo Regional District
qathet Regional District
Sunshine Coast Regional District

School District Boards

School District No. 45 (West Vancouver – Gambier)
School District No. 46 (Gambier)
School District No. 64 (Gulf Islands: Galiano, Mayne, North Pender, South Pender, Salt Spring, Saturna)
School District No. 68 (Gabriola/Ballenas Winchelsea)
School District No. 69 (Lasqueti/Ballenas Winchelse)
School District No. 71 (Denman/Hornby)
School District No. 79 (Thetis)

First Nations

Cowichan Tribes
SXIMEŁEŁ (Esquimalt) Nation
Halalt First Nation
Homalco First Nation
K'ómoks (Comox) First Nation
Klahoose First Nation
Lake Cowichan First Nation
Lyackson First Nation
MÁLEXEŁ (Malahat) Nation
xʷməθkʷəy̓əm Musqueam Indian Band
BOḰEĆEN (Pauquachin) First Nation
Penelakut Tribe
Qualicum First Nation
Scia'new (Beecher Bay) First Nation
Semiahmoo First Nation
Shíshálh (Sechelt) Nation
Snaw-naw-as (Nanoose) First Nation
Snuneymuxw (Nanaimo) First Nation
Lekwungen (Songhees) Nation
Sḵwx̱wú7mesh (Squamish) Nation
Stz'uminus First Nation
Tla'amin (Sliammon) First Nation
T'Sou-ke (Sooke) Nation
W̱JOŁEŁP (Tsartlip) First Nation
SȾÁUTW̱ (Tsawout) First Nation
Tsawwassen First Nation
Tsleil-Waututh/ Səl̓ílwətaʔ/Selilwitulh (Burrard Inlet) Nation
W̱SIḴEM (Tseycum) First Nation
We Wai Kai (Cape Mudge) First Nation
Wei Wai Kum (Campbell River) First Nation

Treaty Groups

Nanwakolas Council
Hul'qumi'num Treaty Group
Laich-kwil-tach Treaty Society
Naut'sa mawt Tribal Council
Te'Mexw Treaty Association

Adjacent Local Trust Committees and Municipalities

Ballenas-Winchelsea Islands Local Trust Committee
Bowen Island Municipality
Denman Island Local Trust Committee
Gabriola Island Local Trust Committee
Galiano Island Local Trust Committee
Gambier Island Local Trust Committee
Hornby Island Local Trust Committee
Lasqueti Island Local Trust Committee
Mayne Island Local Trust Committee
North Pender Island Local Trust Committee
Salt Spring Island Local Trust Committee
Saturna Island Local Trust Committee
South Pender Island Local Trust Committee
Thetis Island Local Trust Committee
Islands Trust Conservancy Board

Provincial Agencies

Agricultural Land Commission
Attorney General (Housing Policy Branch)
BC Ferries
Ministry of Agriculture
Ministry of Energy, Mines and Petroleum Resources
Ministry of Environment and Climate Change Strategy
Ministry of Environment and Climate Change Strategy (BC Parks and Conservation Officer Service Division)
Ministry of Environment and Climate Change Strategy (Climate Action Secretariat)
Ministry of Forests, Lands, Natural Resource Operations and Rural Development – South Coast Office, Crown Lands, Water Licensing, Ecosystems, Archaeology
Ministry of Health
Ministry of Indigenous Relations and Reconciliation (West Coast Office; South Coast Office)
Ministry of Municipal Affairs and Housing (Intergovernmental Relations and Planning Branch)
Ministry of Transportation and Infrastructure on Vancouver Island and South Coast

Improvement District Boards

Gabriola Fire Protection District
Graham Lake Improvement District
Schmidt Improvement District
Galiano Estates Improvement District
Gossip Island Improvement District
Montague Improvement District
Spanish Hills Improvement District
Wise Island Improvement District
Bennett Bay Waterworks District
Campbell-Bennett Bay Improvement District
Lighthouse Point Waterworks District
Mayne Island Improvement District
Village Point Improvement District
Georgina Improvement District
Razor Point Improvement District
Trincomali Improvement District
Harbour View Improvement District
Mount Belcher Improvement District
North Salt Spring Waterworks District
Piers Island Improvement District
Salt Spring Island Fire Protection District
Scott Point Waterworks District
Saturna Shores Improvement District
Thetis Island Improvement District
Vaucroft Improvement District

BYLAW REFERRAL FORM
RESPONSE SUMMARY

☐ **Approval Recommended for Reasons Outlined Below**

☐ **Approval Recommended Subject to Conditions Outlined Below**

☐ **Interests Unaffected by Bylaw**

☐ **Approval Not Recommended Due to Reason Outlined Below**

Islands Trust Area (Islands 2050)	TC 183
(Island)	(Bylaw Number)
(Signature)	(Title)
(Date)	(Agency)

STAFF REPORT

File No.: DE-RZ-2021.1 (Denman Housing Association/ Pandesign)

DATE OF MEETING:	November 2, 2021
TO:	Denman Island Local Trust Committee
FROM:	Sonja Zupanec, RPP, MCIP Northern Team
SUBJECT:	Application to amend the OCP and LUB to allow for a density transfer and 20 units of Affordable Housing – "Denman Green" Project Applicant: Simon Palmer on behalf of the Denman Housing Association and Henning Nielsen Location: 1151 Northwest Road (PID 000-393-941); Danes Road (031-395-864 AND 031-395-872); 6080 Woodham Rd (PID 009-704-523), Denman Island

RECOMMENDATION

1. **That Denman Island Local Trust Committee Bylaw No. 241 cited as "Denman Island Official Community Plan Bylaw, 2008, Amendment No. 1, 2021" be read a first time.**

2. **That Denman Island Local Trust Committee Bylaw No. 242 cited as "Denman Island Land Use Bylaw, 2008, Amendment No. 1, 2021" be read a first time.**

3. **That Denman Island Local Trust Committee Bylaw No. 243 cited as "Denman Island Housing Agreement Bylaw" be read a first time.**

4. **That Proposed Bylaw Nos. 241, 242 and 243 be referred to the following First Nations, Local Governments and agencies for comment:**

a. Hornby Island Local Trust Committee	**b. Island Health**	**c. Denman Advisory Planning Commission**
d. Denman Conservancy	**e. Comox Valley Regional District**	**f. K'omoks First Nation**
g. School District 71	**h. Denman Fire Department**	**i. Qualicum First Nation**
j. Tla'amin Nation	**k. Snaw'Naw'As Nation**	**l. Te'Mexw Treaty Association**
m. We Wai Kai Nation	**n. Stz'uminus First Nation**	**o. Lake Cowichan First Nation**
p. Halalt First Nation	**q. Lyackson First Nation**	**r. Penelakut Tribe**
s. Cowichan Tribes	**t. Laich-kwil-tach Treaty Society**	**u. Nanwakolas Council**

v. **We Wai Kum Nation**

w. **Xwemanlhkwu (Homalco) First Nation**

x. **Islands Trust Freshwater Specialist**

5. **That the Denman Island Local Trust Committee request staff to schedule a community information meeting at the start of the first scheduled business meeting of 2022 for application DE-RZ-2021.1 (DHA) and Proposed Bylaw Nos. 241, 242 and 243.**

REPORT SUMMARY

This report introduces draft bylaws to amend the Denman Island Official Community Plan (OCP) and Denman Island Land Use Bylaw (LUB) to enable the density transfer and proposed multi-family rental housing development "Denman Green" as presented in application DE-RZ-2018.1 (DHA). Staff is recommending that the draft bylaws in Attachment 1, 2 and 3 of this report be given first reading as presented. All relevant background information is posted to the Islands Trust current applications webpage.

BACKGROUND

Figure 1. Overview of Density Transfer Parcels

The Denman Island Local Trust Committee (LTC) passed the following resolutions at the July 6, 2021 regular business meeting:

> **DE-2021-050 It was MOVED and SECONDED,**
> that the Denman Island Local Trust Committee request staff to prepare a draft bylaw to amend the Denman Island Official Community Plan, 2008, to enable application DE-RZ-2021.1 (Denman Housing Association). **CARRIED**
> **DE-2021-051 It was MOVED and SECONDED,**
> that the Denman Island Local Trust Committee request staff to prepare a draft bylaw to amend the Denman Island Land Use Bylaw, 2008, to enable application DE-RZ-2021.1 (Denman Housing Association). **CARRIED**

Draft bylaws to amend both the OCP and LUB are included in Attachments 1 and 2 for LTC consideration.

DE-2021-052 It was MOVED and SECONDED,

that the Denman Island Local Trust Committee request the applicant for DE-RZ-2021.1 (Denman Housing Association) to submit the following to the Local Trust Committee prior to a Public Hearing being considered/scheduled:

a. Confirmation from a qualified professional that the receiver parcels PID 000-393-941 and PID 006-660-495 have adequate conditions to support community sewage treatment or other approved systems, compliant with the BC Sewerage System Regulation under the *Health Act* for the proposed increase in density;
b. A copy of the provincial water license intended to supply water to the 20 units of affordable rental housing;
c. A water management plan based on an approved provincial water license and expanding on the findings of the May 2021 hydrogeological assessment for 1151 Kirk Road, to address:
    I. Peak and expected water demand calculations;
    II. Water conservation commitments to exceed BC Building Code requirements;
    III. Minimum onsite storage capacity for potable, non-potable, rainwater and fire suppression and types of storage being considered;
    IV. Emergency considerations should temporary demand be greater than designed storage or well capacity;
    V. Proposed plan for irrigation and grey-water re-use;
    VI. Proposed groundwater monitoring and reporting; and
    VII. Proposed storm water management. **CARRIED**

The applicant has submitted a water management plan (Attachment 5) and confirmation from a qualified professional that the receiver parcel for the 20 units of affordable rental housing, has adequate conditions to support community sewage treatment (Attachment 6). Approval for a water license has not yet been granted by the province for this parcel and is still pending.

Confirmation that the Danes Rd. receiver parcels have adequate conditions to support sewage disposal has not yet been received and is pending.

DE-2021-053 It was MOVED and SECONDED,

that the Denman Island Local Trust Committee request the applicant for DE-RZ-2021.1 (Denman Housing Association) enter into a cost recovery agreement with the Islands Trust for the purposes of drafting:

a. A housing agreement for 20 units of affordable rental housing (Denman Green); and
b. A restrictive covenant for compliance with BC Energy Step Code, water conservation and groundwater monitoring. **CARRIED**

Staff have worked with the applicant to prepare a draft housing agreement and restrictive covenant for LTC consideration (Attachment 3 and 4).

DE-2021-054 It was MOVED and SECONDED,

that the Denman Island Local Trust Committee request staff to advise the applicant for DE-SUB-2021.1 (Pandesign Inc.) that a covenant or other legal instrument be registered on the "Commercial" zoned portion of lot PID 000-393-941, 1151 Kirk Road, to prevent the sale or transfer of the subdivided parcel until such time that application DE-RZ-2021.1 (Denman Housing Association) is completed, and that

confirmation that this has been completed is submitted to the Islands Trust as soon as the subdivision of the subject property is registered on title. **CARRIED**

The applicant has confirmed that this request has been addressed by the current owner with the Denman Housing Association (DHA).

DE-2021-055 It was MOVED and SECONDED,
that the Denman Island Local Trust Committee request staff to report back on engagement with the Archaeological Branch and K'ómoks First Nation on whether an Archaeological Overview Assessment for the Commercial zoned portion of PID 000-393-941 (1151 Kirk Road) should be requested as a condition of the Local Trust Committee's consideration of an increase in density on the subject property through application DE-RZ-2021.1 (Denman Housing Association). **CARRIED**

The Archaeological Branch has confirmed that an AOA would not be required. Staff will be seeking confirmation from K'omoks First Nation during the formal referral process as to whether or not they will be requesting an AOA.

DE-2021-056 It was MOVED and SECONDED,
that the Denman Island Local Trust Committee request staff to send an early referral of DE-RZ-2021.1 (Denman Housing Association) to the Denman Island Fire Department, the Islands Trust Conservancy and Islands Trust Freshwater Specialist for comment. **CARRIED**

Early referrals were sent, including to the Denman Conservancy. The only response received at the time of report writing was from the Denman Conservancy (Attachement 7).

ANALYSIS

Issues and Opportunities

All professional reports submitted by the applicant have been posted to the application page. Staff have identified the following preliminary issues and opportunities, discussed in more detail below:

- Summary of Draft Bylaw No. 241 (OCP)
- Summary of Draft Bylaw No. 242 (LUB)
- Summary of Draft Bylaw No. 243 (Housing Agreement)
- Summary of Draft Restrictive Covenant
- Bylaws Consistent with Islands Trust Policy Statement
- Proposed Water Management Plan and Sewage Confirmation
- Early Referral Response from the Denman Conservancy

Summary of Draft Bylaw No. 241 (OCP)

Draft Bylaw No. 241 (OCP - Attachment 1), if adopted, would introduce new general policies in the OCP to enable the transfer of density from one parcel to another for the purposes of multi-family affordable housing and; require Energy Step Code compliance for any dwellings as a result of rezoning or density transfer. Geographically specific revisions include: re-designation of the receiver parcel (PID 000-393-941) from 'Commercial' to 'Residential' for affordable housing; and re-designation of the receiver parcels (PID 031-395-864/872) from 'Rural' to 'Residential' to permit eventual subdivision of the two parcels into a total of five lots. Staff anticipate a number of changes to the draft bylaw at second reading, to remove duplication of policies currently contained in Bylaw No. 233 (DCLTA) which is being considered by the Minister for final adoption by the LTC.

Summary of Draft Bylaw No. 242 (LUB)

Draft Bylaw No. 242 (LUB – Attachment 2), if adopted, would:

1. Amend the zoning of the donor parcel (PID 009-704-523) to reduce the maximum permitted density from seven dwellings to four.

2. Amend the zoning of the receiver parcel for affordable housing for 'Denman Green' (PID 000-393-941) from 'Commercial' to a site specific zone 'Affordable Housing – R4(1)' zone and introduce site specific regulations for density, setbacks, height, lot coverage and maximum floor area.

3. Amend the zoning of the receiver parcels for market housing (PID 031-395-864/872) from 'Rural 2 (R2)' to 'Residential 1(5) – R1(5)' and introduce site specific regulations for Energy Step Code Compliance, increased setbacks to the provincial park/conservation covenant boundaries; maximum density and minimum lot size.

Summary of Draft Bylaw No. 243 (Housing Agreement)

Draft Bylaw No. 243 (Housing Agreement – Attachment 3), if adopted would regulate the affordability of 20 units of rental housing at Denman Green and outline the tenant selection procedure and annual reporting requirements.

Summary of Draft Restrictive Covenant

A draft section 219 restrictive covenant is intended to be registered on the title of the 'Denman Green' parcel for the 20 units of affordable rental housing, as a condition of rezoning. The covenant would require that the 20 units of rental housing be built to Energy Step Code Level 2 standards; that privacy fencing be installed on all interior lot lines to adjacent residential and institutional properties and that ground water quality and quantity monitoring be conducted and data submitted annually to the Islands Trust.

Bylaws Consistent with the Islands Trust Policy Statement

As the Proposed Water Management Plan has not been formally reviewed by the Islands Trust Freshwater Specialist for comment, staff have not completed the Islands Trust Policy Statement checklist (ITPS) for first reading. The checklists can be returned to the LTC for consideration at second reading upon technical review of the proposed water management plan and possibly an approved groundwater license.

Proposed Water Management Plan and Sewage Disposal

The applicant has submitted a water management plan (Attachment 5) for the 20 units of affordable rental housing (Attachment 5). The plan includes use of licensed groundwater, stored in cisterns and rainwater harvesting and collection to support up to 49 residents on the 1 ha parcel in the Denman Village. An internal review of the proposed plan will be conducted and staff will report back to the LTC with any technical comments. The applicant

has also submitted an addendum to the wastewater plan (Attachment 6) confirming adequate conditions on the Northwest Rd parcel for 20 units of affordable rental housing, to treat wastewater.

Early Referral response from the Denman Conservancy

The Denman Conservancy Board members have reviewed the preliminary staff report and provided an early referral response (Attachment 6) and highlighted member questions. Preliminary concerns of the Board appear to be specific to the Danes Road receiver parcels and not the Denman Green development itself. Categories of concern include:

- Adequate conditions on Lots 4 and 5 Danes Road to treat wastewater from the proposed increase in density,
- Potential impacts of the proposed increased residential development on adjacent Railway Grade Marsh covenant area and adjacent riparian areas;
- whether an ecological baseline report for the Danes Road receiver parcels should be required as a condition of rezoning due to the presence of sensitive ecosystems on adjacent covenant and riparian areas.

Staff note that the Conservancy's comments regarding incorrect PIDs in the July 2021 staff report reflect the fact that at the time the staff report was written, the Danes Road subdivision had not yet been approved and PIDs were not issued to these new lots. This staff report provides the most current PID numbers for all lots involved in the concurrent density transfer application. The Conservancy notes the presence of sensitive ecosystems adjacent to Lot 4 and 5.

In efforts to reduce the possible impact of increased residential density on Lot 4 and 5, draft Bylaw 242 (LUB) has been prepared with a site specific setback requirement of 30 metres for all buildings and structures (excluding fences and a pump/utility house) from any lot line adjacent to a conservation covenant or park boundary. This number could be increased and/or fencing/screening or vegetation buffer requirements could be included by way of zoning or a restrictive covenant. Staff recommend a bylaw referral to the Conservancy if first reading is given, and Staff will follow up with the Board directly to encourage a referral response is submitted to the LTC with specific suggestions to address concerns pertaining to the increase in density on the Danes Road parcels.

Consultation

As this application proposes an amendment to the official community plan, the LTC is required to conduct a consultation process involving a set of referrals that are independent of any public hearing process. Following first reading of the bylaws staff recommend referrals to First Nations, provincial agencies, adjacent local governments and select referral agencies as detailed in the recommendations on page 1 of this report. Staff also recommend a community information meeting as part of the review process, subsequent to the receipt of referral responses and in advance of a public hearing being scheduled. Significant changes to the bylaw (either as a requirement of the LTC, or by the applicant) that necessitate further referrals or community meetings or application complexities may require more involved consultation. The LTC should consider if it wishes to undertake additional consultation than identified in the recommendations on page 1 of this report, and direct staff accordingly.

RATIONALE FOR RECOMMENDATIONS

Draft bylaws have been prepared to amend the OCP and LUB and contemplate density transfer, multi-family affordable housing, a housing agreement and subdivision as presented in application DE-RZ-2021.1 (DHA). Staff

recommend first reading of all three bylaws in order to advance formal consultation with First Nations, agencies and local government. The staff recommendations are found on page 1 of this report.

ALTERNATIVES:

1. **Consider First and Second Reading.**

   The LTC can consider giving first and second reading consecutively for all three bylaws and proceed to a CIM early in the new year.

2. **Proceed no further.**

   The LTC can choose this alternative at any stage in a bylaw amendment application. If this alternative is selected the following resolution is recommended:

   "*That the Denman Island Local Trust Committee proceed no further with application DE-RZ-2021.1 (DHA) for the following reasons (insert rationale).*"

Next Steps

Should the LTC concur with the staff recommendations, bylaw referrals will be sent out requesting a response within 60 days of the date on the referral and a community information meeting will be tentatively scheduled during the first regularly scheduled business meeting in 2022.

Submitted By:	Sonja Zupanec, RPP, MCIP, Island Planner	October 21, 2021
Concurrence:	Heather Kauer, RPP, MCIP, Regional Planning Manager	October 25, 2021

ATTACHMENTS

1. Draft Bylaw No. 241 (OCP)
2. Draft Bylaw No. 242 (LUB)
3. Draft Bylaw No. 243 (Housing Agreement)
4. Draft Restrictive Covenant
5. Sewage Report Northwest Rd
6. Proposed Water Management Plan
7. Denman Conservancy Early Referral response October 2021

DRAFT

DENMAN ISLAND LOCAL TRUST COMMITTEE
BYLAW NO. 241

A BYLAW TO AMEND DENMAN ISLAND OFFICIAL COMMUNITY PLAN, 2008

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

1. That the Denman Island Local Trust Committee Bylaw No. 185 cited as "Denman Island Official Community Plan, 2008" is amended as shown on Schedule "1" attached to and forming part of this bylaw.

2. This bylaw may be cited for all purposes as "Denman Island Official Community Plan, 2008, Amendment No. 1, 2021".

READ A FIRST TIME THIS	xx	DAY OF	, 20xx
READ A SECOND TIME THIS	xx	DAY OF	, 20xx
READ A THIRD TIME THIS	xx	DAY OF	, 20xx
PUBLIC HEARING HELD THIS	xx	DAY OF	, 20xx
APPROVED BY THE EXECUTIVE COMMITTEE OF THE ISLANDS TRUST THIS	xx	DAY OF	, 20xx
APPROVED BY THE MINISTER OF MUNICIPAL AFFAIRS AND HOUSING THIS		DAY OF	, 20XX
ADOPTED THIS		DAY OF	, 20XX

_____ _____

Chair **Secretary**

DENMAN ISLAND LOCAL TRUST COMMITTEE

BYLAW NO. 235

Schedule "1"

1. Schedule "A" – Official Community Plan Policy Document of the Denman Island Local Trust Committee Bylaw No. 185, cited as "Denman Island Official Community Plan, 2008" is amended as follows:

- PART E FAMILIES AND INDIVIDUALS, E1 – HOUSING, Housing Objectives is amended by adding the following new objective following the text of Objective 4:

- "Objective 5 To protect and enhance the supply and quality of rental housing for low income households."

- PART E FAMILIES AND INDIVIDUALS, E1 – HOUSING, Housing Policies, Policy 1 is amended by adding the following sentence to the end of the first sentence: "except for lots created for the purpose of allowing multi-family affordable housing."

- PART E FAMILIES AND INDIVIDUALS, E1 – HOUSING, Housing Policies, Policy 9 is replaced in its entirety with the following:
  "In the Residential and the Rural designation, the principal use should be single family residential with the exception of the following:
  - The existing cabins on the R1(2) zoned parcel and the rental accommodation on the two R1(1) zoned parcels as permitted by the Denman Island Land Use Bylaw; and
  - Multi-family affordable housing through the completion of a successful rezoning application."

- PART E FAMILIES AND INDIVIDUALS, E1 – HOUSING, Housing Policies, Policy 10 is amended by changing "Policy 29" to "Policy 30".

- PART E FAMILIES AND INDIVIDUALS, E1 – HOUSING, Housing Policies, Policy 10 is amended by adding "28, 29, or" after the word "Policy" and before the number "30."

- PART E FAMILIES AND INDIVIDUALS, E1 – HOUSING, Housing Policies, Policy 27 is replaced in its entirety with the following:
  "Applicants applying for a zoning amendment prior to 2032 for new single family or multi-family dwellings should be required to meet or exceed BC Energy Step Code Level 2 standards for new construction, either by way of a site specific amenity zone or by way of a restrictive covenant registered on title."

- PART E FAMILIES AND INDIVIDUALS, E1 – HOUSING, Housing Policies, Policy 28 is amended by adding an additional bullet to the end of the list that reads: "that residential rental tenure zoning is considered to ensure affordability is maintained in perpetuity."

DENMAN ISLAND LOCAL TRUST COMMITTEE

BYLAW NO. 241

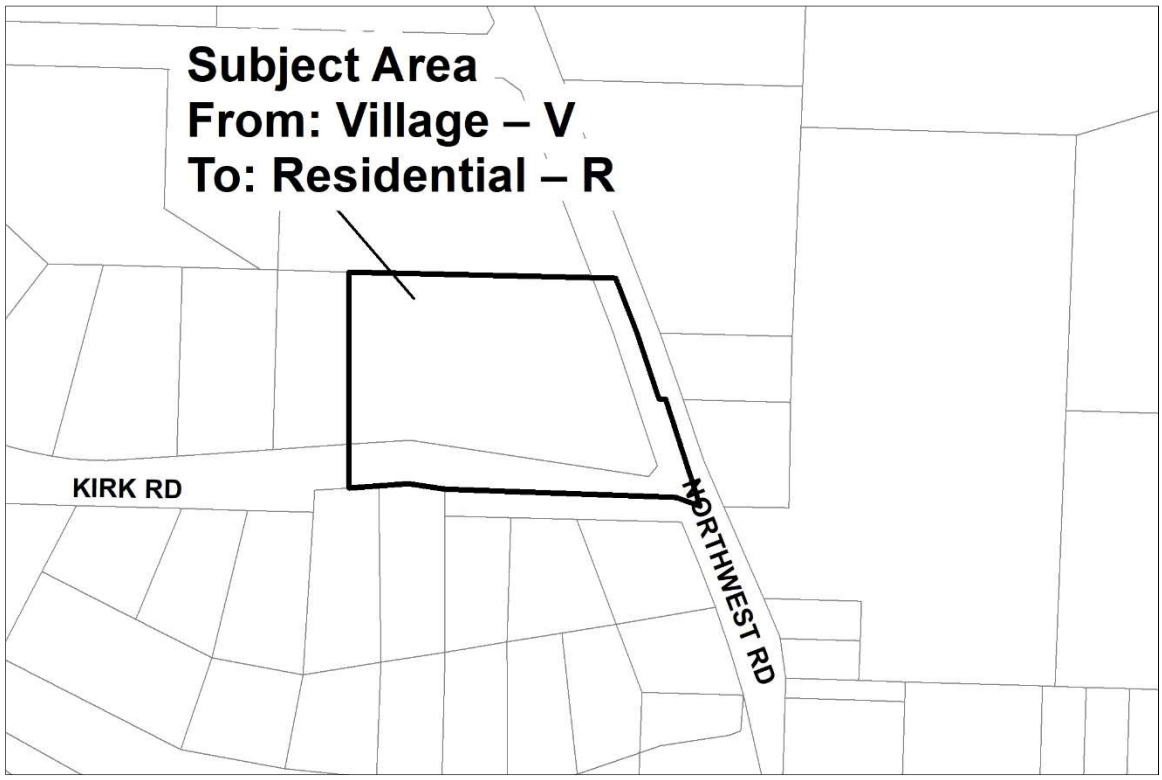
Schedule "2"

1. Schedule "C" – Land Use Designations of the Denman Island Local Trust Committee Bylaw No. 185, cited as "Denman Island Official Community Plan, 2008" is amended by changing the designation of PID 000-393-941 as shown on Plan No. 1 attached to and forming part of this bylaw, and by making such alterations to Schedule "C" of Bylaw No. 185 as are required to effect this change.

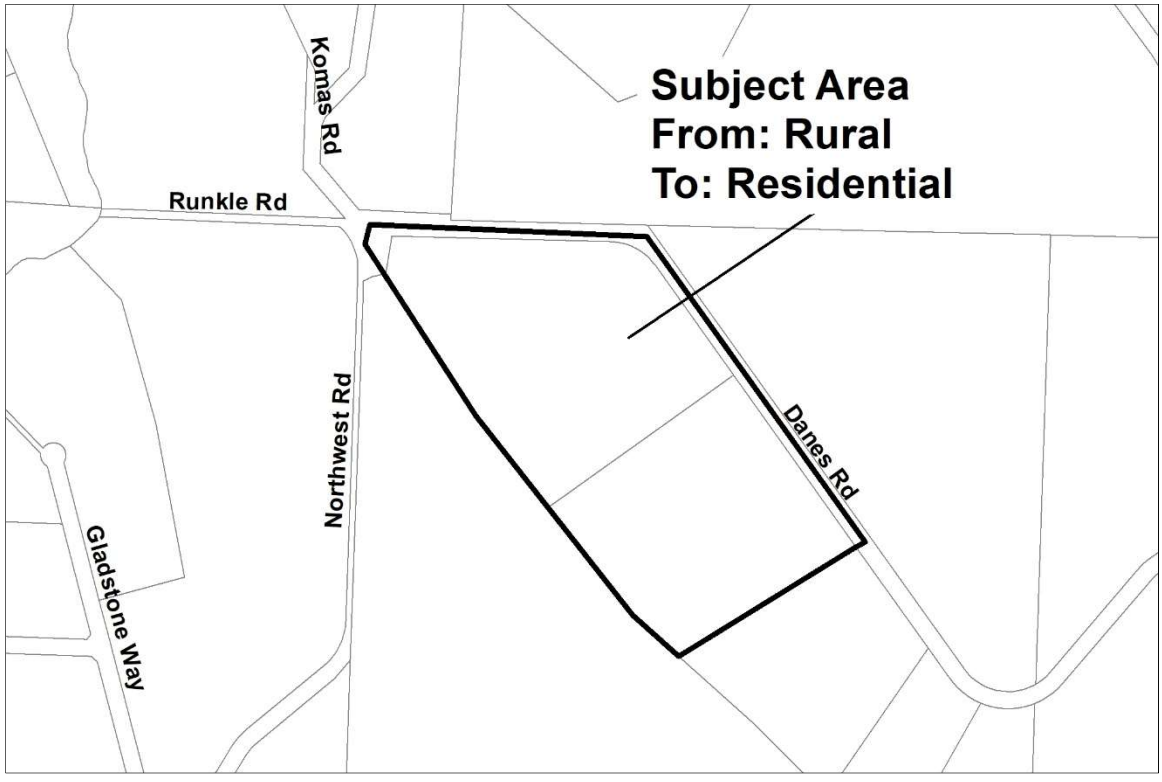
2. Schedule "C" – Land Use Designations of the Denman Island Local Trust Committee Bylaw No. 185, cited as "Denman Island Official Community Plan, 2008" is amended by changing the designation of PID 031-395-864 LOT 4 SECTION 28 DENMAN ISLAND NANAIMO DISTRICT PLAN EPP105119 and PID 031-395-872 LOT 5 SECTION 28 DENMAN ISLAND NANAIMO DISTRICT PLAN EPP105119 as shown on Plan No. 1 attached to and forming part of this bylaw, and by making such alterations to Schedule "C" of Bylaw No. 185 as are required to effect this change.

3. Schedule "E" – Map 2 North Development Permit Areas of the Denman Island Local Trust Committee Bylaw No. 185, cited as "Denman Island Official Community Plan, 2008" is amended by removing the 'Commercial' Development Permit Area designation from PID 000-393-941 as shown on Plan No. 2 attached to and forming part of this bylaw.

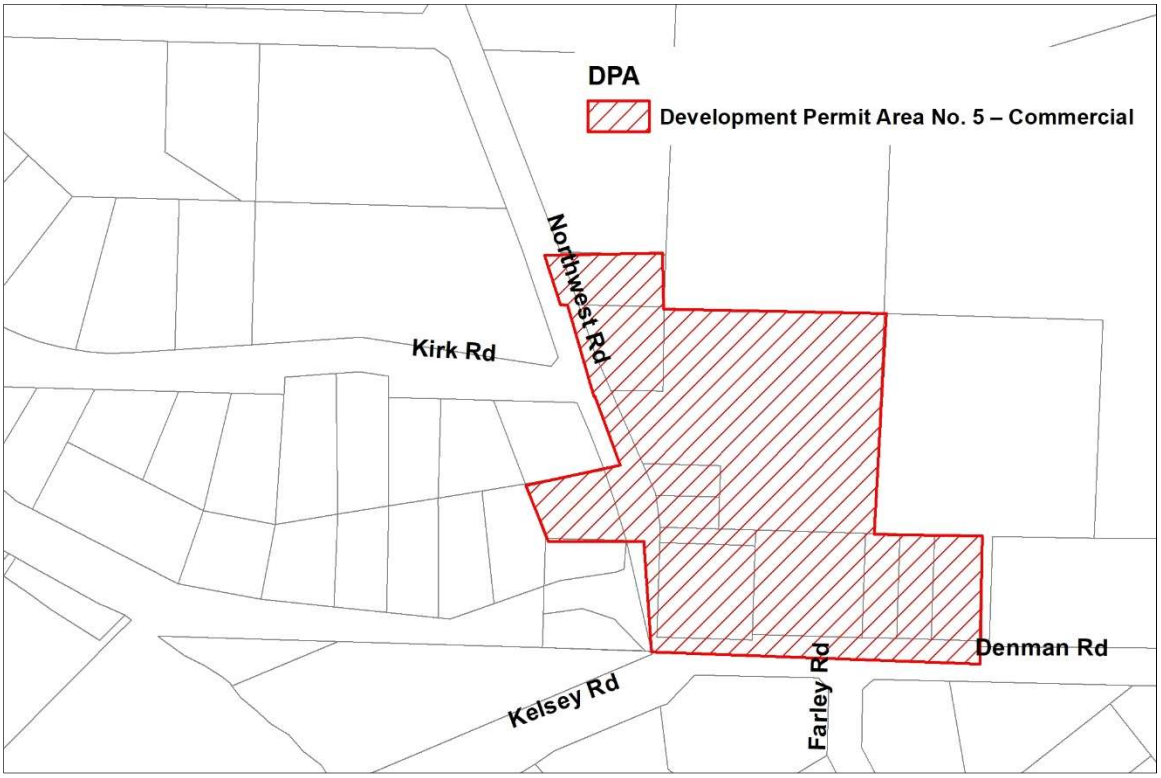
Plan No. 1



Plan No. 2



Plan No. 3


DPA
Development Permit Area No. 5 – Commercial
Northwest Rd
Kirk Rd
Denman Rd
Farley Rd
Kelsey Rd

DRAFT

DENMAN ISLAND LOCAL TRUST COMMITTEE
BYLAW NO. 242

A BYLAW TO AMEND DENMAN ISLAND LAND USE BYLAW, 2008

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

1. Citation

   This bylaw may be cited for all purposes as "Denman Island Land Use Bylaw, 2008, Amendment No. 1, 2021".

2. Denman Island Local Trust Committee Bylaw No. 186, cited as "Denman Island Land Use Bylaw, 2008," is amended as per Schedule 1 attached to and forming part of this bylaw.

READ A FIRST TIME THIS ____ DAY OF _____ , 202x

PUBLIC HEARING HELD THIS ____ DAY OF _____ , 202x

READ A SECOND TIME THIS ____ DAY OF _____ , 202x

READ A THIRD TIME THIS ____ DAY OF _____ , 202x

APPROVED BY THE EXECUTIVE COMMITTEE OF THE ISLANDS TRUST THIS

____ DAY OF _____ , 202x

ADOPTED THIS ____ DAY OF _____ , 202x

_____ _____

Chair **Secretary**

DENMAN ISLAND LOCAL TRUST COMMITTEE
BYLAW NO. 242

1. Schedule "A" of Denman Island Land Use Bylaw, 2008 is amended as follows:

1.1 PART 1 ADMINISTRATION, Section 1.1 Definitions is amended by replacing the definition of "lot coverage" with the following:

"lot coverage means the percentage of the total area of the lot covered by buildings and structures including roof overhangs but excluding cisterns connected to a building for the purposes of rainwater harvesting and collection."

1.2 PART 1 ADMINISTRATION, Section 1.1 Definitions is amended by adding the following definitions in alphabetical order:

"*dwelling*, *multi-family* means a building containing two or more dwelling units, each having their own entrance, which may include an entrance from a common interior corridor or an exterior entrance;

dwelling unit, *single family* means a building containing one dwelling unit;

residential rental tenure means the granting of a right to occupy a *dwelling unit* as living accommodation where the minimum occupancy period is thirty consecutive days, and where the *dwelling unit* is not owned by a *dwelling unit* occupant, but where regular payments are made to the owner for the use of the *dwelling unit*;"

1.3 PART 2 GENERAL REGULATIONS, Section 2.1 Accessory Buildings and Structures, 10 is amended by adding the words "and the use is not permitted on a parcel in the 'Affordable Rental Housing (R4) Zone'." after the word "Bylaw".

1.4 PART 2 GENERAL REGULATIONS, Section 2.1 Travel Trailers, 11 is amended by adding the words "except on a parcel zoned 'Affordable Rental Housing (R4).'" after the word "accommodation".

1.5 PART 2 GENERAL REGULATIONS, Section 2.4 Home Occupation Regulations, Permitted Home Occupation Uses is amended by adding the following new regulations 3 and 4 after regulation 2 and by making such consequential numbering alterations to effect this change:

"3 Despite regulation 2 of this section, the following uses, and no others are permitted as home occupations in the R4 zone:
- general business offices
- professional offices, excluding health services
- artist or artisan studios"

4 Notwithstanding 2.4 regulation 3 of this section, the following is prohibited in the R4 zone:
- on site purchase of any products or services
- on site attendance of clientele or customers
- creation of noise which disturbs persons"

1.6 PART 2 GENERAL REGULATIONS, Section 2.4 Home Occupation Regulations, Number of Employees is amended by adding the following new regulation 17 after regulation 16 and by making such consequential numbering alterations to effect this change:

"Despite regulation 16 of this section, no non-resident employees are permitted in the R4 zone."

1.7 PART 2 GENERAL REGULATIONS, Section 2.5 Parking Regulations, Number of Parking Spaces Required, 16, residential is amended by removing:

- "one per one single family residential use", and replacing it with:
- "one per one single family residential dwelling unit"

1.8 PART 2 GENERAL REGULATIONS, Section 2.5 Parking Regulations, Number of Parking Spaces Required, 16, residential is amended by adding another bullet:

- "two per dwelling unit in a multi-family dwelling"

1.9 PART 2 GENERAL REGULATIONS, Section 2.5, Parking Regulations, Number of Parking Spaces Required, 17, Minimum number of bicycle parking spaces is amended by adding another bullet:

- "one per dwelling unit in a multi-family dwelling"

1.10 PART 2 GENERAL REGULATIONS, Section 2.6 Signs Regulations, Permitted signs, 1 is amended by adding "Affordable Rental Housing (R4)" after "(R3)".

1.11 PART 2 GENERAL REGULATIONS, Section 2.7 Screening Regulations, Landscape Screens, 8 is amended by removing "R3 zone" and replacing with "R3 and R4 zones".

1.12 PART 3 ZONE REGULATIONS, Section 3.1 Creation of Zones, 1, Zone Classification, Zoning Code, Residential Zones is amended by adding "Affordable Rental Housing R4".

1.13 PART 3 ZONE REGULATIONS, Section 3.3 "Residential Zoning Tables", Table 1 – Permitted Uses is deleted in its entirety and replaced with:

Table 1 - Permitted Uses		**R1**	**R2**	**R3**	**R4**
Principal Uses					
1	Residential	✓	✓	✓	
2	Residential Rental Tenure subject to registration of housing agreement				✓
3	Parks	✓	✓	✓	✓
4	Utilities	✓	✓	✓	✓
Accessory Uses					
5	Home occupation uses listed in Section 2.4 accessory to a principal residential use	✓	✓	✓	✓
6	Forest fungi production accessory to a residential use, on lots 2.0 ha or larger	✓	✓	✓	✓
7	Horticulture and agriculture, other than intensive agriculture, accessory to a principal residential use	✓	✓	✓	✓

8	Occasional wood working and wood processing using wood obtained from the lot and accessory to a principal residential use	✓	✓	✓	
9	Generation of electricity from non-polluting renewable sources and accessory to a principal residential use	✓	✓	✓	✓
10	Secondary suites and secondary dwelling units		✓ *Secondary dwelling units must be approved through a Temporary Use Permit		

1.14 PART 3 ZONE REGULATIONS, Section 3.3 "Residential Zoning Tables", Table 2 – Permitted Buildings and Structures is deleted in its entirety and replaced with:

Table 2 - Permitted Buildings and Structures		**R1**	**R2**	**R3**	**R4**
1	Single family dwelling units	✓	✓	✓	
2	Multi-family dwelling units				✓
3	Buildings and structures accessory to a constructed single family dwelling unit	✓	✓	✓	
4	Buildings and structures accessory to a constructed multi-family dwelling unit				✓
5	Buildings and structures to accommodate horticulture, agriculture and sale of horticultural and agricultural products	✓	✓	✓	✓
6	Buildings and structures for parks and utilities	✓	✓	✓	✓
7	Pit privies	✓	✓	✓	
8	Fences	✓	✓	✓	✓
9	Signs, subject to Section 2.6	✓	✓	✓	✓
10	Portable sawmill accessory to a residential use, to accommodate occasional wood working and wood processing	✓	✓	✓	
11	Buildings and structures for the generation of electricity from non-polluting renewable sources	✓	✓	✓	✓
12	Common house			✓	✓

1.15 PART 3 ZONE REGULATIONS, Section 3.3 "Residential Zoning Tables", Table 3 – Density of Uses, Buildings and Structures is deleted in its entirety and replaced with:

Table 3 - Density of Uses, Buildings and Structures		**R1**	**R2**	**R3**	**R4**
1	Minimum lot area per principal single family dwelling unit	1.0 ha	4.0 ha	n/a	n/a
2	Despite line 1 of this table, maximum number of single family dwelling units on lots less than the minimum area shown in line 1 of this table	1	1	n/a	n/a
3	Subject to line 1 of this table, maximum number of dwelling units per lot	5	n/a	15	
4	Maximum combined lot coverage of buildings and structures	25%	25%	n/a	10%

5	Maximum number of buildings or structures for the generation of electricity from non-polluting sources	1	1	1	3

1.16 PART 3 ZONE REGULATIONS, Section 3.3 "Residential Zoning Tables", Table 4 – Height is deleted in its entirety and replaced with:

Table 4 – Height		**R1**	**R2**	**R3**	**R4**
1	Maximum height of principal buildings and structures				
	• located less than 100.0 metres from the natural boundary of the sea	7.0 m	7.0 m	7.0 m	7.0 m
	• located 100.0 metres or more from the natural boundary of the sea	9.0 m	9.0 m	9.0 m	9.0 m
2	Maximum height of buildings and structures				
	• accessory to a residential use	6.0 m	6.0 m	6.0 m	6.0 m
	• used exclusively for agriculture	15.0 m	15.0 m	15.0 m	15.0 m
3	Maximum height of a fence, excluding deer netting	2.0 m	2.0 m	2.0 m	2.0 m
4	Maximum height of a pump/utility house located within a setback area	2.5 m	2.5 m	2.5 m	2.5 m
5	Maximum height of a boathouse	4.5 m	4.5 m	4.5 m	4.5 m

1.17 PART 3 ZONE REGULATIONS, Section 3.3 "Residential Zoning Tables", Table 5 – Setbacks is deleted in its entirety and replaced with:

Table 5 - Setbacks		**R1**	**R2**	**R3**	**R4**
In addition to regulations 1 to 5 in Section 2.3, the following setbacks apply					
1	Minimum setback of buildings or structures, except for a fence, pump/utility house or pit privy				
	• from the front lot line	7.5 m	7.5 m	30.0 m	10.0 m
	• from the rear or side lot line	3.0 m	3.0 m	30.0 m	10.0 m
	• from the exterior side lot line	4.5 m	4.5 m	30.0 m	10.0 m
2	Minimum setback from all lot lines for pit privies, feeding troughs, manure piles and buildings and structures for housing animals for agriculture, except domestic chicken coops	8.0 m	8.0 m	30.0 m	30.0 m
3	Minimum setback from all lot lines for domestic chicken coops	3.0 m	3.0 m	30.0 m	10.0 m

1.18 PART 3 ZONE REGULATIONS, Section 3.3 "Residential Zoning Tables", Table 6 – Floor Area is deleted in its entirety and replaced with:

Table 6 - Floor Area		**R1**	**R2**	**R3**	**R4**
1	Maximum gross floor area of a pump/utility house located within a setback area	6.0 m^2	6.0 m^2	6.0 m^2	10.0 m^2
2	Maximum gross floor area of a boathouse located within 15.0 metres of the natural boundary of the sea	30.0 m^2	30.0 m^2	n/a	n/a
3	Maximum gross floor area of a single family dwelling unit	n/a	n/a	139.4 m^2	n/a
4	Maximum gross floor area of a dwelling unit in a multi-family dwelling	n/a	n/a	n/a	
5	Maximum gross floor area of a common house	n/a	n/a	279 m^2	n/a
6	Maximum combined gross floor area of all accessory buildings and structures	n/a	n/a	1275 m^2	

1.19 PART 3 ZONE REGULATIONS, Section 3.3 "Residential Zoning Tables", Table 7 – Subdivision is deleted in its entirety and replaced with:

Table 7 - Subdivision		**R1**	**R2**	**R3**	**R4**
1	Maximum density permitted by subdivision is an average of one lot per	1.0 ha	4.0 ha	35.0 ha	
2	Minimum lot area permitted by subdivision, subject to the regulations in 2.8	1.0 ha	2.0 ha	35.0ha	

1.20 PART 3 – ZONE REGULATIONS, Section 3.3 – "Residential Zoning Tables", Table 8 – Site Specific Regulations is amended by adding the following text after row R1(4):

"R1(5)

1. A Siting and Use Permit for a dwelling in the R1(5) zone must be accompanied by written certification from an appropriately qualified professional architect or engineer that the dwelling unit meets or exceeds the applicable requirements of Step 2 of the Energy Step Code in affect at the reference date of this bylaw amendment.
2. Despite line 9 in Table 1 of this Section, secondary suites are not permitted in the R1(5) zone.
3. Despite line 3 in Table 3 of this Section, the maximum number of single family dwellings permitted in the R1(5) zone is five.\
4. Despite line 1 in Table 5 of this Section, the minimum setback of buildings and structures, except for a fence or pump/utility house from a conservation covenant or provincial park boundary is 30 meters.
5. Despite line 1 in Table 7 of this Section, the maximum number of lots permitted by subdivision in the R1(5) zone is five.
6. Despite line 2 in Table 7 of this Section, the minimum lot area permitted by subdivision, subject to the regulations in 2.8 is 2.0 ha."

1.21 PART 3 – ZONE REGULATIONS, Section 3.3 – "Residential Zoning Tables", Table 8 – Site Specific Regulations is amended by adding the following text after row R2(6):

"R2(7)

1. Despite line 9 in Table 1 of this Section, secondary suites are not permitted in the R2(7) zone.
2. Despite line 3 in Table 3 of this Section, the maximum number of single family dwellings permitted in the R2(7) zone is four.
3. Despite line 1 in Table 7 of this Section, the maximum number of lots permitted by subdivision in the R2(7) zone is four."

1.22 PART 3 ZONE REGULATIONS, Section 3.3 "Residential Zoning Tables", Table 8 – Site Specific Regulations is amended by adding a new R4(1) Site Specific Zoning Code:

Table 8 - Site Specific Regulations

The regulations listed in tables 1 through 7 of this section apply to the land identified on Schedule B (the Zoning Map) by the site specific zoning code listed below on the left, except as varied by the relevant site specific regulation listed in this Table (Table 8)

Site Specific Zoning Code	Site Specific Regulations
R4(1)	1 Despite line 7 of Table 1 of this Section, the following is not permitted: • the keeping of chickens or other livestock; 2 Despite line 3 in Table 3 of this Section, the maximum number of affordable dwelling units per lot is 20. 3 Despite line 4 in Table 3 of this Section, the maximum combined lot coverage of buildings and structures is 25%. 4 Despite line 1 in Table 4 of this Section, the maximum height of principal buildings and structures located 100.0 meters or more from the natural boundary of the sea is 10.0 m. 5 Despite line 1 in Table 5 of this Section, the minimum setback of a free standing photovoltaic solar array from any interior lot line is 1.5 m. 6 Despite line 4 in Table 6 of this Section, the maximum gross floor area of an affordable dwelling unit is 140 m^2. 7 Despite Table 7 of this Section, the minimum lot area permitted by subdivision is 1.0 hectare. 8 Despite regulations 16 of Section 2.5, the minimum number of automobile parking spaces required is 1.5 per affordable housing unit. 9 Despite regulations 9, 12, and 15 in Section 2.8, the applicant must provide proof of a water license that permits the withdrawal of the licensed amount of groundwater.

2. Schedule "B" of Denman Island Land Use Bylaw, 2008 is amended as follows:

2.1. Schedule "B" – North Sheet is amended by changing the name "North Sheet" to "North Map".

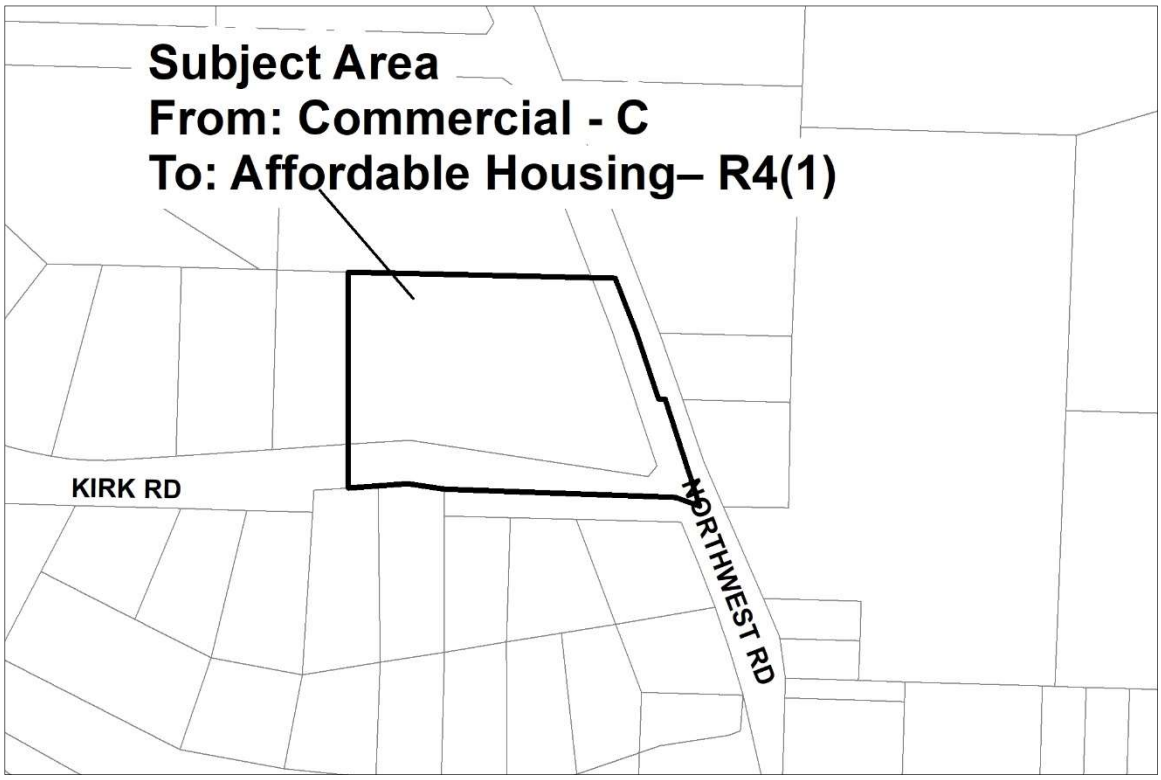
2.2. Schedule "B" – South Sheet is amended by changing the name "South Sheet" to "South Map".

2.3. Schedule "B" – North Map, is amended by changing the zoning classification of PID 000-393-941 as shown on Plan No. 1 attached to and forming part of this bylaw, and by making such alterations to Schedule "B" of Bylaw No. 186 as are required to effect this change.

2.4. Schedule “B” – North Map, is amended by changing the zoning classification of PID 031-395-864 LOT 4 SECTION 28 DENMAN ISLAND NANAIMO DISTRICT PLAN EPP105119 and PID 031-395-872 LOT 5 SECTION 28 DENMAN ISLAND NANAIMO DISTRICT PLAN EPP105119 as shown on Plan No. 2 attached to and forming part of this bylaw, and by making such alterations to Schedule “B” of Bylaw No. 186 as are required to effect this change.

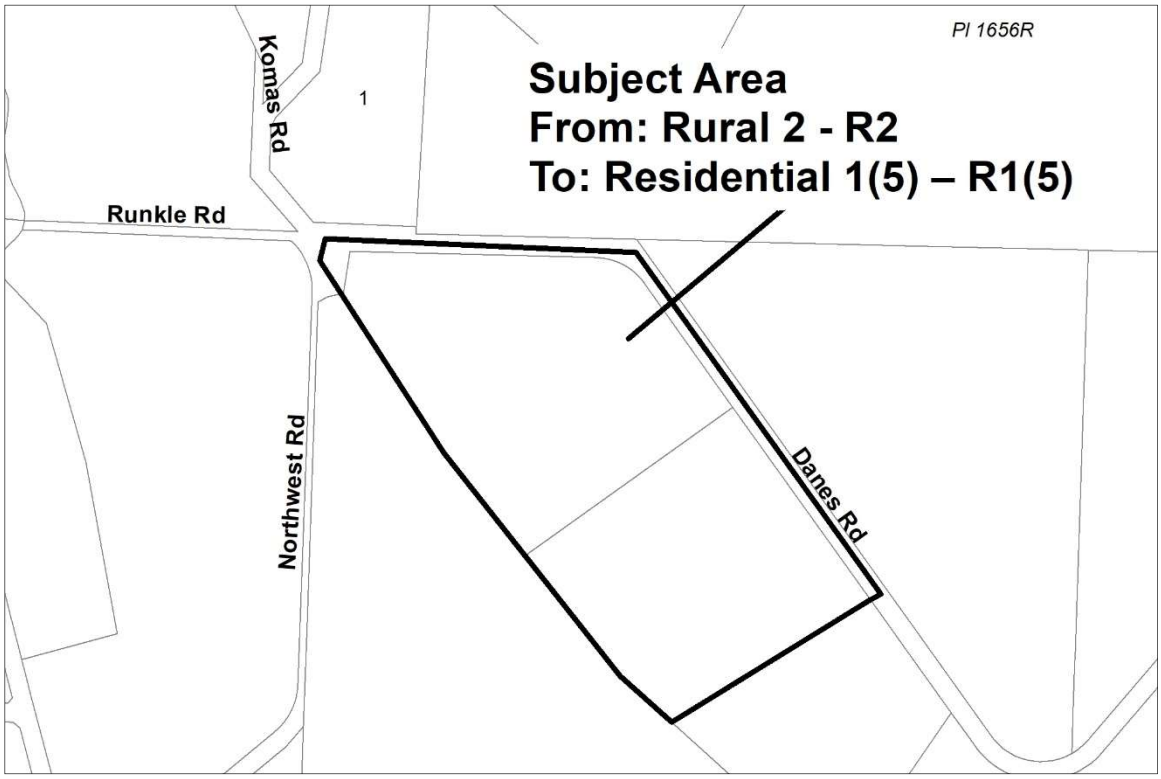
2.5. Schedule “B” – South Sheet, is amended by changing the zoning classification of the non-Agricultural Land Reserve portion of THE SOUTH WEST 1/4 OF SECTION 13, DENMAN ISLAND, NANAIMO DISTRICT, EXCEPT PART IN PLAN VIP71627 (PID 009-704-523) as shown on Plan No. 3 attached to and forming part of this bylaw, and by making such alterations to Schedule “B” of Bylaw No. 186 as are required to effect this change.

Plan No. 1
(Final plan to be inserted prior to bylaw adoption)



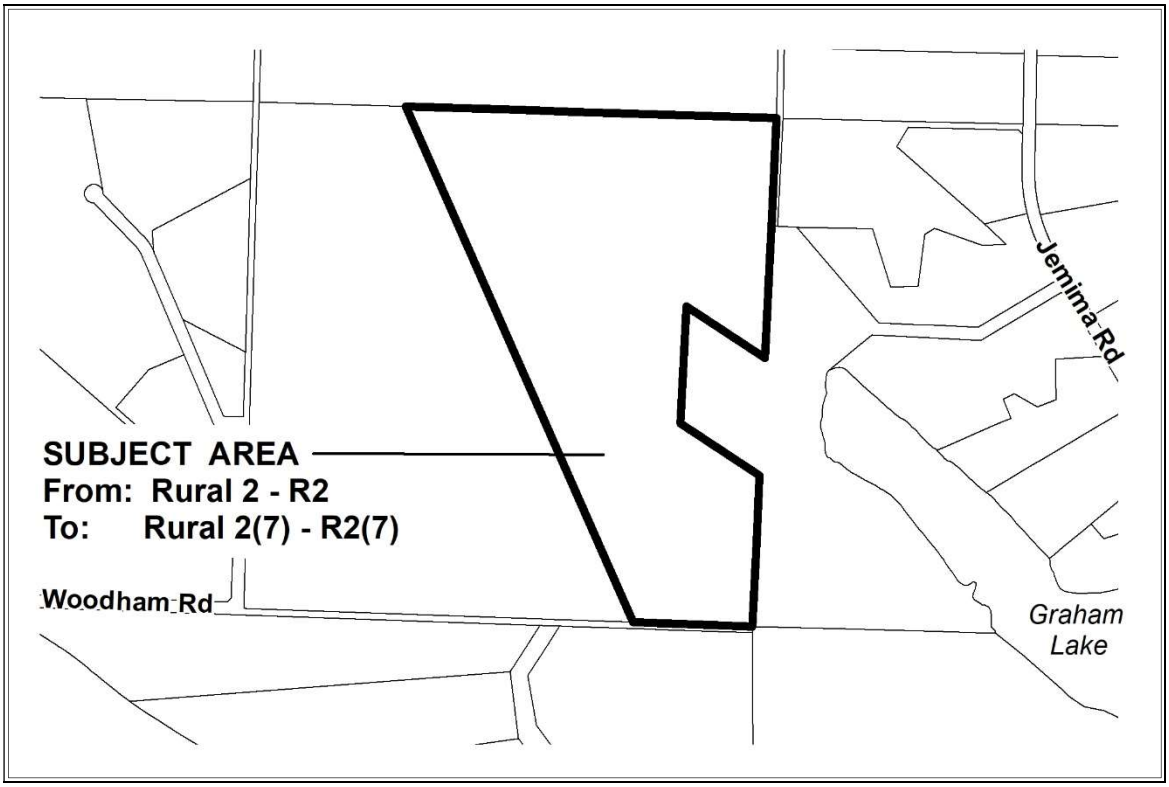
Plan No. 2

(Final plan to be inserted prior to bylaw adoption)



Plan No. 3

(Final plan to be inserted prior to bylaw adoption)



DRAFT

DENMAN ISLAND LOCAL TRUST COMMITTEE
BYLAW NO. 243

A BYLAW TO AUTHORIZE A HOUSING AGREEMENT

The Denman Island Local Trust Committee, being the Local Trust Committee having jurisdiction in respect of the Denman Island Local Trust Area under the *Islands Trust Act;*

AND WHEREAS Section 483 of the *Local Government Act* and Section 29 of the *Islands Trust Act* permit the Local Trust Committee to enter into a housing agreement;

AND WHEREAS the Denman Island Local Trust Committee wishes to enter into a Housing Agreement;

NOW THEREFORE the Denman Island Local Trust Committee enacts in open meeting assembled as follows:

1. Citation

   This bylaw may be cited for all purposes as "Denman Island Housing Agreement Bylaw No. 243, 2021".

2. Any two Trustees of the Denman Island Local Trust Committee are authorized to execute an agreement in the form attached to this Bylaw with Denman Community Land Trust Association.

READ A FIRST TIME THIS	--	DAY OF	--	, 202x
READ A SECOND TIME THIS	--	DAY OF	--	, 202x
READ A THIRD TIME THIS	--	DAY OF	--	, 202x

APPROVED BY THE EXECUTIVE COMMITTEE OF THE ISLANDS TRUST THIS

	_____	DAY OF	_____	, 202X
ADOPTED THIS	_____	DAY OF	_____	, 202X

_____ _____

Chair **Secretary**

LAND TITLE ACT

TERMS OF INSTRUMENT – PART 2

Housing Agreement and Section 219 Covenant

THIS AGREEMENT DATED FOR REFERENCE THE _____ DAY OF _____, 20___ is BETWEEN:

Denman Housing Association a society incorporated under the laws of the province of British Columbia and having its office at 3720 East Road, Denman Island, B.C. V0R 1T0

(the "Owner");

AND:

DENMAN ISLAND LOCAL TRUST COMMITTEE, a corporation under the *Islands Trust Act*, having an office at 2 Floor, 1627 Fort Street, Victoria, B.C., V8R 1H8

(the "Trust Committee")

WHEREAS:

A. The Owner is the registered owner of the lands situated at 1151 Northwest Road on Denman Island British Columbia and legally described as:

PID 000-393-941, Lot B, Sections 18 and 19, Denman Island, Nanaimo District, Plan 36263, commonly known as Denman Green (the "Lands");

B. The Lands have been rezoned by the Denman Island Local Trust Committee by means of Denman Island Land Use Bylaw 2008 Amendment No. xx and Denman Island Official Community Plan, 2008, Amendment No. xx has been put in place to permit the development of an affordable housing project;

C. The Owner intends to construct on the Lands a residential development of affordable rental units (hereinafter defined) to rent, by way of a Tenancy Agreement, at an affordable rate to Qualified Occupants (hereinafter defined);

D. The Trust Committee may, pursuant to Section 29 of the Islands Trust Act and Section 483 of the Local Government Act, enter into an agreement with an owner of land that includes terms and conditions regarding the occupancy, tenure and availability to specified classes of persons of Dwelling Units located on those lands;

E. Section 219 of the Land Title Act permits the registration of a covenant of a negative or positive nature in favour of the Trust Committee in respect of the use of land or construction on land;

F. As a condition of rezoning the Lands, the Owner and the Trust Committee wish to enter into this Agreement to provide affordable housing on the Lands and to restrict the use of, and construction on, the Lands and the use of the Affordable Housing Units constructed on the lands, on the terms and conditions of this Agreement to have effect as both a covenant under section 219 of the *Land Title Act* and a housing agreement under section 483 of the *Local Government Act*; and

G. The Trust Committee has, by bylaw, authorized the execution of this Agreement and the Owner has duly authorized the execution of this Agreement.

THIS AGREEMENT is evidence that in consideration of $1.00 paid by the Trust Committee to the Owner (the receipt of which is acknowledged by the owner), and in consideration of the promises exchanged below, the Trust Committee and the Owner agree, as covenants granted by the Owner to the Trust Committee under Section 219 of the Land Title Act, and as a housing agreement between the Owner and the Trust Committee under Section 483 of the Local Government Act, as follows:

a. **Definitions** – In this Agreement:

"Affordable Dwelling Unit" means a deed restricted or rent controlled Dwelling Unit that is designated as an Affordable Dwelling Unit by this Agreement and is available on an affordable basis as set out in this agreement;

"Affordable Housing Funder" means BC Housing, Canada Mortgage and Housing Corporation or other agency that provides a grant or preferential rate loan to support the development of affordable housing units on the Lands;

"Affordable Market Unit" means an affordable housing unit on the Lands where the rental price is linked to market conditions on Denman Island or the Comox Valley Regional District region, the rental rate is approved by an Affordable Housing Funder and meets the occupancy criteria set out in Section C;

"Annual Household Income" means the gross income, as shown on line 150 of their preceding year's T1 General Income Tax and Benefit returns or an equivalent document produced by the Canada Revenue Agency, of all Qualified Occupants of an Affordable Dwelling Unit combined;

"BC Housing" means the British Columbia Housing Management Commission;

"Dwelling Unit" means one or more rooms in a building, containing a single set of cooking facilities, and used or intended to be used, as a residence by an individual or a group of individuals living together in common occupancy;

"Family Member" means a person under the age of 65 years old who lives with and is related to the Tenant through blood or marriage including a person with whom the Tenant is living in a marriage-like relationship;

"Household" means one or more invdividuals occupying the same Dwelling Unit;

"Qualified Occupant" means a person who meets the eligibility criteria for occupancy as set out in Schedule B;

"Qualified Renter" means a Household which meets the eligibility criteria for a residential tenancy of an Affordable Housing Unit, as set out in Section C of this Agreement;

"Residential Tenancy Act" means the most recent version of the British Columbia *Residential Tenancy Act*;

"Schedule B" means that Schedule B annexed hereto or any variation thereof made by the Owner that does not contradict any of the terms in the balance of this Agreement;

"Tenancy Agreement" means a tenancy agreement as defined in, and subject to, the *Residential Tenancy Act*.

b. **Agreement over the Lands** – Pursuant to section 219 of the Land Title Act and section 483 of the Local Government Act, the Owner covenants and agrees that:

ii the Lands must at all times be used and occupied in compliance with all statutes, laws, regulations, orders of any authority having jurisdiction, and this Agreement;

iii it will design, construct and maintain in a reasonable state of repair the Affordable Housing Units on the Lands, including Affordable Market Units in accordance with the terms of this Agreement;

iv it will design and construct only duplexes or triplexes or quadruplexes on the Lands. If an Affordable Housing Funder requires a different configuration of the Affordable Housing Units, that configuration must be approved by the Local Trust Committee

v the Lands must not be used or occupied for residential purposes unless the buildings have been designed to meet

1. at least the performance requirements of the BC Energy Step Code 3 energy efficiency standards established by the British Columbia Building Code Regulation, BC Reg. 264/2012 (the "Performance Standards") of the Building Act (BC); or

2. if required by an Affordable Housing Funder, a different energy performance target; and

3. the Owner shall provide to the Trust Committee a Compliance Report, from a certified energy adviser, that the building has been constructed and is operating in accordance with 1. or 2. as the case may be.

vi the development on the Lands will be constructed with a Type 3 advanced secondary treatment sewage system, or equivalent alternative as approved by the Affordable Housing Funder, that meets similar performance criteria

c. **Affordable rental housing eligibility** – The Owner covenants and agrees that Affordable Dwelling Units will only be occupied in accordance with the followingcriteria:

i Either;
a. the Household's Annual Household Income must be less than or equal to BC Housing's Housing Income Limits for the Comox Valley Planning Area or,
b. if the Owner has an agreement with an Affordable Housing Funder under which the Affordable Housing Funder has agreed to provide funding for the construction and operation of affordable housing on the Lands, the Household meets the income or non-financial criteria imposed on the occupancy of the relevant Affordable Housing Units on the Lands established by such Affordable Housing Funder, which may include but are not limited to the requirement that a Qualified Occupant has certain physical or mental conditions, is a senior receiving the Guaranteed Income Supplement, or is a recipient of social or disability assistance.

ii the household will occupy the Affordable Housing Unit as their permanent, principal and sole residence; and

iii the household is comprised of at least one Qualified Occupant;

and the Owner covenants and agrees to:

iv include in every Tenancy Agreement a prohibition on subletting, including short-term vacation rentals, and a provision entitling the Owner to terminate the Tenancy Agreement in accordance with the *Residential Tenancy Act* in the event of any breach of that prohibition;

v deliver to the Trust Committee a true copy of every Tenancy Agreement entered into in respect of any Affordable Housing Unit within 10 days of any request to do so;

vi specify in every Tenancy Agreement the existence of this Agreement and the occupancy restrictions applicable to the Affordable Housing Unit, and provide to each tenant, upon their request, a copy of this Agreement, and

vii if one of the individuals comprising a Qualified Renter who rents an Affordable Housing Unit dies, that individual's spouse or adult child residing in the Affordable Housing Unit at the time of the Qualified Renter's death may continue to rent the Affordable Housing Unit for the longer of:
a. The balance of the fixed term under the Tenancy Agreement; or
b. twelve (12) months on the same terms, including monthly rent, set out in the Tenancy Agreement.

d. Rental rates - The Owner covenants and agrees that:

i the rent payable by a Qualified Renter for an Affordable Housing Unit, exclusive of utilities, must not exceed 30% of the gross monthly Household income of the Qualified Renter, except in the case of an Affordable Market Unit; and

ii not require any tenant under a Tenancy Agreement to pay any extra charges or fees for use of any water or septic system, or property taxes. For clarity, this limitation does not apply to cablevision, telecommunications, laundry, or gas or electricity utility fees or charges.

e. Affordable Housing Units – The Owner covenants and agrees that it will

i. not rent an Affordable Market Unit unless the Affordable Market Unit is approved by an Affordable Housing Funder and there are other Affordable Housing Units occupied by households whose income does not exceed the Housing Income Limits; and

ii. will not include more than 30% of the Affordable Housing Units as Affordable Market Units unless necessary to meet the requirements of an Affordable Housing Funder, and not before informing the Trust Committee and providing the Trust Committee and the Denman Island public an opportunity to assist the Owner in limiting the number of Affordable Market Units to 30%

f. Order to Comply - If the Owner is in default of the performance or observance of this Agreement, the Trust Committee may give the Owner a notice of default requiring the Owner to comply with this Agreement within the time stated in the notice. The Owner agrees that any breach or default in the performance of this Agreement on its part must be corrected, to the satisfaction of the Trust Committee, within the time stated on the notice of default provided to the owner by the Trust Committee.

g. **Statutory Declaration from Owner** – The Owner shall deliver to the Trust Committee by the end of January of each year, a completed statutory declaration, substantially in the form attached as Schedule 'A', sworn by the Owner, in relation to the Affordable Housing Units. The Owner irrevocably authorizes the Trust Committee to make enquiries it considers necessary and reasonable in order to confirm compliance with this Agreement.

h. Management – The Owner covenants and agrees to furnish good and efficient management of the Lands and the Affordable Housing Units on the Lands. If and when the Trust Committee has reasonable grounds to believe that a continuing breach of this Agreement exists, the Trust Committee may authorize its representatives to inspect the Lands at any reasonable time, subject to the notice provisions of the *Residential Tenancy Act* and subject to the concurrent delivery of such a notice to the Owner.

i. No Transfer – The Owner must not transfer the Lands, other than to another non-profit organization or society incorporated under the Societies Act, having as its objective the management of affordable housing, or the Provincial Rental Housing Corporation

j. Society Standing – The Owner must maintain its standing as a society under the *Societies Act* and must not amend its Constitution in any manner that would prevent, or adversely affect, the ability of the Owner to perform its obligations under this Agreement.

k. Specific Performance of Agreement – The Owner agrees that the Trust Committee is entitled to obtain an order for specific performance of this Agreement and a prohibitory or mandatory injunction in respect of any breach by the Owner of this Agreement, in view of the public interest in restricting the occupancy of the Affordable Housing Unit. The Owner further acknowledges that a breach of this Agreement may constitute a breach of the Trust Committee's Land Use Bylaw, as amended from time to time.

l. Assignment – The Owner acknowledges that the Trust Committee may delegate or assign the

administration and management of this Agreement to a third party, and, in that event, any reference in this Agreement to the Trust Committee shall be interpreted as a reference to that party provided that the Trust Committee has so advised the Owner.

m. Indemnity – The Owner shall indemnify and save harmless the Trust Committee and each of its elected officials, officers, directors, employees, and agents f~~orm~~ from and against all claims, demands, actions, loss, damage, costs, and liabilities for which any of them may be liable by reason of any act or omission of the Owner or its officers, directors, employees, agents or contractors or any other person for whom the Owner is at law responsible, including breaches of this Agreement.

n. Release – The Owner releases and forever discharges the Trust Committee and each of its elected officials, officers, directors, employees, and agents and each of their heirs, executors, administrators, personal representatives, successors and assigns from all claims, demands, damages, actions, or causes of action arising out of the performance by the Owner of its obligations under this Agreement, or the enforcement of this Agreement.

o. Trust Committee Powers Unaffected – This Agreement does not limit the discretion, rights, duties or powers of the Trust Committee under any enactment or the common law, impose on the Trust Committee any duty or obligation, affect or limit any enactment relating to the use or subdivision of the Lands, or relieve the Owner from complying with any enactment.

p. No Public Law Duty – Wherever in this Agreement an act, determination, consent, approval or agreement of the Trust Committee is provided for, such act, determination, consent, approval or agreement may be done or made in accordance with the terms of this Agreement and no public law duty, whether arising from the principles of procedural fairness or the rules of natural justice shall have any application.

q. No Waiver – No condoning, excusing or overlooking by the Trust Committee of any default under this Agreement, nor any consent, approval, or agreement whether written or otherwise shall be taken to operate as a waiver by the Trust Committee of any subsequent default or of the necessity for further consent, approval or agreement in respect of a subsequent matter requiring it under this Agreement, or in any way to defeat or affect the rights or remedies of the Trust Committee.

r. Arbitration – Any matter in dispute between the parties under this Agreement, including any disputes as to whether a particular individual is eligible to occupy an Affordable Housing Unit, must be referred to a single arbitrator if the parties can agree on one, and otherwise to three arbitrators, one to be appointed by each of the parties and the third by those two so appointed, and the matter must be resolved in accordance with the provisions of the *Arbitration Act* (British Columbia).

s. Notice on Title – The Owner acknowledges and agrees that this Agreement constitutes both a covenant under Section 219 of the *Land Title Act* and a housing agreement under Section 483 of the *Local Government Act*,and agrees that the Owner will register a notice of this Agreement against title to the Lands.

t. Covenant Runs with the Land – Every obligation and covenant of the Owner in this Agreement constitutes both a contractual obligation and a covenant granted by the Owner to the Trust Committee in accordance with section 219 of the *Land Title Act* in respect of the Lands and this Agreement burdens the Lands and runs with it and binds the Owner's successors in title and binds

every parcel into which it is consolidated or subdivided by any means, including, by subdivision or by strata plan.

u. Limitation on Owner's Obligations – The Owner is only liable for breaches of this Agreement that occur while the Owner is the registered owner of the Lands.

v. Amendment – This Agreement may not be modified or amended except by bylaw of the Trust Committee, upon an agreement in writing between the Trust Committee and the Owner.

w. Notices – Any notice required to be given pursuant to this Agreement shall be in writing and shall be given to the Owner or the Trust Committee, as the case may be, at the address first above written, or to any other address of which either the Owner or the Trust Committee may advise the others in writing in accordance with this paragraph. Notice to the Trust Committee must be addressed to the Secretary of the Islands Trust. If given in person or by facsimile transmission, such notice will be deemed to be received when delivered and, if mailed, such notice will be deemed to be received only when actually received by the party to whom it is addressed.

x. Enurement – This Agreement is binding upon and enures to the benefit of the parties and their respective successors and permitted assigns.

y. Remedies Cumulative – The remedies of the Trust Committee specified in this Agreement are cumulative and are in addition to any remedies of the Trust Committee at law or in equity. No remedy shall be deemed to be exclusive, and the Trust Committee may from time to time have recourse to one or more or all ofthe available remedies specified herein or at law or in equity.

z. Severability – Each covenant and agreement contained in this Agreement is, and shall be construed to be, a separate and independent covenant or agreement and the breach of any such covenant or agreement by the Owner shall not discharge or relieve the Owner from its obligations to perform. If any term or provision of this Agreement, or its application to any person or circumstance shall to any extent be found to be invalid and unenforceable, the remainder of this Agreement, or the application of such term or provision to persons or circumstances other than those as to which it is invalid or unenforceable, shall not be affected, and each term and provision of this Agreement shall be valid and shall be enforced to the extent permitted by law.

aa. Joint and Several – In the case of more than one Owner, the grants, covenants, conditions, provisions, agreements, rights, powers, privileges and liabilities of the Owner shall be construed and held to be several as well as joint.

bb. Included Words – Wherever the singular or the masculine is used in this Agreement, it shall be deemed to include the plural or the feminine, or the body politic or corporate, where the context or the parties so require.

cc. Governing Law – This Agreement shall be governed by and construed in accordance with the laws of the province of British Columbia.

dd. Joint Venture – Nothing in this Agreement shall constitute the Owner as an agent, joint venture or partner of the Trust Committee or give the Owner any authority or power to bind the Trust Committee in any way.

ee. Time of Essence – Time is of the essence in this Agreement.

ff. Further Assurances – The parties shall execute and do all such further deeds, acts, things and assurances as they reasonably require to carry out the intent of this Agreement.

gg. Priority – The Owner agrees to do everything necessary at the Owner's expense to ensure that this Agreement is registered against title to the Lands with priority over all financial charges, liens and encumbrances registered or pending at the time of application for registration of this Agreement.

hh. Deed and Contract – By executing and delivering this Agreement each of the parties intends to create both a contract and a deed executed and delivered under seal.

As evidence of their agreement to be bound by the above terms, the parties each have executed and delivered this Agreement under seal by executing Part 1 of the *Land Title Act* Form C to which this Agreement is attached and which forms part of this Agreement.

SCHEDULE "A"

OWNER'S STATUTORY DECLARATION

CANADA, PROVINCE OF BRITISH COLUMBIA

IN THE MATTER OF A HOUSING AGREEMENT WITH THE DENMAN ISLAND LOCAL TRUST COMMITTEE ("Housing Agreement")

I,_____, Denman Island, BC, declare that:

1. I am the_____[director, officer, employee] of the Denman Housing Association, the Owner of the land known as Denman Green, Denman Road, Denman Island, legally described as: xxx (the "Lands").

2. The terms in this declaration have the same meaning as those defined in the Housing Agreement.

3. I make this declaration to the best of my personalknowledge.

4. This declaration is made pursuant to the Housing Agreement registered against the Lands.

5. For the period from_____to_____, the Affordable Dwelling Units were used only by Qualified Occupants meeting all eligibility requirements of the Housing Agreement, including, without limitation, the restrictions on Annual Household Income.

6. At no time during the last year were any of the Affordable Dwelling Units used as a short-term vacation rental or sublet.

7. The rental amounts charged for the Affordable Dwelling Units were in compliance with the Housing Agreement.

8. I acknowledge and agree to comply with all of the Owner's obligations under the Housing Agreement, and other charges registered against the Lands and confirm that the Owner has complied with all of its obligations under these Agreements.

9. I make this solemn declaration conscientiously believing it to be true and knowing that itis of the same force and effect as if made under oath and pursuant to the Canada Evidence Act.

DECLARED BEFORE ME at_____, British Columbia, this_____day of_, 20____.

_____ _____

A Commissioner fortaking Affidavits Columbia

Signature of person makingdeclaration in British

SCHEDULE B

Definition of a Qualified Occupant

A Qualified Occupant means a person aged 19 years or older who fits into at least one of the following categories, which are not listed in any particular priority order;

i) Has been living on Denman Island for a minimum of one year prior to application for housing; or
ii) Has been commuting to Denman Island for at least half-time work (20 hours per week) for a minimum of one year prior to application for housing; or
iii) Indigenous peoples whose ancestry relates to those First Nations having territorial claims to Denman Island.

Except that where there are no persons meeting the categories specified above in clause i, ii or iii of this Schedule who make an application to rent an available Affordable Housing Unit and the lack of applications would result in the Affordable Housing Unit being vacant for more than one month, then a Qualified Occupant may be a person aged 19 years or older who fits into at least one of the following categories, which are not listed in any particular priority order:

a. Previous resident of Denman Island who has lived away from Denman Island for a maximum of three consecutive years; or
b. Non-resident who is hired to begin at least half-time work (20 hours per week) on Denman Island; or
c. A person who has worked at least half-time on Denman Island (20 hours per week) for less than one year; or
d. A person with an immediate family member whose principal residence is on Denman Island. "Immediate family member" means a daughter/son or parent or sibling, to whom the person is related by blood, or by marriage or common-law relationship, or by adoption; or
e. On-reserve and off-reserve, status and non-status, and/or self-identifying indigenous, Inuit, or Métis people, as outlined in Calls for Justice #4.1 of the "Final Report of the National Inquiry into Missing and Murdered Indigenous Women and Girls and 231 Calls for Justice" (June 2019)

Except that where there are no persons meeting the categories specified in clause i, ii or iii nor a, b, c, d or e of this Schedule who make an application to rent an available Affordable Housing Unit and the lack of applications would result in an Affordable Housing Unit being vacant for more than one month, then a Qualified Occupant may be any person permitted by an Affordable Housing Funder.

TERMS OF INSTRUMENT – PART 2

SECTION 219 COVENANT – DEVELOPMENT

THIS AGREEMENT dated for reference the __ day of _____, 2021 is

BETWEEN:

DENMAN HOUSING ASSOCIATION
3720 East Road
Denman Island, B.C. V0R 1T0

(the "Grantor")

AND:

DENMAN ISLAND LOCAL TRUST COMMITTEE
a corporation under the *Islands Trust Act*
having an office at 2 Floor, 1627 Fort Street, Victoria, B.C.
V8R 1H8

(the "Trust Committee")

WHEREAS:

A. The Grantor is the registered owner in fee simple of land located on Denman Island, British Columbia and more particularly described as:

PID: X
LOT x

(the "Land");

B. The Grantor has submitted a rezoning application (under reference number DE-RZ-2021.1) to allow it to develop and construct up to 20 affordable rental dwelling units, and as part of its rezoning application, the Grantor wishes to enter into a covenant with the Trust Committee under which it agrees to fulfil certain development requirements;

C. Section 219 of the *Land Title Act* of British Columbia permits the registration of a covenant of a negative or positive nature in favour of a municipality in respect of the use of land and buildings on land; and

D. The Grantor wishes to grant and the Trust Committee wishes to accept these covenants over the Land restricting the use of the Land and building thereon in the manner herein provided.

NOW THEREFORE THIS AGREEMENT WITNESSES that pursuant to Section 219 of the *Land Title Act*, and in consideration of the premises and the mutual covenants and agreements contained herein and the sum of One Dollar ($1.00) now paid to the Grantor by the Trust Committee (the

receipt and sufficiency of which is hereby acknowledged), the parties hereto covenant and agree each with the other as follows:

1. **Definitions** – In this Agreement, the following terms have the following meanings:

   (a) "**Datalogger**" means a device that can record data from a water piezometric pressure transducer, temperature detector and conductivity sensor, at intervals of once per hour (24 times per day).

   (b) "**Dwelling Unit**" means one or more rooms in a building, containing a single set of cooking facilities, and used or intended to be used, as a residence by an individual or a group of individuals living together in common occupancy.

   (c) "**Energy Step Code**" means Article 10.2.3 of Division B of the *British Columbia Building Code*, and a reference to a numbered step in the Energy Step Code is a reference to a step established in the Energy Step Code.

2. **No Build** – The Grantor will not develop or build on the Land until it erects (and thereafter maintains) a solid wood fence suitable to enhance visual privacy and mitigate dust along its entire length of its shared interior lot lines.

3. **Concurrent Construction Requirements –** Concurrently with its construction of any dwelling unit on the Land, the Grantor will install a down-well continuous datalogger (the "Datalogger") with a water level pressure transducer, temperature sensor, and electric conductivity sensor, that will allow the Grantor to meet the monitoring requirements imposed on it in section 6, and that is on a direct read smart cable that allows for downloading at the well head or will be installed with telemetry to upload to a desktop application remotely.

4. **Energy Step Code Requirements** – The Grantor shall construct all dwellings on the Land, to meet or exceed the applicable requirements of Step 2 of the Energy Step Code in effect as at the reference date of this Agreement.

5. **No Occupancy** – The Grantor covenants and agrees with the Trust Committee that the Grantor shall not occupy nor allow any one to occupy any building that may be constructed on the Land unless the Grantor has:

   (a) provided written certification from an appropriately qualified engineer that the Datalogger has been installed in accordance with the terms of this Agreement; and

   (b) provided written certification from an appropriately qualified professional architect or engineer that all Dwelling Units meet or exceed the applicable requirements of Step 2 of the Energy Step Code in effect as at the reference date of this Agreement.

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6. **Monitoring and Reporting Requirements** – After the Datalogger is installed and the Trust Committee has received confirmation of the same in accordance with the terms of this Agreement, the Grantor will, while this Agreement is in place:

   (a) Be responsible to ensure the datalogger provides continuous groundwater monitoring at a rate of no less than 24 times per day;

   (b) as part of the aforementioned monitoring, the Grantor will record the groundwater:

      (i) levels, adjusted for barometric pressure,

      (ii) temperature, and

      (iii) electric conductivity;

   (c) annually, by the date that is no later than 15 days after the anniversary of the date this Agreement is registered in the Land Title Office, provide the Trust Committee with:

      (i) all raw data recorded pursuant to subsections 6(a) and (b); and

      (ii) a fully completed "Water Champion Covenant Annual Report" in the form attached hereto as Schedule "A".

7. **Indemnity** – As an integral part of this Agreement, pursuant to section 219(6)(a) of the *Land Title Act*, the Grantor hereby indemnifies the Trust Committee from and against any and all liability, actions, causes of action, claims, suits, proceedings, judgements, damages, expenses, demands and losses at any time suffered or incurred by, or brought against, the Trust Committee, or any of its elected or appointed officials, officers, employees or agents, arising from or in connection with the granting or existence of this Agreement, the performance of any of the Grantor's obligations under this Agreement, any breach of any provision under this Agreement or the enforcement by the Trust Committee of this Agreement.

8. **Specific Relief** – The Grantor agrees that the public interest in ensuring that all of the provisions of this Agreement are complied with strongly favours the award of a prohibitory or mandatory injunction, or an order for specific performance or other specific relief, by the Supreme Court of British Columbia at the instance of the Trust Committee, in the event of an actual or threatened breach of this Agreement.

9. **No Effect on Powers** – Nothing in this Agreement shall:

   (a) affect or limit the discretion, rights or powers of the Trust Committee under any enactment or at common law, including in relation to the use, development or subdivision of the Land;

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(b) affect or limit any enactment relating to the use, development or subdivision of the Land; or

(c) relieve the Grantor from complying with any enactment, including in relation to the use, development or subdivision of the Land.

10. **Trust Committee Discretion** – Where the Trust Committee or a representative of the Trust Committee is required or permitted under this Agreement to form an opinion, exercise a discretion, express satisfaction, make a determination or give its consent:

(a) the relevant provision shall not be considered fulfilled unless the approval, opinion, determination, consent or expression of satisfaction is in writing signed by the Trust Committee or the representative, as the case may be;

(b) the approval, opinion, determination, consent or satisfaction is in the sole discretion of the Trust Committee or the representative, as the case may be; and

(c) the Trust Committee or the representative, as the case may be, is under no public law duty of fairness or natural justice in that regard and the Trust Committee or the representative may do any of those things in the same manner as if it were a private person and not a public body or employee or officer thereof.

11. **No Obligation to Enforce** – The rights given to the Trust Committee under this Agreement are permissive only and nothing in this Agreement shall give rise to any legal duty of any kind on the Trust Committee to anyone or obligate the Trust Committee to enforce this Agreement or to perform any act or incur any expense.

12. **Agreement Runs with Land** – This Agreement shall burden and run with, and bind the successors in title to, the Land and each and every part into which the Land may be subdivided by any means (including by deposit of a strata plan of any kind under the *Strata Property Act* (British Columbia)).

13. **Waiver** – No waiver by the Trust Committee of any requirement or breach of this Agreement shall be effective unless it is an express waiver in writing that specifically references the requirement or breach and no such waiver shall operate as a waiver of any other requirement or breach or any continuing breach of this Agreement.

14. **Remedies** - No reference to or exercise of any specific right or remedy by the Trust Committee shall prejudice or preclude the Trust Committee from exercising any other right or remedy, whether allowed at law or in equity or expressly provided for in this Agreement, and no such right or remedy is exclusive or dependent upon any other such remedy and the Trust Committee may from time to time exercise any one or more of such remedies independently or in combination.

15. **Priority** – The Grantor shall cause this Agreement to be registered in the applicable land title office against title to the Land with priority over all financial liens, charges and

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encumbrances, and any leases and options to purchase, registered or pending registration at the time of application for registration of this Agreement, including by causing the holder of each such lien, charge, encumbrance, lease or option to purchase to execute an instrument in a form required by the Trust Committee under which such holder postpones all of the holder's rights to those of the Trust Committee under this Agreement in the same manner and to the same extent as if such lien, charge, encumbrance, lease or option to purchase had been registered immediately after the registration of this Agreement.

16. **Modification** – This Agreement may not be modified except by an agreement or instrument in writing signed by the Grantor or its successor in title and the Trust Committee or a successor or assignee.

17. **Further Assurances** – The Grantor shall do and cause to be done all things, including by executing further documents, as may be necessary to give effect to the intent of this Agreement.

18. **Grantor's Expense** – The Grantor shall perform its obligations under this Agreement at its own expense and without compensation from the Trust Committee.

19. **Severance** – If any part of this Agreement is for any reason held to be invalid by a decision of a court with the jurisdiction to do so, the invalid portion is to be considered severed from the rest of this Agreement and the decision that it is invalid shall not affect the validity or enforceability of the remainder of this Agreement.

20. **Interpretation** - In this Agreement:

    (a) reference to the singular includes a reference to the plural, and vice versa, unless the context requires otherwise;

    (b) article and section headings have been inserted for ease of reference only and are not to be used in interpreting this agreement;

    (c) the term "enactment" has the meaning given to it under the *Interpretation Act* (British Columbia) on the reference date of this Agreement;

    (d) reference to any enactment includes any regulations, orders or directives made under the authority of that enactment;

    (e) reference to any enactment is a reference to that enactment as consolidated, revised, amended, re-enacted or replaced from time to time, unless otherwise expressly provided;

    (f) reference to a particular numbered section, or to a particular lettered schedule, is, unless otherwise expressly provided, a reference to the correspondingly numbered section or lettered schedule of this Agreement;

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(g) all Schedules to this Agreement form an integral part of this Agreement;

(h) time is of the essence; and

(i) where the word "including" is followed by a list, the contents of the list are not intended to limit or otherwise affect the generality of the expression preceding the word "including".

21. **Governing Law** – This Agreement shall be governed by and construed in accordance with the laws of the Province of British Columbia, which shall be deemed to be the proper law hereof.

22. **Enurement** – This Agreement hereof shall enure to the benefit of the parties and their respective successors and assigns, as the case may be.

23. **Entire Agreement** – This Agreement is the entire agreement between the parties regarding its subject.

24. **Execution in Counterparts & Electronic Delivery** - This Agreement may be executed in any number of counterparts and delivered by e-mail, each of which shall be deemed to be an original and all of which taken together shall be deemed to constitute one and the same instrument, provided that any party delivering this Agreement by e-mail shall also deliver to the other party an originally executed copy of this Agreement.

As evidence of their agreement to be bound by this Agreement, the parties have executed the General Instrument – Part 1 (*Land Title Act* Form C) attached to and forming part of this Agreement.

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Islands Trust	**WATER CHAMPION COVENANT ANNUAL REPORT**	Submit to: northinfo@islandstrust.bc.ca 700 North Road, Gabriola Island BC V0R 1X3

Purpose

The purpose of this annual report is to provide Islands Trust with essential information and data with respect to an evidence-based approach using continuous monitoring to (a) ensure sufficient environmental protection from water quantity issues relating to the housing operations, (b) ensure water sustainability in a changing climate; (c) ensure sufficient water conservation strategies to satisfy deviation from water requirements in water licence xxx; and (d) mitigate risk potential of salt water intrusion on the source well and/or receiving environment.

Background

A Conditional Water Licence xxx was issued for the requested maximum daily demand for any day of the yearwith a date of water right precedence of [date] to a maximum of xx cubic meters (xx litres) ofgroundwater per day. Several conditions are specified in licence including but not limited to installation of a flow-metering device. Covenant No. _____ requires additional requirements including a down-wellcontinuous datalogger with a water level pressure transducer, temperature sensor, and electric conductivity sensor.

In Scope

The holder of this covenant is required to:

- *Undertake continuous groundwater monitoring at a rate of no less than 24 times per day*
- *A pressure transducer must be permanently installed in the source groundwater well on a direct read cable*
- *Groundwater levels, temperature, and electric conductivity is to be recorded*
- *Groundwater levels must be compensated for barometric pressure*
- *Provide raw data to Islands Trust*

Project Data

Project Name	
Project Operator	
Project Location	

Report Summary

Report Submitted by		**Reporting Year**	
Professional Designation		**Submission Date**	
Reporter Phone Number			
Reporter Email			

Well Summary

Well Tag Number		**Well License Number**	
Well Identification Plate #		**Water Use Type**	

Well Owner Name		**Licensed Annual**	
Well Class		**Aquifer Number**	
Well Activity			
Well Operator Name		**Driller Name**	
Operating Start Date		**Date of Well**	
Well Status		**Drilling Method**	
Well Location			
Latitude		**UTM Easting**	
Longitude		**UTM Northing**	
Coordinate Datum		**UTM Zone**	
Ground Elevation (m asl)			
Well Completion Data			
Total Drilled Depth (m bgl)		**Estimated Well Yield**	
Casing Stick Up (m)		**Yield Estimation**	
Pump Depth (m btoc)		**Yield Estimation Date**	

H2O ENVIRONMENTAL LTD

3060 Lake Road, Denman Island, BC V0R 1T0
Tel :(250) 335-1864 Fax: (250) 335-1846
Email: h2oenv@telus.net

July 5, 2021 H_2O File: 21-5

Denman Housing Association
3720 East Road
Denman Island, BC V0R 1T0

Re: Addendum to:
Wastewater Assessment for Housing Development
1511 Northwest Road, Denman Island

H_2O Environmental Ltd. (H_2O) was retained by the Denman Housing Association (DHA) to aid in the characterization of the soils and groundwater conditions of a proposed subdivision at the above legal address. An assessment report for the site was issued May 14, 2021[1]. This present addendum letter is in response to a subsequent Islands Trust request to clarify the daily design flow (DDF) for which the wastewater system was designed.

From the original report:

The proposed development onsite is four 3-bedroom units, six 2-bedroom units and ten 1-bedroom units. The SPM[2] lists the daily design flow (DDF) as 700, 1000 and 1300 litres per day (lpd) for the 1, 2 and 3 bedroom homes, respectively. The total estimated effluent flow would be 18,200 litres per day from the group of homes. The DHA is committed to reusing light greywater[3] for toilet flushing and with that in place, the DDF will be reduced to 12,740 l/d.

According to the SPM, each person can also be rated at 350 l/d for residential DDF. For 49 people, this number provides a DDF of 17,150 lpd and with the reduction for the recycling of water, the DDF would be 12,005 lpd, which is less than the DDF estimate of 12,740 from the original report.

H_2O is pleased to provide you with this addendum letter clarifying the onsite DDF. Please contact H_2O with any further questions you may have regarding this report.

H_2O Environmental Ltd.

Per: _____
Steven M. Carballeira, P.Geo.

[1] H_2O Environmental Ltd. May 14, 2021 *Wastewater Assessment for Housing Development, Proposed Lot 2 of the Subdivision of Lot B, Secs. 18 & 19, Denman Island, Nanaimo LD, Plan 36263, 1511 Northwest Road, Denman Island*
[2] Ministry of Health, *Sewerage System Standard Practices Manual*, Version 3, September 2014
[3] Light greywater is water from bathtubs, showers bathroom sinks and laundry. See *Manual of Composting Toilets and Greywater Practice,* BC Ministry of Health, 2016

DENMAN GREEN – WATER PLAN

POTABLE WATER PLAN - DENMAN GREEN HOUSING DEVELOPMENT

August 10, 2021

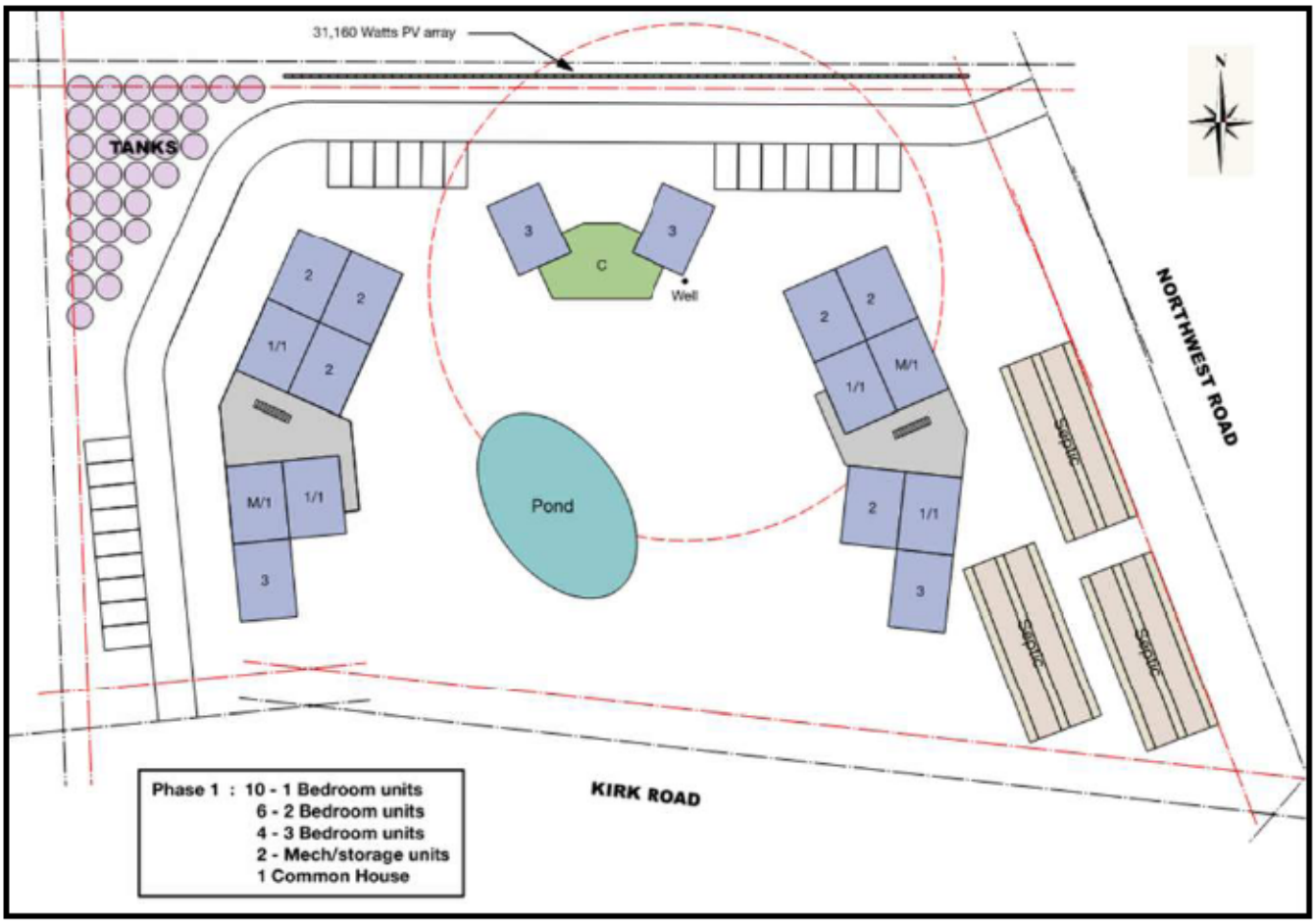
PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
S. MCGEORGE
47511

2021-08-10

PREPARED FOR:

Denman Housing Association

3720 East Road, Denman Island, B.C. V0R 1T0



INTEGRAL

Project Office
Integral Group
Suite 101 – 1019 Wharf St
Victoria, BC Canada V8W 2Y9
1.250.418.1288

Project Contact:

Sharon McGeorge
smcgeorge@integralgroup.com

Disclaimer

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1 Executive Summary

This report outlines results from an engineering analysis done on behalf of the Denman Housing Association. It provides a plan for use of the existing well water (primary) along with rainwater harvesting (secondary) as potable water sources for the fifty (50) person population of the Denman Green affordable housing project. Existing well data, local climate rainfall data, available rainwater catchment area, water storage requirements and the community water use profile have all been assessed in order to develop the water plan.

The report presents adjusted Average Daily Demand (ADD) values that represent the expected community water use. This report is expected to be used as part of the community water source approval package that will be submitted to Island Health. The rainfall calculations below have been made in alignment with the "Rainfall Catchment Reliability Analysis" from the Washington State Design Manual; however, they have been adapted to account for the specific needs and conditions of the Denman Island community.

The Denman Housing Association has proposed various water saving measures to reduce the ADD value and. These measures include:

i. High efficiency water fixtures
ii. Grey water recycling
iii. Irrigation addressed by on-site pond water
iv. User Education

The findings of our assessment conclude that, the existing well will be able to cover 100% of the community indoor water demand for the proposed development. As an added resilience measure, and part of the water stewardship plan, the development will use rainwater to cover 50% of the use profile during an average rainfall year.

Table 1: Water Demand Summary.

Annual Water Demand and Supply		
Sustainable Year-Round Well Yield (0.11l/s)	3,468,960 liters/year	9,504 litres/day
Proposed treated rainwater @ 50% of total ADD*	1,316,861liters/year	3,517 liters/day
Calculated system demand 134 l/c/d X 52.5 people X year	2,567,775 liters/year	7,035 liters/day
Annual available water is **4,752,848 liters/year** or **185% of demand**.*		
Maximum Day Demand and Supply		
Calculated MDD - 197 l/c/d X 52.5 persons		**10,342 litres/day**
Rainwater system designed to provide flow to cover 50% MDD		**5,171 litres/day**
Maximum water supply flow Well+ Rain = **14,675 liters/day** or **140%** of max day demand		
Treated storage will be **22,730 liters** ensuring **2 days** worth of maximum daily demand of storage		

** for an average rainfall year*

2 Reference Documentation

The following reference documents were used to support the analysis presented in this report.

Referenced Documents:

1. (Author not stated). "Design Guidelines for Rural Residential Community Water Systems" *https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/water-rights/water-utilities/design_guidelines_rural_residential_water_mar2012.pdf* . Utility Regulation Section Water Management Branch, Ministry of Ministry of Forests, Lands, Natural Resource Operations & Rural Development, Government of British Columbia, Canada. 2012.

2. (Author not stated). "GUIDELINES FOR THE APPROVAL OF WATER SUPPLY SYSTEMS Vancouver Island Health Authority." *https://www.islandhealth.ca/sites/default/files/2018-04/water-supply-system-approval-guidelines.pdf* Vancouver Island Health Authority. 2018.

3. "Environmental Education: Drinking Water Conservation, Washroom Water Use (High School)" *https://www.crd.bc.ca/docs/default-source/partnerships-pdf/environmental-education/dm-activity-washroomwateruse(highschool)2020.pdf?sfvrsn=d0b229cc_2. 2020.*

4. (Author not stated). "City of Guelph – Blue Built Homes, Monitoring & Demand Analysis Stud." *Veritec Consulting Inc.* 2014.

   DeOreo, W.B. et al. "Residential End Uses of Water Version 2 EXECUTIVE REPORT" *Water Research Foundation*. https://www.circleofblue.org/wp-content/uploads/2016/04/WRF_REU2016.pdf . 2016.

   DeOreo, W.B. et al. "Analysis of Water Use in New Single Family Homes." *Aquacraft, Inc. Water Engineering and Management*. https://energy.mo.gov/sites/energy/files/3-deoreo-%282011%29-analysis-of-water-use-in-new-single-family-homes.pdf . Boulder, CO. 2011.

5. Andy Anderson et la. "Water System Design Manual." *Washington State Department of Health*. https://www.doh.wa.gov/Portals/1/Documents/Pubs/331-123.pdf?ver=2019-10-03-153237-220 . 2020.

3 Calculations

3.1 Community Water Use

The Denman Green affordable housing development is planning 20 homes and one common building. The following unit type and occupancy have been planned.

Table 2: Estimated maximum community occupancy and home type.

Home Type	QTY of unit type	Occ/Unit	Total Occ
One Bedroom	10	1.5	15
Two Bedroom	6	3	18
Three Bedroom	4	4	16
		TOTAL	**49**

In the "BC Design Guidelines for Rural Residential Water Systems" the typical occupancy of 2.5 person for multifamily dwelling would yield 20 X 2.5 average = 50 people. In addition to this population, to account for the Common Building water use, the calculations in this report have assumed an additional dwelling unit with 2.5 people for a total of **52.5 people or 21 dwellings**.

Note that this water plan focuses on potable water use only and the water demand calculations do not include fire suppression or irrigation water loads as these will both be covered by separate stand alone water systems. For reference, a brief commentary is included below to indicate the projects general plan for both irrigation and fire suppression.

Fire Suppression: According to the Denman Fire Chief the community will need 54,553 liters (12,000 IG) permanent water storage for firefighting. It is anticipated that separate vertical storage tanks would be used for fire fighting purposes and the stored water will not be used by the potable supply system. They would remain full at all times as required for fire fighting.

Proposed Irrigation:

Irrigation needs will be entirely addressed by a dedicated non potable water system that pumps water from an on-site pond, reshaped from an existing wet area on the property. Irrigation will not be provided by the potable water supply, nor by rainwater harvesting.

Open grass areas will not be irrigated; island residents generally do not water grass areas and these areas are allowed to dry during summer months. Small plots of garden associated with each living unit, approximately 5 m2 per dwelling unit are anticipated, and these will be irrigated. Based on the planned 200 m2 pond area and 50% irrigation efficiency and using the procedure outlined in the Design Guidelines for Rural Residential Community Water Systems, the resulting pond draw down would be 1.4 mm per day. This will be replenished daily by the ground water supply.

3.1.1 Average Daily Demand (ADD)

The Island Health standard ADD is 220 l/c/d. Current high efficiency new construction buildings have been shown to have a much lower ADD. As the Denman Green development will be built to include premium water efficient fixtures, along with user education, a reduce ADD value of 167 l/c/d has been proposed. This was presented to Island Health in a document entitled "Average Daily Demand Value" (Mar. 3, 2021) (see Appendix D) that provides references to studies and further backing for this decision.

In addition to the reduced ADD of 167 l/c/d the development is proposing to install grey water recycling for all dwellings which further reduces the ADD by 33 l/c/d. The final adjusted **ADD is 134 l/c/d** which forms the basis of the calculations in this report.

3.1.2 Maximum Daily Demand (MDD)

The Maximum Daily Demand of **MDD = 197 l/c/d** will be used to size the water treatment flows and treated water storage tank volumes. The MDD calculation is provided below for reference.

Based on "BC Design Guide for Rural Residential Water Systems" MDD is calculated by the following formula.

MDD= Indoor Demand + Water Loss Allowance + Irrigation Demand.

Indoor demand with be the 134 l/c/d ADD value provided above. Since irrigation will be handled by a separate water system using pond water, the water loss allowance is the only additional factor.

The water loss allowance calculation is shown below.

$$Water\ Loss\ (m^3/day) = 5 \times (0.4704 \times L_m + 0.0303 \times N_c + 0.8 \times L_c) \times \left(\frac{P}{49.26}\right)^{1.5}$$

Where:

L_m = *mains length (km)*
N_c = *# of service connections*
L_c = *total length of service connections (km)*
P = *average system pressure (meters water column)*

Calculation sheet inputs and results for water loss allowance are shown in the table below.

Table 3: Water loss allowance calculation summary.

	m3/day/system	liters/person/day (52.2 ppl)
Water loss allowance (m3/day)	**3.3213**	**63.3**
Lm = Mains length [km]	0.265	Per preliminary building layouts provided.
Nc = Number of connections	21	(20 residental + common building.)
Lc = total length of service connections [km]	0.10	Assume 4.57 M/ dweling
P = average system pressure [M water column]	42.2	assume 60 psi system pressure.

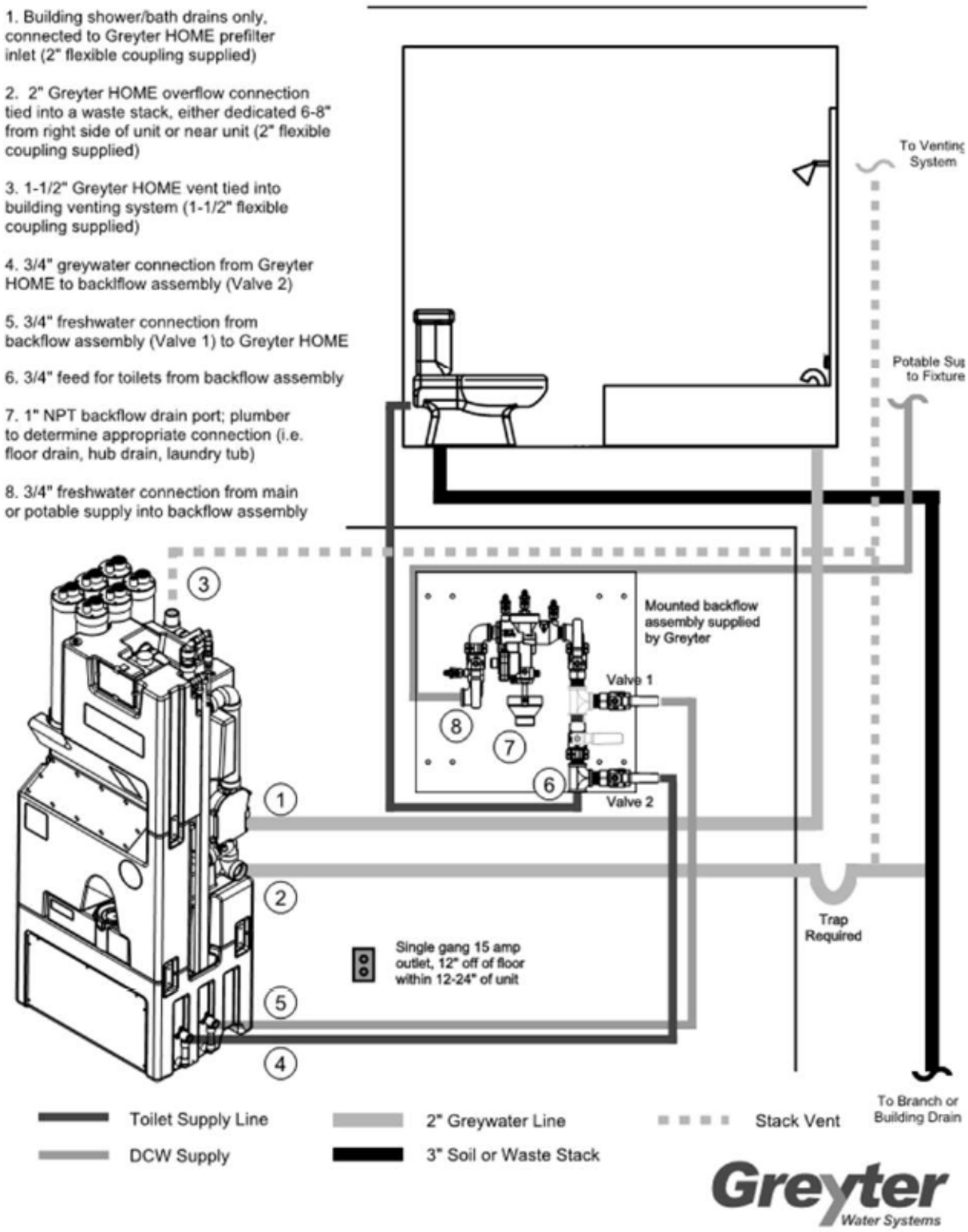
With the water loss allowance of 63.3 l/c/d the calculated **MDD = 197 l/c/d**. Refer to the property layout map in Appendix A for the assumed routing of water mains and water connections used in this calculation.

3.1.3 Greywater recycling

Water for toilet flushing will be provided by a greywater recycling system that utilizes recycled shower and basin water. One "Greyter" water device is proposed for each building/dwelling unit. By using this device, the toilets can operate from 100% recycled water. When the anticipated number of showers per day are taken the Greyter system will have enough water in its storage tank to meet 100% of the grey water demand. In case that there is not enough water from showers, the Greyter system will pull from the potable water source. This potable water draw is not a factor for the overall ADD & MDD calculations because the increase in water for flushing would always be coupled with a decrease in shower water usage.

The figure below demonstrates the typical installation of a Greyter system.

Figure 1: Greyter Water Recycling Cutsheet.



The Greyter system has been reviewed for availability of parts and reliability and I recommend it as a good option for the community to achieve their water use reductions. I have also reviewed the safety and

certifications, and found that provided that it is supplied and installed with a reduced pressure backflow assembly on the incoming water main, it will meet all code requirements.

3.2 Well Water

The existing well has a sustained yield of 0.11 l/s based on the 72h draw down test and hydrogeological review completed by *ELANCO ENTERPRISES LTD (May 5, 2021)*. Refer to Appendix C for report details.

The comparison table below shows various ADD values and total daily demand for the development to provide perspective on the well yield vs water use. With the proposed ADD of 134 l/c/d the well would yield 134% more than the average daily demand and 91% of the Maximum Daily Demand.

Table 4: Water Demand Reference Table.

ADD	NOTE	Daily Demand (52.5 ppl)
134 l/c/d	With greywater recycling. No irrigation.	7,035 l/day
167 l/c/d	Without greywater recycling. No irrigation	8,684 l/day
220 l/c/d	Island Health standard design value.	11,440 l/day
MDD		
197 l/c/d	Maximum daily demand for indoor use only	**10,342 l/day**
Daily Yeild		
Well Daily Yield @ (0.11l/s)		**9,459 l/day**
Proposed Rainwater Daily Yield		**3,517 l/day**

3.2.1 Groundwater Monitoring and Reporting

As part of the groundwater stewardship plan for the development, a datalogger will be installed to provide continuous groundwater monitoring. The logger would record at a minimum 24 times per day the following:

- Well water levels adjusted for barometric pressure
- Temperature
- Electric conductivity

A 'Water Champion Covenant Annual Report' (per Islands Trust approved form) will be completed & delivered to Islands Trust on an annual basis.

3.2.2 Treated Water Storage

The recommended treated water storage is one 6000 gal (22,730 liter) tank. This covers 2 days' worth of MDD flow rate. See below for calculations and rational.

Based on "BC Design Guide for Rural Residential Water Systems" section 4.7.1 the system should have at a minimum treated water storage of 25% of Maximum Daily Demand (MDD). The table below provides possible stored volume options, with option 1 being the recommended volume.

Table 5: Treated Water Storage Options.

Option	Criteria	Stored Volume (liters)	Tank Size Required
Option #1	2 days of MDD (197)	20,685	6,000 gal (22,730 liter)

Option #2	3 days of MDD (197)	31,027	10,000 gal (37,131 liter)
Option #3	25% of MDD (197)	2,589	1,000 gal (3,405 liter)

With 2 days treated water storage the variable flow due to events in the common building will be more than covered. Also, chlorination contact time can be easily achieved while ensuring continual change over of the treated water tank.

3.3 Rainwater Harvesting

Rainwater harvesting for potable use is proposed for this development as a supplementary water source designed to cover 50% of the domestic indoor water demand for all months. The intent of adding rainwater collection to the water system is to add resilience, a backup water source and a high level of water stewardship. The sections below cover all components of the rainwater harvesting system and calculations.

3.3.1 Rainfall data

The Government of Canada historical weather data was used to collect rainfall data for this study. Three different weather stations were used to compare rainfall data within the neighboring area (not on Denman Island). For the weather stations located on Denman, there were only four years' worth of complete rainfall data available (1990, 1992, 1994,1995). When compared to recorded values from the other stations, it was found that in all cases the Denman annual rainfall was marginally greater than the other stations.

The COMOX A weather station had the most comprehensive data and was used as the basis for this study. Due to the consistency of data available at all three reviewed stations it was possible to proceed with confidence that the data set at COMOX A weather station was a close representation of actual rainfall on Denman.

Table 6: Statistical Information on Annual Rainfall for selected weather stations.

Weather Station	Years of Data	Average Annual Rainfall (mm)	Range of Measured Rainfall (mm)
COMOX Airport	1945-2017 (72y)	1,094	591-1695
NANAIMO Airport	1947-2006 (59y)	1,034	616-1655
COURTENAY PUNTLEDGE	1985-2006 (21y)	1,208	686-1726

The weather stations reviewed as part of this study are indicated in the map below as black crosses. The location of the community on Denman Island is shown with the bubble.

Figure 2: Map of Weather Stations.

3.3.2 Rainwater Collection Area

The current community plan indicates that there will be 20 dwelling units and one common building. The roof areas of these buildings will serve as the primary rainwater collection area for the community. As a conservative assumption these collection surfaces have been estimated to be 1,500 M^2 total. (Area estimate provided by the Denman Housing Association for use in this report.)

3.3.3 Rainwater Storage

The Denman Green development is proposing to have rainwater cover 50% of the total water demand for the community. To achieve this, a stored volume of **405,000 liters** was calculated to be required. This calculation is based on the following inputs:

1. ***Rainwater catchment area:*** *Proposed area is* ***1,500m²***.
2. ***Population:*** *assumed to be* ***52.5 ppl maximum****. (50ppl for the residence and an additional full time household of 2.5ppl to cover the community centre use.)*
3. ***Average Daily Demand (indoor only)****: assumed to be* ***134 l/c/d****. (Note this ADD does not include toilet flushing or irrigation.)*
4. ***Weather Data****: COMOX A Weather station average monthly rainfall.*
5. ***Rainwater collection efficiency****: 80%*

6. ***Useable tank volume**: 90%*

Table 7: Annual Summary of Rainwater Harvesting, Use and Storage.

	Community water use (Litres)	50% Rainwater (Liters)	Average Rainfall Comox A (mm)	Harvested Rainwater W/ Collection Efficiency (Litres)	Storage Levels (Litres)
Starting Volume				**Usable storage volume**	**367,597**
Jan	218,085	109,043	146.06	175,276	367,597
Feb	196,980	98,490	110.48	132,577	367,597
Mar	218,085	109,043	102.91	123,488	367,597
Apr	211,050	105,525	59.14	70,969	333,041
May	218,085	109,043	41.07	49,284	273,283
June	211,050	105,525	39.26	47,107	214,865
July	218,085	109,043	27.29	32,745	138,568
Aug	218,085	109,043	35.32	42,385	71,910
Sept	211,050	105,525	47.29	56,745	23,130
Oct	218,085	109,043	127.54	153,049	367,597
Nov	211,050	105,525	186.11	223,328	367,597
Dec	218,085	109,043	174.92	209,907	367,597
Total	**2,567,775**	1,283,888		1,316,861	

This table shows that the by continually drawing 50% of the total demand from the rainwater storage, the stored volume never gets completely empty over the entire year, and that at the end of the year the rainwater storage tanks will be fully recharged (for an average year).

It is proposed that vertical aboveground storage tanks be used which are available locally from Barr plastics. These tanks come in various sizes and for the purpose of this preliminary design we are presenting three possible options. The calculations were completed using Option #1.

Option #1 – 10,000 gal tank: 141"ø, 160" high tank. 11 tanks @ 37131 liter = 408,441l.

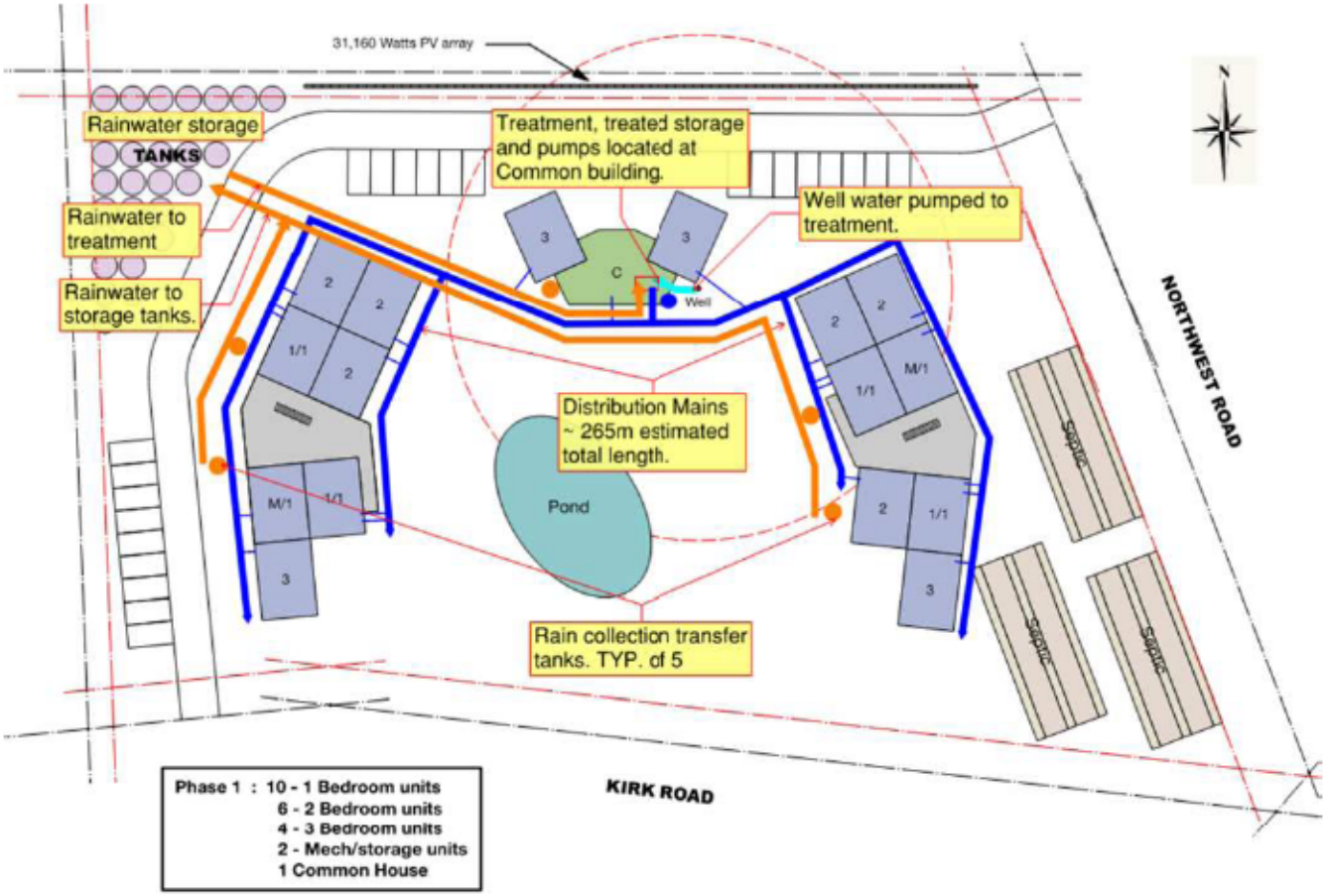
Option #2 - 6,000 gal tank: 119"ø, 139" high tank. 18 tanks @ 22730 liter = 409,140 l.

Option #3 - 3,000 gal tank: 95"ø, 107" high tank. 36 tanks @ 11250 liter = 405,000 l.

Figure 3: Potable Water Storage Tanks.

The storage tanks are proposed to be located on the north west corner of the lot as conceptually shown in the sketch below.

Figure 4: Property Map Showing Conceptual Water System Layout.



3.3.4 Rainwater capture analysis

The graph below is a visual representation of the rainwater system over 1) average rainfall year and 2) worst recorded drought year (1985).

Figure 5: Water Use Chart – Average Rainfall Year.

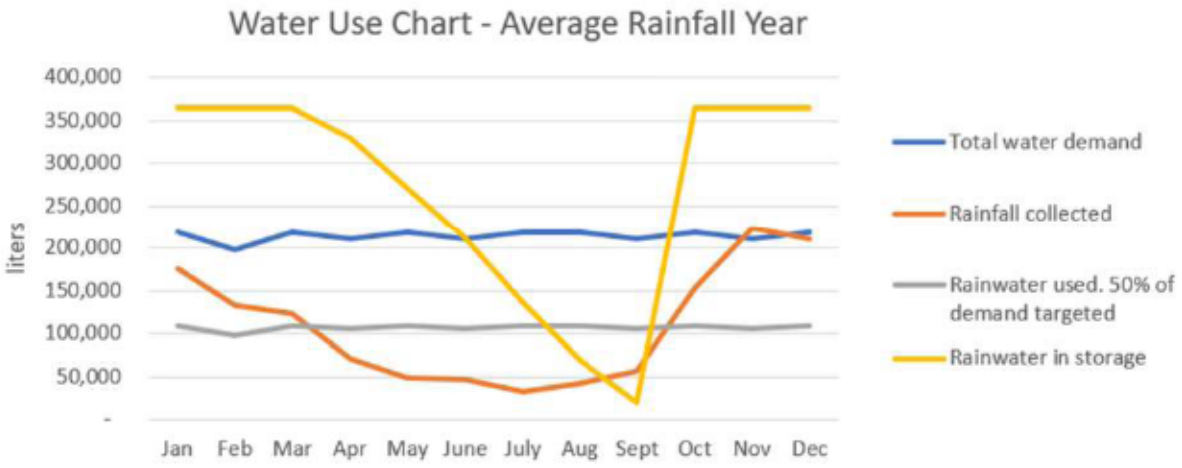
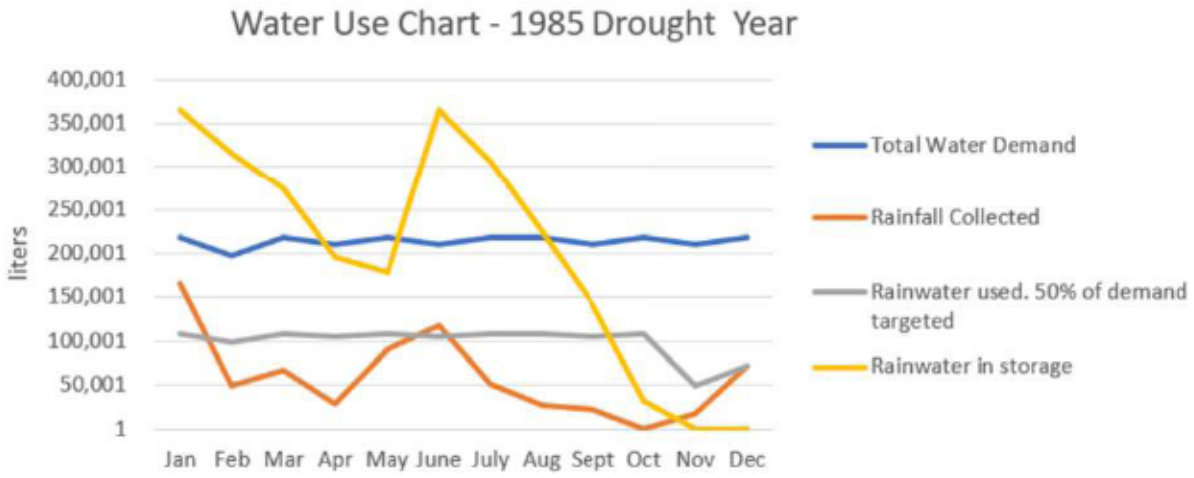


Figure 6: Water Use Chart – 1985 Drought Year.

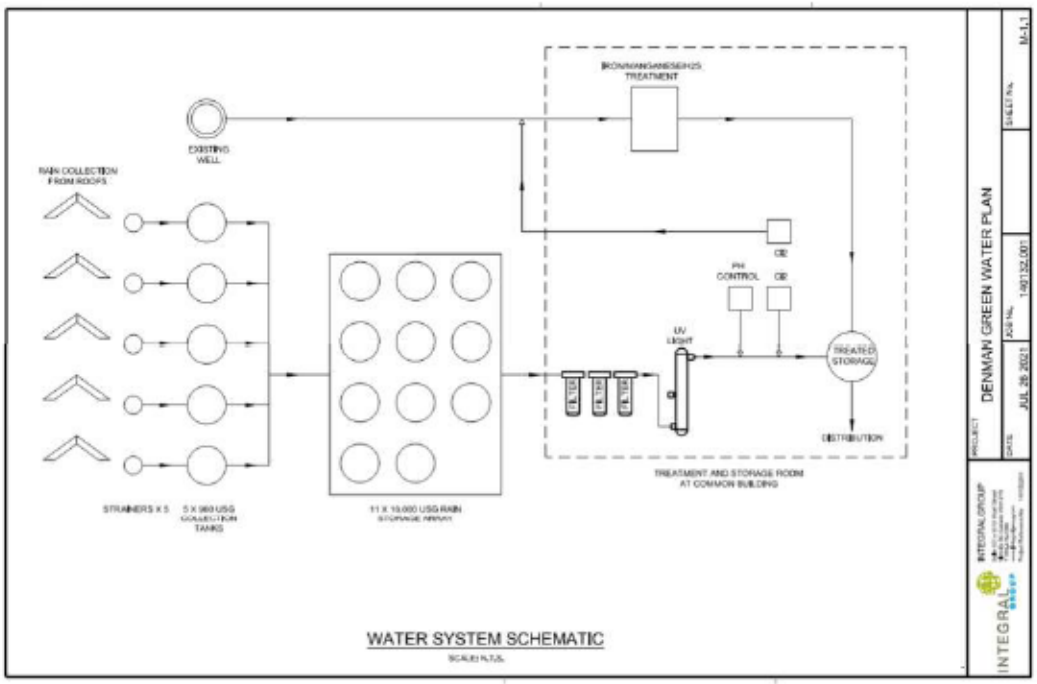


In the first graph, the Storage gets drawn down over the dry season. The second graph represents the worst case drought year of 1985 – the storage tanks will be able to buffer the dry periods and the rainwater system will provide the targeted 50% of demand for all months except Nov and Dec. This is mainly due to heavy rainfall in the month of June of that year, if there were a longer dry period spanning more than 5 months the system would end up relying more heavily on the well. With the Current estimated ADD (134) and well yield (0.11l/s) this reliance on the well would not be an issue.

3.4 Water treatment

The conceptual sketch below shows schematically the water system and proposed treatment. A more detailed design for water treatment will be submitted to Island Health as part of the water system construction permit process, once the development has made it to the next stage of design. The information below is preliminary only and to be used for general budgeting and planning purposes.

Figure 7: Water System Schematic.



3.4.1 Rainwater treatment

Rainwater collected from building roofs is filtered with strainers to remove leaves, needles and debris and is directed to a local collection tank at each building. From these 4 tanks the water is pumped to the rainwater storage array. The water will be pulled from the storage array into a treatment system containing filtration, UV, and chlorine and will be stored in the day tank for daily use by the residents. Downstream of the treatment system there will be pressure tanks to ensure continuous pressure and flow to the buildings.

Based on experience from other potable rainwater havesting systems on the Gulf Islands as well as test results from a pilot project which collected and tested rainwater from a nearby location on Denman, the quality of collected rainwater is not a concern. The results from the pilot tests showed that only the PH did not meet the *Maximum Acceptable Concentration/ Operational Guidance/ Aesthetic Objective*. It is anticipated that the water treatment system will require a water softener to correct this.

For final source approvals this report may be read in conjunction with the results from the pilot project conducted by the Denman Green Water Harvesting Pilot Project. The writeup for this pilot project has been included in the Appendix B. It is proposed that further on-site collected raw & treated water samples will be tested to instruct system design and ensure that Canadian Drinking Water standards are met.

Water catchment surfaces, treatment, conveyance and storage materials will be selected to meet local and federal potability regulations. The final system design will be fully engineered before review and approval by Island Health to ensure all regulations are met.

3.4.2 Wellwater treatment

Wellwater will be pumped in parallel to the rainwater system through a treatment train into the treated storage tanks. In the hydrogeological review completed by *ELANCO ENTERPRISES LTD (May 5, 2021)* the water quality tests showed that the well had above recommended levels of manganese, iron and H2s. Refer to Appendix C for report details. The proposed treatment system would have at minimum chlorine injection followed by a multimedia filter to remove excess turbidity, manganese, iron and H2s. If required the final system may also include UV treatment. The treated water will then enter the treated water storage tank for distribution to the buildings.

3.5 Stormwater Management

A professionally developed stormwater management plan will be integrated with the landscape design for the site at an appropriate stage in the project. The notes below are provided for general context.

Site Information

- The site slopes gently East to West with a large established ditch on the South side
- There will be no hard-paved areas. Driveway & parking areas will be gravel
- The grounds will be planted and grassed to permit up to 50% infiltration[+]
- A large pond, central to the site, will buffer run-off with overflow lead to the ditch
- Rainwater collected from roofs will be stored with excess piped away to drain as part of an integrated rainwater harvesting plan

[+] *Stormwater Planning. A Guidebook for British Columbia*

3.6 Climate Change Projections & Impact

The below notes are provided to evaluate the resilience of collecting and using rainwater for potable use with respect to the future rainfall and changing climate.

Climate projections made in the CRD report titled "CLIMATE PROJECTIONS FOR THE CAPITAL REGION" and published in 2017 indicate that the annual precipitation in this region is projected to increase by 5% by the 2050's and by 12% by the 2080s. Similarly a report issued by Pinna Sustainability titled "Climate Projections for Island Trust Area" completed in March 2020 indicates that rain will be concentrated in one season which may shift from the winter to the fall and that the spring and summer months will experience increasing dry spells.

As wells and aquifers rely on recharge from rainfall it is possible that these predicted prolonged dry spells and heavier concentrated rainfalls could tax the existing aquifers. Concentrated heavy rains tend to have large amounts of runoff and evaporation rather than percolating down to the aquifer level. Having the rainwater catchment system in place will help to counter this effect by supplementing the water provided by the wells/aquifer.

4 Water system budget

The catchment, storage filtration and pumping system components and budget pricing were provided by Watertiger, a company that designs, supplies materials for and constructs water treatment systems, including many rainwater systems. They have been working in this field for over 17 years.

Table 8: Water system class C budget provided by Watertiger.

Item	Amount (CAD)	Notes
Rainwater storage array	$ 106,500	11X 10,000 USG vertical above round tanks for total 408,441 liters. Obtained pricing from Barr Plastics. Cost is FOB Abbotsford.
Day Tanks and Treated water storage	$ 10,100	1X 6000 USG Vertical above ground tanks for treated storage. 5X 960 USG transfer tanks.
Tank Delivery to Site	$ 48,600	Delivery of all tanks from Abbostford to Denman.
Treatment equipment	$ 30,000	- Includes: 5x strainers off the roofs - Rainwater filters - Rainwater UV - pH control – rainwater - chlorine dosing – rainwater - chlorine dosing – well - Fe/Mn treatment – well - Chlorine monitoring in the day/treated tank - Freight allowance to site
Treatment equipment Installation	$ 10,000	Initial cost subject to adjustment with detail design.
Total	**$ 205,200**	Adam Scheuer Watertiger T: (604) 630-1114 ext 102 M: (604) 220-1454 adam@watertiger.com - watertiger.com VISIT OUR NEW WEBSITE *Tame your water*

Not included in above price: Taxes, outbuildings, engineering, other trades (carpentry, electrical, excavation, etc.)

Refer to **Figure 7 Water System Schematic** for layout of components.

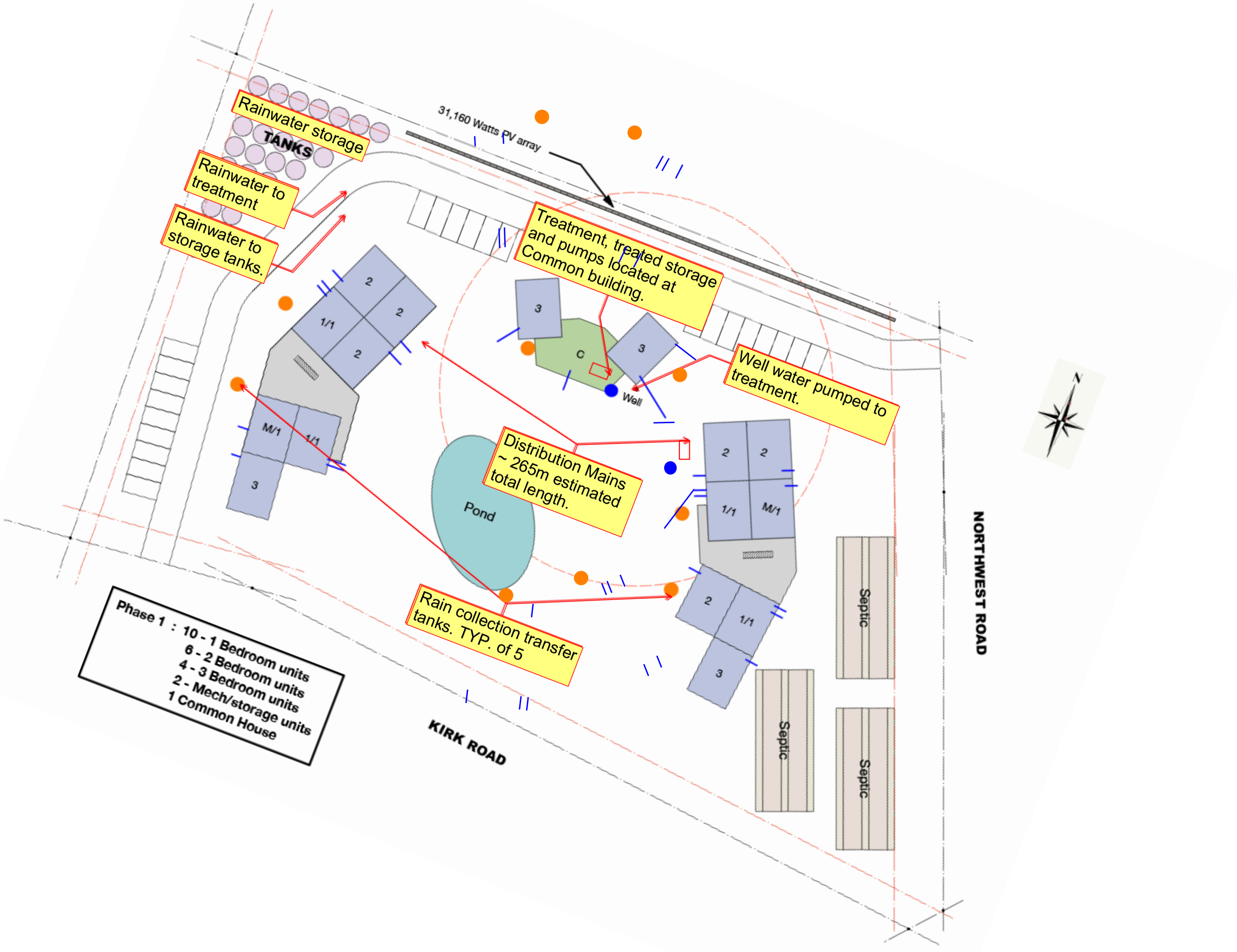
5 Conclusions and Recommendations

The existing well yield and water quality is sufficient to supply 100% of the annual indoor water demand of the proposed development provided sufficient water saving measures are also in place. Water saving measures proposed include high efficiency fixtures, a graywater recycling system to cover toilet flushing needs, and separate non-potable water system to cover irrigation requirements. The addition of a rainwater harvesting system as a supplementary and backup potable water source adds resilience and long term stability by ensuring a reduced load on the well. The supplemental water source would also be relied on if peek demand MDD flows were experienced for an extended period as the MDD exceeds the recommended sustained well yield.

The findings in this report support the approvals of a combined well water (primary) and rainwater (secondary) source to serve the Denman Green affordable housing development.

Sharon McGeorge, PEng, LEED AP – Senior Mechanical Designer
INTEGRAL GROUP

Appendix A – Property Map and Water System Concept Sketch


Rainwater storage
TANKS
Rainwater to treatment
Rainwater to storage tanks.
31,160 Watts PV array
Treatment, treated storage and pumps located at Common building.
Well water pumped to treatment.
Well
Distribution Mains ~ 265m estimated total length.
Pond
Rain collection transfer tanks. TYP. of 5
Septic
Septic
Septic
NORTHWEST ROAD
KIRK ROAD
Phase 1 : 10 - 1 Bedroom units
6 - 2 Bedroom units
4 - 3 Bedroom units
2 - Mech/storage units
1 Common House
N

Appendix B – Denman Green Water Harvesting Pilot Project

Risk Assessment:

The following risk assessment matrix outlines potential risks based on their likelihood of occurrence and severity [1]:

		Severity		
		High	**Medium**	**Low**
Likelihood	**High**	Microbial Contamination	Excess Chlorine	Pine needles/Leaves
	Medium	Animal fecal matter Metal/Chemical Leaching THM and HAA Formation	Sediment Build-Up Air Pollution	Storm Water Salinity
	Low	Treatment Equipment Failure	Algal Growth	Mosquito/Insect Breeding

Risk Mitigation:

In order to mitigate possible risks, the proposed rainwater harvesting, and treatment system has several filtration and disinfection steps. A first flush diverter is used to remove the initial amount of each rainfall, which is often the most contaminated due to residues on the collection surface. For the first and second months of operation a first flush volume of 0.5 mm will be used. For the third month of operation a 0.2 mm first flush volume will be used. The first flush volume showing the best result will be used for months four to twelve.

A leaf-eater prevents leaves and other large debris from entering collection tanks. Rainwater entering the first storage tank, before treatment, will be held until a treated water sample is desired. An overflow pipe allows any excess rainwater to exit the tank and reduces possible stress on the treatment components.

When the pump is turned on, rainwater will be moved from the pre-treatment storage tank through a 5-micron sediment filter, an activated carbon pre-UV filter, and then through the UV reactor. The filters will remove sediment and large particles from the rainwater. The UV reactor is the first disinfectant step and is the first line of defense against microbial contaminants. To ensure rainwater is fully disinfected, a calculated dose of chlorine will be manually added to the post-treatment storage tank once enough water has been processed for sampling purposes. After the chlorine is added to the system, the water will be left in the post-treatment storage tank for a 24-hour period, allowing the chlorine to dissipate to a safe and acceptable level. The chlorine is the second, and final, disinfection step and further rids the water of microbial contaminants.

To avoid the formation of trihalomethanes (THM) and halactetic acid (HAA), organic materials will be filtered from the rainwater and chlorine residual amounts will be monitored. In the full scale Denman Green water treatment system, activated carbon filters can be added to aid in reducing any HAA's present [6]. By monitoring the concentration of chlorine present in samples and using a UV reactor for additional disinfection THM and HAA formation can be reduced, however, must be tested to ensure safe drinking water.

To avoid algal growth within storage tanks, it is necessary to keep the tanks out of direct sunlight. In the proposed treatment system, the storage tanks will be inside of a small building, where they will not be reached by sunlight. The metal collection surface will be painted with a silicone coating to prevent the leaching of metals into rainwater.

The treatment system should be regularly cleaned to prevent sediment build-up. As the system will be in operation for a period of only one year, the required maintenance will be minimal and treatment system maintenance concerns will be determined based on the sample test results. The collection surface should be monitored for leaf and pine needle build-up and cleaned off as necessary.

Sampling Plan and Suggestions:
Water sampling will consist of 14 samples in total over the 12- month pilot operation period. An initial raw water sample has been taken in an environment reflective of the pilot build site. Three raw water and treated water samples will be taken from late fall to early winter. Three raw water and treated water samples will be taken from late winter to early spring. One raw water and one treated water sample will be taken after the first significant rainfall occurring after a period of dry weather conditions. Sample testing will confirm compliance with BC Water Quality Parameters and VIHA requirements, as well as ensure that disinfection and filtration are as efficient as possible given the quality of the rainwater entering the system.

Points of Sampling:

- Raw water from pre-treatment tank (untreated)
    - Determine the entering water quality and any contaminants that will affect the treatment process
- Post-treatment storage tank (treated)
    - Confirm compliance with regulation and final sampling procedure before consumption

Parameters to be tested:

- Tannins and lignins
    - Could be a result of pine tree debris on the collection surface
    - Could affect the quality of UV disinfection
    - Tannins and lignins can change water colour, therefore a colour test could also determine their presence
- pH
    - Could affect the quality of chlorine disinfection
- Turbidity
    - Could affect the quality of both UV and chlorine disinfection
    - High turbidity could increase the potential for pathogens in drinking water
- Chloride
    - Confirm chlorine residual has dissipated to acceptable levels
- Total Coliforms
    - Assess for large amounts of coliforms that must be removed during treatment
    - Total coliforms in the initial raw water sample were above regulation requirements
- *E.coli*

    - Indicates fecal contamination
- Non-Coliform Bacteria
    - Environmental organisms that can alter results of total coliform tests [7]
- Heterotrophic Plate Count
    - Measures the amount of heterotrophic bacteria forming cultures [8]
- UVT
    - Determine if UV dose is acceptable
- Total Organic Carbon
    - High total organic carbon indicates high levels of organic matter which can result in harmful compounds after water treatment
- Ammonia
    - Results from the degradation of organic matter containing nitrogen
    - Could be toxic with prolonged exposure and can indicate if additional water treatment, such as a cation exchange resin, is required [9]
- Arsenic
    - Typically found in ground water as a result of agricultural pollution or leaching from the earth into the water
    - Exchange resins or ultra filtration would be required to remove arsenic [10]
- Colour
    - Water colour can change as a result of various forms of contamination
- Conductivity
    - Indicates metals, or ions, present
- Corrosiveness
    - Corrosive water can lead to dissolved toxic metal or damage to plumbing [11]
- Fluoride
    - Harmful at high levels
- Hardness
    - Could cause soap scum and calcification, potentially blocking piping
    - Indicates dissolved minerals such as magnesium and calcium [12]
- Metals Scan
    - Could impact health if metal levels of water are high
- Nitrate + Nitrite
    - Increased amounts in groundwater near agricultural practices
    - Nitrate and nitrite could negatively impact health [13]
- Organic Nitrogen
    - Sum of nitrogen from all source within the water sample such as, ammonia, nitrates, and nitrites
    - Could indicate sewage and agricultural contamination [14]
- Total Dissolved Solids
    - Inidcates the amount of dissolved ions and organic matter present
    - Increased amounts can impact the effectiveness of UV disinfection [15]
- Selenium
    - Could be harmful if levels are high
- THM and HAA Formation Potential

- Could result from chlorine reacting with organic matter present in water
- Likelihood can be reduced by thorough treatment and acceptable chlorine levels

Schedule:

Sample	First Flush Volume	Month
1	0.5 mm	Late Fall (November)
2	0.2 mm	Early Winter (December)
Note: future samples will be conducted with the better of 0.2mm or 0.5mm first flush volume		
3	-	Early Winter (January)
4	-	Late Winter (Febraury)
5	-	Early Spring (March)
6	-	Early Spring (April)
7	-	Rainfall after arid (Summer)

Sampling schedule:

A total of 14 samples will be taken at 7 timepoints, one each of raw and treated water. 3 of these sampling times will be during late fall to early winter. 3 more sample timepoints will be during late winter to early spring. One sample timepoint will be after the first rainfall following a period of dry weather conditions.

Test Details [2]:

Test Name	Parameters Tested	Cost
VIHA Surface Water Test	- Alkalinity - *E. coli* - Nitrite - Nitrate - Total Coliforms - Ammonia - Fluoride - Nitrate + Nitrite - Total Dissolved Solids - Chloride - Heterotrophic Plate Count - Organic Nitrogen - Total Nitrogen - Colour, True - Hardness - pH - Turbidity - Conductivity - Mercury - Sulphate - Total Organic Carbon	$630.00 per sample

	- Corrosiveness - Tannins & Lignins - UV Transmittance - ICPMS Metals including: Ag, Al, As, B, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, K, Mg, Mn, Mo, Na, Ni, Pb, S, Sb, Se, Si, Sn, Sr, Ti, Tl, U, V, Zn, Zr	
Additional Required Tests	- THM and HAA Formation Potential - Non-Coliform Bacteria	Unknown

Sources:

[1] https://www.who.int/water_sanitation_health/gdwqrevision/rainwater.pdf

[2] https://www.bvlabs.com/sites/default/files/2019-05/BV%20WESTERNCAN%20Water%20Wastewater%202019%20Fee%20Schedule%201jun19.pdf

[3]https://www.watersystemscouncil.org/download/wellcare_information_sheets/potential_groundwater_contaminant_information_sheets/96111501_Tannins.pdf

[4] https://realtechwater.com/blog-post/what-is-uvt/

[5] https://www.canada.ca/en/health-canada/programs/consultation-organic-matter-drinking-water/document.html#b4

[6] https://www.mass.gov/service-details/haa5-in-drinking-water-information-for-consumers

[7] https://www.des.nh.gov/organization/commissioner/lsu/categories/faq.htm

[8] https://www.standardmethods.org/doi/abs/10.2105/SMWW.2882.188

[9] http://www.purewateroccasional.net/wtiammonia.html

[10] https://www.cdc.gov/healthywater/drinking/private/wells/disease/arsenic.html

[11] https://www.water-research.net/index.php/corrosive-water

[12]https://www2.cambridgema.gov/CityOfCambridge_Content/documents/Drinking%20WaterMy%20edition.pdf

[13] https://water-research.net/index.php/nitrate

[14]https://www.usgs.gov/special-topic/water-science-school/science/nitrogen-and-water?qt-science_center_objects=0#qt-science_center_objects

[15] https://www.safewater.org/fact-sheets-1/2017/1/23/tds-and-ph

Appendix C – Well Water Hydrogeological Review

Proposed Sampling Methodology for Denman Green Water Harvesting Pilot Project

Simon Palmer, Denman Housing Association
Darrell Bélanger, Vancouver Island Health Authority

Natalie Harris, Engineers for a Sustainable World UBC
Danie Benetton, Engineers for a Sustainable World UBC

July 23, 2020

Potential Sources of Contamination:

Rainwater has several common contamination risks which can result from both environmental and collection conditions. Due to Denman Island's remote location, contamination risks from air pollution will be reduced. However, seasonal events such as increased use of wood stoves and forest fires can have an impact on air quality on Denman Island. Air pollution is not the only environmental source of contamination, so other sources will be addressed. Animal fecal matter, particularly from birds, dirt, insects, and leaves can all impact water quality [1]. Pine trees located around the collection site can introduce acidic tannins into the water and cause discoloration if needles accumulate on the collection surface or in gutters. Stagnant water in storage containers could promote microbial growth, more so after storms or heavy rainfall. The World Health Organization has recorded the following bacteria and pathogens being commonly found in collected rainwater:

- *E. coli*
- *Cryptosporidium*
- *Giardia*
- *Campylobacter*
- *Vibrio*
- *Salmonella*
- *Shigella*
- *Pseudomonas*

Building materials and collection components can also impact water quality by leaching metals, impurities, and various chemicals.

ELANCO ENTERPRISES LTD.
4965 Cordova Bay Road, Victoria, B.C., V8Y 2K1
Phone 250 744-1357. E-mail: adakin.elanco@gmail.com

Our File: 263

May 5, 2021

Denman Housing Association.
3720 East Road.
Denman Island, B.C.
V0R 1T0

By: e-mail

Attention: Simon Palmer.

Dear Sir.

Re: Hydrogeological Assessment of Yield and Source Protection for a Well Located at 1151 Northwest Road, Denman Island, B.C.

As requested, I have conducted a hydrogeological assessment of the area on, and around, the subject property, determined the sustainable yield from the existing water supply well and conducted an assessment of potential contamination from nearby sources.

Background:

The Denman Housing Association (DHA) is intending to develop a 1.05 hectare (ha) property for 20 units of affordable housing in the Denman village area. This property is located at 1151 Northwest Road (the Property). The proposed housing will range from one to three bedroom units, with an estimated population of 49. The water supply will come from a well and a proposed rainwater harvesting system on the Property, and sewage will be treated on site and dispersed back into the ground.

Water Supply Well and Assessment Objectives

There is an existing 150mm diameter 15.8 meter (m) deep well on the Property (the Property Well) and the DHA has retained Elanco Enterprises Ltd. to conduct a hydrogeological assessment in order to:

- Determine the well's long-term sustainable yield,
- Identify impacts that pumping from the well may have on local area wells and surface water bodies.
- Determine if the water quality meets minimum standards, and if not, to identify which parameters will require treatment.
- Determine whether or not the well water should be classified as Groundwater at risk of Containing Pathogens (GARP).
- Recommend well head protection measures.

Water Supply System

The water supply system on the property will include a well, roof rainwater collection system, many water storage tanks and a water treatment facility. The details of the above ground system will be designed by others. It is anticipated that the well will be the principal water source and the above ground system will be a supplementary source and will also help accommodate peak hour and peak day demands.

Work Carried out

This assessment involved reviewing information on regional water wells, surface drainage, soils and geology, visiting the site on April 20th, 2021, supervising a 3-day pump test on the well, analyzing data, assessing the long term well yield and potential impacts and assessing water quality issues.

Location, Topography and Drainage,

The Property is located on the west side of Denman Island in the village center, which is immediately east of the BC Ferry Terminal (see Figs. 1 and 2).

As indicated by the topographic contours on Fig. 3 and illustrated by the profiles on Figs 1 and 4c the Property is located on the western edge of a very extensive relatively flat area (the Plateau Area). There are no established natural drainage channels in the Plateau Area and it appears that much of the precipitation seeps into the ground. Within a 0.5 kilometer (Km) radius of the Property Well the regional maps indicate only one surface water body (see location on Fig. 2). This feature, known locally as "Wood Swamp", is likely fed by both surface water runoff and groundwater seepage. Water is withdrawn from this water body and used for irrigation under license C129751, which permits a 9,250 m^3/year withdrawal between April 1st and September 30th.

The land surface on the Property slopes gently from Northwest Road, at an elevation of about 43 metres above sea level (m-asl), towards the west (see Fig. 4c). With the exception of a cleared area in the northeast portion of the Property, the rest is covered with trees (see Fig. 6). As indicated on this figure there is an area in the southwest corner of the Property which has only a few fir trees and has relatively moist soils, some of which could be described as a swamp. When visiting the site on April 20 2021, it was noted that there was water flowing (about 15 Litres per minute) in the ditch along the north side of Kirk Road (see Photo 1). This flow appears to come from the adjacent swamp and judging by the presence of swamp grasses it appears to flow much of the year and is present about until about 50m down slope where it seeps below the ditch invert. As is indicated later in this report, this swamp appears to be partially sustained by a groundwater discharge.

Soils

The regional soils map indicates that the soils on the west side of Northwest road are Royston Soils (see Fig. 7) which are a well drained podzolic soil. On the east side of Northwest Road, the soils are a mixture of Tolmie (poorly drained) and Merville (moderately well drained) soils. As there are no well developed surface water channels, it is likely that surface water mostly seeps into underlying sediments and fractured bedrock through the Merville soils.

As part of an assessment for a sewerage system on the Property, three test pits were dug along the eastern boundary of the Property (H2O Environmental Ltd, March 2021 and April 2021). The locations of these test pits are indicated on Fig. 8 and a summary of information on the encountered soil and groundwater is provided in Appendix A. These logs indicate that there is a thin sand loam unit which overlies bedrock and/or glacial till at depths ranging from 0.36 to

0.80m in the area. Groundwater seepage was encountered in TP-1 and TP-2 and permeameter tests indicated a moderately well drained soil with permeability in the range 525 to 1,969 millimeters per day. Four test pits were also dug on the new lot located immediately west of the Property and these confirmed the presence of a 0.7 to 0.8m thick silt loam overlying fractured bedrock. No groundwater was encountered in these test pits.

Bedrock Geology

The bedrock geology of Denman Island consists of sedimentary formations of the Upper Cretaceous Nanaimo Group. These formations are characterized as successions of sandstone-conglomerate units inter-bedded with mudstone and fine-grained sandstone. As indicated on Fig 1, the Property is underlain by Cedar District Formation (Unit uKcd on the map) and the ridge located to the northeast is underlain by De Courcy Formation (uKdc). The Cedar District Formation is a massive grey mudstone with occasional siltstone and fine grained sandstone interbeds. The De Courcy Formation is a massive sandstone with some interbeds of conglomerate.

As indicated on Section A-A' on Fig. 1, these units are layered in a relatively uniform dipping structure over most of the island. Regional mapping indicates that the formation dip near the Property is about 11° to the northeast. As indicated later in this report, water well yield data suggests that there do not appear to be any regional scale structural discontinuities (such as a fractures) in the Cedar District Formation near the Property.

Three profiles, based on logs for wells drilled on and around the Property, are provided on Figs. 4 and 5. All of the deep water wells (>5m), indicated on Fig. 2 and listed on Table I, have penetrated Cedar District Formation and the few that did not are completed in overburden sediments.

The Property Well

The existing well on the property (see Photo 2) had supplied water to a business on the Property until recently when a building burned down. This well is located near the north boundary, around the middle of the Property (see location on Figs. 6 and 8). The driller's well log of the 15.8m deep Property Well is lacking in lithologic information (see Appendix B). However, it does indicate that at a depth of about 5m the yield was estimated at 22 m^3/day (3.3 Igpm) and there is no indication that the yield increased as the well was drilled to a final depth of 15.8m. This well has been assigned Well Tag Number (WTN) 955563 by the Provincial Government and an interpretation of the well log is presented in Appendix B. As indicated on this log the estimated ground elevation is 42m-asl and the static water elevations recorded on June 18, 1993 (at time of construction), January 12, 2021 and April 9, 2021 were 40.8, 41.6 and 40.9 m-asl respectively.

The lithology on the driller's log is missing as the log only indicated "soft" and "hard" drilling. However, the casing was driven to a depth of 4.6m which indicated that solid bedrock was likely not present until the well reached that depth.

Local Area Wells

The locations of identified water wells in the area within a 0.5-Km radius are indicated on Fig. 2. The data on these wells presented on Table I are based on the Ministry of Environment's WELLS database. Information on wells located closer to the Project Well is also listed on Table II and III and this includes street addresses and estimated elevations. It is recognized that many of these wells may not be accurately located and the static water levels have changed since they were constructed. Also, many wells are currently not being used and the yields indicated on the table are likely not sustainable over the long term.

A review of the compiled information and statistics led to the following observations:

- Of the 41 well records listed on Tables II and III none indicated a "dry hole" but many did not have a record of the estimated yield.
- The estimated well yields ranged from 0.9 to 65 m^3/d and median and average values were 16.2 and 19.2 m^3/d respectively.
- Well depths ranged from 3.7m (dug well) to a 73.8m deep drilled well and median and average well depths were 35.1 and 35.4m, respectively.
- Recorded depths to static water level at the time of well construction ranged from 0.9 to 15.2m and median and average depths to water were 3.7 and 5.1m, respectively. Many of the reported deep depths to water are not likely true values, as typically they are recorded in low yielding wells which require considerable time for the static water level to establish after construction and some only record a location where water entered the drilled hole.

The two wells located nearest to the Property well are the Community well, for which only the well depth was known and the 56.4m deep Museum well. There are records of three wells on the Highways property, which is immediately north of the Property (3361 Piercy Road). However, apparently two of these wells do not exist and the remaining well is not used as their water supply comes from a well (34149) located on an easement on the 1400 Northwest Road property.

The Kirnel water system provides water to 18 properties located along part of Kirk Road and along Nelson Road (see area indicated on Fig. 2). This system is supplied from a well which is also located on another easement on the 1400 Northwest Road property. This well (34154) was originally drilled to a depth of 32.6m but has since been partially back filled and is now only 7.9m deep. As indicated later in this report the water level in this well was monitored as part of this project and a graph is presented on Fig. 10.

Groundwater Flow Systems

Small fractures and bedding planes in the mudstone bedrock are the principal sources of water, however in many areas a thin saturated zone in the overburden provides significant storage. As can be seen on the hydrogeological Sections B-B' to D-D' presented on Figs. 4 and 5, the static water levels in most of the wells in the Plateau area are relatively close to ground surface.

As indicated by the blue arrows on Fig. 3, groundwater generally flows orthogonal to the topography, in a southwest direction. This is consistent with the presence of a groundwater fed swamp on the 1400 Northwest Road property.

Pump Testing of the Property Well

The Property Well was first pumped test for a 3 hour period at a rate of 11.35 litres per minute (L/min or 0.19 L/sec) in January 2021 (Wood 2021) and at the end of pumping the water level in the well had drawn down by 2.84m. This provided useful information for the design of the 72 hour pumping test that began on April 9th, 2021 in support of this hydrogeological assessment.

In order to assess the potential impact that pumping from the Property Well could have on nearby water supply wells monitoring was implemented in the two nearby wells and one distant operating well. The selected nearby wells were the Museum complex well, located about 100m southeast of the Property Well and the Community Center well, located about 130m east of the Property Well. The distant well was the Kirnel water system well which is located about 330m north of the Property Well (see locations on Fig. 2 and 3).

25mm diameter PVC sounding tubes were installed in the Property Well and in three monitoring wells to enable ease of measuring the depths to water in these wells, using both an electric sounder tape and automatic recorders. The recorders used were Solinst dataloggers that were pre-programmed to record water levels at 3-minute intervals for 6 days prior to pumping, during the test and for 9 days after pumping had ceased. Manual measurements were made at the time that the dataloggers were installed, daily during the test and at the time of the datalogger removal on April 20, 2021.

The existing pump in the Property Well was connected to a temporary power supply provided from a neigbouring property and a 25-mm diameter 50m long discharge pipe was laid on the ground surface to discharge the test pumped water into the swamp located southwest of the Well (see Photo 3). The pump test set up and the monitoring for three hours at the start and end of the test was conducted by McGill's Well Service personnel and the twice daily monitoring during the test was carried out by Dave Ricketts, a local volunteer. The manual measurements were a supplement to the 3-minute datalogger record of water levels.

The pumping test was started on April 9th at an initial rate of about 0.19 L/s and after three hours it settled down to a constant 0.18 L/s for the remainder of the test. The flow rate was determined using both the bucket and stop watch method at the end of the discharge hose and by reading volumes on a digital flow meter.

The temperature, pH, ORP and electrical conductivity of the discharge water quality were occasionally recorded during the test. The results of all manual measurements are summarized in Appendix C.

Just before pumping ceased on April 12th a water sample was collected and sent to a commercial laboratory for a comprehensive potability analysis.

Water Level Trends and Pump Test Results

The data from the four data loggers was down-loaded and water levels converted to geodetic water levels. Graphs of the water levels in the Property Well and the two nearby wells are presented on Fig. 9 and graphs of water levels in Property Well and the Kirnel well are presented on Fig. 10. As can be seen from these graphs, pumping from the Property well had no impact on the nearby wells. Also noted was a gradual water level decline of about 0.18m over the 17 day monitoring period (mid April 3 to mid April 20, 2021).

Analysis and Interpretation of Long Term Pump Test Data

As can be seen on the graphs, the water level in the pumped well declined rapidly during the first hour and then declined very slowly during the remainder of the test.

The drawdown in the well during and after the pumping test was calculated relative to the water level trend and used to prepare a semi-log graph of water level trends while pumping the Property Well and during the recovery period. As is standard practice, the residual water level drawdown during the post pumping recovery period are plotted against the ratio of time since pumping started (t) divided by the time since the test stopped (t') on Fig 11. This recovery trend confirmed that the well fully recovered at a t/t' value close to 1, which indicated that there was no surface water recharge.

As can be seen, the projected water level trend at the end of the test indicated that if the well was pumped for 100 days at the 0.18 L/s rate the drawdown would have increased to 3.2m.

The slopes of the water level trends can be used to calculate aquifer transmissivity as the drawdown cone expands. Using the Cooper-Jacob method the apparent transmissivity for the initial parts of the pumping and recovery periods (P1 and R1 on Fig. 11) was about 2×10^{-5} m^2/s and during the remainder of the test and recovery (P2 and R2) was about 2×10^{-4} m^2/s. The shape of this graph suggests that the aquifer material near the well had a lower permeability than that farther away from the well. The best interpretation is that the water enters the well in a depression in the bedrock surface and the expanded cone reaches a relatively shallow permeable unit with a strong east to west flow. This aquifer unit is likely to comprise a combination of overburden sediments and the leached upper portion of the underlying bedrock surface.

While the water level in the Community well was not impacted by the Property Well it was clearly being impacted by the School well, which is located 60m to the east (see Fig. 9). The influence of the Highways well on the Kirnel well is just visible on the upper water level graph on Fig. 10.

These results, and a calculation of well hydraulics using the Theis equation, confirm that there will not be any measurable impacts on the yields of wells located down-slope (west) of the Property Well.

Precipitation and Local Aquifer Recharge

The precipitation at the site is likely similar to that recorded at the Comox International Airport. The long term 30 year climate normals for monthly total precipitation (mm) at the Comox Airport

Station are: Jan (171.9), Feb. (114.3), Mar (105.7), Apr (64.6), May (45.6), Jun (42.8), Jul (26.7), Aug (29.2), (Sep (41.8), Oct (122.8), Nov (200.5) and Dec (187.9) and the annual average is 1,153.6 mm.

As indicated on Fig. 9, there were three rainfall events over the April 3 to 20th, 2021 monitoring period and these ranged from 1.0 to 3.2 mm per day, all of which will have been absorbed in the soil and clearly had no impact on groundwater levels. Based on experience in other areas, during the winter months a relatively flat area with Tolmie and Merville soils will become saturated and typically between 15 to 40% will recharge the aquifer. In addition to direct rainfall the aquifer is recharged from septic systems, one of which will be located on the Property.

Long Term Sustainability of the Project Well

As indicated on the well log in Appendix B, the static water level at the time of well construction in June 18, 1993 was at an elevation of 40.8 m-asl, in January 2021 it was at 41.6 m-asl and on April 9, 2021 it was at 40.9 m-asl. During the 17 day monitoring period the water level declined from about 41.0 m-asl on April 3rd to 40.8 m-asl on April 20th, representing a decline of 0.012 m/day. If this rate of decline continued the static water elevation in August would be about 1.3m lower than it was in April (about 39.5m). This may be an extreme low level as judging by the water levels recorded in the Ministry of Environment Observation well (no. 268) located on Denman Island the water levels in April 2021 were the lowest recorded for the time of the year.

As can be seen on the insert table on Fig. 11, using a design specific capacity of 0.0541 L/s/m that was derived from the pump test analysis and after allowing for the 1.3m water level decline and a contingency factor of 75%, the estimated sustainable yield of the well is 0.11 L/s (1.5 lgpm or 9,459 L/day.

As set out on Table IV the capture zone analysis for the Property Well indicates that the zone will be about 30m wide and a water balance calculation for the length required to develop a recharge area capable of sustaining a 9,459 L/day discharge is 492m (see capture zones indicated on Figs. 3, 6 and 8 and the full recharge area on Fig. 2).

Groundwater Quality

Water samples were collected from the Property Well at the end of both the January 2021 3-hour and the April 2021 72-hour well yield tests and sent to laboratories for potability analyses. The results of these two analyses are included on Table V.

The following are comments on these results of these water quality analyses:

- Water quality is good and the only parameter that did not meet the Maximum Acceptable Concentration (MAC), as set out in the Canadian Drinking Water Guideline, was manganese (both total and dissolved). Iron, turbidity and sulphide did not meet the Aesthetic Objective (AO) in the guideline. Except for turbidity, these parameters are the result of bacterial activity in the aquifer reducing the available oxygen and causing the manganese and iron in the sediments to become soluble and the sulphate to be reduced into the sulphide which imparts a pungent “rotten egg” smell. The concentrations of these three parameters can relatively easily be reduced by aerating the water and/or using ion

exchange treatment methods. The low ORP measurements recorded during the pumping test (see Appendix B) and the observed sulphide smell were an indication of this condition being present in the aquifer.

- A turbidity less that 1 NTU is required to ensure effective treatment of the water supply using an ultra violet lamp. Treatment will therefore be required to lower the 9.45 NTU recorded in the sample collected at the end of the 72-hour test to less than 1 NTU. It is noted that this sample was collected when the well was pumped at 0.18 L/s and experience suggests that pumping at the design rate of 0.11 L/s will result in a lower turbidity. However, filtering will still likely be required to reduce it below the 1 NTU maximum. If there is still a problem, consideration could be given to having a contractor surge the well to try and create a better filter around the zone where water enters the well.
- Water quality data for four public water supply wells in the area was obtained from the Vancouver Health Authority. These are for the Community, Museum, Store and BC Ferry wells (see locations on Fig. 3) and the information is summarized on Table V. With the exception of the BC Ferry well most of the water quality parameters for these wells were similar to the Property Well, which confirms that they are tapping the same aquifer unit. It was noted that the chloride concentration in the School well declined from 124 mg/L in 1994 to 82 mg/L in 2019 and over the same period, the sodium concentration declined from 166 to 127 mg/L, suggesting that salt was gradually been flushed out of the mudstone bedrock.
- Iron and manganese concentrations for these three wells met the AO limit, which suggests that there is a localized anomaly around the Project Well.
- While the bottom of the Museum, Store and School wells were below sea level, both the well hydraulics and water quality data provided no evidence of salt water intrusion.
- The bottom of the BC Ferry well is significantly below sea level and being close to the ocean has the potential for causing salt water intrusion. However, this is a low yielding well and the high sodium and chloride concentrations in this well could be attributed to a source in the bedrock, rather than to salt water intrusion (Dakin et al 1983).
- None of the wells (including the Property Well) had evidence of e-coliform in the test results and there was only one sample that had total coliform present (BC Ferry Well in 2005).

Well Head Protection and GARP Assessment

As set out in Appendix D, a Level 2 Groundwater at risk of Containing Pathogens (GARP) hydrogeological assessment was conducted and this resulted in the conclusion that the water pumped from this well has a high risk of being GARP. This assessment led to the recommendation that one of the two sewage effluent dispersal fields be moved to a new location, as is indicated on Fig. 8.

Also set out in this appendix, and summarized in the next section, are a few recommendations for well head protection.

Recommendations

1. The area around the existing well should be re-contoured with low permeability soil with a surface graded away from the well casing.

2. The edge of effluent dispersal fields should be located at least 10m from the southern edge of the capture zone indicated on Fig. 8.
3. The water level in the swamp area should be preserved to minimize impacts on the local aquifer. This could involve creating a small pond with a water level no lower than the current level in the swamp.

Summary and Conclusions

1. The log of the Property Well construction is incomplete and very little is known about the sediments overlying the Cedar District mudstone bedrock unit below the Property.
2. While the well is 15.8m deep, the information available suggests that most of the water enters the well at a zone about 5m below ground which is just below the base of the steel casing.
3. After allowing for seasonal changes and incorporating standard conservative measures in a yield analysis it is concluded that the well can sustain a long term yield of 0.11 L/s (9,459 L/day). The well can also sustain a short term (days) yield of about 0.18 L/s (14,950 L/day).
4. Monitor of water levels in the two nearest well during the pump test provided no evidence of the Project Well having any impact on water levels in these wells and pumping in the neigbouring wells did not have an impact on the Property Well.
5. Pumping from the Property well will also not have any impact on the yields of all other wells in the area, including those located down slope and west of the Property Well.
6. The Project Well water quality meets all Canadian Water Quality aesthetic objectives with the exception of manganese, iron, sulphide and turbidity. Only manganese exceeds the Maximum Acceptable Concentration (MAC). These parameters are a common problem in British Columbia groundwaters and treatment is often required.
7. As the well is very shallow, the water pumped from it is classified as Groundwater at Risk of Containing Pathogens (GARP).and will require that additional preventative measures be installed in the water treatment system.
8. With the exception of a small swamp on the Property, there are no surface water drainage systems that will be impacted by pumping from the well.

Limitations.

This investigation has been conducted using a standard of care consistent with that expected of scientific and engineering professionals undertaking similar work under similar conditions in B.C. No warranty is expressed or implied.

I trust that this is sufficient for you present purposes.

Yours truly,

Elanco Enterprises Ltd.

R. Allan Dakin, FEC, P. Eng.
Senior Groundwater Engineer

Att.

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Photos

Photo 1. Water flowing in a ditch along the north side of Kirk Road which originates from the swamp on the Property. The swamp grass in the ditch suggests that it never completely dries up.

Photo 2. Property Well during pump test..

Photo 3. Pump test discharge area at the edge of the swamp.

Tables

Table I

List of Wells Within 0.5 Km Radius of Property Well

Well Tag Number	Address		Depth to (m)			Yield
	Number	Road	Bedrock	DTW	Bottom	m^3/d
12980	1016	Northwest	na	4.6	7.3	na
12981	1016	Northwest	na	na	4.9	na
12986			1.5	3.4	4.9	na
12987			na	2.4	3.4	na
12988			0.9	3.0	3.7	na
12989			na	6.1	7.0	na
12994			na	na	na	na
12996	1196	Northwest	na	1.2	4.0	na
13233			na	2.4	6.1	na
22024	3340	Denman	na	na	38.1	na
22604	3400	Denman	4.3	7.3	29.3	5.4
26146			na	1.5	65.5	1.4
26250	3199	Denman	na	0.9	57.9	0.9
27383	3361	Piercy	3.7	na	71.6	na
27394	3185	Kirk	2.7	8.2	30.5	32
27411			na	5.8	42.7	na
28020	3370	Denman	4.3	9.1	36.6	22
32364	1146	Northwest	2.7	2.7	30.8	na
32822	3401	Kirk	2.1	1.2	35.1	na
33961			4.0	3.7	29.3	5.4
34149	1400	Northwest	6.4	na	44.8	65
34154	1400	Northwest	4.9	na	32.6	21.6
37568			3.7	6.4	22.9	27
40772		Denman	2.1	8.8	63.1	4.5
40785	1100	Northwest	1.5	1.5	50.6	16
41516		Northwest	6.1	na	32.0	5.4
41917	1066	Northwest	2.4	2.7	50.6	14
44233	1071	Northwest	3.7	15.2	61.6	43
44651		Denman	2.4	7.9	32.3	14
46980	1111	Northwest	1.5	1.5	56.4	1.1
47773	3135	Kirk	1.5	3.4	49.4	3.8
47858		Piercy	0.9	16.2	49.4	22
50949	3716	Denman	1.8	na	56.1	54
52043	1070	Farley	0.9	na	54.9	43
53383	3277	Kirk	0.9	2.4	43.3	5.4
55564	1146	Northwest	0.9	13.7	44.8	5.4
70554		Piercy	na	na	30.5	11
70555		Piercy	na	1.2	30.5	5.4
70556		Piercy	na	3.0	61.0	na
73778	3811	Denman	na	4.6	30.5	38
73798		Lacon	na	na	na	27
74352	3716	Denman	na	4.9	18.3	na
74354	3770	Kirk	na	3.7	29.3	na
74357	1055	Lacon	na	3.0	13.4	na
74925	1196	Northwest	4.0	5.2	37.8	16

Table I

List of Wells Within 0.5 Km Radius of Property Well

Well Tag Number	Address		Depth to (m)			Yield
	Number	Road	Bedrock	DTW	Bottom	m^3/d
83424	3176	Kirk	na	na	na	na
86319	3400	Denman	1.5	na	24.4	27
93687	3176	Kirk	na	8.4	12.2	32
93936	1151	Northwest	na	na	na	na
93988	1169	Northwest	na	na	na	na
93992	1100	Northwest	na	na	49.4	na
93993	1111	Northwest	na	na	56.4	na
93994	3446	Denman	na	0.9	6.1	na
93995	3446	Denman	na	na	15.2	na
93997	3806	Denman	na	na	25.9	na
95553	1111	Farley	3.0	1.2	29.6	11
95563	**1151**	**Northwest**	**na**	**1.8**	**15.8**	**22**
97082			na	3.7	30.5	27
97106	3375	Kirk	na	na	35.1	7.2
105775	3135	Kirk	na	7.9	27.4	22
113477	3730	Denman	2.4	9.1	24.4	16
115436	1175	Farley	1.2	27.4	64.0	7.2
Number of values =		62	30	42	57	36
Minimum			0.9	0.9	3.4	0.9
Average			2.7	5.5	33.7	18.9
Median			2.4	3.7	30.8	16.2
Maximum			6.4	27.4	71.6	65

Notes: na = information not available DTW = Depth to Static Water Level

1) The Property Well is indicated in red.
2) Data mostly based on MOE Wells database.
3) See location of wells on circled area on Fig. 2

Table II

Data on Water Wells - Sorted by Well Tag Number

Well Tag Number	Address		Facility	Depth to (m)				Elevation (m-asl)					Yield
	Number	Road		Bedrock	DTW	PWS	Bottom	Ground	Bedrock	DTW	PWS	Bottom	m^3/d
12980	1016	Northwest		na	4.6	na	7.3	40	na	35	na	33	na
12981	1016	Northwest		na	na	na	4.9	40	na	na	na	35	na
12988	3551	Kelsey		na	3.0	na	3.7	41	na	38	na	37	na
12996	1196	Northwest		na	1.2	na	4.0	45	na	44	na	41	na
22024	3340	Denman		na	na	na	38.1	26	na	na	na	-12	na
22604	3400			4.3	7.3	na	29.3	39	35	32	na	10	5.4
26250	3199	Denman	BC Ferry	1.5	0.9	8.7	57.9	8	6	7	-1	-50	0.9
27383	3361	Piercy	Highways	2.4	na	71.6	71.6	42	40	na	-30	-30	na
27394	3185	Kirk		3.7	8.2	na	30.5	18	14	10	na	-12	32
28020	3370	Denman		4.3	9.1	na	36.6	32	28	23	na	-5	22
32364	1146	Northwest		2.7	2.7	na	30.8	44	41	41	na	13	na
32822	3401	Kirk		2.1	1.2	na	35.1	38	36	37	na	3	na
34149	1400	Northwest	Highways	6.4	na	9.1	44.8	44	38	na	35	-1	65
34154	1400	Northwest	Kernel	4.9	na	20.4	32.6	48	43	na	28	15	22
40785	1100	Northwest		1.5	1.5	na	50.6	45	43	43	na	-6	16
41917	1066	Northwest	Store	2.4	2.7	na	50.6	42	40	39	na	-9	14
44233	1071	Northwest		3.7	15.2	na	61.6	41	37	26	na	-21	43
46980	1111	Northwest		1.5	1.5	68.6	73.8	42	40	40	-27	-32	1.1
47773	3135	Kirk		1.5	3.4	39.6	49.4	27	25	24	-13	-22	3.8
50949	3716	Denman		1.8	na	na	56.1	43	41	na	na	-13	54
52043	1070	Farley		0.9	na	53.3	54.9	40	39	na	-13	-15	43
53383	3277	Kirk		0.9	2.4	na	43.3	30	29	28	na	-13	5.4
55564	1146	Northwest		0.9	13.7	na	44.8	45	44	31	na	0	5.4
74352	3716	Denman		na	4.9	na	18.3	45	na	40	na	27	na
74354	3770	Kirk		na	3.7	na	29.3	34	na	30	na	5	na
74925	1196	Northwest		4.0	5.2	31.4	37.8	45	41	40	14	7	16
83424	3176	Kirk		na	5.2	7.6	48.8	26	na	21	18	-23	2.7
86319	3400	Denman		1.5	na	7.6	24.4	38	36	na	30	14	27
93988	1196	Northwest	Comm. Hall	na	na	na	na	45	na	na	na	na	na
93992	1100	Northwest	School	na	na	na	49.4	45	na	na	na	-4	na
93993	1111	Northwest	Museum	na	na	na	56.4	42	na	na	na	-14	na
93994	3446	Denman		na	0.9	na	6.1	42	na	41	na	36	na
93995	3446	Denman		na	na	na	15.2	45	na	na	na	30	na
95563	1151	Northwest	Project	na	1.8	5.2	15.8	42	na	40	37	26	22
97106	3375	Kirk		na	na	na	35.1	36	na	na	na	1	7.2
105775	3135	Kirk		2.4	7.9	19.8	27.4	18	16	10	-2	-9	22
113477	3738	Denman		2.4	9.1	14.6	24.4	46	44	37	31	22	16
12994 A	3361	Piercy	Highways	na	na	na	30.5	43	na	na	na	13	9.5
12994 B	3361	Piercy	Highways	na	na	na	15.2	43	na	na	na	28	5.4
A	3325	Kirk		na	na	na	na	30	na	na	na	na	na
B	3360	Denman		na	na	na	na	32	na	na	na	na	na
Number of values =	41			22	24	13	38						24
Minimum				0.9	0.9	5.2	3.7	8	6	7	-30	-50	0.9
Average				2.6	4.9	27.5	35.4	38	34	32	8	3	19.2
Median				2.4	3.5	19.8	35.1	42	38	36	14	1	16.2
Maximum				6.4	15.2	71.6	73.8	48	44	44	37	41	65

Notes: na = information not availab DTW = Depth to Static Water Level PWS = Principal Water bearing Source

1) Data mostly based on MOE Wells database, with ground elevations based on Google Earth and street numbers from Comox RD map

2) See location of wells on Fig. 3

Table III

Data on Water Wells - Sorted by Street Address

Well Tag Number	Address		Facility	Depth to (m)				Elevation (m-asl)					Yield
	Number	Road		Bedrock	DTW	PWS	Bottom	Ground	Bedrock	DTW	PWS	Bottom	m^3/d
26250	3199	Denman	BC Ferry	1.5	0.9	8.7	57.9	8	6	7	-1	-50	0.9
22024	3340	Denman		na	na	na	38.1	26	na	na	na	-12	na
B	3360	Denman		na	na	na	na	32	na	na	na	na	na
28020	3370	Denman		4.3	9.1	na	36.6	32	28	23	na	-5	22
22604	3400	Denman		4.3	7.3	na	29.3	39	35	32	na	10	5.4
86319	3400	Denman		1.5	na	7.6	24.4	38	36	na	30	14	27
93994	3446	Denman		na	0.9	na	6.1	42	na	41	na	36	na
93995	3446	Denman		na	na	na	15.2	45	na	na	na	30	na
50949	3716	Denman		1.8	na	na	56.1	43	41	na	na	-13	54
74352	3716	Denman		na	4.9	na	18.3	45	na	40	na	27	na
113477	3738	Denman		2.4	9.1	14.6	24.4	46	44	37	31	22	16
52043	1070	Farley		0.9	na	53.3	54.9	40	39	na	-13	-15	43
12988	3551	Kelsey		na	3.0	na	3.7	41	na	38	na	37	na
47773	3135	Kirk		1.5	3.4	39.6	49.4	27	25	24	-13	-22	3.8
105775	3135	Kirk		2.4	7.9	19.8	27.4	18	16	10	-2	-9	22
83424	3176	Kirk		na	5.2	7.6	48.8	26	na	21	18	-23	2.7
27394	3185	Kirk		3.7	8.2	na	30.5	18	14	10	na	-12	32
53383	3277	Kirk		0.9	2.4	na	43.3	30	29	28	na	-13	5.4
A	3325	Kirk		na	na	na	na	30	na	na	na	na	na
97106	3375	Kirk		na	na	na	35.1	36	na	na	na	1	7.2
32822	3401	Kirk		2.1	1.2	na	35.1	38	36	37	na	3	na
74354	3770	Kirk		na	3.7	na	29.3	34	na	30	na	5	na
12980	1016	Northwest		na	4.6	na	7.3	40	na	35	na	33	na
12981	1016	Northwest		na	na	na	4.9	40	na	na	na	35	na
41917	1066	Northwest	Store	2.4	2.7	na	50.6	42	40	39	na	-9	14
44233	1071	Northwest		3.7	15.2	na	61.6	41	37	26	na	-21	43
40785	1100	Northwest		1.5	1.5	na	50.6	45	43	43	na	-6	16
93992	1100	Northwest	School	na	na	na	49.4	45	na	na	na	-4	na
46980	1111	Northwest		1.5	1.5	68.6	73.8	42	40	40	-27	-32	1.1
93993	1111	Northwest	Museum	na	na	na	56.4	42	na	na	na	-14	na
32364	1146	Northwest		2.7	2.7	na	30.8	44	41	41	na	13	na
55564	1146	Northwest		0.9	13.7	na	44.8	45	44	31	na	0	5.4
95563	1151	Northwest	Project	na	1.8	5.2	15.8	42	na	40	37	26	22
12996	1196	Northwest		na	1.2	na	4.0	45	na	44	na	41	na
74925	1196	Northwest		4.0	5.2	31.4	37.8	45	41	40	14	7	16
93988	1196	Northwest	Comm. Hall	na	na	na	na	45	na	na	na	na	na
34149	1400	Northwest	Highways	6.4	na	9.1	44.8	44	38	na	35	-1	65
34154	1400	Northwest	Kernel	4.9	na	20.4	32.6	48	43	na	28	15	22
12994 A	3361	Piercy	Highways	na	na	na	30.5	43	na	na	na	13	9.5
12994 B	3361	Piercy	Highways	na	na	na	15.2	43	na	na	na	28	5.4
27383	3361	Piercy	Highways	2.4	na	71.6	71.6	42	40	na	-30	-30	na
Number of values =	40			21	23	12	37						23
Minimum				0.9	0.9	5.2	3.7	18	14	10	-30	-32	1.1
Average				2.7	5.1	29.1	34.8	39	36	33	9	4	20.0
Median				2.4	3.7	20.1	35.1	42	39	37	16	1	16.2
Maximum				6.4	15.2	71.6	73.8	48	44	44	37	41	65

Notes: na = information not availab DTW = Depth to Static Water Level PWS = Principal Water bearing Source

1) Data mostly based on MOE Wells database, with ground elevations based on Google Earth and street numbers from Comox RD map

2) See location of wells on Fig. 3

Table IV

Analysis of Capture Zone, Travel Time and Recharge Area

Capture Zone

Formula	Symbol	Parameter	Note No	Value	Unit
		Village housing units		20	
		Estimated population (cap)		49	
	Q	Estimated maximum long-term well yield	1	9,459 0.109 0.0001 1.5 2,089	L/d L/s m^3/s lgpm gpd
		Equovalent supply		193	L/d/cap
	T	Transmissivity	2	1.8E-04 15.6	m^2/s m^2/d
	i	Gradient	3	0.02	
Y = Q/2T/i	Y	half width	4 & 5	15.2	m
	2Y	Width		30.4	m
X = Y/pi	x	down distance	5	4.8	m

Travel Time in Aquifer

	m	Thickness of aquifer at well		2	m
T/m	K	Hydraulic conductivity		9.0E-05	m/s
	n	Aquifer porosity		0.3	
V= Ki/n	V	Travel velocity		0.52	m/day
		Distance for 100 days		52	m
		Distance for 200 days		104	m
		Time for 30m		58	days

Estimated Length of Recharge Area

	Width (see 2Y above)	30.4	m
	Average annual precipitation	1153.6	mm
		0.0032	m/day
	Infiltration factor	0.2	
	Well yield	9,459	L/d
		9.5	m^3/d
	Estimated length of capture zone required	**492**	m

Notes:

1) Assumes a constant pumping rate based on the conservative water and the sustainable pumping rate indicated on the table on Figure 10.
2) Transmissivity calculated from 72 hour pump test (see Fig. 8)
3) Average gradient between Kirnel well and a projection of the Project well.
4) A short term 100% increase in pumping rate would increase width to 60m.
5) See dimension illustration below

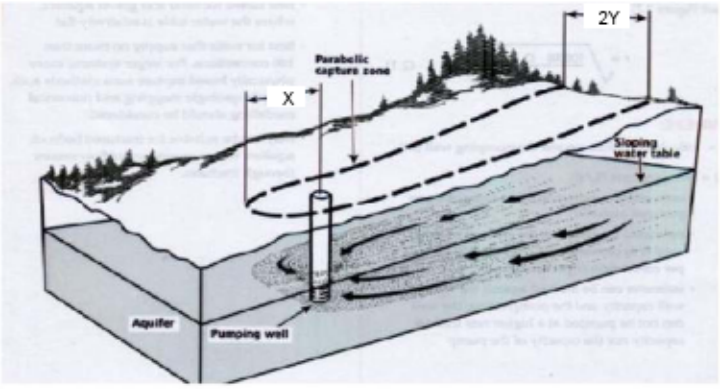


Table V

Groundwater Quality

Sampling well -->			Well 95563		Community Center	Store		School				BC Ferry			CDWQ Guideline		
			1151 Northwest Rd														
Parameter	units	Symbol	Jan. 12 2021	Apr. 12 2021	Apr. 4 2016	Aug. 18 2013	Jun. 6 2019	Sep. 28 1994	Apr. 23 1996	Jun. 9 2010	Mar. 6 2019	Dec. 1 2005	Jun. 13 2017	Jul. 11 2018	MAC	AO	IMAC
Colour, True	CU		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0		15	
Total Alkalinity (as $CaCO_3$)																	
pH 4.5	mg/L	Alk 4.5	150	141	-	260	239	201	200	190	218	-	159	124			
pH 8.3	mg/L	Alk 8.3		-	-	-	2.9	-	-	-	3.3	-	5.72	<1			
Carbonate	mg/L	CO_3^{-2}	<1	-	-	-	3.5	-	-	-	4	-	6.86	8			
Bicarbonate	mg/L	HCO_3^-	183	172	-	-	292	245	244	232	258	-	180	151			
Hydroxide	mg/L	OH^-	<1	-	-	-	<1	-	-	-	<1	-	<0.5	<1			
pH Field	units	pH	-	7.43	-		-	-	-	-	-	-	-	-			
Laboratory	units	pH	6.53	7.4	-	8.4	8.37	8.6	8.5	8.6	8.5	9.2	7.81	8.64		6.5-9.5	
ORP (field)	mV	Eh	-	8	-	-	-	-	-	-	-	-	-	-			
Temperature (field)	°C	T	-	10.0	-	-	-	-	-	-	-	-	-	-			
Langier Index																	
at 10°C	unit	LSI	-1.79	-0.86	-	-0.57	-0.73	-	-	-0.36	-0.40	-	-1.07	0.48		<0	
at 80°C	unit	LSI	-0.53	0.40	-	0.69	0.52	-	-	0.90	0.86	-	0.19	1.74			
Hardness (as $CaCO_3$)																	
Dissolved		Hard D		80.8	-	-	-	-	-	-	-	-					
Total		Hard T	66.5	80.3	76.1	8.6	6.6	14.5	11.0	10.6	10.3	91.4	15.2	113.7			
Electrical conductivity																	
Field	µS/cm	EC	-	318	-	-	-	-	-	-	-	-					
Laboratory	µS/cm	EC	350	388	-	-	536	766	704	-	674	539	579	1500			
Total dissolved solids	mg/L		190	220	-	400	292	-	-	380	352	310	362	848		500	
Residue Filterable	mg/L	TSS		10.4	-	-	-	398	410	-	-	-	-	-			
Turbidity																	
Laboratory	NTU		**3.4**	**9.45**	0.13	0.7	0.39	0.6	0.3	2.3	0.25	-	0.34	0.33		1	
Transmittance, UV (254 nm)	%T/cm			95.9	90.5	95.4	90.6	-	-	91.7	96.4	-	96.2	97.3			
UV Absorbance (254 nm)	Abs/cm			0.0180	0.043	-	0.043	-	-	-	0.016	-	0.017	0.012			
Bromide	mg/L	Br - D		0.092	-	-	-	-	-	-	-	-	-	-			
Chloride	mg/L	Cl	28	31.9	-	38.1	30	124	126	95	82	-	150	**370**		250	
Fluoride	mg/L	F	0.096	0.108	-	0.76	0.62	1.61	1.7	1.3	1.3	-	0.026	1.3	1.5		
Sulphate	mg/L	SO_4	4.9	8.26	-	1.6	<1	<1	3.2	4.1	3.8	-	0.74	4.9		500	
Sulphide - total	mg/L	S^{-2}		0.0405	-	-	**0.40**	-	-	-	0.0096	-	-	-		0.05	
Sulphide - total	mg/L	H_2S		0.0431	-	-	**0.43**	-	-	-	0.01	<0.005				0.05	
Nitrogen																	
Total	mg/L	N_tot	-	-	-	-	0.157	-	-	-	0.107	-			-	-	-
Total organic	mg/L	TON	-	-	-	-	0.035	-	-	-	0.022	-	-	-	-	-	-
Ammonia	mg/L	NH_3	-	0.0875	-	-	0.13	-	-	-	<0.015	-	-	-			
Nitrate and nitrite	mg/L	NO_2+NO_3	<0.02	-	-	-	<0.02	0.05	0.04	-	-	-	<0.02	<0.02			
Nitrate	mg/L	NO_3	-	<0.0050	-	<0.05	<0.02	0.05	0.04	<0.1	0.022	-	<0.02	<0.02	10		
Nitrite	mg/L	NO_2	-	<0.0010	-	<0.05	<0.005	<0.005	<0.005	<0.1	<0.005	-	<0.005	<0.005	1		

Table V

Groundwater Quality

Parameter	units	Symbol	Sampling well -->	Well 95563	Community Center	Store		School				BC Ferry			CDWQ Guideline		
			1151 Northwest Rd														
			Jan. 12 2021	Apr. 12 2021	Apr. 4 2016	Aug. 18 2013	Jun. 6 2019	Sep. 28 1994	Apr. 23 1996	Jun. 9 2010	Mar. 6 2019	Dec. 1 2005	Jun. 13 2017	Jul. 11 2018	MAC	AO	IMAC
Total Kjeldal nitrogen	mg/L	TKN	-	-	-	-	-	-	-	-	-	-	-	-			
Phosphorous																	
Total	mg/L	P-T	-	<0.050	-	-	-	-	-	-	-	-	-	-			
Orthophosphate	mg/L	P	-	-	-	-	-	-	-	-	-	-	-	-			
Dissolved	mg/L	PT - D	-	<0.050	-	-	-	-	-	-	-	-	-	-			
Carbon in water																	
Dissolved Organic	mg/L	-	-	1.28	-	-	-	-	-	-	-	-	-	-			
Total Organic	mg/L	-	-	1.66	1.01	-	-	-	-	2.1	0.8	-	-	-			
Tannin & Lignin	mg/L	-	-	<0.10	<0.10	0.1	-	-	-	-	-	-	-	-			
Total Sulphur	mg/L	S - T	<3	2.78	-	-	<3	-	-	-	<3	-	<3	<15			
Silica	mg/L	SiO_2	8.78	9.09	-	-	-	-	-	-	-	-	-	-			
Total Metals																	
Aluminum	mg/L	Al	0.0088	0.0154	<0.003	<0.05	0.0213	<0.02	<0.02	<0.05	<0.002	0.0160	0.013	0.0270	0.1		
Antimony	mg/L	Sb	<0.00005	<0.00010	<0.0005	<0.002	<0.00005	-	-	<0.002	<0.0005	<0.0002	<0.0005	<0.0025	0.006		
Arsenic	mg/L	As	<0.00001	0.00042	0.00015	<0.002	<0.00001	<0.04	0.001	<0.002	<0.0001	0.0005	<0.0001	<0.000	0.01		
Barium	mg/L	Ba	0.40600	0.473	0.381	0.09	0.0782	0.11	0.141	0.14	0.104	1.12	0.207	1.16	1		
Beryllium	mg/L	Be	<0.00001	<0.000100	<0.0001	<0.0004	<0.0001	<0.001	<0.001	-	<0.0001	-	<0.0001	<0.0005	-		
Bismuth	mg/L	Bi	<0.001	<0.000050	<0.001	<0.01	<0.001	<0.02	<0.02	-	<0.001	-	<0.001	<0.005	-		
Boron	mg/L	B	0.129	0.125	0.393	0.55	0.463	0.841	0.859	0.690	0.863	0.6580	0.752	0.548	5		
Cadmium	mg/L	Cd	<0.00001	0.0000078	<0.00001	<0.0001	<0.00001	<0.002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00005	0.005		
Calcium	mg/L	Ca	20.9	25.9	24.9	2.9	2.23	3.13	4.18	4.01	4.00	34.60	5.77	42.40	-		
Cesium	mg/L	Cs	-	0.000022	-	-	-	-	-	-	-	-	-	-			
Chromium	mg/L	Cr	<0.001	0.00267	<0.001	<0.004	<0.001	<0.002	0.002	<0.004	<0.0021	<0.0005	<0.001	<0.001	0.05		
Cobalt	mg/L	Co	<0.0002	0.00014	<0.0005	<0.0002	<0.0002	<0.003	<0.003	-	<0.0002	-	<0.0002	<0.0002			
Copper	mg/L	Cu	0.0	0.0147	0.0458	<0.01	0.015	0.456	0.522	0.100	<0.0773	0.0620	0.049	<0.0002		1	
Iron	mg/L	Fe	**1.0**	**0.812**	<0.01	0.046	0.0174	0.006	0.015	0.148	0.012	<0.1	0.011	0.049		0.3	
Lead	mg/L	Pb	0.00042	0.00152	0.00041	<0.001	<0.0002	0.001	<0.001	0.023	<0.0002	0.0041	0.00028	0.0016	0.01		
Lithium	mg/L	Li	-	0.0153	0.0295	0.022	-	<0.005	-	0.020	-	-	-	-			
Magnesium	mg/L	Mg	3.48	3.79	3.39	0.34	0.246	1.620	0.13	0.140	0.083	1.2	0.180	1.890			
Manganese	mg/L	Mn	0.264	0.330	0.0013	0.0116	0.0069	<0.002	<0.002	<0.002	<0.001	**0.0510**	0.0047	0.0053	0.12	0.02	
Mercury	mg/L	Hg	-	<0.000005	-	-	-	-	-	<0.00001	<0.002	<0.0001	-	-	0.001		
Molybdenum	mg/L	Mo	0.001	0.000331	<0.001	<0.001	<0.001	<0.004	<0.004	-	<0.001	-	<0.001	<0.005			
Nickel	mg/L	Ni		0.00147	<0.001	<0.01	<0.001	<0.008	<0.008	-	<0.001	-	<0.001	<0.005			
Phosphorus	mg/L	P		<0.050	0.018	-	-	0.06	<0.001	0.015	-	-	-	-			
Potassium	mg/L	K	0.417	0.571	0.56	0.66	0.575	0.4	<0.4	0.100	0.144	<0.4	0.255	0.530			
Rubidium	mg/L	Rb		0.00044	-	-	-	-	-	-	-	-	-	-			
Selenium	mg/L	Se	0.0001	0.000294	<0.0001	<0.006	<0.0001	<0.03	<0.0005	<0.006	<0.0001	<0.0002	<0.0001	<0.0005	0.01		
Silicon	mg/L	Si		8.27	8.35	6.95	6.73	3.24	4.09	-	4.57	-	4.65	3.44			
Silver	mg/L	Ag	<0.00002	<0.00001	<0.00002	<0.0001	<0.00002	<0.01	<0.01	<0.00001	<0.00002	-	<0.00002	<0.0001			
Sodium	mg/L	Na	43	41.6	94.4	154	122	166	151	159	127	**267**	159	**268**		200	
Strontium	mg/L	Sr	0.532	0.594	0.622	0.1	0.0818	0.128	0.169	-	0.108	-	0.267	0.249			
Tellurium	mg/L	Te	<0.00001	<0.00020	-	-	.-	.-	<0.02	-	-	-	-	-			
Thallium	mg/L	Tl		<0.00001	<0.00005	<0.0001	<0.00001	<0.02	<0.02	-	<0.00001	-	<0.00001	<0.00005			
Thorium	mg/L	Th		<0.00010	-	-	-	-	-	-	-	-	-	-			

Table V

Groundwater Quality

Parameter	units	Symbol	Sampling well -->	Well 95563	Community Center	Store		School				BC Ferry			CDWQ Guideline		
				1151 Northwest Rd													
				Jan. 12 2021	Apr. 12 2021	Apr. 4 2016	Aug. 18 2013	Jun. 6 2019	Sep. 28 1994	Apr. 23 1996	Jun. 9 2010	Mar. 6 2019	Dec. 1 2005	Jun. 13 2017	Jul. 11 2018	MAC	AO	IMAC
Tin	mg/L	Sn		<0.005	0.00013	<0.005	<0.001	<0.005	<0.02	<0.02	-	<0.005	-	<0.005	<0.025			
Titanium	mg/L	Ti		<0.005	0.00054	<0.005	<0.001	<0.005	<0.003	<0.003	-	<0.005	-	<0.005	<0.025			
Tungsten	mg/L	W			<0.0001	-	-	-	-	-	-	-	-	-	-			
Uranium	mg/L	U		<0.0001	<0.00001	<0.0001	<0.004	<0.0001	-	-	<0.004	<0.0001	<0.0005	<0.0001	<0.0005	0.02		
Vanadium	mg/L	V			<0.00050	<0.005	<0.001	<0.005	<0.003	<0.003	-	<0.005	-	<0.005	<0.025			
Zinc	mg/L	Zn		0.0051	0.0147	0.0541	<0.01	0.01690	0.004	0.016	<0.01	0.005	0.022	<0.005	<0.025	5		
Zirconium	mg/L	Zr		<0.0001	<0.00020	-	-	<0.0001	<0.003	<0.003	-	<0.0001	-	<0.0001	<0.0005			
Dissolved Metals																		
Aluminum	mg/L	Al			0.0027	-	-	-	-	-	-	-	-	-	-	0.1		
Antimony	mg/L	Sb			<0.00010	-	-	-	-	-	-	-	-	-	-	0.006		
Arsenic	mg/L	As		-	0.00030	-	-	-	-	-	-	-	-	-	-	0.01		
Barium	mg/L	Ba		-	0.507	-	-	-	-	-	-	-	-	-	-	1		
Beryllium	mg/L	Be		-	<0.000020	-	-	-	-	-	-	-	-	-	-	-		
Bismuth	mg/L	Bi		-	<0.000050	-	-	-	-	-	-	-	-	-	-	-		
Boron	mg/L	B-		-	0.130	-	-	-	-	-	-	-	-	-	-	5		
Cadmium	mg/L	Cd		-	<0.000005	-	-	-	-	-	-	-	-	-	-	0.005		
Calcium	mg/L	Ca		-	25.6	-	-	-	-	-	-	-	-	-	-	-		
Cesium	mg/L	Ce			0.000023	-	-	-	-	-	-	-	-	-	-			
Chromium	mg/L	Cr		-	<0.00050	-	-	-	-	-	-	-	-	-	-	0.05		
Cobalt	mg/L	Co		-	<0.00010	-	-	-	-	-	-	-	-	-	-			
Copper	mg/L	Cu		-	0.00146	-	-	-	-	-	-	-	-	-	-		1	
Iron	mg/L	Fe		-	**0.676**	-	-	-	-	-	-	-	-	-	-		0.3	
Lead	mg/L	Pb		-	0.000316	-	-	-	-	-	-	-	-	-	-	0.01		
Lithium	mg/L	Li			0.0171													
Magnesium	mg/L	Mg		-	4.10	-	-	-	-	-	-	-	-	-	-			
Manganese	mg/L	Mn		-	0.366	-	-	-	-	-	-	-	-	-	-	0.12	0.02	
Molybdenum	mg/L	Mo		-	0.000099	-	-	-	-	-	-	-	-	-	-			
Nickel	mg/L	Ni		-	0.00060	-	-	-	-	-	-	-	-	-	-			
Potassium	mg/L	K		-	0.582	-	-	-	-	-	-	-	-	-	-			
Rubidium	mg/L	Rb			0.00046	-	-	-	-	-	-	-	-	-	-			
Selenium	mg/L	Se		-	<0.000050	-	-	-	-	-	-	-	-	-	-	0.01		
Silver	mg/L	Ag		-	<0.000010	-	-	-	-	-	-	-	-	-	-			
Sodium	mg/L	Na		-	49.8	-	-	-	-	-	-	-	-	-	-		200	
Strontium	mg/L	Sr		-	0.639	-	-	-	-	-	-	-	-	-	-			
Tellurium	mg/L	Te		-	<0.00020	-	-	-	-	-	-	-	-	-	-			
Thallium	mg/L	Tl		-	<0.000010	-	-	-	-	-	-	-	-	-	-			
Thorium	mg/L	Th		-	<0.00010													
Tin	mg/L	Sn		-	<0.00010	-	-	-	-	-	-	-	-	-	-			
Titanium	mg/L	Ti		-	<0.00030	-	-	-	-	-	-	-	-	-	-			
Tungsten	mg/L	W		-	<0.00010	-	-	-	-	-	-	-	-	-	-			
Uranium	mg/L	U		-	<0.000010	-	-	-	-	-	-	-	-	-	-			
Vanadium	mg/L	V		-	<0.00050	-	-	-	-	-	-	-	-	-	-	5		
Zinc	mg/L	Zn		-	0.0100	-	-	-	-	-	-	-	-	-	-			
Zirconium	mg/L	Zr		-	-	-	-	-	-	-	-	-	-	-	-			

Table V

Groundwater Quality

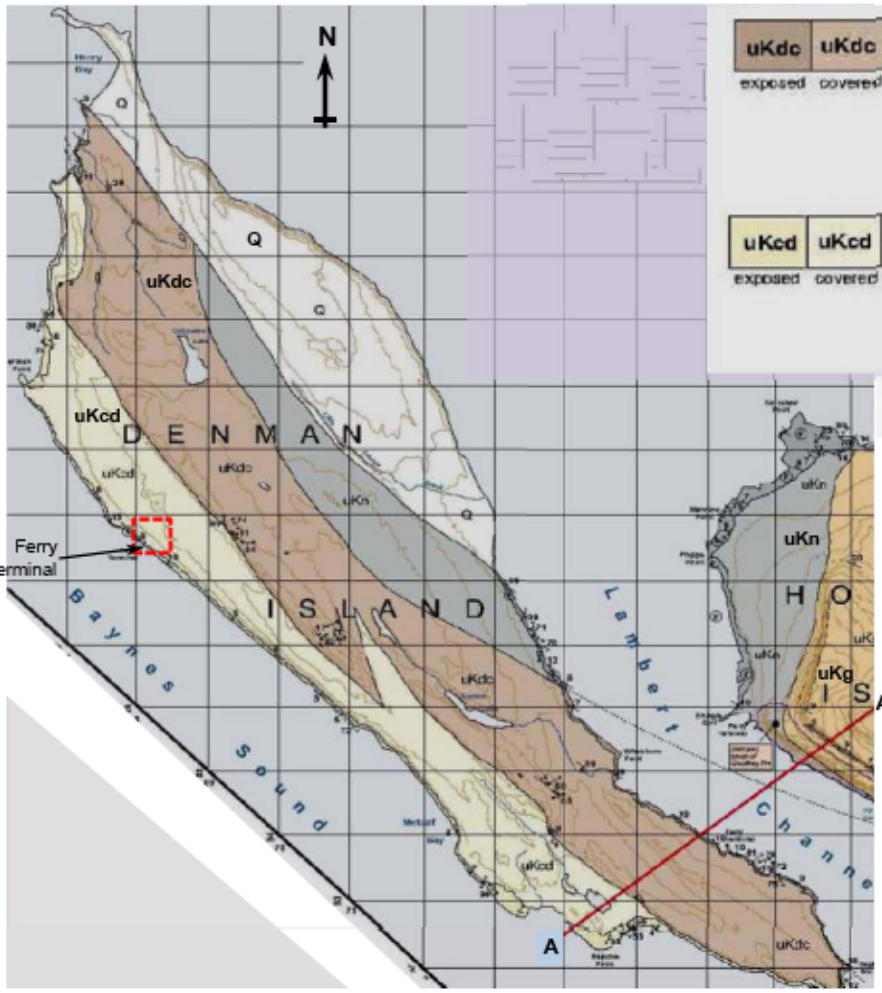
Parameter	units	Symbol	Sampling well --> Well 95563 1151 Northwest Rd Jan. 12 2021	Well 95563 1151 Northwest Rd Apr. 12 2021	Community Center Apr. 4 2016	Store Aug. 18 2013	Store Jun. 6 2019	School Sep. 28 1994	School Apr. 23 1996	School Jun. 9 2010	School Mar. 6 2019	BC Ferry Dec. 1 2005	BC Ferry Jun. 13 2017	BC Ferry Jul. 11 2018	CDWQ Guideline MAC	CDWQ Guideline AO	CDWQ Guideline IMAC
Microbiological																	
Total coliform	MPN/100mL		<1	<1	-	-	<1	-	-	-	<1	**20**	-	-	<1		
E-coliform	MPN/100mL		<1	<1	-	-	<1	-	-	-	<1	<1	-	-	<1		
Total Non Coliform	MPN/100mL		-	-	-	-	-	-	-	-	-	-	-	-	200		
Hetrotrophic PC	CFU/1mL		-	<1	-	-	27	-	-	-	2	-	-	-			
Iron Bacteria	CFU/1mL						<25				<25						
Sulphate Reducing Bac	CFU/1mL						<75				<75						

Notes:

1) See locations of wells with water quality data on Fig. 3
2) Local are well information provided by VIHA via a freedom of information request.
3) **Bolded** and underlined values indicates that value exceeds the AO value.
4) Red values exceed the MAC value.

Figures

JOB NUMBER: 263



uKdc | uKdc (exposed | covered)

DE COURCY FORMATION: Massive, light-olive grey, medium- to coarse-grained, poorly sorted, thick-bedded sandstone (feldspathic litharenite) containing 45-50% rock fragments including 15% chert. Sandstone is interbedded with thick-bedded, channelized, clast-supported pebble-cobble conglomerate containing a high proportion of mafic and felsic extrusive clasts.

uKcd | uKcd (exposed | covered)

CEDAR DISTRICT FORMATION: Massive, dark grey mudstone containing abundant calcium carbonate concretions. Mudstone is locally interlaminated and interbedded with siltstone and fine-grained, thin-bedded parallel- and current-ripple-laminated sandstone. Common clastic dikes and slump folded layers

Q ***QUATERNARY DEPOSITS:*** Sand and gravel.

Area around the Property (see Note 2)

Scale (1:10,000)

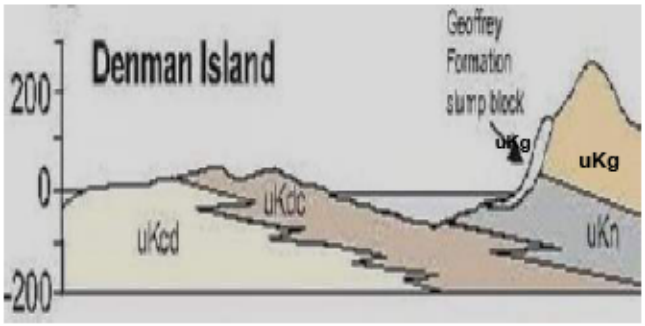
0 150 300m

uKg | uKg (exposed | covered)

GEOFFREY FORMATION: Thick-bedded, channelized, clast-supported pebble-cobble conglomerate containing predominantly mafic and felsic extrusives and mafic intrusive clasts; in a matrix of medium-grained, light olive grey sandstone. Conglomerate is interbedded with medium- to coarse-grained, light olive grey, massive, parallel and current ripple laminated, thick-bedded sandstone (feldspathic litharenite); minor mudstone.

uKn | uKn (exposed | covered)

NORTHUMBERLAND FORMATION: Massive, dark grey mudstone containing abundant calcium carbonate concretions. Mudstone is locally interlaminated and interbedded with siltstone and fine-grained, parallel and current ripple laminated sandstone. Common clastic dikes and slump folded layers.



Section A-A'

NOTES
1) Map from Katnick D.C. and Mustard P.S. 2001. Geoscience Map 2001-3 50,000 scale map prepared for BC Geological Survey Branch.
2) See detailed map on Fig. 2

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Assessment of Sustainable Yield and Potential Impacts for Well on 1151 Northwest Road Property, Denman Island , B.C.	**Geology and Location Map.**

Drawn: RD Date: Apr. 2021

Approved:

Fig. 1

JOB NUMBER: 263

Scale (1:10,000)

0 300 600m

Legend

- The Property
- Inferred groundwater flow direction
- Licensed surface water point of diversion
- Pump tested well on the Property..
- Well monitored during pumping test.
- 73591 Water well from MOE wells Database (see Note 2)
- Recharge area required to sustain Project well yield of 0.11 L/s.

NOTES
1) Base map from BC MOE Wells Web mapping
2) See information on wells within a 0.5 Km radius on Table I.

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Assessment of Sustainable Yield and Potential Impacts for Well on 1151 Northwest Road Property, Denman Island , B.C.	**Local Area Map Indicating Water Wells within 1 Km Radius of Property Well.**

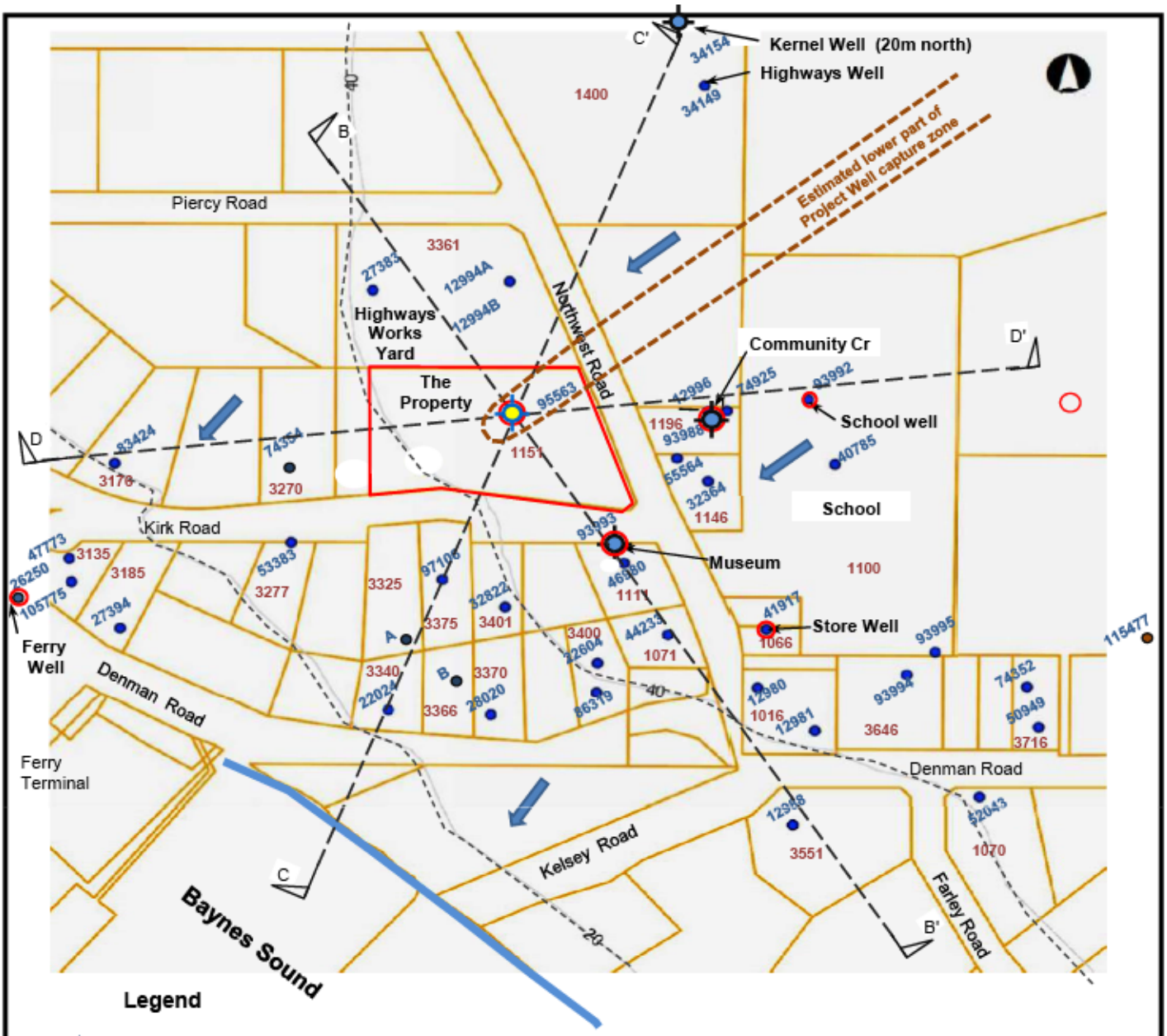
Drawn: RD Date: Apr. 2021

Approved:

Fig. **2**

File:2600 \ 263 Figures 2 Area Map 5/5/2021 9:37 PM

JOB NUMBER: 263



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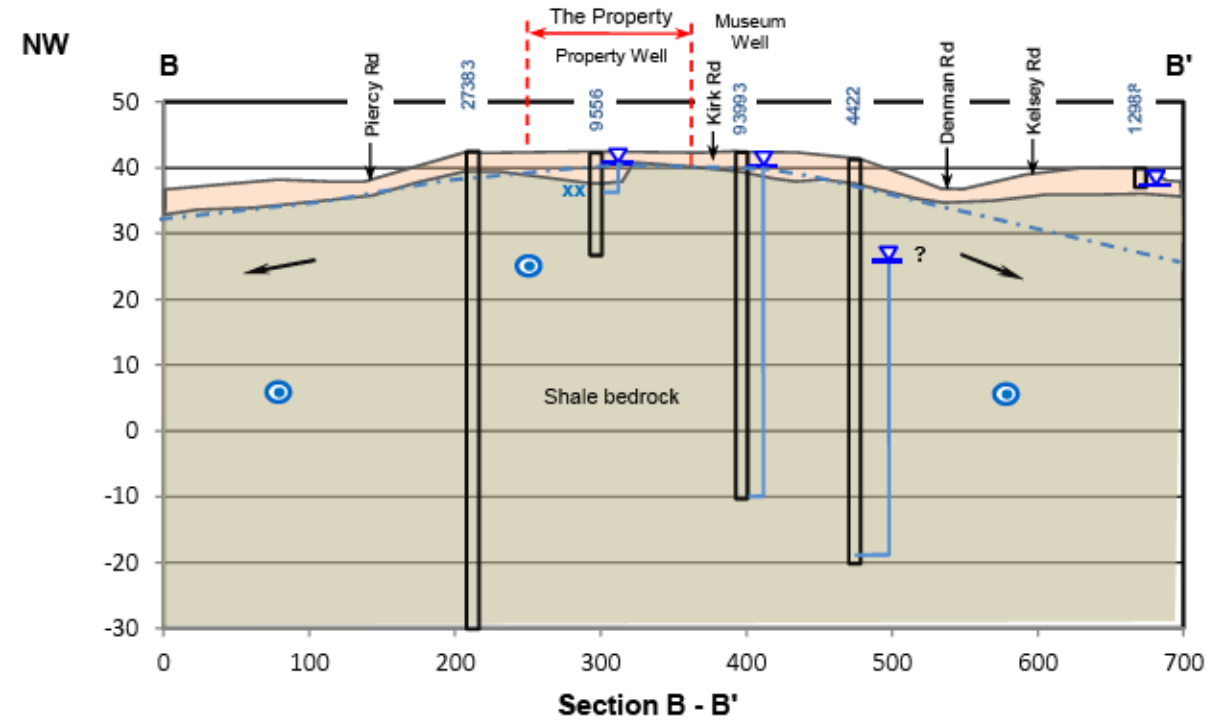
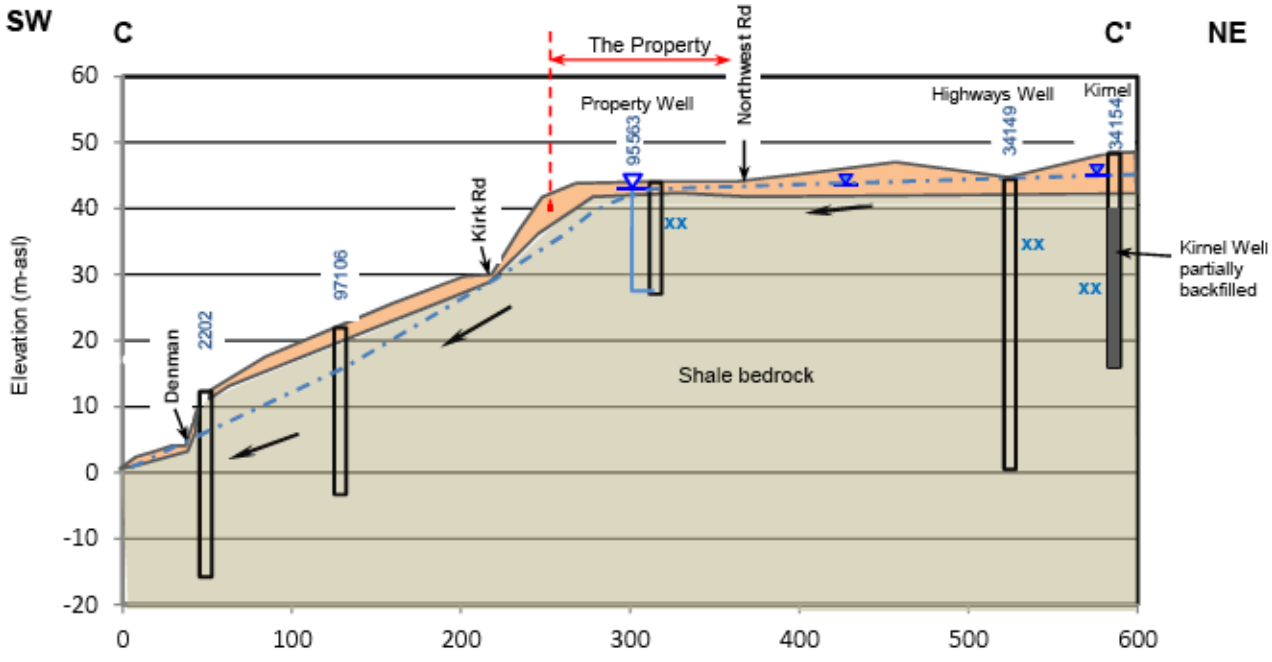
Assessment of Sustainable Yield and Potential Impacts for Well on 1151 Northwest Road Property, Denman Island , B.C.	**Local Area Well Map.** Drawn: RD Date: Apr. 2021 Approved: Fig. **3**

File:2600 \ 263 Figures 3 Local Map 5/5/2021 11:10 PM

JOB NUMBER: 263





Legend

Interpreted groundwater flow direction

In plane of section

Into section

Out of section

Silty clay overburden unconsolidated sediments

Water bearing bedrock fracture zone.

Inferred water table / piezometric surface.

Well tag number (see data on Table II)

Well with indicated piezometric level

NOTES

1) See location of sections on Fig. 3

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Assessment of Sustainable Yield and Potential Impacts for Well on 1151 Northwest Road Property, Denman Island , B.C.

Section B - B' and C - C'

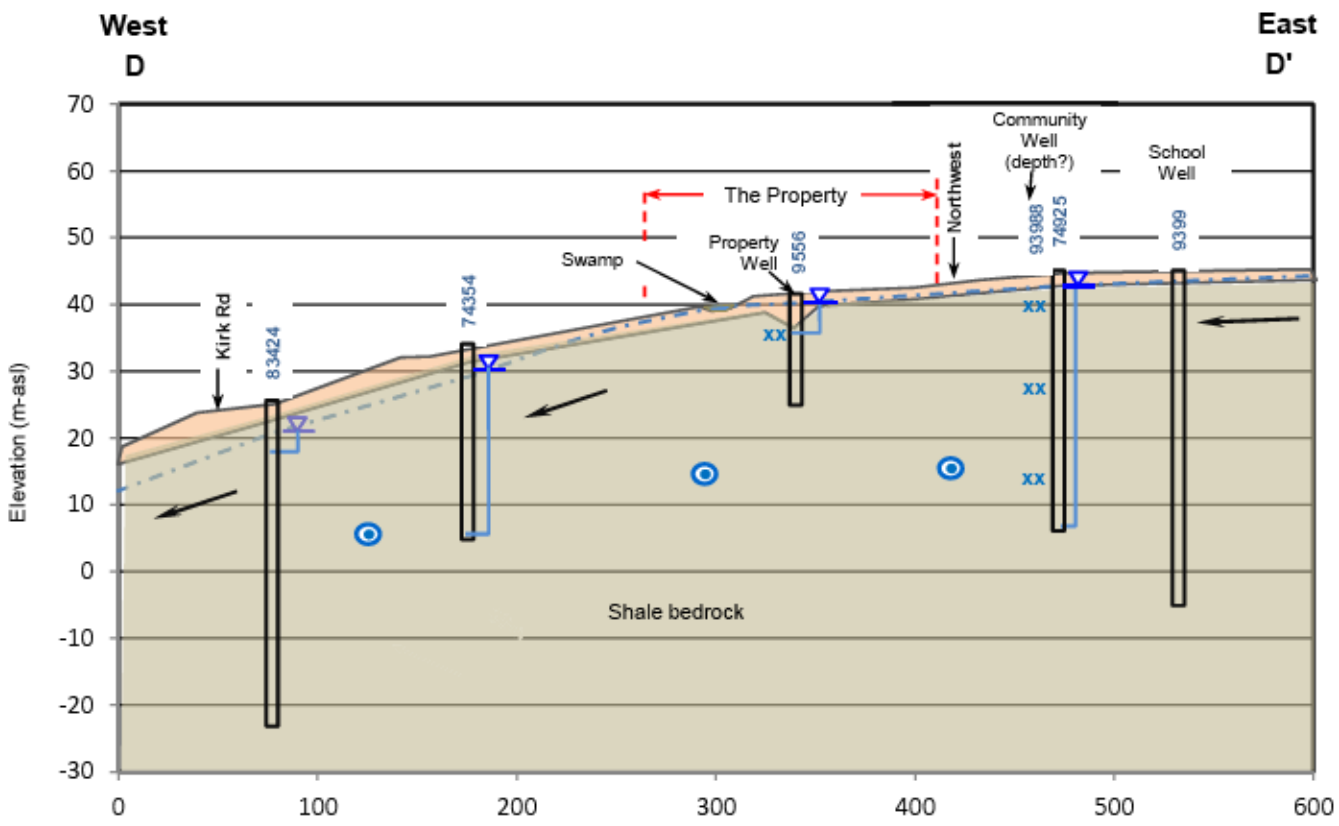
Drawn:

Date: Apr. 2021

Approved:

Fig. **4**

JOB NUMBER: 263



Legend

See legend on Fig. 4

NOTE
1) See location of section on Fig. 3

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Assessment of Sustainable Yield and Potential Impacts for Well on 1151 Northwest Road Property, Denman	**Section D-D'** Drawn: RD Date: Apr. 2021 Approved: Fig. **5**

JOB NUMBER: 263

Legend

Project Well (pump tested)

Monitored well

Approximate extent of swamp area.

Approximate extent of operating well capture zone

Scale (1:3,000)

0 40 80m

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Assessment of Sustainable Yield and Potential Impacts for Well on 1151 Northwest Road Property, Denman Island , B.C.	**Orthophoto Map**

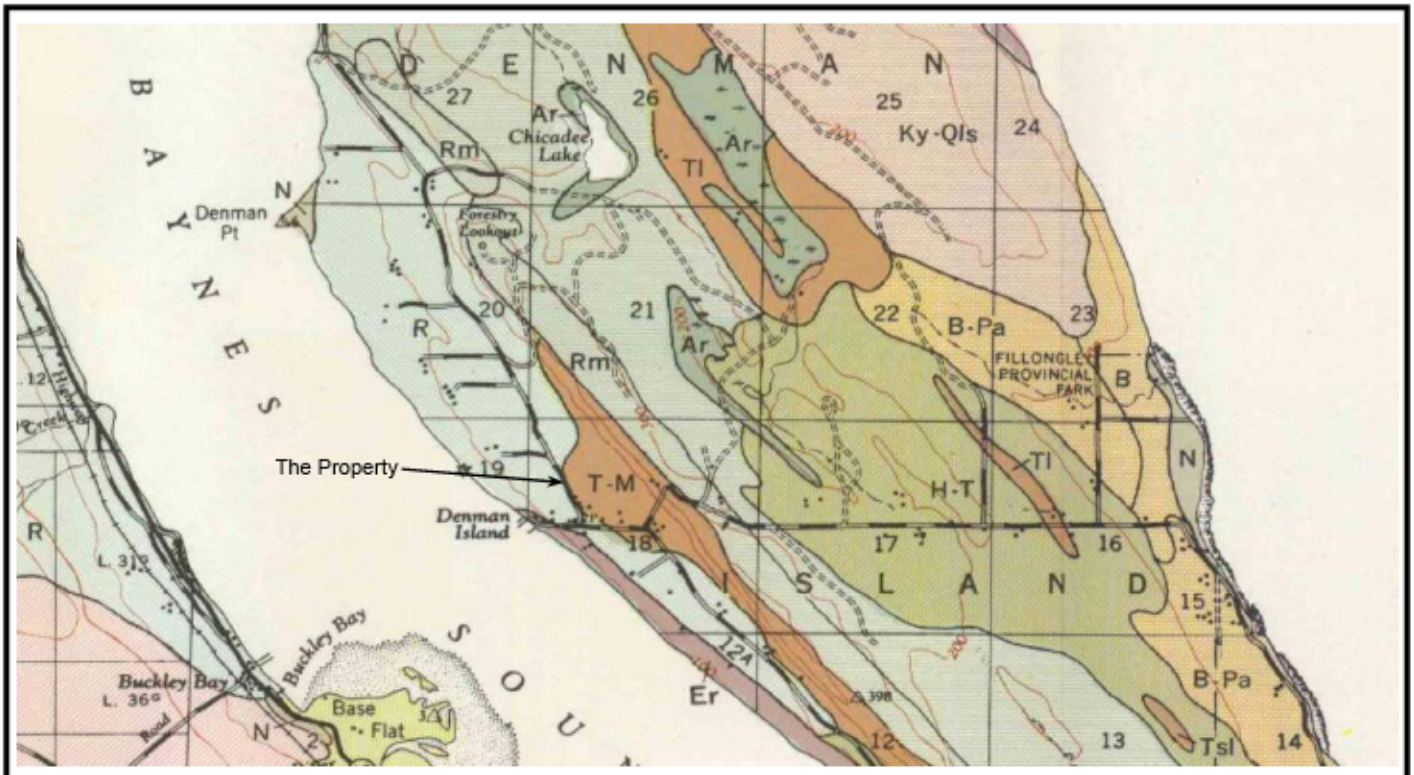
Drawn: RDN | Date: Apr. 2021

Approved:

Fig. **6**

File:2600 \ 263 Figures 6 Ortho map 5/5/2021 9:44 PM

JOB NUMBER: 263



Legend

MERVILLE	ROUGH MOUNTAINOUS LAND	ROUGH STONY LAND	ROYSTON	TOLMIE
Loam Sandy loam	Variety of rocks	Variety of rock materials	Gravelly loam	Fine sandy loam Sandy loam Loam Sandy clay loam
M	Rm	Rs	R	T
Acid Dark Brown Forest			Brown Podzolic	Dark Grey Gleisolic
Moderately well drained	Variable drainage	Variable drainage	Well drained	Poorly drained
Gently sloping	Mountainous	Gently to very steeply sloping	Undulating to steeply sloping	Level to depressional
Few stones	Very stony	Very stony	Moderately to very stony	Stone free
6 to 10 inches of dark brown granular, permeable sandy loam or loam (A_1); over brown granular to subangular blocky and very permeable loam (B); over grey very slowly permeable, and highly plastic marine clay (D)	Bedrock with thin soil or soil material, much bare rock	Thinly mantled bare rock	18 to 20 inches of dark yellowish brown to yellow brown gravelly loam; with weak blocky structure and few concretions, very permeable (B), overlying a compact, grey brown and very slowly permeable, clay loam till (C)	6 to 9 inches of very dark brown to black granular and permeable fine sandy loam to sandy clay loam (A_1); over 4 inches of grey to grey brown, slowly permeable, subangular blocky sandy clay loam (AB); over 8 to 10 inches of reddish brown to yellowish brown highly mottled and slowly permeable sandy clay (B_g), over grey, compact very slowly permeable marine clay (D)

NOTES
1) Based on 1958 Qualicum-Alberni Sheet 1:63,360 scale e soils map. Prepared by Experimental Farms Service, Ottawa See details in Kenny et al 1990.

Scale (1:5,000)
0 80 160m

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Assessment of Sustainable Yield and Potential Impacts for Well on 1151 Northwest Road Property, Denman Island , B.C.

Soils Map.

Drawn: RD
Date: Apr. 2021
Approved:
Fig. **7**

JOB NUMBER: 263

Legend

Approximate location of test pit (see Note 2)

Estimated extent of lower portion of Property Well capture zone.

Scale (1:1,000)

0 15 30m

NOTES

1) See location of the Property on Fig. 3.
2) Test pits were provided by the H2O Environmental Ltd., who prepared preliminary plans for a Type 3 waste water system for the Project. (see logs of pits in Appendix A)

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Assessment of Sustainable Yield and Potential Impacts for Well on 1151 Northwest Road Property, Denman Island , B.C.	**Preliminary Property Development Plan**

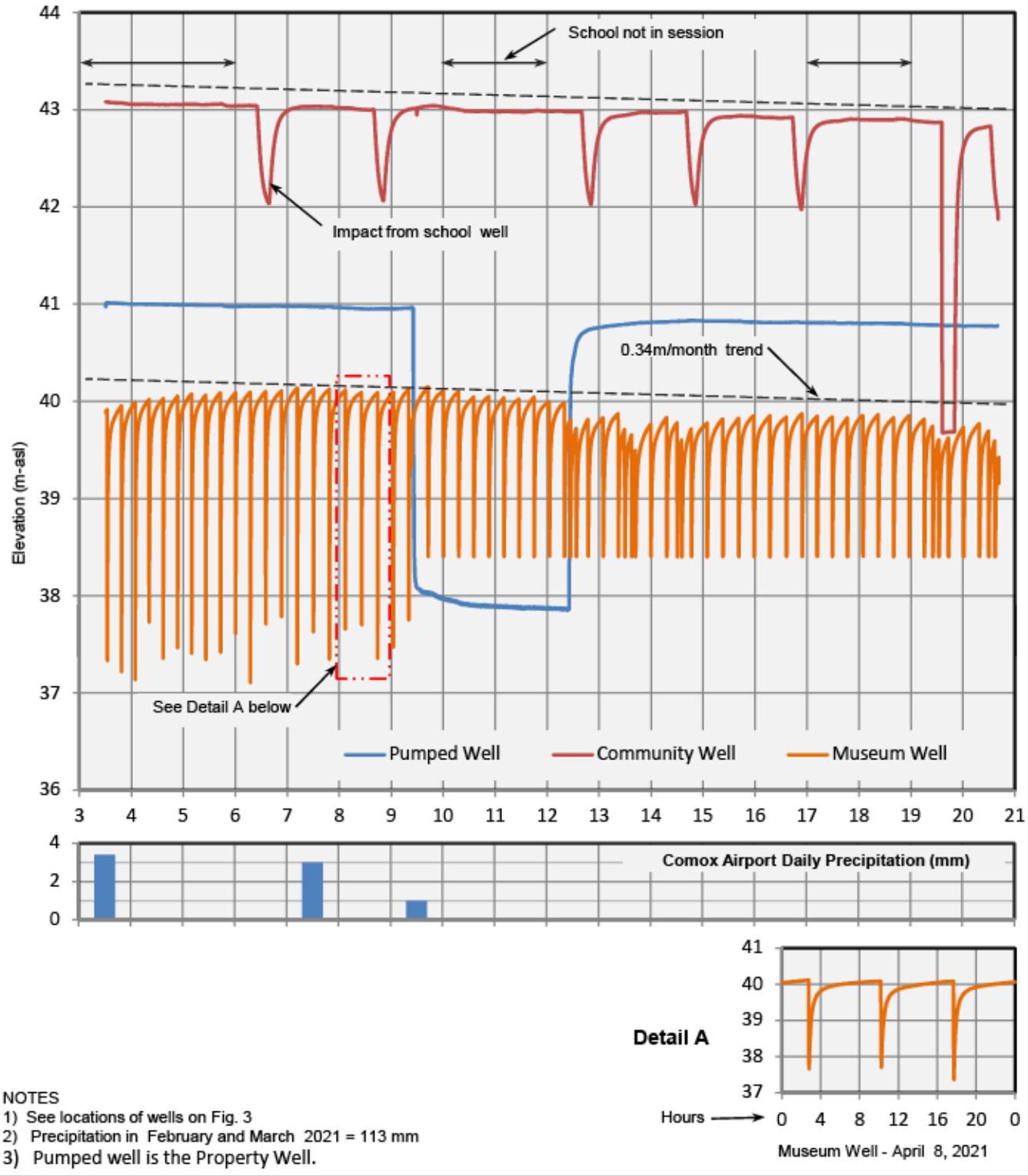
Drawn: RD | Date: Apr. 2021

Approved:

Fig. **8**

File:2600 \ 263 Figures 8 Site map 5/5/2021 9:47 PM

JOB NUMBER: 258



NOTES
1) See locations of wells on Fig. 3
2) Precipitation in February and March 2021 = 113 mm
3) Pumped well is the Property Well.

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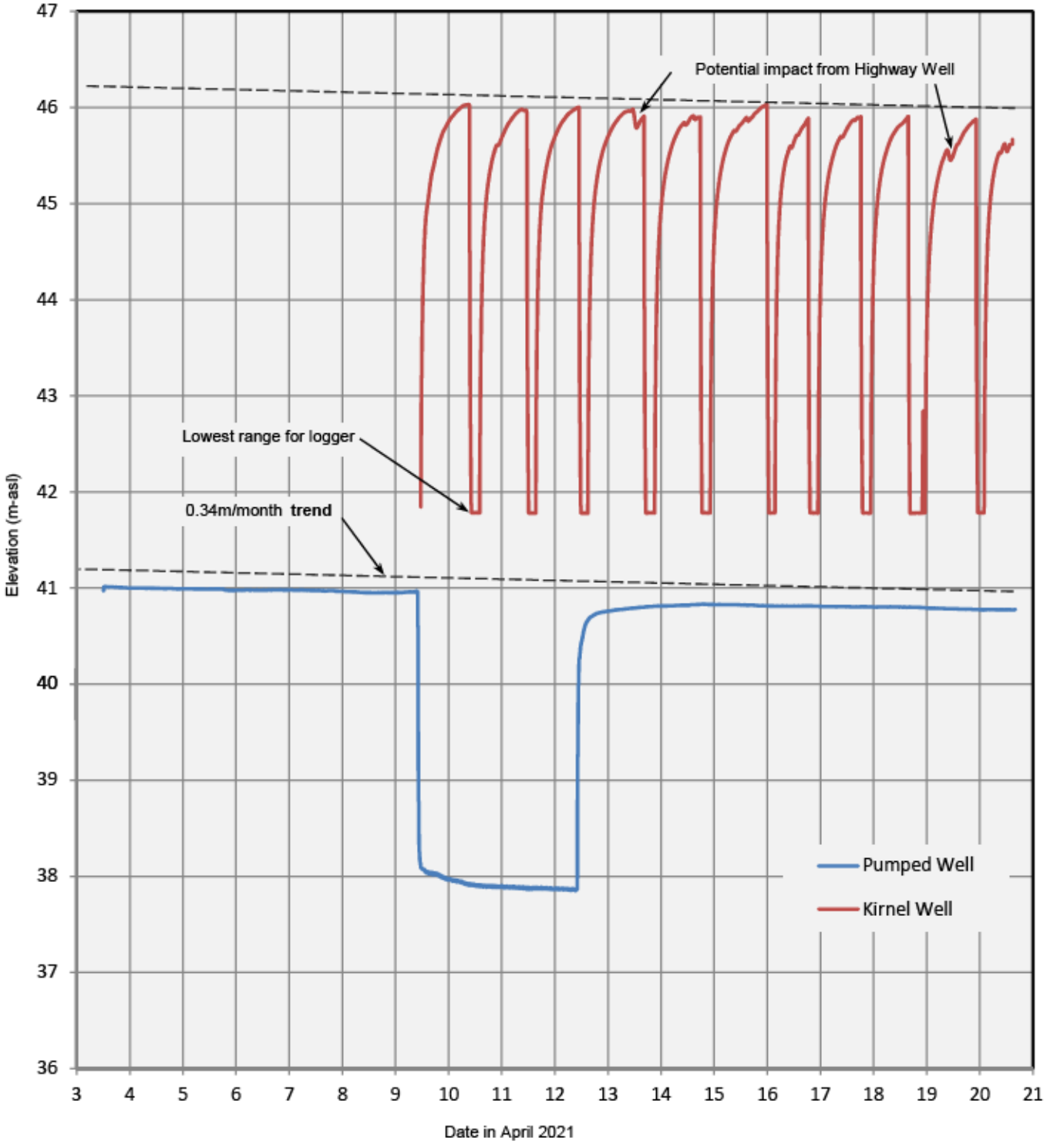
Assessment of Sustainable Yield and Potential Impacts for Well on 1151 Northwest Road Property, Denman Island , B.C.

Water Levels in Pumped Well and two Neighbouring Wells

Drawn: RDN | Date: Apr. 2021
Approved:
Fig. **9**

File:2600 \ 263 Figures 9 WL Elevations 5/5/2021 9:55 PM

JOB NUMBER: 263



NOTES
1) See locations of wells on Fig. 2 and details of wells on Table II.

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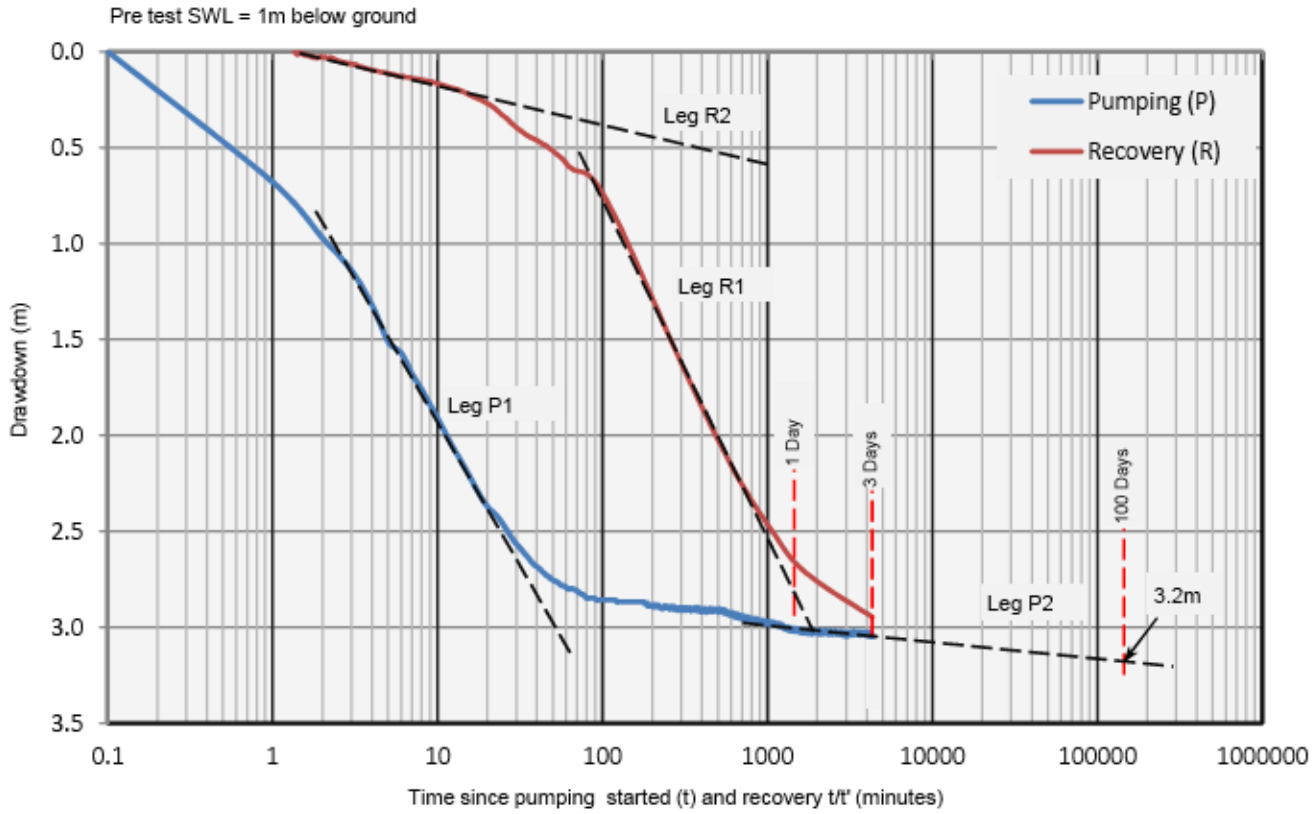
Assessment of Sustainable Yield and Potential Impacts for Well on 1151 Northwest Road Property, Denman Island , B.C.	**Water Levels in Pumped and Kirnel Wells**

Drawn: RD | Date: Apr. 2021 | Approved: | Fig. **10**

File:2600 \ 263 Figures 10 Kirnel Well 5/5/2021 9:53 PM

JOB NUMBER: 263



	Drawdown	Sp Cap	Q	
	m	L/s/m	L/s	Igpm
100 day	3.2	0.0541	0.173	2.3
Decline	1.3	< -- seasonal decline		
Available	2.7	0.0541	0.146	1.9
75%	2.0	0.0541	0.109	1.5

Percent of available drawdown (design value)

Estimates for fracture zone transmissitivity

Transmissivity = $1.83 * 10^{-4} * Q / \Delta S$

	Q (L/s)	ΔS (m)	T (m^2/s)
First Leg			
Pumping	0.173	1.50	2.1E-05
Recovery	0.173	1.75	1.8E-05
Second Leg			
Pumping	0.173	0.15	2.1E-04
Recovery	0.173	0.25	1.3E-04

NOTE8
1) See well location on Figs . 3 and 6.
2) As indicated on well log (Appendix B) the well is 15.8 m deep and the principal water source is assumed to be at a depth of 5m below ground.
2) See natural scale graphs of water levels on Figs. 9 and 10, and manual monitoring data in Appendix C
3) Total volume of water pumped during 3 day pump test = 95,884 litres. Average rate was 0.18 L/s (2.9 USgpm).

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Assessment of Sustainable Yield and Potential Impacts for Well on 1151 Northwest Road Property, Denman Island , B.C.

Semi-Log Graph of Well 95563 Water Level Trends

Drawn: RN | Date: Apr. 2021

Approved: | Fig. **11**

File:2600 \ 263 Figures 11 Semilog 5/5/2021 9:59 PM

Appendix A

Logs of Test Pits on the Property

Appendix A

Logs of Test pits

Lot #:	2	Testpit #:	1	Slope %:	5	Veg:	DOUGLAS FIR		
Depth (cm)		Texture	Colour	Structure	CF%	Con	Roots	Mottles	Seepage
0	10	FOR DEB	LT BR	N	<5	L	Y	N	N
10	100	SAND LOAM	DK BR	N	20	L	TO 60	AT 60	Y
Comments:		GLACIAL TILL AT 36 cm							

Lot #:	2	Testpit #:	2	Slope %:	9	Veg:	DOUGLAS FIR		
Depth (cm)		Texture	Colour	Structure	CF%	Con	Roots	Mottles	Seepage
0	6	SOD	LT BR	N	<5	L	Y	N	N
6	30	SAND LOAM	DK BR	STR BL	30	L	Y	N	Y
30	46	SAND LOAM	RED	N	<5	L	N	N	N
46	80	SAND LOAM	TAN	N	40	L	TO 50	N	N
Comments:		BEDROCK AT 80							

Lot #:	2	Testpit #:	3	Slope %:	5	Veg:	DOUGLAS FIR		
Depth (cm)		Texture	Colour	Structure	CF%	Con	Roots	Mottles	Seepage
0	5	FILL SAND	TAN	N	10	L	Y	N	N
5	80	SAND LOAM	RED	MOD BL	25	L	TO 80	N	N
Comments:		HARD AT 80							

Data fron H2O Environmental Ltd. March 30, 2021.

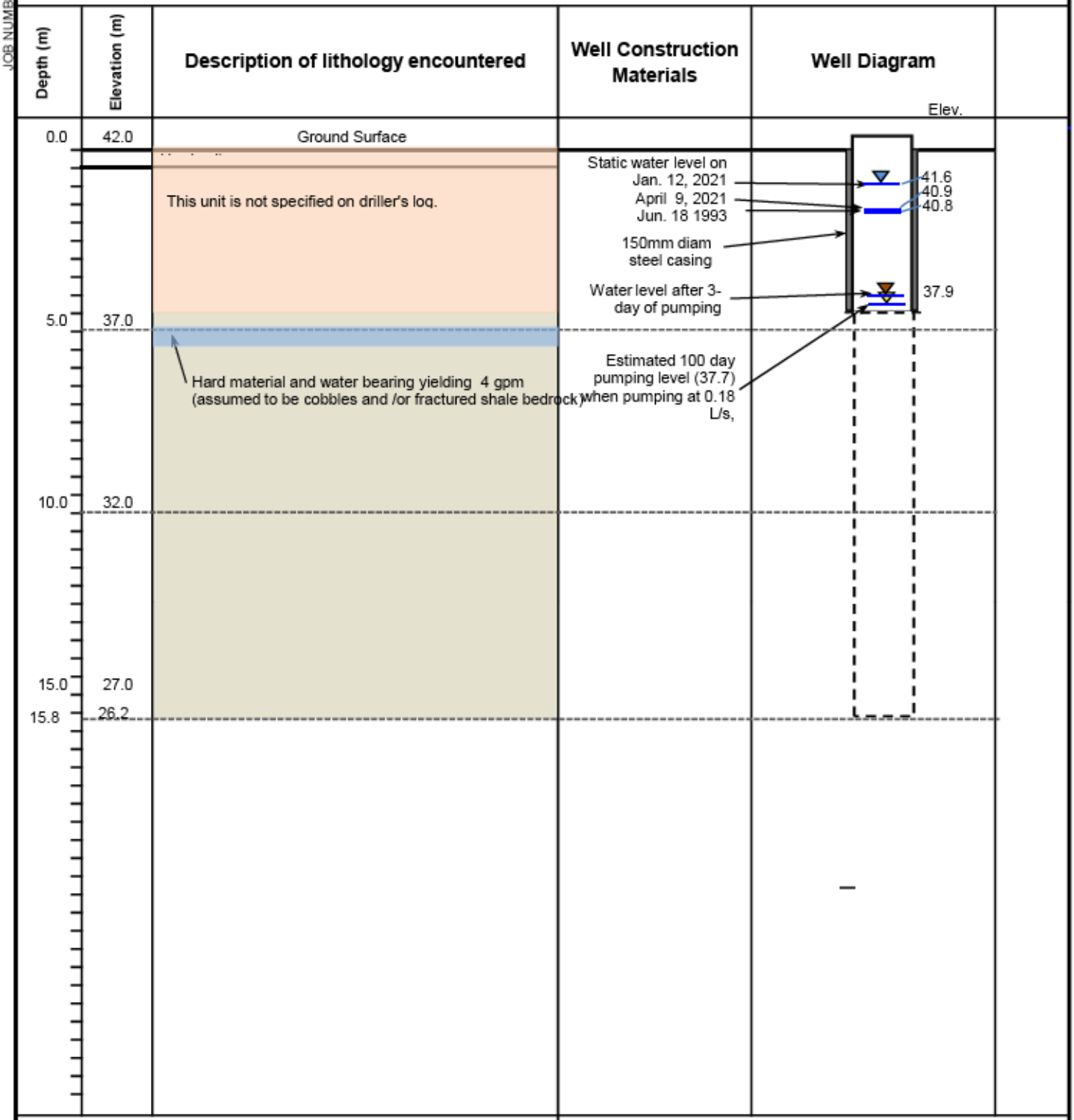
Appendix B

Log of Property Well (WTN 95563)

JOB NUMBER : 263

Borehole No: **Property Well (WTN 95563)**
Date Drilled: June 1991
Method: Cable tool
Datum above ground (m): 0.6
Elevation top of flange (m-asl): 42.6

Constructed By: Gulf Island Well Drilling
Hole Diameter: 150 mm
Ground elevation: 42.0 m-asl
Depth to water at construction : na m-btoc
April 9, 2021 depth to water: 1.1 m-below ground



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Assessment of Sustainable Yield and Potential Impacts for Well on 1151 Northwest Road Property, Denman Island , B.C.

Log of Property Well

BY:	DATE:
rad	Aug. 2021
APPROVED:	Fig.
	B1

Appendix C

Manual Measurements Made During Pump Test.

APPENDIX B1

Pump Test on Well 95563 Monitoring in Well 95563

DRAFT

Day	Time	Elapse Time (t)	Recovery Time (t')	t / t'	DTW	Draw down	Water Elev^{-s}	Meter	Pumping Rate		Spec. Cap	EC	pH	ORP	Temp	Comments
		mins	mins		m	m	m-asl		Igpm	L/s	L/s/m	µS/cm	units	mg/L	°C	
9-Apr-21	10:10	0.0			1.66	0.00	40.9	1,125.470								Start of April pumping test on Well 95563
9-Apr-21	10:11	1			2.34	0.68	40.3		2.5	0.19	0.28					Note: only selective data for this test
9-Apr-21	10:12	2			2.63	0.97	40.0									is presented on the table (see Fig. 9)
9-Apr-21	10:13	3			2.80	1.14	39.8									for datalogger based graph).
9-Apr-21	10:14	4			2.98	1.32	39.6									
9-Apr-21	10:15	5			3.17	1.51	39.4									
9-Apr-21	10:16	6			3.23	1.57	39.4									
9-Apr-21	10:17	7			3.34	1.68	39.3									
9-Apr-21	10:18	8			3.42	1.76	39.2									
9-Apr-21	10:19	9			3.50	1.84	39.1									
9-Apr-21	10:20	10			3.57	1.91	39.0									
9-Apr-21	10:22	12			3.70	2.04	38.9									
9-Apr-21	10:24	14			3.80	2.14	38.8									
9-Apr-21	10:26	16			3.89	2.23	38.7									
9-Apr-21	10:28	18			3.97	2.31	38.6									
9-Apr-21	10:30	20			4.03	2.37	38.6									
9-Apr-21	10:35	25			4.16	2.50	38.4									
9-Apr-21	10:40	30			4.26	2.60	38.3									
9-Apr-21	10:45	35			4.33	2.67	38.3									
9-Apr-21	10:50	40			4.38	2.72	38.2									
9-Apr-21	10:55	45			4.42	2.76	38.2									
9-Apr-21	11:00	50			4.45	2.79	38.2									
9-Apr-21	11:10	60			4.48	2.82	38.1									
9-Apr-21	11:20	70			4.50	2.84	38.1									
9-Apr-21	11:30	80			4.52	2.86	38.1									
9-Apr-21	11:40	90			4.53	2.87	38.1									
9-Apr-21	11:50	100			4.54	2.88	38.1						7.33	-16	10.5	
9-Apr-21	12:02	112						1,126.839	2.5	0.19	0.07					
9-Apr-21	13:10	180			4.57	2.91	38.0									
9-Apr-21	19:15	545			4.60	2.94	38.0									
10-Apr-21	8:30	1340			4.68	3.02	37.9					339	7.30	-11	10.6	
10-Apr-21	18:30	1940			4.70	3.04	37.9					325	7.44	-11	10.9	
11-Apr-21	8:45	2795			4.72	3.06	37.9	1,156.047	2.4	0.18	0.059	319	7.50	6	10.9	Timed bucket rate + 0.176 L/s
11-Apr-21	18:25	3375			4.71	3.05	37.9	1,162.179	2.3	0.18	0.058	318	7.46	9	10.0	Timed bucket rate + 0.177 L/s
12-Apr-21	7:43	4148			4.74	3.08	37.9	1,170.505	2.4	0.18	0.058	308	8	8	10.0	
11-Apr-21	9:50	2835			4.84	3.18	37.8									Water sample collected
12-Apr-21	10:10	4295			4.84	3.18	37.8	1,172.033	2.4	0.18	0.057					Pump off and start of recovery
12-Apr-21	10:11	4296	1	4,296	4.65	2.99	38.0									
12-Apr-21	10:12	4297	2	2,148	4.50	2.84	38.1									
12-Apr-21	10:13	4298	3	1,433	4.36	2.70	38.2									
12-Apr-21	10:14	4299	4	1,075	4.21	2.55	38.4									
12-Apr-21	10:15	4300	5	860	4.09	2.43	38.5									
12-Apr-21	10:16	4301	6	717	3.98	2.32	38.6									
12-Apr-21	10:17	4302	7	615	3.88	2.22	38.7									
12-Apr-21	10:18	4303	8	538	3.78	2.12	38.8									
12-Apr-21	10:19	4304	9	478	3.70	2.04	38.9	1								
12-Apr-21	10:20	4305	10	430	3.62	1.96	39.0									
12-Apr-21	10:22	4307	12	359	3.48	1.82	39.1									
12-Apr-21	10:24	4309	14	308	3.36	1.70	39.2									
12-Apr-21	10:26	4311	16	269	3.25	1.59	39.4									
12-Apr-21	10:28	4313	18	240	3.15	1.49	39.5									
12-Apr-21	10:30	4315	20	216	3.07	1.41	39.5									
12-Apr-21	10:35	4320	25	173	2.87	1.21	39.7									
12-Apr-21	10:40	4325	30	144	2.77	1.11	39.8									
12-Apr-21	10:45	4330	35	124	2.60	0.94	40.0									
12-Apr-21	10:50	4335	40	108	2.05	0.39	40.6									
12-Apr-21	10:55	4340	45	96	2.43	0.77	40.2									
12-Apr-21	11:00	4345	50	87	2.36	0.70	40.2									
12-Apr-21	11:10	4355	60	73	2.33	0.67	40.3									
12-Apr-21	11:20	4365	70	62	2.30	0.64	40.3									
12-Apr-21	11:30	4375	80	55	2.27	0.61	40.3									
12-Apr-21	11:40	4385	90	49	2.22	0.56	40.4									
12-Apr-21	11:50	4395	100	44	2.19	0.53	40.4									
12-Apr-21	12:10	4415	120	37	2.15	0.49	40.5									
12-Apr-21	12:30	5875	140	42	2.12	0.46	40.5									
12-Apr-21	12:50	5895	160	37	2.07	0.41	40.5									
12-Apr-21	13:05	4470	175	26	2.05	0.39	40.6	1,172								See remainder of recovery on Figs 9 and 11

Notes:

1) See location of well on Fig. 2
2) Water level monitoring for three hours at the start of pumping and well recovery was performed by McGill Water Services and twice daily measurements were performed by Dave Ricketts.
3) Depths to water are given relative to the top of the well casing.
4) The drawdown has not been corrected for a long term decline in the static water level as it was for data used to prepare Fig. 7
5) Datum elevation (metres geodetic) estimated from Islands Trust 2m scale topograph 42.6

Appendix D

Level 2 GARP Hydrogeological Assessment.

Table I

Level 2 GARP Hydrogeological Investigation

Topic	Elements	Comments
a) Location, topography and drainage	Site plan	Fig. 1 attached
	Hydrogeological profile	Fig. 5 in Dec 30, 2019 report
	Topographic contours	Fig. 3 in Dec 30, 2019 report
	Well locations	Yes
	Drainage flow directions	No natural surface channels. Sheet flow is orthogonal to topography
	Conditions around well head	Moderately well drained
	Potential sources of contamination	Wastewater treatment and distribution along with feces from dogs and deer.
b) Climatic conditions	Nearest rainfall station	Comox Airport
	Nearest climate station	Comox Airport.
	Monthly precipitation normals	Range from 26.7mm in Jul. to 200.5mm in Nov.
	Annual precipitation	1153.6mm
	Mean annual temperature	10.0 °C
c) Soils and geology	Local soil information	Typically less than 1m thickness of sand loam overlying glacial till and/or mudstone bedrock (see Appendix A).
	Bedrock geology	Cedar District Formation, part of the Upper Cretaceous of the Nanaimo Group (see Fig. 1).
d) Well and well head conditions	Detailed well log	See Appendix B
	Depth to water intake	The depth to the first and only documented water strike , a fracture in mudstone bedrock at a depth of about 5m below ground, which triggers and GARP designation.
	Well yield and efficiency	See Fig. 11 and Table IV.
	Distances from surface water bodies	>30m
	Depth to water bearing zones	5m - see Appendix B
	Pump installation details	To be determined by others
	Well head completion details	To be determined by others, however top of casing is to be flood proof and surface drainage directed away from the wellhead, as per the BC Groundwater Protection regulation.
e) Hydrogeological conditions and aquifer characteristics	Origin and nature of aquifer and confining zones	Semi-confined fractured mudstone bedrock aquifer with saturated overly overburden sediments in many areas..
	Non pumping water levels	Indicated on Fig. 9
	Pump test data	See Figs.9-11
	Aquifer recharge	Principal source of aquifer recharge is infiltration of precipitation on undeveloped land upslope of well (see Figs. 2, 3 and 6 and Table IV.
f) Surface water hydrology and watershed conditions	Ditch drainage system	Only road side ditches present
	River and lake stages	No nearby lakes and rivers.
	Flood plain conditions	Not relevant
g) Aquifer water levels, flow directions and gradients	Water level trends	Water level trend is relatively steady with an estimated 2.5m annual fluctuation and minimal daily fluctuations, There is no inter well interference.
	Hydraulic gradient	Hydraulic gradient is about 20m per Km with slope to the west.
	Unsaturated zone	1m thick unsaturated zone in sand loam overburden sediments.

Table I

Level 2 GARP Hydrogeological Investigation

Topic	Elements	Comments
h) Pumping conditions in well	Anticipated pumping rate	Well to supply up to 20 housing units. Anticipated average daily pumping rate is 0.11 L/s.
	Drawdown effects	Design drawdown in operating well = 2m with no impact on nearby wells.
i) Groundwater and surface water quality	Surface source vs. groundwater quality	The nearest surface water body in the recharge area is a swamp located about 500m to the north (see Fig. 2) and has no influence on the Property Well water quality.
	Surface water source vs. groundwater temperatures	Groundwater temperatures are relatively constant throughout the year at about 10°C and is not influenced by surface water bodies and winter recharge from precipitation.
	Surface source and well microbiological quality	Water samples collected in both the January 2021 and April 2021 pumping tests were analyzed for total and e-coli counts were negative (<1). Available test results for coliform in the School and Store wells were also negative (see Table V).
	Property Well water quality	The turbidity was well above 1 NTU but will likely be reduced a when pumping at a lower rate than during the test and after an extensive period of flushing.
		Iron and manganese concentrations are both above AO limits and n=manganese is above the MAC.
		Analysis of coliform bacteria indicated none present.
		Heterotrophic Plate Count was <1 CFU/1ml.
		The sulphide concentration was above the AO.
j) Conditions for virus transport and survival	Fractured bedrock aquifer	While the bedrock is relatively impervious, the fractures are relatively permeable.
	Capping layer	The bedrock aquifer unit is not locally exposed on surface and moderate permeability <1m thick sediment layer will provide only a partial barrier to migration of viruses from the near surface.
	Unsaturated zone above the aquifer	Test pits confirm the presence a 0.8m thick unsaturated zone in a sand loam unit on the property. While the thickness of the overburden near the well may be greater, the high static water level (about 1m) does not provide for a thicker unsaturated zone when the well is not in operation.
	UV treatment of sewage effluent	It is understood that the Type 3 wastewater treatment system planned for the Property involves UV treatment of the effluent. However, this may not provide adequate removal of viruses and other deleterious compounds in the effluent, hence relocating one of the dispersal fields was justified.

Table I

Level 2 GARP Hydrogeological Investigation

Topic	Elements	Comments
	Potential pathogen travel time from recharge area to the well.	Travel time from recharge area is very difficult to assess as the location and the characteristics of fracture in the bedrock are not known. Using transmissivity values from the pump test and an assumed aquifer thickness, calculated 100 and 200 day travel distance are presented on Table IV.
	Well capture zone	As is illustrated on the figure at the bottom of Table IV, the well capture zone has two components. The first is a drawdown cone in a near vertical fracture in bedrock and the second is in overlying soils and shallow weathered bedrock that extends up-slope from the fracture.
k) Land use and potential sources of contamination	Relatively undeveloped land with potentially two septic systems	As can be seen on Fig. 6 the capture zone extends into relatively undeveloped land with potentially two groups of buildings within the recharge area. The nearest of which is 70 m away from the well. It septic systems were present in these areas, this distance, plus the very low nitrate concentration and absence of coliform in the water samples confirms that this potential source of contamination is not an issue
l) Conclusions	Well depth and setting	The depth to the principal fracture zone is 5m and unsaturated flow in the overburden sediments may not be sufficient to remove contaminants leaching for the nearby ground surface and Northwest Road.
	Extent of operating well capture zone	The estimated extent of the well capture zone shows that it does not currently pass under any existing potential surface concentrated sources of contamination.
	Historical information	No coliform was detected in the Property Well water samples and nitrate concentrations were very low, suggesting that septic systems in the recharge area do not have an impact on the well's water quality.
	Wellhead completion and other protection measures.	Provided that the top of casing is flood proofed and surface water drainage is directed away from the wellhead, as per the BC Groundwater Protection regulation, no further protection measures are required.
m) Recommendations	1)	The top of the well casing should be flood proofed and surface water drainage directed away from the wellhead, as per the BC Groundwater Protection regulation.
	2)	An appropriate water treatment system should be designed, in consultation with Vancouver Island Health Authority professionals.
	3)	All gravity sewer pipes should be located at least 10m from the well head and force mains at least 15m.

Table I

Level 2 GARP Hydrogeological Investigation

Topic	Elements	Comments
	4)	Regular monitoring of water quality be conducted as per Ministry of Health requirements and if a water quality issue becomes apparent, a revised protection plan developed.

Note:
GARP = Groundwater at risk of containing pathogens. As defined in the BC Ministry of Health guidance document (2017)

Appendix D - Average Daily Demand Rational

15 February 2021
Revised March 3 2021 *(with corrected greywater reduction value)*

INTEGRAL

Integral Group
Suite 101 – 1019 Wharf St
Victoria, BC Canada V8W 2Y9
1.250.418.1288

www.integralgroup.com

Nancy Clements & Darrell Belanger
Island Health

Dear Darrell and Nancy

Re: Denman Housing Association – Rainwater Study – Average Daily Demand Value

The below commentary is presented in response to your letter dated December 17th containing items for revision on the report "Denman Green- Water feasibility of rainwater harvesting".

Please note that since the original study was submitted, the Denman Green Affordable housing project is looking to move to a new property with an existing well that has an estimated yield of 0.063l/s (3gpm). The responses below will therefore be focused on resolving items relevant to the new location. Specifically, we would like to establish an agreed upon appropriate ADD value for use in a new study for the new site. The revised study will work to maximize the rainwater harvesting potential in order to conserve groundwater.

In your letter, item number one states: *Item #1: Island Health does not accept the proposed Average Daily Demand (ADD) of 88 Litres/Person/Day*.

Response: I agree that the proposed ADD was not realistic. Having done additional research, I would like to present for your review the below rational and revised ADD of **167 l/c/d** before greywater reductions and **133 l/c/d** after greywater reductions.

Based on the review of various studies listed below it is believed that using the BC design guidelines ADD of 230 l/c/d (litres per capita per day) or the Island Health value of 220 l/c/d would be an overestimation for the Denman Green community as these will be new homes built to a high efficiency standard. In this case, the affordable housing development will be managed to ensure that residents continue to use water efficient fixtures. Similar to the Guelph study the population using the water will be Islanders and be accustomed to having groundwater as their water source and to water conservation habits. Within the studies listed, the ADD for new and/or efficient homes ranged from (**ADD = 134 l/c/d - 167 l/c/d.**) It is my recommendation to use the more conservative of these values and base the water use study on an **ADD of 167 l/c/d.**

Grey Water Recycling:

It is the intent of the Denman Green development to include the use of grey water recycling as part of the water use reduction strategy. The proposed "Greyter" technology would offset 100%

of toilet flushing in the homes. Based on the two references below I would recommend using the reduced **ADD = 133 l/c/d** as these homes will be new construction.

1. In the (DeOreo, W.B. et al. 2011) study, they break out toilet use to be 20% of the total use for the new homes subset. This would result in a 33.4 l/c/d reduction or an **ADD of 133 l/c/d.**
2. In other documents (CRD Drinking water Conservation) and (DeOreo, W.B. et al. 2016) they reference a general toilet % use of 24%. This would result in a 40 l/c/d reduction or **ADD = 127 l/c/d.**

Review of ADD studies:

1. BC Design Guidelines for Rural Residential Community water systems.
    a. This document states that indoor demand (not including irrigation) is **ADD = 230 l/c/d**.
2. Vancouver Island Health Authority: Guidelines for the Approval of Water Supply Systems.
    a. This document states that for indoor demand a design **ADD= 225 l/c/d** should be used.
3. CRD Environmental Education: Drinking Water Conservation
    a. The date of publish for this document is unknown however it references percent use breakdown data from 2014 US Environmental Protection Agency (EPA)
    b. This document stats that "in the capital region, we use an average of 232 litres of water per person, per day. Most of our water use (72%) occurs indoors.
    c. Based on this data the CRD estimates **ADD = 167 l/c/d.**
4. City of Guelph – Blue Built Homes Monitoring & Demand Analysis Study (2014)
    a. This report was based on a special selection of 21 homes that contained water fixtures specifically selected for water conservation. Although not a large selection set, this study does demonstrate what is possible with an educated population and when water conservation measures are taken.
    b. The study states that for the 21 homes tested the **ADD = 138 l/c/d**
    c. And also states that the Guelph citywide residential add for 2012 was **ADD = 177 l/c/d**. The nation wide **ADD = 274 l/c/d**. The lower values for Guelph are due to the city relying on groundwater and that conservation is an ongoing effort for their community.
5. Water Research Foundation: Residential End Use of Water, Version 2 EXECUTIVE REPORT (2016)
    a. Indoor average daily water use for this US study was 58.6 g/c/d or **ADD = 221 l/c/d.**
6. Aquacraft Water Engineering & Management: "Analysis of water use in new single family homes."
    a. This study indicates that specifically for indoor water use, the average new homes used 140 g/h/d, and high-efficiency homes used 110 g/h/d.
    b. They further break down the numbers into a per capita value using a 3 person family was also given as 44.16 g/p/d for new homes and 35.6 g/p/d which in metric units equals **ADD = 167 l/c/d** for new homes and **ADD = 134 l/p/d** for new high efficiency homes.

Referenced Documents:

1. (Author not stated). "Design Guidelines for Rural Residential Community Water Systems" *https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/water-rights/water-utilities/design_guidelines_rural_residential_water_mar2012.pdf* . Utility Regulation Section Water Management Branch, Ministry of Ministry of Forests, Lands, Natural Resource Operations & Rural Development, Government of British Columbia, Canada. 2012.

2. (Author not stated). "GUIDELINES FOR THE APPROVAL OF WATER SUPPLY SYSTEMS Vancouver Island Health Authority." *https://www.islandhealth.ca/sites/default/files/2018-04/water-supply-system-approval-guidelines.pdf* Vancouver Island Health Authority. 2018.

3. "Environmental Education: Drinking Water Conservation, Washroom Water Use (High School)" *https://www.crd.bc.ca/docs/default-source/partnerships-pdf/environmental-education/dm-activity-washroomwateruse(highschool)2020.pdf?sfvrsn=d0b229cc_2*. *2020.*

4. (Author not stated). "City of Guelph – Blue Built Homes, Monitoring & Demand Analysis Stud." *Veritec Consulting Inc.* 2014.

5. DeOreo, W.B. et al. "Residential End Uses of Water Version 2 EXECUTIVE REPORT" *Water Research Foundation*. 2016.

6. DeOreo, W.B. et al. "Analysis of Water Use in New Single Family Homes." *Aquacraft, Inc. Water Engineering and Management*. Boulder, CO. 2011.

Sincerely yours

Sharon McGeorge
PEng. LEED AP
Mechanical Designer
On behalf of Integral Group

Appendix E – Rainfall Calculator and Weather Data

Storage volume calculation inputs.

Collection Area	QTY	Units	Notes
Total Collection Area	1500	M2	Based on preliminary building designs and roof areas
Water Consuption	**QTY**	**Units**	**Notes**
People using water	52.5	ppl	Based on the BC "Design Guidelines for Rural Residential Community Water Systems". (2.5 people per multifamily X 20 houses) + 2.5 for common building.
ADD per person (litres)	134	Litres	As presented in the rational document
MDD per person (liters)	197	Liters	calculated based on proposed development layout amd 21 connections.
Storage Volume (Rainwater)	408,441	Litres	*"Rainwater storage to cover 50% of demand over the 5 driest months/period of the year" (36 tanks @11250 litters each)*
Storage Volume (2 day Treated water)	20,685		MDD. For resiliance and emergency planning we recommend 2 days of MDD storage.
Collection Efficiency	80%		Rain collection efficiency to account for evaporation and first flush losses.

Monthly Rainfall using COMOX Airport weather data.

Monthly Total Rainfall data in mm. (does not include snow)
Station: COMOX A
en_climate_monthly_BC_1021830_1

	1945	1946	1947	1948	1949	1950	1951	1952	1953
Jan	133.1	206.2	91.2	134.6	7.4	24.4	134.1	133.9	203.2
Feb	142.2	89.7	90.7	115.6	80.5	131.1	100.6	124.5	63
Mar	242.3	77.7	66.3	62.7	97.8	70.9	43.4	63.8	79
Apr	45.7	42.9	27.9	36.3	57.4	115.3	13.2	86.6	29.5
May	46.5	8.9	11.7	86.9	17	25.9	38.9	30	48.8
June	14	108.2	79.2	29.7	12.7	17.5	4.3	32	25.1
July	42.7	25.7	28.2	43.2	64	26.9	29.7	1.8	20.8
Aug	15	18.5	13	66.8	53.3	36.3	6.9	18	73.4
Sept	49.5	35.6	23.4	76.2	35.8	24.1	45	12.2	70.4
Oct	85.1	94.5	208.8	88.4	41.9	271.5	157.2	18.8	90.7
Nov	246.6	71.9	67.6	307.1	172	169.7	254.5	117.9	349.8
Dec	222.5	92.7	297.4	78.5	125.7	216.2	94	242.8	142.2
Total	1285.2	872.5	1005.4	1126	765.5	1129.8	921.8	882.3	1195.9

	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963
Jan	174.5	143.3	225.3	59.4	350.8	223	224	278.1	116.8	45
Feb	165.9	23.9	72.1	85.6	239	77.7	207.8	259.6	37.8	162.8
Mar	44.2	61	154.9	184.9	70.1	117.3	73.4	176	64.8	127.5
Apr	48.8	44.5	4.8	106.2	97.5	40.9	82.6	73.2	67.3	106.2
May	34	56.4	13.7	36.6	19.8	39.6	47.2	60.2	46.2	57.9
June	48.3	34	96	65.3	57.7	46.2	6.9	15.5	45	53.8
July	42.4	55.9	8.1	41.4	0	7.1	1	30.2	38.4	61
Aug	59.7	16.8	17.3	153.4	51.6	17.8	53.3	12.2	138.2	31.2
Sept	66.5	45.7	94.2	41.1	48.5	74.2	29.2	50.5	53.6	42.9
Oct	134.6	198.6	189	80.3	109.2	91.2	132.3	104.9	121.7	236.2
Nov	289.6	192.8	58.7	55.6	185.4	113.5	199.9	170.7	267.7	144.3
Dec	235.5	154.4	156.7	369.1	229.6	124.5	137.9	154.2	186.9	241
Total	1344	1027.3	1090.8	1278.9	1459.2	973	1195.5	1385.3	1184.4	1309.8

	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
Jan	239.3	84.1	170.7	173	268.7	27.7	118.4	105.2	42.2	278.9
Feb	55.9	76.5	74.7	86.6	94.2	125.2	62.5	47	102.9	63.8
Mar	102.1	29.7	151.1	122.9	157	83.8	55.1	124.7	136.9	71.6
Apr	16.5	50.5	8.1	46.2	24.9	104.4	64.8	47.8	93.2	8.1
May	18.5	38.9	23.9	16	38.4	19.1	19.6	42.7	21.1	68.1
June	48.8	3	32.8	13	27.7	25.1	13	58.9	60.7	46.5
July	53.8	27.7	24.4	6.9	31.5	22.1	34.5	11.7	30.7	24.4
Aug	19.8	73.7	24.9	0	94.2	41.1	10.9	24.4	29.5	13.5
Sept	41.1	5.8	39.6	29	38.4	120.9	33.3	39.6	90.4	68.8
Oct	43.4	211.1	92.7	265.2	218.4	111.5	102.9	78.2	23.6	164.1
Nov	134.6	248.4	262.9	86.1	236.5	105.4	143	219.5	173.2	197.9
Dec	78	198.1	274.8	165.1	201.9	276.9	192.5	89.7	188.2	271
Total	851.8	1047.5	1180.6	1010	1431.8	1063.2	850.5	889.4	992.6	1276.7

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Jan	166.6	77.2	118.6	46.4	123.1	41.9	78.2	125	132.3	177.1
Feb	135.4	53.1	87.1	126.6	72.8	235.4	184.7	129.7	160.7	258.3
Mar	205.2	79.2	82.8	108.2	106.6	57.7	86.1	70.3	64.3	178.9
Apr	63.5	29.7	46.5	24.6	108.2	52.6	82.9	69.4	76.1	48
May	65.8	38.1	33.5	42	41	32	34.9	94.6	24.2	7.4
June	19.8	18.3	20.1	13.4	12.2	20.6	92.2	39.1	39.6	46.2
July	78.2	8.4	17.3	46.9	17	22.3	37.4	53.3	38	33.4
Aug	1	80.3	71.6	44.7	83.1	41	29	30	23.1	35.8
Sept	21.3	2.8	20.3	63.6	101.2	107.1	52.6	86.5	31.9	55.6
Oct	45.5	267.2	81.5	146.6	47.1	203	58.7	195.2	240	84
Nov	270.5	304.3	58.7	205.2	87.5	91.2	246	220.5	188.7	380.1
Dec	223.5	118.1	103.6	144.2	101.9	259.4	176.5	192.9	190.8	71.6
Total	1296.3	1076.7	741.6	1012.4	901.7	1164.2	1159.2	1306.5	1209.7	1376.4

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Jan	99.3	24	314.7	214	136.1	63.4	168.3	83.8	360.2	105.8
Feb	221.4	76.3	67.6	105.7	36.7	58.8	62.6	201	146.6	3.6
Mar	80.2	98.7	95.7	133.9	99.6	112.4	75.1	44	32	124.6
Apr	78.2	42.5	52	46.8	68.4	56.8	62.8	56	116.7	133.8
May	114.4	22.6	68.6	48.4	45.1	56.9	58	26.3	6.8	105.8
June	39.7	18.6	40	11	40.9	74.9	96.2	53.7	77.6	78
July	10.6	0	39.8	34.9	16.5	49.6	15.8	37.4	16.8	48
Aug	9	14.1	14.8	10.4	17.1	53.2	11.9	103	25	49.2
Sept	61	59.6	34.6	13	61.9	25.4	0.6	4.6	46	1.2
Oct	184	137.7	27	17.9	90	118.7	176.5	30.5	183.8	63.6
Nov	247.6	41.3	187.1	121.2	267.8	88.5	223.5	223.2	143.6	66.2
Dec	66.6	55.8	288.4	191.4	148.9	125.5	161.5	154.2	81.3	276
Total	1212	591.2	1230.3	948.6	1029	884.1	1112.8	1017.7	1236.4	1055.8

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Jan	151	244.8	119.2	143.8	237.8	228.1	80.1	92.4	144.2	221.9
Feb	187.8	82.8	111.4	47.6	151.8	320.8	90	53.6	105.2	16.7
Mar	97.6	162.4	39.6	177.7	74.8	85	85	73.4	52.8	156.3
Apr	61.2	59.8	96.6	80.2	22	24.2	21.8	47	53.8	144.6
May	25.8	34.2	45.8	75.6	38	54.4	26.6	28.6	22.6	27.8
June	45	41.9	15	92.6	34.8	41.4	37.4	21	34.6	19.6
July	24.6	35.2	26.6	26.4	26.8	28.4	33	13	19	6.4
Aug	52.2	60.2	14.2	59.8	6.8	26.8	7.2	34.2	23.8	2
Sept	37.4	21.8	78.8	136.6	2.8	18.4	20	34.6	27	19.4
Oct	117.2	111.2	159.2	222.2	103.2	78.6	155.4	96.1	27	196.8
Nov	140.2	307.4	99.6	141.3	359.4	251	91.2	239.6	179.4	83.4
Dec	198.3	239.4	127.8	143	210.2	126	94.4	218	229	226.2
Total	1138.3	1401.1	933.8	1346.8	1268.4	1283.1	742.1	951.5	918.4	1121.1

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Jan	144.6	118.4	294.6	122.8	141.2	43.8	241.4	105.4	173.8	84.3
Feb	91.4	33.4	94.4	115.5	43.7	26.8	132.8	119	123.6	87.1
Mar	56	107.4	139	81.4	55.3	87.6	121.6	197	130	81.2
Apr	19.2	111.2	42.6	85.7	30.4	26.2	97	31.6	93.2	43.9
May	22.6	79	29.8	21.5	29.2	51.3	75.2	67.2	26	64
June	13.4	39.6	21	68.8	29	29.4	44	20.9	77.4	49.2
July	10.2	35.8	10.7	31.2	25.7	51.2	2.4	33.8	12.8	2.2
Aug	44.4	34.6	6.2	24.6	47	2.8	31	3.6	5.6	53.8
Sept	102.8	26.4	60.9	72.1	17.2	49.4	65.8	84.9	7.4	116
Oct	155.1	184.6	35.4	124.8	123.4	139.4	103	62.6	178.2	15
Nov	155.2	96.4	291.3	175.2	132.1	371.2	191.4	153.4	205	140
Dec	178.9	214.6	217.9		56.6	111.4	315.2	75.6	247.5	49.3
Total	993.8	1081.4	1243.8	923.6	730.8	990.5	1420.8	955	1280.5	786

	2014	2015	2016	2017	Average	Max	Min	Standard Deviation
Jan	79.6	116.8	202.3	57.8	146.06	360.2	7.4	80.07814
Feb	124.4	173.3	168.7	79.8	110.48	320.8	3.6	63.06175
Mar	149.2	101.9	248.6	103	102.91	248.6	29.7	47.83943
Apr	54.8	33.1	20.2	110.2	59.14	144.6	4.8	32.38576
May	47.6	13.2	43.8	49.4	41.07	114.4	6.8	22.70311
June	13.6	17.3	59.4	26.4	39.26	108.2	3	24.91447
July	36.4	21.2	9.2	12	27.29	78.2	0	16.70741
Aug	20.4	53	25.8	6.4	35.32	153.4	0	30.35071
Sept	47.6	38.4	54.6	35.4	47.29	136.6	0.6	30.42464
Oct	238	78.1	351.2	90.3	127.54	351.2	15	72.23612
Nov	102.8	103.2	388.6	282	186.11	388.6	41.3	87.06584
Dec	241.7	348.8	77.2	77.3	174.92	369.1	49.3	75.07653
Total	1156.1	1098.3	1649.6	930	1094.99	1649.6	591.2	203.7565

2021. Referral RE Density Transfer – Railway Grade Marsh – Erika Notes

- There is some confusion within the document about which parcels (PIDs) are actually the receiver parcels. For instance, in the table on page 4, the Woodham PID is noted as a receiver parcel. In Attachment 2, the Danes Covenant parcel (not the new Lots 4 and 5) are noted as the receiver parcels. These errors lead to confusion and need to be corrected by staff.
- It seems inappropriate that the Woodham to Danes Density Transfer (3 market densities from Snyder to Pandesign) is even associated with the Denman Green Density Transfer (19 affordable housing densities all coming from the island density bank). Because of this 'triangulation' of these two transfers, when DCA provides comments on the potential ecological impacts of increased density at Railway Grade Marsh and Danes Creek, it could be perceived in the community that we are somehow opposing or trying to block affordable housing. I don't see why these could not have been two separate applications, which would have avoided this issue.
- We have to assume that the two existing Danes lots (Lot 4 and 5) will be subject to a future subdivision application that will result in a total of 5 lots there, so, a total of 8 lots above Railway Grade Marsh, plus possible accessory dwellings. Given this, it is surprising to me that IT staff have not taken into consideration the possible impacts of this increased density on RGM/Danes Creek Covenant Areas, and the RAR ecosystems. We should certainly highlight to staff where this has been omitted but should be considered. I have made note of some specific points in the attached. For instance, In Attachment 2 - Site Context for Receiver Parcel, Staff have noted "No Sensitive Ecosystem or Protected Area Data" - This is preposterous! SAR data is available for both the Danes Creek and RGM areas. And RAR proximity should be noted. Danes Lot 5 will require a restrictive covenant regarding groundwater regulation. That's good. What about the other lots?
- DCA is currently nearing completion of a Management Plan for Railway Grade Marsh Conservation Covenant area with Denman Park. This document gives a sense of the ecological and sensitive areas so that staff can appreciate what adjoins the potential increase in density.

Our understanding of a Summary of the Referral and Staff Report:

Application: DE-RZ-2021.1 (Denman Housing Association)

Receiver parcels noted as PID 000-393-941 AND PID 006-660-495* – 20 units of affordable rental housing at 1151 Kirk Rd, 3 new densities on 2 Danes Creek Parcels, donated from Woodham Rd parcel.

Referral requires:

- QEP report on adequate sewage; provincial water license; water mgt plan based on water license and hydro study done May 2021 (peak and expected water demand; exceed BC building

code water conservation commitments; types and capacity of onsite storage for potable, non-potable, rainwater, fire suppression; emergency considerations; irrigation/grey water reuse plan; groundwater monitoring; stormwater management;)

- Cost recovery agreement for drafting housing agreement; restrictive covenant for compliance with BC energy step code, water conservation and groundwater monitoring
- Applicant for DE-SUB-2021.1 (Pandesign Inc.) that a covenant or other legal instrument be registered on the "Commercial" zoned portion of lot PID 000-393-941, 1151 Kirk Road, to prevent the sale or transfer of the subdivided parcel until such a time that application DE-RZ-2021.1 (Denman Housing Association) is completed
- Arch Branch engagement KFN – assess if arch overview needed for 1151 Kirk Rd relating to request for increase in density.
- Early referral to agencies (including ITC – and it was passed on to DCA because of RGM and Danes Creek covenants)

Proposed Amendments to OCP and LUB:

- Transfer density between 3 parcels on island and draw upon density bank. Intent is to enable future development of 20 units of rent-controlled affordable housing in Denman Village. Units owned and managed by DHA (applicant) – agreement of intent signed with property owner to acquire 1 hectare for the project.
- Draw on density bank for 19 densities. Madigan loses 3 densities. Kirk Rd parcel receives 19. Danes Rd receives 3 (on Lots 4 and 5). (Will there also be a density on the new Kirk Rd subdivided lot? If so, I do not see it accounted for in this Staff Report)
- Subdivision to happen on Kirk Rd lot – subdivision along commercial/R! boundary – Henning gets R1 lot, Commercial part goes to DHA. Variance needed to vary the minimum R1 lot size (currently minimum is 1 ha – variance will permit 0.28ha lot).

2 DCA covenants relevant for this referral:
FA132364 – Railway Grade Marsh Covenant
FB 371166 – Danes Creek Covenant

Summary of lot PIDs relating to this referral:

PID 031-395-872 (Danes Subdivision Lot 5 – furthest north)
PID 031-395-864 (Danes Subdivision Lot 4 – second from north)
PID 031-395-856 (Danes Subdivision Lot 3 – middle)
PID 031-395-848 (Danes Subdivision Lot 2 – second from south)
PID 031-395-830 (Danes Subdivision Lot 1 – furthest south)
The two lots above in bold are the receiver parcels for Danes Lot. Pandesign will apply to further subdivide these lots to provide a total of 8 dwelling units (plus potential secondary suites) above RGM instead of the current 5. THIS IS WHERE DCA has an interest and should provide comment, but not until report has been revised.

Comments and Errors Noted:

*Error in Table 1 (Pg 4 of staff report, Pg 5 of PDF referral package) – Receiver Parcel #2 (Row 3) PID is same as Donor Parcel – Should reflect Danes Creek PID(s), specifically, the new receiver PIDs on Danes Road as shown below (Lots 4 and 5). Map 1 is unclear and possibly misleading since Lots 4 and 5 are already subdivided from the larger Danes Creek Lot. The table also does not let the reader know how many existing densities are on each of the receiving Danes Lot(s).

PID 006-660-495 (Larger Danes Covenant Parcel) –This PID is noted as the receiver parcel (per Attachment 2 – Site Context of Receiver Land) – but in actual fact the receiver parcels are PID 031-395-872 and PID 031-395-864. **The Danes Covenant Parcel should be unaffected by the application.**

PID 000-393-941 (1151 Kirk Rd) – receives 19 densities from density bank – currently there are only 14 units available in the density bank, and 8 of these will be designated for DCLTA – so, there is a shortfall of 13 densities for the proposal. But Policy 11 allows increase of DI density by 5% for affordable housing, so this makes up the difference. The question is, though, why are the 3 densities from the Woodham Rd parcel going toward market housing before they are allocated for the affordable housing project, when there is already this shortfall?

PID 009-704-523 (Madigan Parcel) – loses / donates 3 densities
PID 031-395-872 (Danes Subdivision Lot 5 – furthest north) – receives 1.5 densities?
PID 031-395-864 (Danes Subdivision Lot 4 – second from north) – receives 1.5 densities?

Question – Will the remaining (0.28 ha R1) lot subdivided from Kirk Rd parcel also have a density? Where does that come from? I don't see it accounted for in the density budgeting in the Table on page 4.

One Main Question: Why is the Pandesign density transfer (from Woodham to Danes) conflated in the same application as the Denman Green? The density transfer (from density bank) needed to accommodate the Denman Green project could happen without the Woodham-Danes transfer. Conflating these two transfers means there is potential that if DCA raises issues about the additional lots above Railway Grade Marsh, we could be perceived as 'anti-affordable-housing'. If the Woodham to Danes transfer were a standalone application, DCA would have the unhindered opportunity to provide honest feedback about the potential ecological impacts on Railway Grade Marsh without the community perception that we are, in that process, holding up or questioning the development of affordable housing on the island (which we are not!). As it stands, negative comments toward the current 'triangulated' application could make DCA seem as though we are trying to block/complicate the Denman Green project.

Note that No water quantity data provided for Danes Lot 4 or 5 yet.

Danes Lot 4 has good quality water. Lot 5 does not, but could meet standards if treated.
A restrictive covenant under S 219 LTA proposed to regulate use of the Land in the interests of confirming groundwater management and treatment methods will be implemented by the

Owner and all future Owners, tenants and other occupants of Lot 5. This would remain in effect if there was an increase in density. **Question: How is groundwater protected on the other lots, and especially given the upland connection to the RAR ecosystems and conservation covenant at Railway Grade Marsh? How is wastewater going to be regulated for these lots so as not to impact the Railway Grade Marsh and Danes Creek Covenant Areas and nearby RAR watercourses?**

- **See Pg 9 of Staff Report: "**There is no wastewater assessment of the parcels on Danes Road to demonstrate the two parcels can support an increase in density from 2 to 5 dwellings. Staff recommend confirmation by a qualified professional that the proposed receiver parcels have adequate conditions to support community sewage treatment or other approved systems, compliant with the BC Sewerage System Regulation under the Health Act, for the proposed increase in density."

Pg 10: "A biological inventory assessment is not being recommended as both receiver areas have been cleared/disturbed and the Sensitive Ecosystem Inventory (SEI) mapping indicates no sensitive or mature forest ecosystems." – its upland proximity to RAR and Conservation covenant at Railway Grade Marsh should certainly warrant ecological assessment for further subdivision of the Danes Parcel. **Why have IT staff not taken the proximity of this sensitive and protected freshwater feature into account in this Staff Report? Attachments note that no SAR are noted for the receiver parcel(s). What about RGM and Danes Baseline reports?**

Agree with ALTERNATIVE analysis point #2 – request water and sewerage info prior to bylaw amendment.

Comments on Attachments:

Attachment 2 –

- Covenants/Interests Registered on Title: Covenant FA 132364 – This should be noted in the Staff report as a conservation covenant.
- Islands Trust Conservancy – the covenant on RGM is held by DCA not ITC.
- Species at Risk – Significant SAR have been recorded in the area including on the Danes Parcel and the adjacent RGM covenant area. Lists of SAR can be found in the Danes Baseline Report and Railway Grade Marsh Baseline Report associated with each covenant.
- Sensitive Ecosystems – no PA data identified! Danes Covenant Area!!
- Climate Change Mitigation – refers to well to supply 49 units – this refers to the Kirk Road Parcel, not the Danes Receiver Parcel. Why is it noted in this section?

Attachment 3 – ITPS Analysis

- 3.3.2 – Danes Road Receiver Parcel Should be included. Potential implications for RGM covenant area, and RAR area directly adjacent and downslope from proposed subdivision.
- 4.4.3 – How are ecological factors accounted for in terms of 'in-stream uses'?

- 5.2.3 – Application does not address the potential environmental impact of increased density on the noted adjacent conservation covenant areas. Why is this not noted before compliance was indicated?
- 5.3.7 – (also relates to OCP E1 Housing Policies 11 and 28) - When there is already a shortage of densities in the density bank to provide for the affordable housing project, why are the donor densities being allocated for market housing?

OCP

- D3 – groundwater – does not mention any requirements for the Danes Creek Receiver Parcels.
- E1 Housing Policy 6 – agree with Staff comments.
- E1 Housing Policy 10 – agree with Staff comments addressing question of intent for secondary suites at Danes Rd parcels as the outcome could have further implications for the RGM and Danes Creek watersheds.

Additional Comments from another Lands Committee member

- Receiver Parcel (Danes) – increase from two permitted dwellings to a new layout permitting five lots/dwellings (Proposed Lots 4,5 x ref DE-SUB-2019.2) – 150% increase in densities + Secondary suites?
- Note: No mention that the receiving property actually borders on a Provincial Park.

From Staff Report

- Water Management Planning
    - Staff have not reviewed the water report to determine if water quantity data for Lots 4 and 5 support an increase in density to support five lots/dwellings. Staff can provide further analysis at a later date. Need to consider whether there will be secondary suites.
    - Wastewater Treatment - There is no wastewater assessment of the parcels on Danes Road to demonstrate the two parcels can support an increase in density from 2 to 5 dwellings. Staff recommend confirmation by a qualified professional that the proposed receiver parcels have adequate conditions to support community sewage treatment or other approved systems, compliant with the BC Sewerage System Regulation under the Health Act, for the proposed increase in density.

The following are the "Site influences" from the Staff Report w/ relevance to Railway Grade Marsh.

Site Influences

- ITC Regional Conservation Plan (2018-2017)
- Planner comment -- n/a – This application does not appear to be inconsistent or contrary to the goals and objectives set out in the ITC Regional Conservation Plan. We might review this to see if there is any relevance to the application.
- Species at Risk Planner Comment - No Species at Risk data identified.

    - Note: Draft RGM Management Plan for adjoining property to Receiving property – Lists nine rare species at risk
- Sensitive Ecosystems Planner comment: No Protected Areas data identified. Islands Trust Ecosystem Mapping (ITEM) identifies the majority of the subject property as "young forest".
    - Note: Draft RGM Management Plan for adjoining property to Receiving property – Identifies 2 rare ecosystems.

Islands Trust Policy *Many categories note pending further info from applicant – this Report is dated July; has additional info been supplied?

- 3.3.2 Loss or degradation of freshwater bodies or watercourses, wetlands and riparian zones and to protect aquatic wildlife. No mention of Danes in "Complies" section or "Planner Comments"
    - Note: Draft RGM Management Plan for adjoining property to Receiving property – info on beaver dams, series of wetlands, creek (RAR)
- 4.1.6 Re: Ag Values; Comment: "Proposed Lot 4 and 5 are adjacent to ALR land. To be addressed in bylaw amendments and can incorporate ALC buffer requirements." ??
- 4.4.2 Sufficient water; awaiting confirmation that receiver parcel (Lot 4 and 5) have sufficient groundwater resources for additional density.
- 5.2.3 address policies related to the aesthetic, environmental and social impacts of development. Planner Comment – none re Danes
- E.1 Housing Policy 6 - potential negative impact on the watercourse. Pending info from applicant. Comment: Danes Road Receiver parcels are adjacent to watercourses. Staff recommend confirmation of adequate wastewater treatment conditions to support an increase in density in this location.
    - Note: Draft RGM Management Plan for adjoining property to Receiving property – Threats to RGM CA –Sections on: Degradation of Riparian and Wetland Ecosystems, Public Access, Pollutants and excessive nutrient loading, Accidental Wildfires
- E.1 Housing Policy 10 - In the Rural designation zoning regulations should generally permit one dwelling unit per lot, including a secondary suite, provided that the landowner provides the Local Trust Committee with proof of adequate water supply for each dwelling unit without endangering the water supply of adjacent land owners. A secondary dwelling unit may be permitted on a lot if approved by a Temporary Use Permit. Comment: Applicant to confirm if Donor and Danes Rd Receiver parcels were intended to accommodate secondary suites.

STAFF REPORT

File No.: 6500-20
(Denman Farm Regulations Review)

DATE OF MEETING:	November 2, 2021
TO:	Denman Island Local Trust Committee
FROM:	Marnie Eggen, Island Planner Northern Team
COPY:	Heather Kauer, Regional Planning Manager
SUBJECT:	Denman Island Farming Regulations Review Project

RECOMMENDATION

1. **That the Denman Island Local Trust Committee request staff to refer to the Denman Island Advisory Planning Commission and the Denman Growers and Producers Alliance for their comment, the anticipated draft community engagement plan for the Denman Farming Regulations Review Project and anticipated draft topic areas for the community survey/questionnaire to be prepared by the consultant.**

REPORT SUMMARY

The purpose of this report is to provide the Denman Local Trust Committee (LTC) with a project status update and to recommend that the LTC refer to the Denman Advisory Planning Commission (APC) and the Denman Growers and Producers Alliance (GPA) for comment the anticipated draft community engagement plan for this project and draft topic areas for the anticipated community survey/questionnaire. Both are to be prepared by the consultant, reviewed by the APC and GPA, and then to be considered for endorsement by the LTC at their next LTC meeting.

BACKGROUND

The LTC passed the following resolutions at their regular business meeting, held September 7, 2021:

> **DE-2021-068**
> **It was MOVED and SECONDED,**
> that the Denman Island Local Trust Committee request that the Denman Island Farming Regulations Review Project Charter dated September 7, 2021 be amended to add, under "In Scope", a third bullet: consideration of new Agricultural Land Commission options for secondary dwelling units.
>
> **CARRIED**
>
> **DE-2021-069**
> **It was MOVED and SECONDED,**
> that the Denman Island Local Trust Committee endorse the Denman Island Farming Regulations Review Project Charter dated September 7, 2021, as amended.
>
> **CARRIED**

The project charter is updated with the amendment and endorsement date.

PROJECT UPDATE

The request for proposal process to hire a land use planning consultant to lead this project is expected to be completed and a consultant in place within a few weeks. Hiring a land use planning consultant as the lead planner to undertake research, analysis, engagement, bylaw drafting and provide report recommendations is one of the main commitments of the Islands Trust in the Contribution Agreement with BC Investment Agriculture Foundation (IAF) Funding Grant. Once the consultant is hired, they will meet with staff to confirm the work plan and timelines for the project and will be undertaking the following next steps:

- review the Farm Plan Implementation Project work to date, including proposed bylaws;
- review Agricultural Land Commission regulatory updates;
- review available Agricultural Land Use Inventory and activities data, BC Assessment and census data, and related data to support policy and regulatory changes;
- coordinate with Islands Trust planning staff and Ministry of Agriculture staff to update Agricultural Land Use Inventory and activities data for Denman Island;
- develop a preliminary community engagement plan for the project and topic areas for the community survey/questionnaire to be referred to the APC and GPA, and eventual endorsement by the LTC in the new year.

ANALYSIS

Issues and Opportunities

Referral to APC and GPA

In accordance with the project charter, the first phase includes development of a plan to engage with the Denman community for phase 2 and 3 of the project. Additionally, a community survey/questionnaire is a required deliverable as a part of the Contribution Agreement with IAF. In order to stick to project timelines and IAF commitments, consideration of endorsement by the LTC of the draft engagement plan and draft community survey/questionnaire should take place no later than at the next LTC meeting, which is tentatively scheduled for January 18, 2022. In light of this timing, staff are recommending that at this LTC business meeting that the LTC request staff to refer to the APC and the GPA the anticipated draft community engagement plan and draft topic areas for the community survey/questionnaire to be prepared by the consultant, so that they have an opportunity to provide input before LTC consideration of endorsement in January.

Rationale for Recommendation

In order to adhere to project timelines and IAF funding commitments, staff recommends that the LTC refer to the Denman Advisory Planning Commission (APC) and the Denman Growers and Producers Alliance (GPA) for comment the anticipated draft community engagement plan for this project and draft topic areas for the anticipated community survey/questionnaire (to be prepared by the consultant), before final consideration of endorsement by the LTC in January. Refer to the formal recommendation, included on Page 1 of the report.

NEXT STEPS

Should the LTC concur with the staff recommendation, staff will work with the consultant to prepare referral packages and organise an APC meeting and invite the GPA.

Submitted By:	Marnie Eggen, RPP, MCIP Island Planner	October 21, 2021
Concurrence:	Heather Kauer, MPA, RPP, MCIP, AICP Regional Planning Manager	October 25, 2021

REQUEST FOR DECISION

To:	Local Trust Committees	**For the Meeting of:**	November 2, 2021
From:	**David Marlor, Director, Local Planning Services**	**Date Prepared:**	September 15, 2021
SUBJECT:	**New Fee bylaws**		

RECOMMENDATION:

That the Denman Local Trust Committee request Staff to draft a new Fee Bylaw based on the model fee bylaw attached to Trust Council Policy "5.6.1 Application Processing Services."

DIRECTOR COMMENTS:
The recommendation will allow staff to draft a fee bylaw specific to each local trust committee's needs based on the model fee bylaw adopted by Trust Council.

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1 PURPOSE: To update all local trust committee fee bylaws to be consistent with the new Application Processing Services policy.

2 BACKGROUND:

At its regular business meeting in June 2021, Trust Council adopted a new Application Processing Services Policy that includes a model Fee Bylaw. Trust Council also passed the following resolution:

> *That Trust Council request all local trust committees to consider adoption of a new application processing fees bylaw based on the model fees bylaw attached to Policy 5.6.1 "Application Processing Services".*

The Trust Council application processing services policy has been amended to:

1. clarify more specifically the activities covered by the application fee to remove ambiguity;
2. remove the need for planners to determine the work required at the start of the process, which has been identified as practically impossible to implement;
3. establish an objective of 80 per cent of the average processing cost for cost recovery;
4. add more clarity around when cost recovery agreements are required, and what are considered extraordinary cost charges; and
5. add a model fees bylaw to the policy as an attachment.

A new model fees bylaw has been developed that:

1. has updated fees that better reflect the actual average cost of processing the various types of applications, designed to include the staff costs and the fixed costs, such as meeting expenses and advertising;
2. adds consideration for recovery of costs associated with First Nation site visits if required;
3. adds more robust fee refund policy to improve fairness;
4. adds an annual automatic increase of fees of two percent to reflect the estimated actual cost increases due to inflation and collective agreement increases for staff;
5. retains ability of local trust committees to reduce fees by up to 20 percent, intended to allow flexibility recognizing local factors affecting cost of application processing;
6. adds flexibility to allow for reduced temporary use permits fees for community benefits as defined by the local trust committee in its official community plan; and
7. adds a 20 per cent higher fee for applications where development began without a permit or permission to reflect the higher cost of processing such an application.

Each local trust committee has been asked by Trust Council to update its fee bylaw to be consistent with the model fee bylaw approved by Trust Council. If a local trust committee wishes to adjust fees in accordance with items 5 and 6 above, the local trust committee should include this request in the resolution to develop a draft fee bylaw. While a local trust committee is under no legislative obligation to amend its fees bylaw, Trust Council has developed the model fee bylaw to assist in assuring the fees charged better reflect the cost of processing applications using shared resources throughout the Islands Trust Area.

Please note that fees charged are to recover the average cost of processing that type of application. Fees cannot be used to be punitive, or to raises funds above the average cost of processing an application. Local trust committees cannot charge fees for building permit referrals or Crown land referrals as there is no authority provided to do so.

Local trust committees are authorized to charge fees for different types of applications as follows:

- **Section 462 of the *Local Government Act*** provides that a local government may, by bylaw, impose fees related to applications and inspections to recover the average costs of processing official community plan amendments, land use bylaw amendments, subdivisions bylaw amendments , heritage conservation bylaw amendments, issuance of a development permit, development variance permit, temporary use permit, heritage alteration permit, land use contract amendments, heritage revitalisation agreement amendments, board of variance orders, and inspection of works and services related to applications and permits, and subdivision applications;
- **Section 31(2)(b) of the *Islands Trust Act*** provides that a local trust committee may impose fees to recover the cost of processing siting and use permits;
- **Section 41 of the *Liquor Control and Licensing Act*** provides that a local government may, by bylaw, impose fees to recover the cost of processing liquor and liquor licensing referrals; and
- **Section 35 of the *Cannabis Control and Licensing Act*** provides that a local government may, by bylaw, impose fees to recover the cost of processing a referral for a license under that Act.

Section 462 of the *Local Government Act* also states that local governments must not impose a fee, charge a tax or require works or services to be provided unless authorized by this Act or any other Act. For this reason, fees are not charged for processing of building permit and Crown land referrals, as there is no authorization in any Act for local trust committees to recover these costs.

Fee bylaws are administrative bylaws. There is no requirement for public input. The local trust committee may consider first, second and third readings all at one meeting. The Executive Committee must approve the bylaw before the local trust committee can consider adoption.

Ideally, all local trust committees will have considered updating their bylaws by March 2022 so that the assumptions on revenue can be included in the next fiscal year budget process.

3 IMPLICATIONS OF RECOMMENDATION

ORGANIZATIONAL:
Staff will draft a fee bylaw based on the model fee bylaw and bring back to a future local trust committee meeting for consideration.

FINANCIAL:
No financial implication from the recommendation.

POLICY:
Updating the Fee bylaw will be consistent with Trust Council Policy 5.6.1 Application Processing Services.

IMPLEMENTATION/COMMUNICATIONS:
Local planning staff assigned to the local trust committee will draft fee bylaw for local trust committee consideration.

FIRST NATIONS:
No First Nations implications from the recommendations.

OTHER:
No other implications from the recommendations.

4 RELEVANT POLICY(S):
Trust Council Policy 5.6.1 Application Servicing Process

5 ATTACHMENT(S):
Trust Council Policy 5.6.1 Application Processing Services

RESPONSE OPTIONS

Recommendation:

That the Denman Local Trust Committee request Staff to draft a new fee bylaw based on the model fee bylaw attached to Trust Council Policy "5.6.1 Application Processing Services."

Alternative:
That the Denman Local Trust Committee request Staff to draft a new fee bylaw based on the model fee bylaw attached to Trust Council Policy "5.6.1 Application Processing Services" with the following modifications: [list modifications].

Prepared By: **David Marlor, Director, Local Planning Services**

Reviewed By/Date: **Julia Mobbs, Director, Administrative Services/Aug, 2021**

Policy:	5.6.1
Approved By:	Trust Council
Approval Date:	June 9, 2021 Repeals policies 5.6.1, 5.6.2 and 5.6.3
Amendment Dates:	
Policy Holder:	Director of Local Planning Services

APPLICATION PROCESSING SERVICES POLICY

Purpose

This policy is intended:

- to identify the services provided by Islands Trust and the different levels of costs associated with these services;
- to provide direction for the preparation of Fees Bylaws and Schedules by Local Trust Committees (LTCs);
- to provide the principles by which cost recovery for extraordinary services beyond the standard fee can be negotiated and agreed to by an applicant and a LTC;
- to recover from applicants 100 per cent of the average cost of processing the development applications, while permitting consideration of lower cost recovery for environmental protection and community benefit.

A. Definitions

1. Application Processing Services include:

   1.1 Bylaw Amendments to an official community plan, zoning bylaw, subdivision bylaw or other land use bylaws;

   1.2 Development Application Requests for:

   1.2.1 Development Permits,
   1.2.2 Development Variance Permits,
   1.2.3 Temporary Use Permits,
   1.2.4 Soil Removal and Deposit Permits,
   1.2.5 Heritage Alteration Permits,
   1.2.6 Board of Variance Orders,
   1.2.7 Liquor Licensing Permits,
   1.2.8 Cannabis Licensing Permits,
   1.2.9 Siting & Use Permits,
   1.2.10 Land Use Contracts;

   1.3 Agency Referral Responses and Comments on applications referred from other agencies.

2. Service Levels include:

2.1 Information Service that involves providing information to applicants and the general public at no cost, as a public service, and funded by property taxation revenues.

2.2 Standard Application Processing Service that involves providing a specific service to applicants as a direct response to an application, whether directly to Islands Trust or through a referral from another agency, and primarily funded by established fees paid by an applicant.

2.3 Extraordinary Processing Service is a service provided to the applicant that is beyond the standard processing service, with funding provided by the applicant as a deposit with the application fee or through a cost recovery agreement.

3. Costs:

3.1 General Service Costs includes average hourly cost of each staff position involved in processing the applications multiplied by the average number of hours taken to complete processing of that type of application, and includes administrative overhead costs.

3.2 Estimated Direct Costs include advertisements, delivery of notices, hall rentals, minute taking at public hearings and community information meetings, and staff travel to attend public hearings and community information meetings.

3.3 Extraordinary Processing Costs include costs beyond the standard processing service such as additional community information meetings, review of technical reports provided by specialists hired by the applicant, and specific legal services such as the preparation and registration of legal documents and the acquisition of legal advice.

4. Community Benefit:

4.1 Community benefit is the provision of an amenity that is of value to the community, and identified in the Official Community Plan as a community benefit or amenity.

B. Policy

1. Standard Application Processing Services

Applicants are responsible for paying different rates based on the level of service. The details involved in each level of a standard application processing service are identified below.

1.1 Information Service – No Fee Required

Information services are considered a public service and include:

1.1.1 ***providing information*** on application process requirements including a meeting with staff;

1.1.2 ***providing assistance*** to complete an application;

1.1.3 ***determination*** of applicable fees;

1.1.4 ***identification*** of readily identifiable issues to be addressed.

1.2 Application and Processing Service – Included in Application Fee

For rezoning applications, temporary use permit applications, development variances, development permits, liquor and cannabis retail license applications, and strata conversion applications, the application fee covers the following services:

1.2.1 comprehensive staff assessment including site visit where required;

1.2.2 staff reports;

1.2.3 discussion between planners and applicant throughout process;

1.2.4 review of archaeological data;

1.2.5 staff referral to other agencies, advisory planning commissions, and analysis of their comments;

1.2.6 bylaw or resolution drafting, including review for compatibility with Trust Object and policies and the relevant Official Community Plan;

1.2.7 staff report with recommendation for Local Trust Committee (LTC) approval consideration;

1.2.8 processing bylaws through Executive Committee for approval consideration, if necessary;

1.2.9 forwarding to Minister of Municipal Affairs and Housing for approval consideration, if necessary;

1.2.10 adoption of all bylaws or issuing of permits as required.

1.3 Public Hearing – Included in Application Fee

Services related to a Public Hearing that will be provided to an applicant who has paid an application fee include:

1.3.1 conducting one public hearing with staff present (includes staff time, staff travel costs and estimated direct costs such as meeting place rental, newspaper notice of public hearing, minute taker fee, and delivery of notices when needed).

1.4 Community Information Meeting – Included in Application Fee

Services related to a Community Information Meeting that will be provided to an applicant who has paid an application fee include:

1.4.1 conducting one community information meeting with staff present (includes staff time, staff travel costs, and estimated direct costs such as meeting place rental and delivery of notices when needed).

2. Extraordinary Processing Services – additional fees required

Extraordinary Processing Services are services provided to the applicant that are beyond the standard processing services identified in 1.1- 1.4. Applicants are responsible for paying additional fees for extraordinary processing services.

2.1 Role of LTC in Determining Necessity for Extraordinary Services

2.1.1 Local trust committees (LTCs) can determine the necessary requirements for processing applications. These requirements may necessitate extraordinary processing services, where the actual or estimated processing service level costs are in excess of the costs of a standard application fee for a similar process because:

2.1.1.1 of additional requirements such as additional public consultation, complex covenant requirements or extensive staff time; or,

2.1.1.2 the processing requirements include services obtained from professions outside Islands Trust such as special technical assistance and/or specific legal services; or,

2.1.1.3 the processing requirements include First Nations site visit(s).

2.1.2 The Regional Planning Manager is responsible for assisting LTCs in identifying and costing extraordinary processing service requirements and advising the LTCs of the options available to handle these requirements.

2.1.3 The Regional Planning Manager is responsible for ensuring that complex service requirements include terms of reference which outline detailed criteria and parameters for the extraordinary services that are required.

2.2 Provision of Extraordinary Processing Services

2.2.1 Extraordinary processing services can be provided by Islands Trust via a cost recovery agreement, with costs to be paid by the applicant, in addition to the applicable standard fee.

2.2.2 A resolution of the LTC following the recommendation of the Regional Planning Manager is required to proceed.

2.2.3 When extraordinary processing service requirements have been identified, the applicant should be advised by staff that the application cannot be processed until additional funds are provided by the applicant and a cost recovery agreement with the Islands Trust is signed and a security deposit has been received.

3. Extraordinary Services Cost Recovery Agreements

3.1 Extraordinary Services Cost Recovery – Principles

3.1.1 Cost Recovery Agreements reflect a service level which includes the extraordinary services needed to undertake the approval process for a complex application.

3.1.2 Cost Recovery Agreements will endeavour to recover all costs of processing that exceed the standard costs of processing services.

3.1.3 The existence of a Cost Recovery Agreement will not fetter a LTC's discretion with respect to an application before the committee.

3.1.4 Authority for negotiating Cost Recovery Agreements is provided within the respective LTC Fees Bylaws.

3.1.5 Cost Recovery Agreements will proceed only by resolution of the LTC after consultation with the Regional Planning Manager, except in situations where an applicant is seeking to discuss an issue directly with Islands Trust legal advisors, in which case the Director of Local Planning Services may approve the Cost Recovery Agreement.

3.1.6 The Cost Recovery Agreement letter will be submitted, together with the recommendation of the Regional Planning Manager and the LTC resolution, for approval by the Director of Local Planning Services (or designate) prior to final agreement with the applicant.

3.2 Services Requiring Extraordinary Services Cost Recovery Agreement

The services identified below are considered to be beyond the scope of standard processing services. These services require payment, in addition to standard application fees established in the Fees Bylaw, of additional fees based on a cost recovery agreement between the Islands Trust and an applicant:

3.2.1 staff time required for covenant development;

3.2.2 staff time to attend more public consultation meetings than that already covered by the standard application fee, including community information meetings, advisory planning commission meetings, and public hearings;

3.2.3 technical assessments or studies as required by the local trust committee;

3.2.4 retaining special technical assistance required by the local trust committee;

3.2.5 additional legal counsel services required for the application not covered under the estimated direct costs of the Fees Bylaw;

3.2.6 process agreement negotiation;

3.2.7 First Nations site visits;

3.2.8 other resources and/or services required by the local trust committee to process the application not covered by the Fees Bylaw.

4. Funding Basis and Fee Adjustments

4.1 Application processing services are funded primarily through fees, as per a LTC's Fees Bylaw. Local trust committees should adopt a Fees Bylaw consistent with the model Fees Bylaw in Attachment 1.

4.2 Standard fees in Fees Bylaws are to be based on average processing costs, as per Section 462 of *the Local Government Act*, Section 31(2)(b) of the *Islands Trust Act,* Section 41 of the *Liquor Control and Licensing Act,* and Section 35 of the *Cannabis Control and Licensing Act*. Standard fees are calculated as the product of staff labour costs multiplied by processing time (including Planner and administrative support). Standard application fees include estimated direct costs.

4.3 A local trust committee may enact variances of up to 20% below what is indicated in the Trust Council's Model Fees Bylaw when adopting a LTC Fees Bylaw. The following criteria must be considered when evaluating a fee variance:

4.3.1 the level of community/environmental benefit offered by the type of application;

4.3.2 variances in direct costs (e.g. hall rental); and,

4.3.3 an amendment to an approved application occurring within 6 months of the approval date.

4.4 Variance to a Fees Bylaw must be adopted by bylaw amendment. All LTC Fees Bylaws and Fees Bylaw amendments must be approved by the Executive Committee before adoption by a LTC.

4.5 Where the model fees bylaw permits reduced fees for temporary use permits that have a community benefit and are small scale, the local trust committee fees bylaw must specify the actual community benefit to which the fee applies, and should be supported by policies in the official community plan on what are considered amenities to the community.

4.6 Applications for development that begin without a permit or bylaw authorisation are subject to a 20 per cent surcharge to recover the additional cost in processing these types of applications.

5. Application Fee Sponsorship

5.1 If eligible, as identified in Trust Council Policy 4.1.13 Guidelines for Executive Committee Sponsored or Local Trust Committee Initiated Development Applications, the applicant may apply for development application fee sponsorship.

6. Development Approval Information

6.1 The Development Approval Information (DAI) Bylaw provides a mechanism to ensure that the LTC receives appropriate reports and documentation (such as reports from engineers, biologists, hydrogeologists, and geotechnical specialists) from applicants to support rezoning, temporary use permit, and development permit applications.

6.2 DAI bylaws reduce operational costs by ensuring that applications are complete and the information provided is appropriate.

6.3 Local trust committees should adopt a development approval information bylaw.

6.4 The Regional Planning Committee should develop a model Development Approval Information bylaw for addition as Attachment 2 to this policy.

C. Legislated References

Local Government Act, S.462

Local Government Act, S.486

Liquor Control and Licensing Act, S.41

Cannabis Control and Licensing Act, S.35

D. Attachments/Links to Supporting Forms, Documents, Websites, Related Policies and Procedures

1. Model Fees Bylaw

[INSERT LTC NAME] LOCAL TRUST COMMITTEE

BYLAW NO. [XX]

A bylaw to prescribe fees for amending bylaws, issuing permits, examining applications for subdivision, and examining other referrals and applications. Model fees reflect the cost recovery for application processing.

WHEREAS Section 462 of the *Local Government Act* provides that a local government may, by bylaw, impose fees related to applications and inspections; Section 41 of the *Liquor Control and Licensing Act* and Section 35 of the *Cannabis Control and Licensing Act* provides that a local government may, by bylaw, impose fees for referral of a license under that Act, [DENMAN AND HORNBY ONLY and Section 31(2)(b) of the Islands Trust Act provides that a local trust committee may impose a fees to recover the cost of processing siting and use permits] ;

NOW THEREFORE the [Insert LTC Name] Local Trust Committee, being the Local Trust Committee having jurisdiction in respect of the [Insert LTC Name] Local Trust Area in the Province of British Columbia pursuant to the *Islands Trust Act*, enacts as follows:

Citation

1.1 This bylaw may be cited as the "[Insert LTC Name] Local Trust Committee Fees Bylaw, No. [XX]".

Interpretation

2.1 In this bylaw:

"Applicant" means:

2.1.1 the person authorized under the _____ Island Local Trust Committee Procedures Bylaw No. ____, _____ to make an application in respect of a bylaw or permit under the *Islands Trust Act* or Part 14 or Part 15 of the *Local Government Act*;

2.1.2 an applicant for a license under the *Liquor Control and Licensing Act* in respect of which the Local Trust Committee is requested or required to provide comments or recommendations;

2.1.3 an applicant for a license under the *Cannabis Control and Licensing Act* in respect of which the Local Trust Committee is requested or required to provide comments or recommendations;

2.1.4 an applicant for subdivision review under the *Land Title Act* or the *Strata Property Act*;

2.1.5 an applicant for the conversion of a previously occupied building to strata lots under the *Strata Property Act*;

2.1.6 an applicant for a soil deposit permit or soil removal permit issued pursuant to a bylaw enacted under Part 14 of the *Local Government Act*; or

2.1.7 an applicant to a board of variance established under Part 14 of the *Local Government Act*.

"Application Processing Fee" means the initial amount payable to the Islands Trust in respect of any application under this bylaw.

"Community Benefit" refers to an application that results in provision of an amenity that is of value to the community, and identified in the Official Community Plan as a community benefit.

[NOTE: This is in relation to temporary use permits for a use under a specified size that provides a community benefit. The local trust committee would define community benefit here based on its official community plan definition of community benefit]

"General Service Cost" includes average hourly cost of each staff position involved in processing the applications multiplied by the average number of hours taken to complete processing of that type of application, and includes administrative overhead costs..

"Estimated Direct Costs" for bylaw amendments listed in Table 1 means the Islands Trust's estimate of its actual average cost of disbursements associated with the processing of an application, including:

1. newspaper advertising for one community meeting,
2. notifications, postal and delivery costs of statutory notifications for one public hearing,
3. rental of premises for one community meeting meetings and/or one public hearing,
4. contract minute-taker costs recording or preparation of minutes of one community meeting and/or one public hearing and,
5. staff travel expenses for one site visit, one community meeting and one public hearing.

"Estimated Direct Costs" for temporary use permits listed in Table 2 means the Islands Trust's estimate of its actual average cost of disbursements associated with the processing of an application, including

1. one newspaper advertisement, notifications, postal and delivery costs of statutory notifications for one community meeting,
2. rental of premises for one community meeting,
3. contract minute-taker costs recording or preparation of minutes of one community meeting, and
4. staff travel expenses for one site visit, one community meeting.

"Islands Trust" means the Director of Local Planning Services or their authorized representative.

Application Fees

3.1 Prior to the processing of an application listed in Column 1 of Table 1, Table 2, Table 3 or Table 4, the applicant must deliver to Islands Trust the corresponding application processing fee in the amount shown in Column 2 subject to section 4. The application fee includes general service costs and estimated direct costs.

TABLE 1 – Bylaw Amendments (OCP and Zoning Bylaw)	
Column 1: Type of Application	**Column 2: Fee**
1. Major (e.g. change to density or land use designation)	$7,800
2. Minor (e.g. policy change without changing density or land use designation not requiring an OCP amendment)	$4,600

TABLE 2 – Permits	
Column 1: Development Permit in Respect of:	**Column 2: Fee**
1. Protection of Natural Environment, Ecosystems and Biological Diversity	$1,000
2. Protection of Development from Hazardous Conditions	$1,000
3. Protection of Farming	$1,000
4. Objectives for Form and Character	$1,700
5. Objectives to Promote Energy Conservation	$1,000
6. Objectives to Promote Water Conservation	$1,000
7. Objectives to Promote the Reduction of Greenhouse Gas Emissions	$1,000
8. Development Permit Amendment	$1,000

Type of Development Variance Permit	
9. Development variance permit (commercial, industrial or institutional development)	$1900
10. Development variance permit (residential development)	$1900
Type of Temporary Use Permit	
11. Temporary Use Permit (residential/commercial/industrial)	$2150
12. Temporary Use Permit for residential uses and commercial uses under 95 square metres that provide community benefit..	$1000
13. Temporary Use Permit Renewal	$700
14. Temporary Use Permit Renewal (Community Benefit)	$350
Other Permits	
15. Siting and Use Permit	$250
16. Heritage Alteration Permit	$1,700
Combination Applications	
17. Development Permit in respect of a protection area or water and energy conservation in combination with a companion application for a Development Variance Permit	$2,500
18. Development Permit in respect of form and character in combination with a companion application for a Development Variance Permit	$3,000

TABLE 3 – Subdivision Referrals	
Column 1	**Column 2: Fee**
1. Application for Subdivision Review – base fee	$1,000
2. Application for Subdivision Review – per additional lot created	$100
3. Application for Subdivision Review – parcel line adjustments only, creating no additional parcels	$500

TABLE 4 – Other Applications	
Column 1: Type of Application	**Column 2: Fee**
1. Board of Variance	$2,200
2. Land Use Contract amendment	$2,000
3. Liquor & Cannabis Regulation Branch – Retail License Application and Process	$1,500
4. Liquor & Cannabis Regulation Branch – Temporary License Change	$500
5. Strata Conversions	$1,500

4. Fee for After-the-Fact Application

4.1 An application for a permit or bylaw amendment to authorize work or an activity already undertaken, or in operation as of the date the application is made, the rated in 3.1 will be subject to a 20% surcharge.

5. Collection and Refund of Application Processing Fee Amounts

5.1 The total application processing fee must be received before the processing of the application can begin.

5.2 An applicant may withdraw their application at any time through written notice to the Planning Assistant and/or the Planner responsible for processing the application.

5.3 If an applicant withdraws an application before staff undertakes any planning work on the application, the Islands Trust must refund to the applicant the Application Fee, less $100.

5.4 For an application in Table 1, or a Temporary Use Permit in Table 2, the applicant will be eligible for: 75% refund if the application is withdrawn once the file has been assigned by the regional planning manager to the planner; 50% refund if the first staff report has been submitted to the LTC; 25% refund once public notice of a public hearing or permit has been sent out, no refund will be provided after a Public Hearing or after consideration of the Permit by the local trust committee.

5.5 For applications in Table 2 (except for Temporary use Permit applications), Table 3 and Table 4, the applicant will be eligible for: 75% refund if the application is withdrawn once the file has been assigned to the planner; no refund will be provided if the first staff report has been submitted to the LTC.

6. Extraordinary Service Costs (ESC)

6.1 Extraordinary Services Costs will be paid by the Applicant through a cost recovery agreement, entered into with Islands Trust, in addition to the application processing fee.

6.2 Where legal work is required for the preparation of covenants, registration of covenant at Land Title Offices, registration of notice of a permit or housing agreement at the Land Title Office or for other purposes related to the application, staff will provide the Applicant with an estimate of the costs. The Applicant will pay a deposit of 150% of this estimate.

6.3 Where site visits involving First Nations are required for the processing of an application, staff will provide the Applicant with an estimate of the costs. The Applicant will pay a deposit of 150% of this estimate.

6.4 Where there may be need for additional community information meeting or public hearing not covered by the application processing fee, staff will provide the Applicant with an estimate of costs. The Applicant will pay a deposit of 150% of this estimate.

6.5 Where other additional costs beyond the general service costs and estimated direct costs not specified above are required for processing of an application, staff will provide the Applicant with an estimate of the costs. The Applicant will pay a deposit of 150% of this estimate.

6.6 If the amount paid by Islands Trust in respect of Extraordinary Service Costs is less than the deposit provided to the Islands Trust, the Islands Trust shall provide the Applicant with the amount and the applicant shall pay the amount upon receipt. The local trust committee may withhold the consideration of issuance of any permit or hold the consideration of adoption of any bylaw in abeyance until the amount has been paid.

6.7 Islands Trust must refund the unused portion of any Extraordinary Service Costs deposit to the applicant if it is unused for any reason.

7. Annual Fee Increases

7.1 Fees in section 3.1 increase by 2% on April 1st of each year following the date of adoption of the bylaw.

7.2 The (Insert LTC Name) will maintain a record of annual 2% increases and make that record available for public inspection.

8. Application Fee Sponsorship

8.1 Pursuant to Islands Trust Policy 4.1.13, Guidelines for Executive Committee Sponsored or Local Trust Committee Initiated Development Applications, an applicant may apply to the Executive Committee of Islands Trust for development application fee sponsorship.

9. Severability

9.1 In the event a portion of this bylaw is set aside by a court of competent jurisdiction, the invalid portion shall be severed and the remainder of the bylaw remains in force and in effect.

10. Repeal

10.1 "[Insert LTC Name] Local Trust Committee Fees Bylaw No. **[XX]"** is repealed upon adoption of this bylaw.

10.2 Any application for which a fee has been fully paid at the time this bylaw comes into force shall be processed to completion in accordance with the fee provisions of the repealed bylaw.

READ A FIRST TIME this st day of , 20

READ A SECOND TIME this st day of , 20

READ A THIRD TIME this st day of , 20

APPROVED BY THE EXECUTIVE COMMITTEE OF THE ISLANDS TRUST

this th day of , 20

ADOPTED this th day of , 20

_____ _____

Chair **Deputy Secretary**

STAFF REPORT

File No.: 3026-10 (LTC General – Meeting Logistics)

DATE OF MEETING:	November 2, 2021
TO:	Denman Island Local Trust Committee
FROM:	Heather Kauer, Regional Planning Manager Northern Team
SUBJECT:	2022 Local Trust Committee Meeting Schedule

RECOMMENDATION

1. **That the Denman Island Local Trust Committee schedule its regular business meetings on the following dates in 2022: January 18, March 22, May 31, July 19, September 27, and November 8.**

DISCUSSION

Each Local Trust Committee (LTC) is asked to endorse, by resolution, its regular business meeting schedule for 2022. Tentative dates have been identified in relation to anticipated project commitments, application volumes, trustee availability, ferry schedules, statutory holidays, conferences, Trust Council, Trust Council Committees, Islands Trust Conservancy, and available staff and financial resources. Tentative meeting dates are identified in Attachment 1.

If alternative dates are proposed, LTCs should avoid scheduling meetings on dates which may conflict with other planned meetings or events. Key dates are noted for reference in Attachment 1. Note, LTCs do not need to identify the planned start times or locations for in-person meetings. Meeting details will be advertised in accordance with legislated notification requirements.

If the LTC is anticipating amending their meeting procedures bylaw to allow for regular meetings to be electronic-only, the LTC has the option of designating which of the dates listed above are anticipated to be electronic vs. in-person. This would allow staff to plan further in advance for accommodating the logistics of each meeting. The alternative is that the format of each meeting is chosen at the end of each previous meeting. If the LTC chooses the latter, staff will book venues for the year and anticipate cancelling the bookings if the meetings get changed to electronic-only.

Submitted By:	Heather Kauer, MPA, RPP, MCIP, AICP Regional Planning Manager	October 19, 2021

ATTACHMENT

1. Tentative 2022 Northern Local Trust Committee Meeting Schedule

ATTACHMENT 1 – TENTATIVE 2021 NORTHERN LOCAL TRUST COMMITTEE MEETING SCHEDULE

LTC	Denman	Gabriola	Gambier	Hornby	Lasqueti	Thetis	Ballenas-Winchelsea
	January 18	January 27	-		-	-	-
	-	-	February 3	February 18	February 7	February 22	-
	March 22	March 3	March 31	-	-	-	March 16
	-	April 7	-	April 29	April 6	-	-
	May 31	May 12	May 26	-	-	May 3	-
	-	June 16	-	June 10	June 21	-	-
	July 19	July 28	July 7	-	-	July 12	-
	-	-	-	-	August 9	-	-
	September 27	September 29	September 1	September 9	-	-	-
	-	October 27	-	-	October 4	October 4	October 12
	November 8	-	November 17	November 25	-	-	-
	-	December 1	-			December 6	-
Total	6	9	6	5	5	5	2
Start Time -In Person -on Zoom	 10:30 am 10:00 am	 10:30 am 10:30 am	 10:30 am 10:30 am	 11:30 am 10:00 am	 11:00 am 9:30 or 10 am	 9:30 am 9:30 am	 10:00 am 10:00 am
Location if in person	Denman Activity Centre	Gabriola Arts & Heritage Centre	TBD	Room to Grow	Judith Fisher Centre	Thetis Community Centre	TBD

Key Dates

Stat Holidays	Jan. 1; Feb. 21; Apr. 15, Apr. 18; May 23; Jul. 1; Aug. 1; Sep. 5; Oct. 10; Nov. 11; Dec. 26,27
Trust Council	March 8-10, June 21-23, Sept 20-22 Nov 1-3 (all tentative)
Executive Committee	Jan 12, Feb 3, Feb 2, Feb 23, Mar 23, Apr 13, May 4, May 25, Jul 13, Aug 3, Aug 24, Oct 19, Nov 9, Nov 23, Dec 21
Financial Planning Committee	TBD
Islands Trust Conservancy	Jan 25, Mar 15, May 17, Jul 12, Oct 4, Nov 22 (tentative)
Trust Programs Committee	TBD
Local Planning Committee	TBD
SD 79 (Cowichan) Spring Break	Mar 14-25
SD 46 (Sunshine Coast) Spring Break	Mar 14-25
SD 68 (Nanaimo) Spring Break	Mar 14-25
SD 71 (Comox) Spring Break	Mar 21-Apr 1
AVICC Conference	April 1-3
Salish Sea Conference	April 25-29
LGMA Conference	June 21-23
UBCM Conference	Sept. 12-16

Applications

Rezoning

File Number	Applicant Name	Date Received	Purpose
DE-RZ-2017.1	Denman Community Land Trust Association	12-Sep-2017	PID: 009-708-537 Create two lots for affordable housing for seniors. Civic address: 3730 Denman Road, Denman Island, BC

Planner: Sonja Zupanec

Planning Status

Status Date: 11-Jan-2021

Draft Q+A document; minor amendments to BL 234 and 239 and draft restrictive covenant to be considered by LTC Jan 19. 2021

Status Date: 08-Dec-2020

File reassigned.

Status Date: 03-Nov-2020

Bylaw Nos. 233, 234 are given 1st reading as amended. Bylaw No. 239 (Housing Agreement) given 1st reading.

File Number	Applicant Name	Date Received	Purpose
DE-RZ-2021.1	Denman Housing Association (Denman Green)	11-Mar-2021	PIDs: 009-704-523, 000-393-941, 006-660-495. Affordable housing units. Civic address: 1151 Kirk Road, Denman Island, BC.

Planner: Sonja Zupanec

Planning Status

Status Date: 06-Jul-2021

Preliminary staff report considered by the LTC. Staff to prepare draft bylaws; enter into cost recovery with applicant; conduct early referrals and present additional information from applicant.

Status Date: 12-Mar-2021

File opened & assigned.

Applications

Siting and use Permit

File Number	Applicant Name	Date Received	Purpose
DE-SUP-2020.21	1165860 BC Ltd. - Dianna Bridge	03-Nov-2020	PID: 024-068-560 Building greenhouse. Civic address: 6345 Hinton Road, Denman Island, BC

Planner: Stephen Baugh

Planning Status

Status Date: 04-Feb-2021
File reassigned.

Status Date: 10-Dec-2020
Request for further information

Status Date: 25-Nov-2020
Under planner review

File Number	Applicant Name	Date Received	Purpose
DE-SUP-2020.22	1165860 BC Ltd. - Dianna Bridge	12-Nov-2020	PID: 017-449-995 Building a pool. Civic address: 6351 Hinton Road, Denman Island, BC.

Planner: Stephen Baugh

Planning Status

Status Date: 04-Feb-2021
File reassigned.

Status Date: 10-Dec-2020
Waiting for additional information from applicant

Status Date: 25-Nov-2020
Under planner review

Applications

Siting and use Permit

File Number	Applicant Name	Date Received	Purpose
DE-SUP-2020.3	Etienne Design - Jessica Booth	16-Mar-2020	PID: 030-773-890 New SFD, workshop with guest accommodation, garage & boat house. Civic address 5465 Lacon Road, Denman Island, BC

Planner: Jaime Dubyna

Planning Status

Status Date: 02-Sep-2021
No change in status.

Status Date: 12-Apr-2021
Notice to K'ómoks First Nation sent.

Status Date: 02-Feb-2021
No change in status.

Subdivision

File Number	Applicant Name	Date Received	Purpose
DE-SUB-2018.2	Sea Berry Farm Ltd.	19-Oct-2018	PID: 000-974-081 5 lot subdivision Civic address: 1300 Farley Road, Denman Island, BC

Planner: Ian Cox

Planning Status

Status Date: 12-Oct-2021
No change in status. Awaiting applicant appraisal for cash-in-lieu.

Status Date: 20-Sep-2021
No change in status.

Status Date: 15-Jun-2020
No change in status.

Applications

Subdivision

File Number	Applicant Name	Date Received	Purpose
DE-SUB-2020.2	Denman Community Land Trust Association (Harlene Holm)	30-Sep-2020	PID: 031-102-026 2 lot subdivision. Civic address:3730 Denman Road, Denman Island, BC.

Planner: Sonja Zupanec

Planning Status

Status Date: 08-Dec-2020
File reassigned.

Status Date: 09-Nov-2020
Referral report sent to MOTI.

Status Date: 02-Oct-2020
Application received. Planner reviewing.

Islands Trust

LTC EXP SUMMARY REPORT F2022

Invoices posted to Month ending August 2021

615 Denman	Invoices posted to Month ending August 2021	Budget	Spent	Balance
65000-615	LTC "Trustee Expenses"	185.00	83.94	101.06
LTC Local				
65200-615	LTC - Local Exp - LTC Meeting Expenses	3,904.00	664.20	3,239.80
65210-615	LTC - Local Exp - APC Meeting Expenses	444.00	415.99	28.01
65220-615	LTC - Local Exp - Communications	250.00	325.00	-75.00
65230-615	LTC - Local Exp - Special Projects	294.00	0.00	294.00
TOTAL LTC Local Expense		4,892.00	1,405.19	3,486.81
Projects				
73001-615-4011	Denman Farm Plan	3,500.00	0.00	3,500.00
TOTAL Project Expenses		3,500.00	0.00	3,500.00

Denman Island Local Trust Committee Policies & Standing Resolutions

No	Meeting Date	Resolution No.	Issue	Policy/Standing Resolution
1.	June 26, 2018	DE-2018-056	Proactive enforcement of Short-term Vacation Rentals	**It was MOVED and SECONDED,** that the Denman Island Local Trust Committee adopt the following standing resolution: "That Bylaw Enforcement staff undertake proactive enforcement of Short-term Vacation Rentals on Denman Island".
2.	June 26, 2018	DE-2018-066	Processing of non-medical cannabis retail license applications	**It was MOVED and SECONDED,** that the Denman Island Local Trust Committee adopt the following standing resolution with respect to the processing of non-medical cannabis retail license applications: • Proposed or amended licenses for non-medical cannabis retail establishments require an application to the Local Trust Committee. • The application process shall comprise a public consultation component, which includes at least one notification to neighbours, one public meeting, posting of public notices and one advertisement in a local periodical. • The public consultation process shall be determined by the Local Trust Committee after initial review of the proposal. • However, as a minimum, the Local Trust Committee will mail or otherwise deliver a notice to all owners and residents of properties within a 500 metre radius of the subject property where the establishment is proposed at least 10 days before adoption of a resolution providing comment on the application. The required notice shall include the following information: o Name of the applicant and a description of the proposal in general terms; o The location of the proposed establishment and the subject site; o The place where, and date and time when, both a public meeting will be held and a resolution of the Local Trust Committee considered; o The name and contact information of the Islands Trust planning staff member who can provide copies of the proposed or amended license application; and o How public comments may be submitted to the Local Trust Committee.
3.	October 9, 2018	DE-2018-096	Application processing	**It was MOVED and SECONDED,** that the Denman Local Trust Committee direct staff to give priority to processing applications for affordable housing projects until further direction by the Denman Island Local Trust Committee.
4.	November 20, 2018	DE-2018-100	Bylaw enforcement on	**It was MOVED and SECONDED,**

			unlawful STVRs	that the Denman Island Local Trust Committee adopt the following standing resolution: that the Denman Island Local Trust Committee direct Bylaw Enforcement to use the following priority in dealing with unlawful short-term vacation rentals (STVRs): 1. Unlawful STVRs that have been the subject of substantiated complaints; 2. Unlawful STVRs that are operated by persons who normally do not reside on Denman Island; 3. Unlawful STVRs operated by persons who do not reside on the same property as the STVR; 4. Unlawful STVRs operated by persons who reside on the same property as the STVR.
5.	November 20, 2018	DE-2018-104	Cannabis License applications	**It was MOVED and SECONDED,** that the Denman Island Local Trust Committee adopt the following standing resolution: that the Denman Island Local Trust Committee requests that Notices of Intention to Apply for a Cannabis License be forwarded to the Local Trust Committee upon receipt by the Islands Trust, and included in the next Local Trust Committee regular meeting agenda package.
6.	February 7, 2019	DE-2019-012	First Nations Reconciliation	**It was MOVED and SECONDED,** that the Denman Island Local Trust Committee adopt the following standing resolution with respect to First Nations in the Local Trust Area: Whereas the Local Trust Committee seeks to engage in Reconciliation with local First Nations, governments and the island community by honouring the Truth and Reconciliation Commission Calls to Action, United Nations Declaration on the Rights of Indigenous Peoples, Draft Principles that Guide the Province of British Columbia's Relationship with Indigenous Peoples, and Islands Trust First Nations Engagement Principles, the Local Trust Committee endeavours to: a) Annually, write a letter to First Nations, (re)introducing Trustees and staff and provide a schedule of known Local Trust Committee meetings for the upcoming year, as well as, provide an update of current projects and advocacy activities; b) For various Local Trust Committee meetings, invite elders from local First Nations to attend and provide a traditional welcome to the territory; c) Work with First Nation governments on cooperative initiatives, including

				and not limited to, language, place names, territorial acknowledgements, and community education on Coast Salish and local First Nations' cultural heritage and history; d) Work with First Nations governments on engagement principles for inclusive land use, marine use and climate change planning; advocacy, protection and stewardship; and knowledge and information sharing protocols; e) Establish and maintain government to government dialogue with First Nations, now and into the future, based on respect and recognition of Aboriginal rights and title, treaty rights and First Nations' traditional territories within the Islands Trust Area.
7.	June 6, 2019 *Amended January 19, 2021	DE-2019-056 DE-2021-015	Bylaw enforcement against unlawful dwellings	**It was MOVED and SECONDED,** that the Denman Island Local Trust Committee adopt the following standing resolution: 'The Denman Island Local Trust Committee directs Bylaw Compliance and Enforcement staff to temporarily withhold enforcement against unlawful dwellings upon receipt of a written complaint, unless any of the following conditions apply: a) The complaint is received from at least two sources, one being the owner, occupant or title holder of a neighbouring property; b) It appears that there is more than one unlawful dwelling on a lot; c) An unlawful dwelling appears to be larger than 90 square meters; or d) An unlawful dwelling appears to be located within a Development Permit Area; and nothing in this enforcement policy should be interpreted as giving permission to violate the Denman Island Land Use Bylaw and the Local Trust Committee may change this policy or give direction to expand enforcement activities at any time.' This Standing Resolution will be reviewed in one year's time. *Amended by DE-2021-015

<table>
<tr>
<td>8.</td>
<td>May 19, 2020</td>
<td>DE-2020-022</td>
<td>Residential densities
See Staff Report dated May 19th for background</td>
<td>
It was MOVED and SECONDED,
that the Denman Island Local Trust Committee adopt the following standing resolution with respect to the available residential densities resulting from Section E.1, policy 11 and Appendix D, ‘Residential Density Bank’ of the Denman Island Official Community Plan:

Whereas the Local Trust Committee sets out the current available residential densities in this density register and that the register be updated from time to time to show additions and withdrawals as they occur:

a. The Denman Official Community Plan ‘Residential Density Bank’ in Appendix D has last added or transferred to the bank on January 31, 2017 and has a cumulative total of residential densities of 14;
b. The Denman Official Community Plan Housing Policy 11 in Section E.1 allows for a residential density increase of approximately 5 percent beyond that permitted by existing zoning at the time of adoption of the Official Community Plan on May 15, 2009 to accommodate zoning amendments for special needs and affordable housing, secondary dwelling units approved by the Denman Island Local Trust Committee under Temporary Use Permit and site specific zoning amendment applications under Policy 29 of Section E.1.

The baseline density that was permitted by zoning at the time of adoption of the Official Community Plan was 994 densities based on the Subdivision Potential Map 2010; 1026 total densities less 32 from Parks, Institutional and Conservation designations where residential use is not permitted. Five percent of 994 is 49 densities. Since adoption of the Official Community Plan on May 15, 2009 the following densities have been utilized:

<table>
<tr><th>Authorizing Bylaw/Temporary Use Permit</th><th>Date Utilized</th><th>Number of Residential Densities Utilized</th><th>Cumulative Total of Residential Densities Remaining</th></tr>
<tr><td colspan="3">Baseline Density at time of adoption of the Denman OCP on May, 2009</td><td>49</td></tr>
<tr><td>BL 199
(Official Community Plan)
BL 200
(Land Use Bylaw)</td><td>August 15, 2011</td><td>14</td><td>35</td></tr>
</table>
</td>
</tr>
</table>

				BL 204 (Land Use Bylaw) — September 24, 2013 — 1 — 34 DE-TUP-2016.2 — March 31, 2017 — 1 — **33**
9.	March 16, 2021	DE-IC-2021-002	Bylaw Enforcement	**It was MOVED and SECONDED,** that the Denman Island Local Trust Committee enact the following Standing Resolution: that the Denman Island Local Trust Committee confirm that the following Enforcement Policy has been and continues in effect: While there is a public health emergency declared for COVID-19, Enforcement activities have been deferred for all unlawful dwellings; there will be no evictions, or demands for eviction; And that site inspections for the purpose of gathering information and communication with property owners will continue; And that the Denman Island Local Trust Committee may change this policy at any time and may give direction to resume enforcement activities.
10.	July 6, 2021	DE-IC-2021-007	Bylaw Enforcement	**It was MOVED and SECONDED,** that the Denman Island Local Trust Committee adopt the following Standing Resolution: That the Denman Island Local Trust Committee clarify that the reference to a 45 day limit for visitor accommodation means 45 days for one client and that otherwise there are no limits on how many days per year a visitor accommodation home occupation can operate; and that this temporary policy remain in place until this regulation is reviewed.

Islands Trust

Print Date: October 25, 2021

Top Priorities Report

Denman Island

1. *Farming Regulations Review Project*	Responsible	Dates

Incorporate Bylaw 223 considerations (agriculture, intensive agriculture, feedlot definitions)

2. *Denman OCP and LUB Review*	Responsible	Dates

Rec'd: 19-Jan-2021

Housing
- review of secondary suites regulations
- further opportunities to support housing options
- limit on gross floor area of a dwelling (and/or use of floor area ratio to measure density)
- amend Land Use Bylaw definition of "occasional" in relation to the use of an accessory building to clarify that it refers to a cumulative use of not more than 45 days/year regardless of who is staying there
- review of travel trailer regulations

Home occupations
- Temporary Use Permits for Short Term Vacation Rentals in limited circumstances
- Temporary Use Permits for home occupations (to be considered: retreats, camps and courses; seasonal mobile food and beverage operations; others)
- Clarify visitor accommodation regulations regarding kitchen facilities and 45-day limit

Projects Report

Denman Island

1. *Protected Area Network*	Responsible	Date Received
Undertake planning for a Protected Area Network on Denman Island		15-Mar-2011

2. *Alternative Energy*	Responsible	Date Received
Consider regulations governing wind towers and Ocean Loop Geo-Exchange Systems. Monitor recommendation from Trust Council.		15-Aug-2011

3. *Dwelling Floor Area Regulation*	Responsible	Date Received
Consider regulations to limit the gross floor area of a dwelling		25-Oct-2011

4. *Climate Change*	Responsible	Date Received
Consider climate change adaptation and mitigation measures		25-Oct-2011

5. *Development Procedures Review*	Responsible	Date Received
Review and update Development Procedure Bylaw No. 71		11-Dec-2012

6. *Alternative Dispute Resolution*	Responsible	Date Received
To be considered as part of the enforcement tool kit, possibly in cooperation with the Hornby Island Local Trust Committee		26-May-2015

Projects Report

Denman Island

7. *Denman Village Plan*	Responsible	Date Received
Undertake a Denman Downtown Village Neighbourhood Plan; the plan might include reduction in greenhouse gas emissions; encouragement of a healthy, sustainable economy; addressing of water and septic concerns; and consideration of Denman Community Design Charrette Final Report Jan 2018 recommendations.		26-May-2015

8. *Travel trailers*	Responsible	Date Received
LUB amendments and enforcement policies regarding the use of travel trailers		07-Mar-2017

9. *Occasional use of accessory buildings*	Responsible	Date Received
Amend LUB definition of the term occasional in relation to the use of an accessory building to clarify that it refers to a cumulative use of not more than 45 days per year regardless of who is staying there		07-Mar-2017

10. *Incorporate the Regional Conservation Plan into land use planning.*	Responsible	Date Received
To foster preservation and protection of the Denman Island Ecosystems (based on the Islands Trust Conservancy Report, dated July 17, 2018)		07-Aug-2018

11. *Coastal Douglas-fir protection*	Responsible	Date Received

Projects Report

Denman Island

Implementation of the report, Protection of the Coastal Douglas-fir and Associated Ecosystems: An Island Trust Tool Kit (2018).

07-Feb-2019

12. *naming and recognition/traditional place name for Denman Island on Local Trust Committee meeting agendas*	Responsible	Date Received
Reference Staff Report dated November 7, 2019		07-Nov-2019

13. *Temporary Use Permits*	Responsible	Date Received
To support the development of Temporary Use Permits for short-term vacation rentals and other uses.		09-Oct-2018

Islands Trust

News Release

200 - 1627 Fort Street Victoria B.C. | V8R 1H8
Telephone 250.405.5151 | FAX: 250.405.5155
Toll-Free via Service BC in Vancouver 604.660.2421 | in B.C. 1.800.663.7867
information@islandstrust.bc.ca | www.islandstrust.bc.ca

September 9, 2021 – for immediate release 2021-18-IT

Islands Trust to improve development application process

Lək̓ ʷəŋən, METULIYE/Victoria, B.C. – Islands Trust has been awarded a $367,795 grant from the Province of B.C for a Development Application Service Delivery and Technology Improvement Program.

Through the proposed two-year Development Application Service Delivery and Technology Improvement Program, Islands Trust will hire a consultant to review its development application processing approach and identify opportunities to prioritise applications that improve equity and access to affordable housing. The Trust plans to replace the in-house property information system with a new system that provides more reporting options on applications and includes an online application portal for the public to make and track their applications.

“We are thrilled to receive grant funding from the Province of BC for our Development Application Service Delivery and Technology Improvement Program. This program will lead to a smoother, more efficient, and more transparent land use application process,” said Peter Luckham, Chair of Islands Trust Council. “I am also hopeful we will identify ways to support and fast track planning for affordable housing.”

In 2018, Islands Trust undertook an internal review of application processing and planning service delivery. The results of the review led Islands Trust to reorganize staff in the planning department so that some members of the planning team are focused on proactive long-range planning while others are focused on applications and to create a new position to manage responses to referrals from other agencies.

In addition, Islands Trust initiated an internal process to review application processing, which is still underway. Through the internal review Islands Trust also identified that it needed to improve electronic systems used for recording, tracking and managing applications, and to get an independent review of current application processing practices to identify opportunities to improve efficiency, transparency and processing times and systems.

The provincial Local Government Development Approvals Program, funded by the Ministry of Municipal Affairs and administered by the Union of British Columbia Municipalities, is providing grants to forty-two local governments throughout British Columbia and Islands Trust to create more efficient development approvals processes. The provincial Local Government Development Approvals Program supports the implementation of established best practices and testing of innovative approaches to improve development approvals processes while meeting local government planning and policy objectives.

In the last five years Islands Trust has processed a total of 2296 applications and referrals that included 63 rezoning applications; 94 subdivision applications; 217 development variance permits, 161 development permits; 116 temporary use permits; 32 agricultural land reserve applications; 1583 building permit referrals for the regional districts; and 29

other applications and referrals. The volume is increasing, with applications to Islands Trust in the first three months of 2021 being 84 per cent higher than the five year average.

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About Islands Trust

Islands Trust is a special-purpose government representing 26,000 people living within the Islands Trust Area and 10,000 non-resident property owners. The Islands Trust Area is located within Coast Salish territory and is the homeland to over 28,000 Coast Salish Peoples who have called this place home since time immemorial. Islands Trust is responsible for preserving and protecting the Islands Trust Area's unique environment and amenities through conservation-oriented land use planning and regulation, education, advocacy, and cooperation with First Nations and other agencies. The area covers the islands and waters between the British Columbia mainland and southern Vancouver Island. It includes 13 major islands and more than 450 smaller islands covering 5,200 square kilometres.

Contact:

Peter Luckham, Chair, Islands Trust Council 250.210.2553
Russ Hotsenpiller, Chief Administrative Officer, Islands Trust, via Vicki Swan, Communications Specialist 250.405.5178

Islands Trust Council Highlights
September 21-23, 2021

The following is a list of agenda highlights of Trust Council's activities and decisions during its September 21-23, 2021, meeting held electronically. These highlights are not the official minutes of the Trust Council meeting; Trust Council will adopt those at its next meeting scheduled November 30 – December 2, 2021.

Tree Cutting Authority Session

A summary of the tree cutting authority breakout sessions will be brought back to Executive Committee. Recordings of the breakout room sessions are posted to the meeting website.

Policy Statement Amendment Project Phase 3 Public Engagement Plan

Trust Council approved a budget of an additional $82,000 to support implementation of phase 3 option 3 of a public engagement plan.

Shoreline and Residential Density Reports Strategic Plan

Trust Council referred the Residential Floor Area report back to the Regional Planning Committee for updates identifying environmental benefits and incorporating work being done on North Pender and South Pender islands.

Regarding the Shoreline Protection Model Bylaw Report, Trust Council will circulate it to and invite local trust committees and Bowen Island Municipality provide comment on any intent to undertake policy or regulatory amendments.

2020/21 Statement of Financial Information

Trust Council approved the 2020/21 Statement of Financial Information and June 30, 2021 Financial Report.

Disposition of Delegations, Town Hall and Presentations

Vessel Drift and Response Analysis Presentation

Trust Council requested staff prepare correspondence for the Chair to the appropriate ministries affirming Trust Council's support for the location of a dedicated Emergency Response Towing Vessel in Sidney, B.C.

Oil Spill Planning in the Islands Trust Area Presentation

Trust Council requested staff provide a report outlining potential options for how the Trust and local trust committees can engage and assist with the Coast Guard Oil Spill response planning process.

Policy Direction: NAPTEP Fees

Staff will bring back policies for sponsorship of Natural Area Protection Tax Exemption Program (NAPTEP) applications and return to Trust Council for further review and approval.

Trust Council Policy Review Project

Trust Council reviewed and actioned the following policies:

- ***Policy 2.1.2 Standards of Conduct***

Amendments were referred to December Trust Council requesting trustees provide input to Executive Committee.

- ***Policy 2.2.3 Trust Council Resolutions without Meeting (RWM)***

Trustees are no longer requested to "Reply All" during an RWM email vote deleting 4.3.3.4 from the procedures.

Deletion of item 3.1 from the procedures, "trustee discussion during an RWM", was referred back to senior staff for consideration that the principle of the RWM would be offended.

- ***Policy 7.6.1 FOI Policy and 7.6.2 FOI Procedure***

Trust Council updated administrative policy 7.6.1 and procedure 7.6.2 regarding processing requests under the Freedom of Information (FOI) and Protection of Privacy Act.

Continuous Learning Plan

Trust Council prioritized public engagement tools and approaches as a priority topic for future learning opportunities.

Islands Trust

News Release

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September 20, 2021 – for immediate release 2021-19-IT

Islands Trust to return to in-person meetings

Lək̓ ʷəŋən, METULIYE/Victoria, B.C. – After eighteen months of electronic meetings to ensure compliance with public health orders around public gatherings and social distancing, Islands Trust will once again welcome in-person attendance at public meetings and public hearings.

Before the COVID pandemic, electronic meetings were not an option as provincial law required Islands Trust to provide for in-person attendance by the public. Shortly after the pandemic's start, to ensure business continuity, the Province of B.C. issued Ministerial Order M192 to allow Islands Trust to legally conduct electronic meetings. The Order will expire on September 28, 2021, and beginning September 29, Islands Trust meetings will be in person.

“A lot of trustees and islands residents have missed in-person meetings and look forward to them starting up again,” shared Peter Luckham, Islands Trust Council Chair. “We also know that many people enjoyed having the ability to watch meetings live and recorded from the comfort of their own homes. To accommodate both preferences we’re exploring opportunities and figuring out how to continue to offer livestreaming and meeting recordings. The recordings have been a great option for people who aren't available at meeting times and they are a valuable reference."

Islands Trust is booking community halls and venues in preparation for in-person meetings while also working towards continued livestreaming and recording. Livestreaming will depend on the internet bandwidth available at the host venue and will vary from island to island.

The Islands Trust bodies, which consist of 13 local trust committees, Trust Council—made up of the 26 elected trustees from across the Trust Area, the Executive Committee, and the Islands Trust Conservancy Board, can review meeting procedures bylaws to enable or improve electronic meetings. The public may see procedure changes on future agendas.

All people attending in-person meetings will be required to wear masks, but Islands Trust is not obligated to check for proof of vaccination for in-person meetings.

Islands Trust staff and trustees appreciate meeting participants practicing safe distancing and staying home if they have COVID-19 symptoms.

In-person seating at Islands Trust meetings will be limited to no more than 50 persons, or 50% of the seating capacity, whichever is greater.

The transition back to in-person meetings will begin with the following meetings:

September 24	South Pender Island Local Trust Committee Meeting
September 27	Mayne Island Local Trust Committee Meeting
October 2	Galiano Island Local Trust Committee Community Information Meeting
October 4	Galiano Island Local Trust Committee Meeting
October 4	Lasqueti Island Local Trust Committee Meeting
October 5	Islands Trust Conservancy Board Meeting
October 5	Salt Spring Island Local Trust Committee Meeting

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About Islands Trust

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