REGULAR MEETING OF COUNCIL
Tuesday, August 8, 2017 @ 7:30 PM
George Fraser Room, Ucluelet Community Centre,
500 Matterson Drive, Ucluelet

AGENDA

Page

1. CALL TO ORDER

2. ACKNOWLEDGEMENT OF FIRST NATIONS TERRITORY

   Council would like to acknowledge the Yuułuʔiłʔatḥ First Nations on whose traditional territories the District of Ucluelet operates.

3. ADDITIONS TO AGENDA

4. ADOPTION OF MINUTES

   4.1. July 11, 2017 Regular Minutes — 5 - 14
   2017-07-11 Regular Minutes

   4.2. July 11, 2017 Late Items Minutes — 15
   2017-07-11 Late Items Minutes

5. UNFINISHED BUSINESS

6. MAYOR'S ANNOUNCEMENTS

7. PUBLIC INPUT, DELEGATIONS & PETITIONS

   7.1 Public Input

   7.2 Delegations

8. CORRESPONDENCE

   8.1. World Suicide Prevention Day — 17 - 21
   Canadian Mental Health Association Mid Island
   C-1 World Suicide Prevention Day

   8.2. Welcome Bay Project Request — 23 - 24
   Westcoast Community Resources Society
   C-2 Welcome Bay

   8.3. Action on Abandoned Vessels — 25 - 31
   Sheila Malcolmson
   Member of Parliament for Nanaimo - Ladysmith
   C-3 Abandoned Vessels

9. INFORMATION ITEMS

   9.1. Alberni Clayoquot Working Together To Reduce Poverty Protocol Agreement — 33 - 35

Alberni Clayoquot Health Network
I-1 Protocol Agreement

9.2. Clayoquot Biosphere Trust Update 37
Geoff Lyons
I-2 CBT Update

10. COUNCIL COMMITTEE REPORTS

10.1 Councillor Sally Mole
Deputy Mayor April – June

- Ucluelet & Area Child Care Society
- Westcoast Community Resources Society
- Coastal Family Resource Coalition
- Food Bank on the Edge
- Recreation Commission
- Ucluelet Health Centre Working Group

=> *Other Reports*

10.2 Councillor Marilyn McEwen
Deputy Mayor July – September

- West Coast Multiplex Society
- Ucluelet & Area Historical Society
- Wild Pacific Trail Society
- Vancouver Island Regional Library Board – Trustee
- Alberni-Clayoquot Regional District Board – Alternate

=> *Other Reports*

10.3 Councillor Mayco Noel
Deputy Mayor October – December

- Ucluelet Volunteer Fire Brigade
- Central West Coast Forest Society
- Ucluelet Chamber of Commerce
- Tourism Ucluelet
- Signage Committee
- Clayoquot Biosphere Trust Society - Alternate
- Barkley Community Forest Board

=> *Other Reports*

10.4 Councillor Randy Oliwa
Deputy Mayor January – March

- Vancouver Island Regional Library Board - Alternate

- Harbour Advisory Committee
- Aquarium Board
- Seaview Seniors Housing Society
- Education Liaison

=> *Other Reports*

10.5 Mayor Dianne St. Jacques

- Alberni-Clayoquot Regional District Board
- West Coast Commitee
- Airport Committee
- Coastal Community Network
- Groundfish Development Authority
- DFO Fisheries Committees for Groundfish & Hake
- Regional Fisheries Committees
- Pacific Rim Arts Society
- Whale Fest Committees
- Ucluelet Health Centre Working Group

=> *Other Reports*

11. REPORTS

11.8. Short-Term Rental Program - Host Compliance 189 - 193
Karla Robison, Environmental & Protective Services Manager
R-8 Host Compliance

11.9. Short-Term Rental Program - Appendix A 195 - 203
Power Point Presentation

12. LEGISLATION

13. LATE ITEMS

14. NEW BUSINESS

15. QUESTION PERIOD

16. CLOSED SESSION

Procedural Motion to Move In-Camera:

THAT the meeting be closed to the public in order to address agenda items under Section 90(1) of the *Community Charter.*

17. ADJOURNMENT

DISTRICT OF UCLUELET

MINUTES OF THE REGULAR COUNCIL MEETING
HELD IN THE GEORGE FRASER ROOM, 500 MATTERSON DRIVE
Tuesday, July 11, 2017 at 7:30 PM

Present:	**Chair:**	Mayor St. Jacques
	Council:	Councillors McEwen, Oliwa, Mole, and Noel
	Staff:	Mark Boysen, Chief Administrative Officer
		Don Schaffer, Interim Deputy Officer
		Darcey Bouvier, Recording Secretary

Regrets:

1. CALL TO ORDER

1.1 Mayor St. Jacques called the regular meeting to order at 7:30 pm.

2. ACKNOWLEDGEMENT OF FIRST NATIONS TERRITORY

2.1 Council acknowledged the Yuułuʔiłʔatḥ First Nations on whose traditional territories the District of Ucluelet operates.

3. ADDITIONS TO AGENDA

4. ADOPTION OF MINUTES

4.1 June 27, 2017 Regular Minutes

- Councillor Noel noted on page 9 the heading should be "Barkley Community Forest Board" and not "Central West Coast Forest Society".

2017-001 **It was moved by Councillor McEwen and seconded by Councillor Oliwa**
THAT Council approve the June 27, 2017 Regular Minutes as amended.
CARRIED.

4.2 June 27, 2017 Late Items Minutes

2017-002 **It was moved by Councillor McEwen and seconded by Councillor Noel**
THAT Council adopt the June 27, 2017 Late Items Minutes as presented.
CARRIED.

5. UNFINISHED BUSINESS

5.1 Councillor Oliwa requested Mayor and Council receive a copy of all outgoing correspondences that are sent on their behalf.

6. MAYOR'S ANNOUNCEMENTS

6.1 Mayor St. Jacques noted that Ukee Days is being held on July 21-23, 2017.

7. PUBLIC INPUT, DELEGATIONS & PETITIONS

7.1 Public Input

R. Hurwitz spoke on behalf of the Clayoquot Biosphere Trust (CBT) and extended an invitation to the Regional Gathering on Sunday, September 17, 2017. The CBT sees a need for ongoing healing and reconciliation in response to ongoing discussions surrounding Canada's 150th Anniversary. This invitation is for all communities, residents and visitors to come together to share our strengths, shared history, cultural diversity and to move forward in a positive direction for the future of our region. They welcome Mayor and Council's participation and extended an invitation to be apart of the opening ceremony if Mayor and Council are available.

7.2 Delegations

8. CORRESPONDENCE

9. INFORMATION ITEMS

9.1 Community Naloxone Information Distribution
Coastal Family Resource Coalition

Councillor Mole

- Asked to have this item included on the agenda to ensure that everyone is aware this service is available, in addition to training opportunities.

2017-003 **It was moved by Councillor McEwen and seconded by Councillor Noel**

THAT Council receive information item "Community Naloxone Information Distribution".

CARRIED.

10. COUNCIL COMMITTEE REPORTS

10.1 Councillor Sally Mole
Deputy Mayor April – June

Ucluelet & Area Child Care Society

- Attended the Day Care at the request of the Manager
- The children were making get well cards for a child that

broke his arm (not at the daycare); this child had sent a wish list to the daycare for for his birthday and these items are now starting to come in.
- Request Council to write a letter to this child to thank him for his efforts and to wish him well in his recovery.

Westcoast Community Resources Society

- Had their audit done this past Wednesday; everything is solid and they are doing very well.

Coastal Family Resource Coalition

- Participated in a conference call with the Coalition leaders; discussed how they are transitioning into a new model of managing the Coordinator; working with the Clayoquot Biosphere Trust to see how they could manage the Coalition - at present it is managed through the Westcoast Community Resources Society. We are seeing some gaps, but hopeful this new management model will work. Working on a memorandum of understanding and clear parameters on the funding for that position.

=> ***Other Reports***

- Ukee Days coming up July 21-23, 2017. Lots of great events throughout the weekend.

10.2 Councillor Marilyn McEwen
Deputy Mayor July – September

West Coast Multiplex Society

- Had their regular meeting on Monday evening. They are working on their golf scramble fundraiser, which will be September 16th.
- Society looking at community gaming grants for future planning purposes. Geoff Lyons and Howie Hamilton met in Victoria with the Gaming Association and it looks positive they will qualify for future gaming grants.
- On July 7th, the Board and West Coast Committee met with the architets VDA for the second time. This was a two hour meeting and the discussion was on the design of the building. VDA went away with a pretty clear idea of what the communities are wanting the building to look like and that phase two will be the swimming pool. They are going to come back with a design that the whole committee will have a chance to look at one more time.

10.3 Councillor Mayco Noel
Deputy Mayor October – December

Ucluelet Volunteer Fire Brigade

- Attended their official Wet Down Ceremony tonight that welcome's Ucluelet's new firetruck into service.

Ucluelet Chamber of Commerce

- Lara Kemps is the new Executive and started last week; she has a lot of knowledge of the West Coast, a lot of contacts and she brings some great ideas this organization. Will have to get back to Lara about funding; will direct staff to look into whether or not a formal request was submitted by the Chamber.

Tourism Ucluelet

- Discussion surrounding whether or not to go from 2% to 3%, majority wishing to stay at 2%. Visitor numbers between 500-600 people at the junction daily, and the office downtown between 50-100 people.

Barkley Community Forest Board

- Two days ago the first load of logs were being scaled at the Kennedy sort. This was an exciting event, and things are moving along nicely there.

=> ***Other Reports***

- Also attended the Multiplex meeting. Great to see that it is moving along nicely.

10.4 Councillor Randy Oliwa
Deputy Mayor January – March

10.5 Mayor Dianne St. Jacques

Alberni-Clayoquot Regional District Board

- There was a Board meeting, but nothing to report as far as the West Coast goes.

=> ***Other Reports***

- Attended the Multiplex meeting as well. The purpose of the

architectural work is to get a final plan, as well as a final total on costs. This will then be presented to the public; this information should be ready by the end of the summer.

- Attended a meeting with Ucluelet Harbour Seafood, along with Mr. Schaffer and Mr. Boysen. Still having issues with respects to noise down there. Met with UHS Tyson Yeck, from head office at Pacific Seafoods; they are willing to do more things to muffle the noise; hang some noise dampers; had a consultant take some measurements of the engines to be able to blanket those; it will take 4-6 weeks to get that work done. They had previously been shutting off the compressors at 7pm night but unfortunately they are getting into their busy time of year so won't be able to continue to turn them off. Met with the neighbours and provided an update on that as well.
- Attended the July 1st celebration event; lots of great participation. Thank you to Abby Fortune and her team for putting that on.

2016-4 **It was moved by Councillor Noel and seconded by Councillor Oliwa.**

THAT Council accept all committee reports as presented.

CARRIED.

11. REPORTS

11.1 Request for Staff Report for Amphitrite Point Lands Usage
Abby Fortune, Director of Parks & Recreation

2017-005 **It was moved by Councillor Mole and seconded by Councillor McEwen**

THAT Council approve recommendations 1-4 of report item, "Amphitrite Point Lands - Block B DL 1507 And 1517 Clayoquot District" which states:

1. *THAT Council direct staff to bring forward a report in September to identify options for potential uses and partnerships for the property of Amphitrite Point Lands Block B District Land 1507 and 1517 Clayoquot District, as laid out by the Province in the agreement,*
2. *THAT Staff identify opportunities, risks and challenges as they relate to the property and buildings,*
3. *THAT staff provide a timeline and operational plan for the property including basic budget, maintenance and timelines,*
4. *THAT staff request feedback from the community through public consultation in the fall of 2017 regarding future use of the District Lands.*

CARRIED.

11.2 Request for Noise Control Bylaw Extension and Road Closure
Abby Fortune, Director of Parks & Recreation

2017-006 **It was moved by Councillor Mole and seconded by Councillor McEwen**

THAT Council approve recommendations 1 through 4 of report item, "Ukee Days: Noise By-Law and Road Closure" which states:

1. *THAT Council allow Ukee Days festivities to act out side of the Noise Bylaw 915, Section 3, and Article G and grant an extension on Saturday, July 22, at the Ukee Days Fairgrounds (160 Seaplane Base Road) to midnight.*
2. *THAT Council authorizes the closing of Fraser Lane (10:00am - 10:00pm) in front of the Village Green on Friday, July 21.*
3. *THAT Council authorize the temporary closure of Peninsula for the Ukee Days Parade from 10:15am - 10:45am from Peninsula Rd & Matterson Drive to Peninsula Road & Seaplane Base Road for the Ukee Days parade on Saturday, July 22, 2017*
4. *THAT Council attends the Ukee Days festivities July 21-23 and invites the community to join them*

CARRIED.

11.3 Request for Water Service to BC Hydro Lot 479
Warren Cannon, Superintendent of Public Works

Council discussed the following points:

- Concerned about the cost associated to this and who pays the associated cost.
- Would Hydro be on a metered system? CAO Mark Boysen advised that yes, they would be on a metered system.
- Has there been any cost to BC Hydro yet? Have they paid for the report writing, Warren Cannon's time? CAO Mark Boysen advised Mr. Cannon received the report, so Mr. Cannon's time has been limited. This was a request that was submitted to him.
- It would be nice to see a map attached to this request.
- Concern that this proposal will open up the flood gates for additional applicants along the way. Who approves the hook-up or would it be the ACRD approving it? CAO Mark Boysen advised it would be a case-by-case basis for approval to make sure it met all the guidelines. Council has been presented with the water master plan, work was done by the engineering firm that we have contracted and that report has been recently finalized. There are a range of actions that Mr. Cannon is currently working on to ensure that our water supply is secure and has more capacity. Any submission that comes to us that asks for additional connections would come through this process unless we decide to change the process; have a more detailed guidelines for applicants to follow or a new process on how we move things forward. Present the results of that final water plan for the community and look at those options and how people hook up to the water in the future.

- There is already an agreement with the ACRD which outlines the property has to fall within the service area boundaries. This particular property does not fall within those service area boundaries. Concerned we are setting a precedent especially since the last two years we have had water restrictions. If Wyndansea was to go forward, what would the amount of water we would need for that property? Need to be assured that we have enough water for our own community development before we start before we start going outside of our service agreement and supplying someone new. A lot of the properties in that area have wells and this could be an option for BC Hydro. I don't know if they would be a big user. I think it would be beneficial for us to wait and see the water plan and then possibly take another look at this request.

2017-007 **It was moved by Councillor McEwen and seconded by Councillor Oliwa**

THAT Council approve recommendation 1 of report item, "Request for water servicing to BC Hydro Lot 479 Alberni-Clayoquot Regional District (ACRD)" which states:

1. *THAT Council approve supplying water to the proposed BC Hydro building on Lot DL 479 within the Alberni-Clayoquot Regional District (ACRD)*

DEFEATED.

11.4 Request to Move Funds to Cover an Increase in Building Inspection Service

John Towgood, Planner 1

2017-008 **It was moved by Councillor Oliwa and seconded by Councillor McEwen**

THAT Council approve recommendation 1 of report item, "Request to Cover an Increase in Building Inspection Service" which states:

1. *THAT Staff be directed to move $10,000 from the LED lighting special project to building inspection.*

CARRIED.

11.5 Request for Development Permit & Development Variance Permit Approval

John Towgood, Planner 1

2017-009 **It was moved by Councillor Noel and seconded by Councillor McEwen**

THAT Council approve recommendation 1 of report item, "Development Permit and Associated Variance for Lot: D, Plan: VIP 4011, District: 09", which states:

1. *THAT Development Permit 17-06 and Development Variance Permit 17-02 be approved.*

CARRIED.

12. LEGISLATION

12.1 REPORT

Council Remuneration Bylaw Update
Don Schaffer, Interim Corporate Officer

2017-010 **It was moved by Councillor Noel and seconded by Councillor McEwen**

THAT Council approve recommendation 1 of legislation item, "Council Remuneration Bylaw Update", which states:

1. *THAT Council give three readings to the bylaw attached to this report as Appendix "A"*

CARRIED.

12.2 APPENDIX A
Bylaw No. 1219, 2017

2017-011 **It was moved by Councillor Mole and seconded by Councillor Oliwa**

THAT Council give First reading to Council Remuneration, Expense Reimbursement and Benefits Bylaw No. 1219, 2017.

CARRIED.

2017-012 **It was moved by Councillor Mole and seconded by Councillor Oliwa**

THAT Council give Second reading to Council Remuneration, Expense Reimbursement and Benefits Bylaw No. 1219, 2017.

CARRIED.

2017-013 **It was moved by Councillor Mole and seconded by Councillor McEwen**

THAT Council give Third reading to Council Remuneration, Expense Reimbursement and Benefits Bylaw No. 1219, 2017.

CARRIED.

12.3 APPENDIX B
Bylaw No. 1042, 2017

Council McEwen

- Noted a correction should be made as the date should read 2007, not 2017.

12.4 APPENDIX C
Bylaw No. 1145, 2012

2017-014 **It was moved by Councillor Oliwa and seconded by Councillor Noel**

Motion to receive Appendix B and C for information as amended.

CARRIED.

13. LATE ITEMS

- Late items will be addressed here as addenda items

14. NEW BUSINESS

14.1 Councillor Mole

- Make a motion for a letter to Tucker Udell
- Disappointed that Ucluelet did not receive summer funding money for our summer students this year.

2017-015 **It was moved by Councillor Mole and seconded by Councillor McEwen**

THAT Council write a letter to Tucker Udell, to recognize his citizenship and to thank him for his thoughtfulness by requesting his family and friends donate supplies to the Daycare for his birthday instead of receiving gifts himself.

CARRIED.

2017-016 **It was moved by Councillor Mole and seconded by Councillor McEwen**

THAT Council write a letter to our local Member of Parliament expressing our extreme disappointment in not receiving the summer funding grant for the summer students this year as we rely heavily on this funding.

CARRIED.

14.2 Councillor Noel

- Questioned if there were any updates on the District's water situation? CAO Mark Boysend advised water consumption is up and usage is higher than usual; attributes this to the increased activities at the fish plant as well as the influx of tourists. The reading from the well system looks good, it is currently 1 meter higher than it was last year. Looking to have this information presented to Council in August when we have the water master plan completed to present.

14.3 Councillor Oliwa

- Discussed a water conservation initiative in Victoria called "Fix a Leak Week". Great way to get the community on board to conserve water; there could be an education component to get the schools involved; potential to for big savings with small initiatives like this.
- We have made motions in the past to meet with the Board of Education, but have yet to see that happen. As UBCM fast approaches, that Council create a small committee and give leeway to getting that meeting together. Important for all of Council to be on the phone with the Board of Education; at the very least their Executive, as well as their Administrator to get a summary of where SD70 is at with a seismic upgrade.
- Noted Ucluelet's bid to host the HAABC's 2018 Convention was not successful. Will try again for 2019.

2017-017 **It was moved by Councillor Oliwa and seconded by Councillor Noel**

THAT Council direct our administration to expedite a meeting with the Board of Education and their Administrator as soon as possible to discuss Council's initiative and briefing notes for the upcoming meeting with the Minister of

Education at the UBCM.

CARRIED.

15. QUESTION PERIOD

16. CLOSED SESSION

17. ADJOURNMENT

17.1 Mayor St. Jacques adjourned the regular meeting at 8:53 pm.

CERTIFIED CORRECT: Minutes of the Regular Council Meeting held on Tuesday, July 11, 2017 at 7:30 pm in the George Fraser Room, Ucluelet Community Centre, 500 Matterson Road, Ucluelet, BC.

Dianne St. Jacques
Mayor

Mark Boysen
CAO

DISTRICT OF UCLUELET

MINUTES OF THE REGULAR COUNCIL MEETING
HELD IN THE GEORGE FRASER ROOM, 500 MATTERSON DRIVE
Tuesday, July 11, 2017 at 7:30 PM

Present:	**Chair:**	Mayor St. Jacques
	Council:	Councillors McEwen, Oliwa, Mole, and Noel
	Staff:	Mark Boysen, CAO
		Don Schaffer, Interim Corporate Officer
		Darcey Bouvier, Recording Secretary

Regrets:

1. LATE ITEMS

1.1 Truth and Reconciliation Commission Calls to Action Clayoquot Biosphere Trust

2016-1 **It was moved by Councillor McEwen and seconded by Councillor Noel**

THAT Council receive late item, "Truth and Reconciliation Calls to Action" for information.

CARRIED.

1.2 Appointment of Chief Administrative Officer and Corporate Officer *Don Schaffer, Interim CAO/CO*

2016-2 **It was moved by Councillor McEwen and seconded by Councillor Oliwa**

THAT Council approve recommendation 1 and 2 of late item, "Appointment of Mark Boysen as Chief Administrative Officer and Corporate Officer" which states:

1. *THAT Council appoint Mark Boysen as Chief Administrative Officer and Corporate Officer.*
2. *THAT Council appoint Don Schaffer as Interim Deputy Corporate Officer from July 11, 2017 until August 11, 2017.*

CARRIED.

CERTIFIED CORRECT: Minutes of the Late Items Meeting held on Tuesday, July 11, 2017 at 7:30 pm in the George Fraser Room, Ucluelet Community Centre, 500 Matterson Road, Ucluelet, BC.

Dianne St. Jacques
Mayor

Mark Boysen
CAO

Subject: World Suicide Prevention Day & upcoming suicide prevention workshop
Attachments: Community Gatekeeper - safeTALK workshop.pdf; Community Gatekeeper - Brochure.pdf

From: Judy North
Sent: Thursday, July 27, 2017 10:53 AM
Subject: World Suicide Prevention Day & upcoming suicide prevention workshop

Mayor & Council,

I would like to take this opportunity to quickly address –

- **World Suicide Prevention Day,** September 10th - Upcoming community workshop **September 12th**
- provide an introduction to the **Community Gatekeeper Training Project,**
- and briefly introduce myself.

World Suicide Prevention Day, September 10th

In keeping with the theme of this year's World Suicide Prevention Day - "Take a minute, change a life" – I would like to let Mayor and Council know that Canadian Mental Health Association, in collaboration with community partners, is hosting the suicide awareness and community resources connection workshop, **safeTALK** (please see attached brochure) **September 12th from 5.30 - 9.00pm at the Ucluelet Community Centre**. The typical cost for safeTALK ($50 business rate; $35 non-profit, volunteer, youth & senior rate) in recognition of WSPD is being further subsidized by CMHA to the low cost of **$10/person!**

Community Gatekeeper Training Project

This Canadian Mental Health Association project has a provincial goal of supporting suicide safer communities by preparing 20,000 British Columbian gatekeepers - *trusted and respected community members to whom others go to for support* - in suicide prevention by December 2018. Though service providers are welcome and encouraged to attend workshops, the hope is to reach community members.

As the Regional Coordinator covering Vancouver Island I offer the following:

(1) *No cost **suicide awareness presentations*** that are typically under one hour and are delivered with an audience specific focus. These can be in the form of a "Lunch & Learn", staff meeting, open community drop in presentation, or as board/organizer presentation.

(2) The 1/2-day suicide awareness and community connection workshop, **safeTALK (**fee related**).**

(3) The 2-day practical, interactive and practice based suicide intervention skills training workshop, **ASIST** (fee related)

(4) Suicide prevention, intervention and postvention consultations

CMHA covers all travel expenses and provides subsidies for **safeTALK** and **ASIST.**

About me

With 25 years in the suicide and crisis intervention realms, child & youth suicide clinical proficiency, Indigenous experience, Victim Services competency, being a LivingWorks trainer since 2004, and transferable knowledge of suicide intervention and postvention skills I am confident of my ability to engage with participants and present practical, effective, and audience specific information. I hold a MA in Counselling and Psychology, and possibly of greatest interest, am a suicide attempt survivor combining research and experiential knowledge to effectively and passionately deliver each workshop.

I would like to invite Mayor & Council to attend the **safeTALK** workshop as you consider what a suicide safer Ucluelet community could look like; and ask for a consideration of waiving the $40 rental fee. Online registration will be available mid-August at www.mid-island.cmha.bc.ca/education; please scroll down the page to the link for Ucluelet.

I am available to meet with Mayor & Council or its designate to support other ways in which to build a suicide safer community, and remain open to providing presentations & workshops to Town Council and staff, businesses and non-profit organizations.

I look forward to hearing from you regarding how I can support the suicide prevention efforts of your community.

Promoting life & living,

Judy North, MA
Regional Coordinator, Community Gatekeeper Training Project

Canadian Mental Health Association Mid Island
249 Hirst Avenue West, PO Box 578,
Parksville B.C. V9P 2G6

Direct Line - **(250) 905-0133**

www.mid-island.cmha.bc.ca

The Gatekeeper Training Project is an initiative operated by Canadian Mental Health, BC Division and funded by the Ministry of Health with a goal of training 20,000 British Columbians in suicide prevention by December 2018. Thank you for your support in making this happen!

Community Gatekeeper Training

Canadian Mental Health Association
British Columbia
Mental health for all

safeTALK half-day training

Helping people at risk of suicide

Suicide is preventable. Anyone can make a difference.

safeTALK is a half-day training in suicide alertness. Learn to:

- Identify people who may have thoughts of suicide,
- Ask them directly about the possibility of suicide, then
- Connect them to live-saving community supports and resources.

Both professionals and members of the general public can benefit from safeTALK.

safeTALK is one of two levels of training offered throughout British Columbia through the Canadian Mental Health Association's Community Gatekeeper training program. ASIST, a two-day interactive workshop in suicide intervention and safety planning, is also available.

LivingWorks safeTALK

You're someone who is there to listen when people need to talk—and with Community Gatekeeper training you may be able to help save a life.

WHY TAKE SAFETALK?

LIFE-SAVING: Anyone can experience thoughts of suicide. By connecting friends, family members, colleagues, and students with helping resources, safeTALK participants save lives in their communities.

SIMPLE YET EFFECTIVE: safeTALK uses the easy-to-follow TALK steps—Tell, Ask, Listen, and KeepSafe— and includes time to practice them so the knowledge is retained.

ENGAGING: safeTALK is a dynamic training that incorporates presentations and audiovisuals. It invites participants to become more alert to the possibility of suicide and how to prevent it.

TRUSTED: More than 50,000 people attend safeTALK each year. safeTALK is used in over 20 countries worldwide, and many communities, organizations, and agencies have made it a core training program.

PROVEN: Studies show that safeTALK participants feel more confident asking people about suicide, connecting them with life-saving resources, and keeping them safe until those resources can take over. [1,2]

[1] McLean, J., Woodhouse, A., el, M, Pynnonen, A., McBryde, L. (2007) Evaluation of the Scottish safeTALK Pilot. Scottish Development Centre for Mental Health, Edinburgh. [2] McKay, K., Hagwood, J., Kavalidou, K., Kolves, K., O'Gorman, J. & De Leo, D. (2012) A Review of the Operation Life Suicide Awareness Workshops. Report to the Department of Veterans' Affairs. Australian Institute for Suicide Research and Prevention, Brisbane.

To learn more about bringing Community Gatekeeper training to your community or workplace, contact Judy North, Regional Coordinator - Vancouver Island, 250-905-0133, judy.north@cmha.bc.ca.

Funding provided by the BC Ministry of Health

World Suicide Prevention Day Canadian Mental Health Associat...

SUICIDE PREVENTION IS EVERYBODY'S BUSINESS

Each year, over 500 British Columbians die by suicide. Although suicide is a leading cause of death for youth aged 15–24 years old, the impact of suicide is actually greater among older people.

No matter the age of the person or the circumstances surrounding their death, each one lost to suicide leaves a lasting mark on that person's family, friends and community.

You're someone who is there to listen when people need to talk—and with Community Gatekeeper training you may be able to help save a life.

ABOUT THE CANADIAN MENTAL HEALTH ASSOCIATION

As the nation-wide leader and champion for mental health, the Canadian Mental Health Association (CMHA) helps people access the community resources they need to build resilience and support recovery from mental illness or addiction. Each year, CMHA BC together with a network of 14 BC branches provides services and supports to over 100,000 British Columbians.

Visit www.cmha.bc.ca to find a CMHA branch in your community

To learn more about Community Gatekeeper training, please contact:

Judy North, Regional Coordinator
CMHA Mid Island Branch, Nanaimo, BC

judy.north@cmha.bc.ca
250-905-0133

Canadian Mental Health Association
British Columbia
Mental health for all

905 - 1130 W. Pender Street
Vancouver, BC, V6E 4A4

phone: 604-688-3234
or 1-800-555-8222
(toll-free in BC)
email: info@cmha.bc.ca

www.cmha.bc.ca

Funding provided by the BC Ministry of Health

(2016)

Canadian Mental Health Association
British Columbia
Mental health for all

Community Gatekeeper Training

Helping people at risk of suicide

WHAT IS A COMMUNITY GATEKEEPER?

Community Gatekeepers are members of the community who have been trained to help people who are at risk of suicide. They are people who hold a position of trust and responsibility in the community, and who have regular face-to-face contact with many adults or older adults.

Examples could include:

- First responders
- HR professionals
- Elders and spiritual leaders
- Community service providers
- Teachers and professors

Community Gatekeepers are in the unique position of being able to help prevent suicide, and help save the lives of people in their community.

TWO LEVELS OF COMMUNITY GATEKEEPER TRAINING

Community Gatekeeper training follows research-informed curriculum shown to be effective at increasing knowledge, skill and willingness to intervene, as well as helping to reduce the risk of suicide.

ASIST two-day training

ASIST is a two-day interactive workshop in suicide intervention and safety planning. Over 100,000 people in 30 countries attend ASIST each year. Learn to:

- recognize people at risk of suicide
- talk to them, hear their stories and understand their situations
- help them keep safe and develop an effective personal safety plan
- connect them to community supports and resources

safeTALK half-day training

safeTALK is a half-day training in suicide alertness. More than 50,000 people in 20 countries attend safeTALK each year. Learn to:

- identify people who may have thoughts of suicide
- ask them directly about the possiblity of suicide
- connect them to life-saving community supports and resources

HOW CAN I BECOME A COMMUNITY GATEKEEPER?

Community Gatekeeper training is being offered across British Columbia through the Canadian Mental Health Association (CMHA) on a fee-for-service basis.

To learn more about bringing Community Gatekeeper training to your community or workplace, please contact:

Judy North, Regional Coordinator
judy.north@cmha.bc.ca
250-905-0133

Westcoast Community Resources Society
P.O. Box 868, Ucluelet, British Columbia V0R 3A0
Phone: (250) 726-2343 Fax: (250) 726-2353

July 17, 2017

Dear District of Ucluelet,

Re: Welcome Bay (1800 Bay Street) Building Permit Fee Payment

Westcoast Community Resource Society (WCRS) has proposed a two unit second stage transitional housing renovation project at 1800 Bay Street in Ucluelet, which will house women and children who are homeless or at risk of homelessness due to leaving unsafe or abusive situations. The project is called Welcome Bay and with the renovation work expected to start around the end of July, we will be submitting for a building permit in the coming week. WCRS is writing this letter to request support for the project in the form of payment of the building permit fees for Welcome Bay by the District of Ucluelet.

Our efforts to complete the Welcome Bay project require a big investment from our Society but we are also relying on support from everyone in our communities. Projects of this nature are important to the District, the west coast and region to provide much needed safe, adequate, and affordable housing for the above noted tenant group. We're asking everyone to pitch in however they can and our appeal is also going out to businesses and other funders.

Since 1992, WCRS has operated the Westcoast Transition House located in Ucluelet and has provided free programs for community members. This important project coincides with Westcoast Community Resource Society's 25-year anniversary and we are taking the opportunity to celebrate these two milestones at our AGM in October. At this historic event, we intend to provide acknowledgement of your contributions.

Thank you for your consideration of this request.

Sincerely,

Margaret Morrison

Margaret Morrison, Executive Director
Westcoast Community Resource Society
250-726-2343 x54
mmwcrs@gmail.com

Westcoast Community Resources Society
P.O. Box 868, Ucluelet, British Columbia V0R 3A0
Phone: (250) 726-2343 Fax: (250) 726-2353

July 17, 2017

Dear Mayor and Council,

Re: Welcome Bay (1800 Bay Street) Rezoning Application Fee Reimbursement

Westcoast Community Resource Society (WCRS) has proposed a two unit second stage transitional housing renovation project at 1800 Bay Street in Ucluelet, which will house women and children who are homeless or at risk of homelessness due to leaving unsafe or abusive situations. The project is called Welcome Bay and the renovation work is expected to start around the end of July. We submitted a rezoning application in June 2016 which was adopted in September 2016. The cost of that rezoning application was $1650, including OCP amendment, public hearing and application fees. WCRS is writing this letter to request reimbursement of the rezoning fees for the 1800 Bay Street Housing Project by the District of Ucluelet.

Our efforts to complete the Welcome Bay project require a big investment from our Society and we are reaching out for support from everyone in our community. Projects of this nature are important to the District and will provide much needed safe, adequate, and affordable housing for the above noted tenant group. This second stage housing project will be the only one of its kind in our region; the closest other such program is on Salt Spring Island according to BC Housing.

Since 1992, we have operated the Westcoast Transition House in Ucluelet and have provided free programs for community members. This important project coincides with Westcoast Community Resource Society's 25-year anniversary and we are taking the opportunity to celebrate these two milestones at our AGM in October. At this historic event, we intend to provide acknowledgement of your contributions.

We look forward to hearing back from you regarding our request.

Sincerely,

Margaret Morrison

Margaret Morrison, Executive Director
Westcoast Community Resource Society
250-726-2343 x54
mmwcrs@gmail.com

Sheila Malcolmson
Member of Parliament
Nanaimo—Ladysmith

June, 2017

Greetings from coastal British Columbia!

I'm seeking your support for my federal legislation to protect our coasts.

Right now, thousands of abandoned vessels are polluting our oceans and leaking oil into our waterways, jeopardizing valuable aquaculture and commercial fishing jobs, threatening our tourism industry, and taking a huge toll on coastal communities and volunteers.

For too long, jurisdictional gaps have left coastal communities with nowhere to turn when they need help cleaning up abandoned vessels.

It's time for federal action on abandoned vessels!

My bill C-352 creates a comprehensive coast-wide strategy to:

- ✓ End the run-around and finger-pointing by designating Coast Guard as the agency responsible for directing the removal & recycling of abandoned vessels
- ✓ Get taxpayers off the hook by fixing vessel registration and creating a fee to help cover the cost of vessel disposal
- ✓ Prevent vessels from becoming hazards by piloting a turn-in program at safe recycling facilities
- ✓ Create good green jobs by supporting local marine salvage businesses
- ✓ Build a coast-wide strategy in cooperation with local and provincial governments

HOUSE OF COMMONS
CHAMBRE DES COMMUNES
CANADA

Parliamentary Office
313 Confederation Building
House of Commons
Ottawa, Ontario
K1A 0A6
T. : 613-992-5243
F. : 613-992-9112

Community Office
495 Dunsmuir Road #103
Nanaimo, British Columbia
V9R 6B9
T. : 250-734-6400
F. : 250-734-6404

Sheila.Malcolmson@parl.gc.ca
www.sheilamalcolmson.ndp.ca

Although community pressure has finally gotten abandoned vessels on the federal agenda, the Liberal government's plan simply cannot address the thousands of vessels littering our coastlines. After decades of federal and provincial neglect, $1 million/year for removals is a welcome first small step, but falls far short of what's needed to address this growing problem on all three coasts.

I built my legislation based on years of advice from coastal communities. Your endorsement as a marine ally will demonstrate powerful solidarity when the debate on abandoned vessels begins in the House of Commons this fall.

To show the growing demand for a comprehensive coast-wide solution, I'd love your support.

Here is how you can help build momentum for federal action:

1. Gather petition signatures supporting Bill C-352 (enclosed). Once you've added your name and gathered other signatures, please mail it to my Ottawa office so I can stand in Parliament and show support for a solution.

2. Join the growing list of coastal allies by writing a formal endorsement letter or passing a motion of support (templates enclosed)

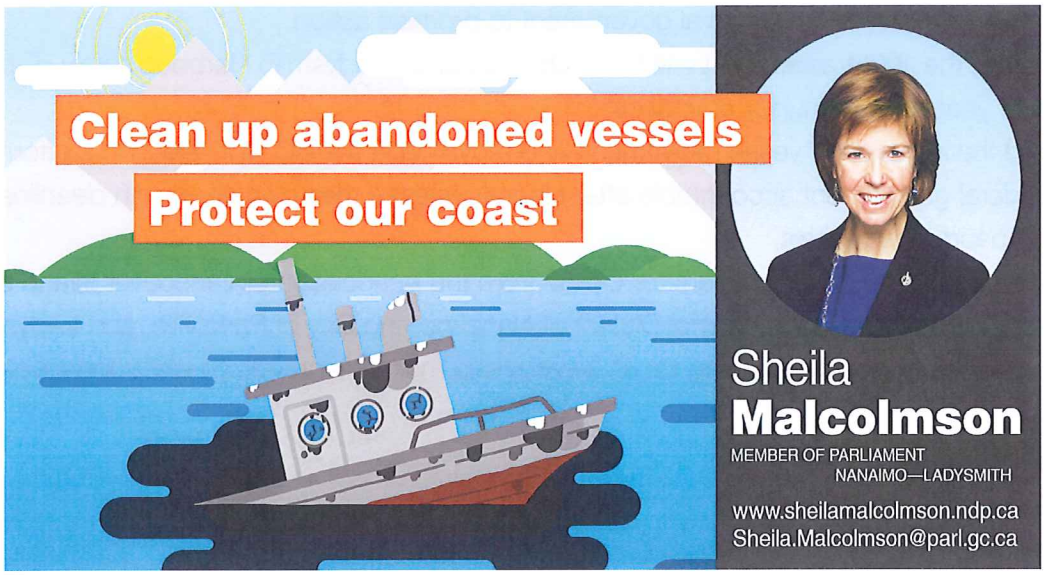
3. Sign and return the postcard (enclosed)

For more information, including the text of the bill, please visit my website at www.sheilamalcolmson.ndp.ca/abandonedvessels

Thank you so much for your support; I look forward to working with you.

Sheila Malcolmson,
Member of Parliament for Nanaimo—Ladysmith

It's Time For Federal Action To Clean Up Abandoned Vessels



Why are abandoned vessels a problem?

- Thousands of abandoned vessels threaten Canadian waterways
- They're a major source of oil spills and pollution, jeopardizing valuable aquaculture, commercial fishing jobs and tourism
- No regulations or programs exist to remove and recycle abandoned vessels before they become serious environmental or navigational hazards
- Jurisdictional gaps have left coastal communities with nowhere to turn for help dealing with abandoned vessels
- Lack of action on this long-standing issue is pressuring local governments, First Nations, marinas, port operators and taxpayers
- Vessel abandonment is made worse by the lack of turn-in programs where owners can easily dispose of their vessels

What solutions does my legislation Bill C-352 propose?

- Ends the run-around and finger-pointing to designate Coast Guard as the agency responsible for directing the removal & recycling of abandoned vessels
- Gets taxpayers off the hook by fixing vessel registration and creating a fee to help cover the cost of vessel disposal
- Prevents vessels from becoming hazards by piloting a turn-in program at safe recycling facilities
- Creates good green jobs by supporting local marine salvage businesses
- Builds a coast-wide strategy in cooperation with local and provincial governments

June 2017

Sheila Malcolmson, MP for Nanaimo—Ladysmith
House of Commons, Ottawa, Ontario, K1A 0A6
Telephone: (613) 992-5243 - Email: sheila.malcolmson@parl.gc.ca

NDP

What have we achieved so far?

- Successfully pressured the federal government to promise action
- Helped get the 100' trawler Viki Lyne II, which threatened Ladysmith Harbour, safely dismantled after four years of community advocacy
- Secured the inclusion of vessel registration and recycling in the BC NDP election platform
- Kept federal government accountable after Liberals missed their own six-month deadline to act on abandoned vessels
- Received unanimous endorsement for C-352 from the Association of Vancouver Island and Coastal Communities, the Regional District of Nanaimo, the City of Parksville, and Ladysmith Maritime Society (see the growing list at: www.sheila.malcolmson.ndp.ca/abandonedvessels)

How can you help build support?

- Sign and distribute the petition
- Write a letter of support or sign the postcard
- Share the abandoned vessels campaign on Facebook and Twitter
  - Facebook: facebook.com/SheilaMalcolmsonNDP
  - Twitter: @s_malcolmson

What's Sheila's history?

Sheila Malcolmson has been a strong advocate for a comprehensive abandoned vessel solution since being elected locally in 2002.

As Islands Trust Council Chair, for six years she worked with hundreds of local governments to urge provincial and federal government action on this decades-old problem.

Elected as the Member of Parliament for Nanaimo—Ladysmith in 2015, she tabled legislation and secured $1.2 million for the safe removal of the trawler Viki Lyne II from Ladysmith Harbour, on the East coast of Vancouver Island.

Her degree in Environmental and Resource Studies and years guiding kayak trips in BC's wilderness inform her work for coastal communities.

June 2017

Sheila Malcolmson, MP for Nanaimo—Ladysmith
House of Commons, Ottawa, Ontario, K1A 0A6
Telephone: (613) 992-5243 - Email: sheila.malcolmson@parl.gc.ca

NDP

Template: Suggested endorsement letter and motion of support

(Insert organization name and logo)

(Date)

Sheila Malcolmson, MP for Nanaimo-Ladysmith
House of Commons
Ottawa, Ontario
K1A 0A6

Dear Ms. Malcolmson,

On behalf of (*insert organization name*), I am writing to support the following motion urging the federal government to adopt MP Sheila Malcolmson's legislation, C-352:

Whereas:

- Abandoned vessels pose an environmental risk and navigational hazard;
- No regulations and programs have established effective measures for the removal and disposal of abandoned vessels;
- Coastal communities in Canada have called on the government to act on abandoned vessels for decades;

Move that *(inset organization name)* encourages Parliament to adopt Bill C-352, "An Act to amend the Canada Shipping Act, 2001 and provide for the development of a national strategy for abandoned vessels", which would fix vessel registration, pilot a vessel turn-in program, create good green jobs by supporting local marine salvage businesses and vessel recycling, and make Coast Guard responsible for directing the removal of abandoned vessels.

Sincerely,

(Please sign on behalf of your organization)

Petition to the House of Commons: Federal Action to Clean up Abandoned Vessels

We, the undersigned residents of Canada, draw the attention of the House of Commons to the following:

WHEREAS:

- Abandoned vessels pose an environmental risk and navigational hazard;
- No regulations or programs have established effective measures for the removal and recycling of abandoned vessels;
- Coastal communities in Canada have called on the government to act on abandoned vessels for decades;

THEREFORE, we call on the Government of Canada to support Bill C-352 to:

1. Designate Coast Guard as the agency responsible for directing the removal & recycling of abandoned vessels;
2. Build a coast-wide strategy in cooperation with local and provincial governments;
3. Get taxpayers off the hook by improving vessel registration and creating a fee to help cover the cost of vessel disposal;
4. Prevent vessels from becoming hazards by piloting a turn-in program at safe recycling facilities;
5. Create good green jobs by supporting local marine salvage businesses.

NAME (PRINT)	STREET ADDRESS (city, province, postal code)	EMAIL	SIGNATURE

PLEASE SEND COMPLETED PETITIONS TO: Sheila Malcolmson, Member of Parliament, House of Commons, Ottawa, ON, K1A 0A6 **POSTAGE FREE!** (Please use an envelope)

Petition to the House of Commons: Federal Action to Clean up Abandoned Vessels

We, the undersigned residents of Canada, draw the attention of the House of Commons to the following:

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NAME (PRINT)	STREET ADDRESS (city, province, postal code)	EMAIL	SIGNATURE

PLEASE SEND COMPLETED PETITIONS TO: Sheila Malcolmson, Member of Parliament, House of Commons, Ottawa, ON, K1A 0A6 **POSTAGE FREE!** (Please use an envelope)

July 19th 2017

RE: Alberni Clayoquot Working Together To Reduce Poverty Protocol Agreement

Mayor and Council
District of Ucluelet
Box 999, 200 Main Street
Ucluelet, BC
V0R 3A0

Dear Ucluelet Mayor and Council,

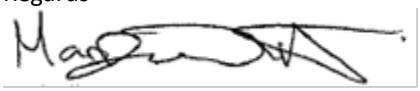
Thank you for your recent resolution to endorse the Alberni Clayoquot Working Together to Reduce Poverty Protocol Agreement.

This protocol agreement is an initiative lead by the Alberni Clayoquot Health Network in collaboration with local leaders, communities and organizations. Recognizing that poverty is a complex issue which cannot be addressed by any one organization or initiative, the ACHN has participated and convened efforts to move this conversation forward. Since November 2015 the following actions have been taken to engage communities and local leaders:

- November 2015 Community Response to Poverty Forum in the Alberni Valley organized by MLA Scott Fraser
- Local Mayors, Regional District Directors and organizational leads convened to identify next steps January 2016
- Clayoquot Biosphere Trust Poverty Forum – February 2016
- Working Together to Reduce Poverty Workshop, May 30th 2016 organized by the Alberni Clayoquot Health Network
- Identification of 5 Outcome areas and development of Theory of Change to Reduce Poverty in the ACRD
- Creation and endorsement of the Alberni Clayoquot Working Together to Reduce Poverty Protocol Agreement

We look forward to our upcoming work with you to keep this conversation in the forefront and continued work with community partners to plan actions to address this complex social issue. In order to maintain momentum and continue to engage community stakeholders we will convene a *Signing Event for the Alberni Clayoquot Working Together to Reduce Poverty Protocol Agreement October 2017,* an invitation for this event will be distributed early September. In the meantime we will be presenting the Poverty Reduction Theory of Change and invitation for resolutions to endorse the Poverty Protocol Agreement in the Nuu Chah Nulth Nations. We will be pulling together educational resources to assist in disseminating and gathering information and have included a briefing note which outlines information on this initiative. We invite you to tell us what information on poverty in the ACRD you require by participating in our survey. (https://www.surveymonkey.com/r/FQ58TMQ)

Regards



Marcie DeWitt
Coordinator, Alberni Clayoquot Health Network
achn@acrd.bc.ca
250.726.5019

ALBERNI CLAYOQUOT HEALTH NETWORK

POVERTY REDUCTION PROTOCOL BRIEFING NOTE

BACKGROUND

Recognizing that poverty is a complex issue which cannot be addressed by any one organization or initiative, leaders in the ACRD have begun to bring together local stakeholders to discuss, identify opportunities and plan around poverty reduction.

- November 2015 Community Response to Poverty Forum in the Alberni Valley organized by MLA Scott Fraser
- Clayoquot Biosphere Trust Poverty Forum – February 2016
- Local Mayors, Regional District Directors and organizational leads convened to identify next steps January 2016
- Working Together to Reduce Poverty Workshop, May 30th 2016 organized by the Alberni Clayoquot Health Network
- Identification of 5 Outcome areas and development of Theory of Change to Reduce Poverty in the ACRD, presentation to local groups and leaders Fall and Winter 2016/2017.
- Creation of the Alberni Clayoquot Working Together To Reduce Poverty Protocol Agreement
- Presentation and resolutions to endorse the Poverty Reduction Theory of Change and Protocol Agreement to local leadership tables

LOCAL STATS

While there are many factors which contribute to the complex issue of poverty in our region here are a couple key statistics which point to the need to mobilize action.

- The Alberni Clayoquot Regional District (ACRD) is currently experiences the 4th highest rates of poverty out of 29 Regional Districts in BC with 22.1% living in low income homes
- A child poverty rate of 30.6% and 36.3% of children and youth in the region living in low income homes
- A core housing need of 14.8% with 46.4% of renters spending more than 30% of their income on housing and 12.7% of dwellings requiring major repairs.
- A significantly lower life expectancy
- Significant barriers around housing, transportation, food and health access which vary between urban, rural, remote and First Nation communities.

NEXT STEPS

We recognise that reducing poverty is a long term goal and this is just one of many steps towards this goal. The Alberni Clayoquot Health Network Theory of Change is just a starting point to assist in guiding us forward to make some meaningful change.

- Presentations to local Nuu Chah Nulth Nation leadership and government tables
- Alberni Clayoquot Working Together to Reduce Poverty Protocol Agreement Signing
- Poverty Reduction education campaign and planning with local community partners to identify next steps and action plans

GET INVOLVED

- Take the survey
- Attend an event, sign up to the ACHN newsletter for more info!
- Explore ways we can collaborate by contacting ACHN Coordinator at achn@acrd.bc.ca

ALBERNI CLAYOQUOT HEALTH NETWORK

ADDITIONAL RESOURCES

Check out some of our local statistics and information resources locally and beyond.

- Vital Signs Reports for the Alberni Valley and West Coast Communities
- Living Wage calculation for Huu-ay-aht First Nation and 2017 report for West Coast communities
- Local Health Area 70 Profile
- BC Stats – Alberni Clayoquot Socio Economic Profile
- Statistics Canada – ACRD Census Profile
- Canada Without Poverty
- Provincial Poverty Profile Report
- 2016 Child Poverty Report Card

To Mayor & Council

Report on the Clayoquot Biosphere Trust

Geoff Lyons – CBT Bard Member for Ucluelet

Dear Mayor & Council,

Thank you for my re-appointment as the CBT Board representative for the District of Ucluelet.
As requested, here is my report on activities of the CBT: -

- The CBT has undertaken numerous activities, including:
    - Funding allocations to numerous applicants under various funding opportunities have and are being undertaken in 2017; for background, in 2016 this consisted of:
        - Education & Youth $100,000 }
        - Research & Environment $ 59,000 }
        - Culture & Events $ 39,000 } $235,000
        - Community Development $ 26,000 }
        - Food Security $ 11,000 }
    - The Vital Signs was also completed and circulated in 2016;
    - In 2017 the "Living Wage" comparison was completed, and circulated through-out the region;
    - The investment of the base-funding of the Canada Fund endowment (originally $12,000,000) continues to maintain its standing over the cost of living adjustment obligation, and now stands at approx. $17,000,000;
    - There is over $1,000,000 in surplus (in excess of the cost of living adjustment obligation);
    - The CBT Office, which is rented, is in a poor state of repair, and the discussion is to possibly try to relocate to a more permanent location (attempts to purchase the existing property and renovate it have not moved forward);
    - Discussions are taking place to consider co-locating with the Vancouver Island Regional Library in a shared location;
    - A regional gathering is planned for Sept 17th in the National Park at Kwisitis Centre from 11:00 – 4:00 pm – everyone is welcome;
    - I had the pleasure of attending a gathering of Community Foundations in Ottawa (the CBT is an active member). A very informative and thought provoking few days of presentations and lectures by numerous advocates and funding providers on many issues addressing funding and assistance to deserving groups;
    - I have been appointed as Treasurer and a member of the Executive Committee, as well as the CBT Investment Committee, and look forward to working with the group to optimise the Investments in a safe and secure manner.

DISTRICT OF UCLUELET

STAFF REPORT TO COUNCIL

Council Meeting: AUGUST 8, 2017
500 Matterson Drive, Ucluelet, BC V0R 3A0

FROM: DON SCHAFFER, INTERIM DEPUTY CORPORATE OFFICER **FILE NO:** {0550-20}

SUBJECT: DELEGATION OF AUTHORITY TO SIGN MINUTES

ATTACHMENT(S): NONE

RECOMMENDATION(S):

1. **THAT** Council delegate the authority to sign Council meeting minutes from January to June, 2017, to the Interim Deputy Corporate Officer.

PURPOSE:

The purpose of this report is to authorize the Interim Deputy Corporate Officer (DCO) to sign minutes of Council meetings held from January to June, 2017.

BACKGROUND:

Section 124 (2) of the *Community Charter* requires that the Council of each municipality in the province put in force a procedure bylaw which provides for, among other things, the taking of minutes and certification of those minutes. District of Ucluelet Council Procedures Bylaw No. 1166, 2014, states at Section 16.1 the following:

> Minutes of Council meetings must be
> (a) Legibly recorded,
> (b) Certified as correct by the Corporate Officer, and
> (c) Signed by the Mayor at the meeting at which they are adopted.

Staff have been unable to locate signed copies of minutes of open or closed meetings since dating back to January, 2017. In order to meet the requirements of the *Charter* and the Council Procedure Bylaw minutes must be signed, kept safe and made available to the public. Additionally, no minutes of meetings dating back to the beginning of this year are available on the District website.

Having the DCO sign minutes for meetings at which he was not in attendance is problematic, since the signature is a statement of correctness of the minutes. However, as Council has adopted each set of minutes by resolution, and as the DCO has reviewed the minutes of each meeting to make sure that any requested changes to minutes have been made, the DCO is comfortable attesting to the correctness of the documents.

It is also felt that having the DCO sign minutes of past meetings while having the Chief Administrative Officer/Corporate Officer sign minutes from here on will clearly delineate the changes in staffing and procedures.

TIME REQUIREMENTS – STAFF & ELECTED OFFICIALS:

The Mayor or Acting Mayor will need to take time to attend at the District office and sign each document, as will the DCO.

POLICY OR LEGISLATIVE IMPACTS:

Having the minutes of meetings of Council signed and certified provides the District with complete and accurate records of the conduct of its business, as required by law and best practice.

OPTIONS REVIEW:

1. **THAT** Council delegate the authority to sign Council meeting minutes from January to June, 2017, to the Interim Deputy Corporate Officer.

2. **THAT** Council delegate the authority to sign Council meeting minutes from January to June, 2017, to the CAO/CO.

Respectfully submitted:

Don Schaffer, Interim Deputy Corporate Officer

Mark Boysen, Chief Administrative Officer

DISTRICT OF UCLUELET

STAFF REPORT TO COUNCIL

Council Meeting: AUGUST 8TH, 2017

500 Matterson Drive, Ucluelet, BC V0R 3A0

FROM: JOHN TOWGOOD, PLANNER 1 **FILE NO:** 3060-20 **FOLIO NO:** 061.250

SUBJECT: DEVELOPMENT PERMIT AND VARIANCE FOR CAMPGROUND ON LOT 5, PLAN VIP67274

ATTACHMENT(S): APPENDIX A – APPLICATION
APPENDIX B – DEVELOPMENT PERMIT, DP17-07
APPENDIX C – DEVELOPMENT VARIANCE PERMIT, DP17-03

RECOMMENDATION(S):

1. **THAT** Council approve Development Permit DP17-07 and Development Variance Permit DVP17-03 for LOT 5, PLAN VIP67274, P.I.D 024-167-525.

PURPOSE:

To provide Council with information on a proposed campground consisting of 5 RV spots and an auxiliary building. The proposed development triggers the requirement for a Form and Character, Natural Environment, and Hazardous Conditions Development Permit ("**DP**").

BACKGROUND:

An application has been received for a Development Permit for 1015 Peninsula Road, Lot 5, Plan VIP67274 (the "**Subject Property**"). This undeveloped property is located on Spring Cove across Peninsula Road from the Terrace Beach Resort (**Figure 1**).

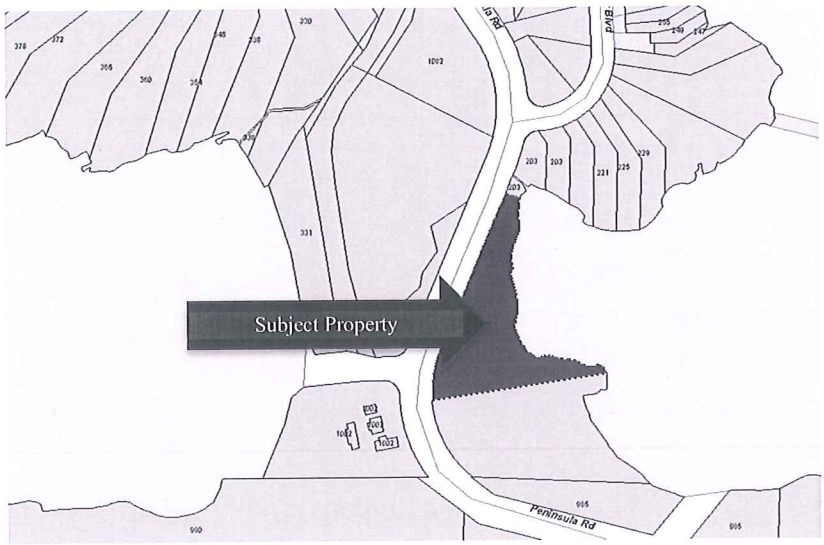


Figure 1 – Site Plan

This lot has a 25m Green space buffer runs along the foreshore and a Development Permit for the rebuilding of a section of the Wild Pacific Trail was recently approved within that greenspace. (**Figure 1**).

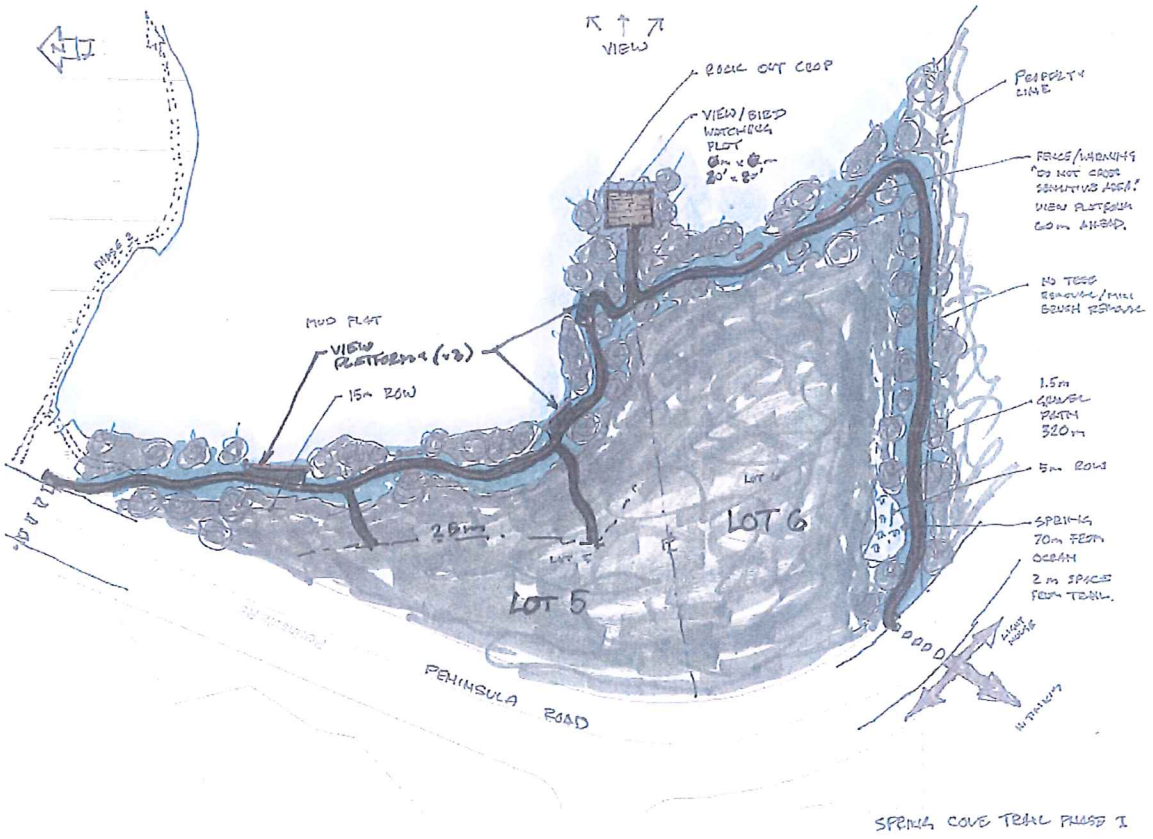


Figure 2 - Wild Pacific Trail Sketch

This lot has some significant old growth trees. The owner prior to speaking with Planning Staff had a review done on danger trees and cut and limbed the identified trees. There is language in the green space covenant that allows an owner to manage danger trees for the public trail but a DP should have been completed for any disturbance of lands including tree cutting. The applicant also cut a district curb and laid gravel down in the general parking area. Again, this work should have been part of a DP. Once Staff noted this work was being done we contacted the owner requesting him to stop all work. The owner fully cooperated with staff and immediately stopped all work. The applicant has worked with Staff to bring forward this DP application and has been made aware of all the required process around building on this lot.

DISCUSSION:

The proposed Development Permit application is assessed on:

- Official Community Plan's (the "**OCP**") Reef Point designation policies;
  - Protection of the natural environment, its ecosystems and biological diversity; and
  - Protection of development from hazardous conditions; and
  - Establishment of objectives for the form and character of development in the resort region;
- Zoning Bylaw requirements;

OCP, Protection of the natural environment, its ecosystems and biological diversity:

The development of this property is mainly restricted to the upper road side bench area due to the properties configuration and the 25m foreshore greenspace buffer. This development application consists of the addition of gravel to the existing gravel already in place and one auxiliary building that is using a very low impact *"Helical Pile"* foundation system (**Figure 3**).

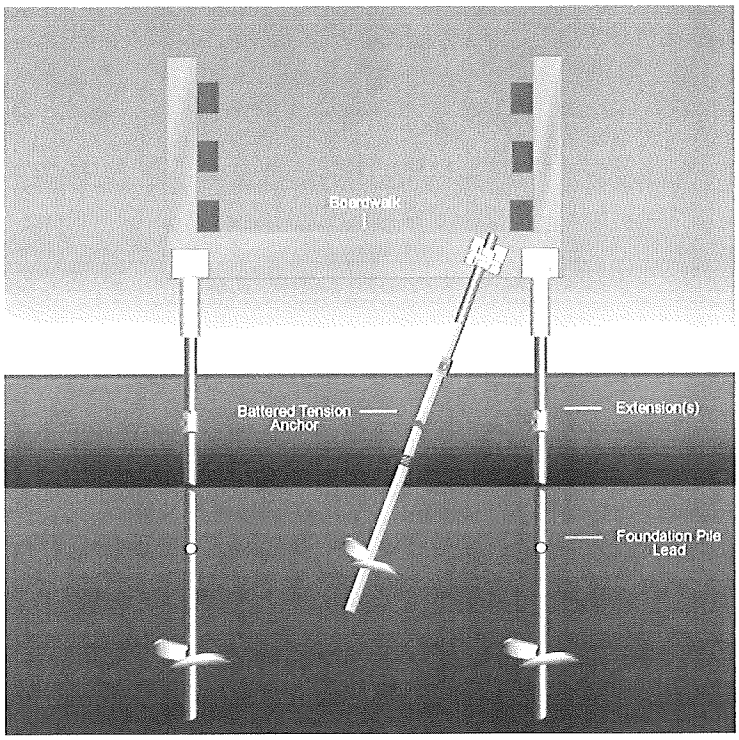


Figure 3 – Helical Pile

The general development permit guidelines indicate that an "Environmental Impact Assessment" shall be required for all properties greater than 2 HA in size to evaluate the impacts of a proposed development on the natural environment. The Subject property is 0.51 HA and considering the green space and low impact nature of the development Staff have not required an Environmental Impact Assessment. The applicant stated that he will keep and enhance the landscaping to represent the native species on the property. Any exposed fill areas will be replanted with native species. As part of the Building Permit ("**BP**") for this development, any work being proposed within 30m of a wetland or identified stream, will require a report and supervision by a qualified environmental consultant. The applicant has stated they plan to flatten out a existing fill pile that spilled over the property line from lot 6. This fill appears to have been located on lot 5 and 6 from the creation of the Peninsula Road rerouting. The applicant has stated that there will be no natural or no fill soils excavated as part of the flattening out and redistribution of this fill pile.

OCP, Protection of development from hazardous conditions:

This development happens on the upper bench and 25m from the fore shore, and approximately 5m's above datum. The applicant has removed a number of hazard trees as recommended by an arborist report and stated that no further tree removal is required. To be clear, no further tree removal will be allowed under this DP. The applicant has already reviewed and removed any identified hazard trees on the subject property.

OCP, Establishment of objectives for the form and character of development in the resort region;

The Reef Point Development Permit Area is intended for large scale tourist commercial developments. Reef Point's natural beauty and rich ecological qualities add significant potential value to Ucluelet, its residents, and future generations in terms of character creation. It is these qualities; beautiful, natural, and wild, which residents and people from afar come to experience. The immediacy of the ocean, the marine environment and the presence of significant stands of forest, including old-grow are primary character-giving qualities of this area.

The Subject Property is a challenging property to develop because of its shape and the large 25m greenspace buffer on the foreshore. The applicants approach to utilizing this lot as a campground that focuses on RV's with yurt type accommodation structures is a creative way to work with the lots challenges and attributes. The applicant is proposing 6 RV spaces and one axillary yurt structure constructed immediately, with 3 yurts being built within a year to create a 4-unit motel use. The applicant is proposing a one-way access road and a one-way exit as indicated in the sketch below. Planning Staff have augmented the Applicants sketch with colors and landscaping to better inform Council of the applicant's intent and to better define the DP requirements on the DP permit (**Figure 4**).

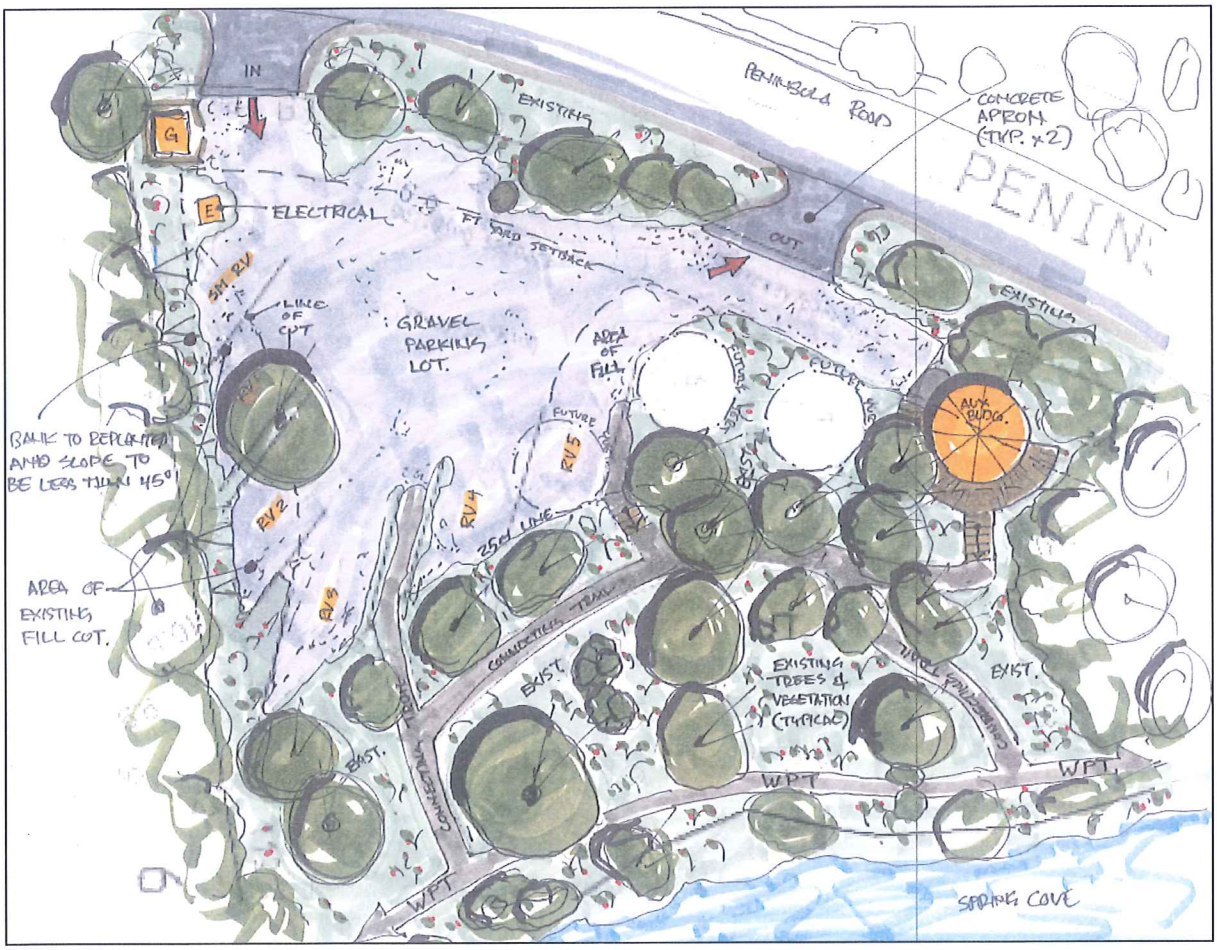


Figure 4 – Colored Sketch

The yurt Structure (**Figure 5**) consists of metal roofing and metal siding and it has a very low profile. This structure will sit on top of Helical Piles and appears to sit above the landscaping. The

first structure will be originally used as an auxiliary building but will be used as a motel suite when the applicant builds three more yurt units to fit the zoning definition for a motel.

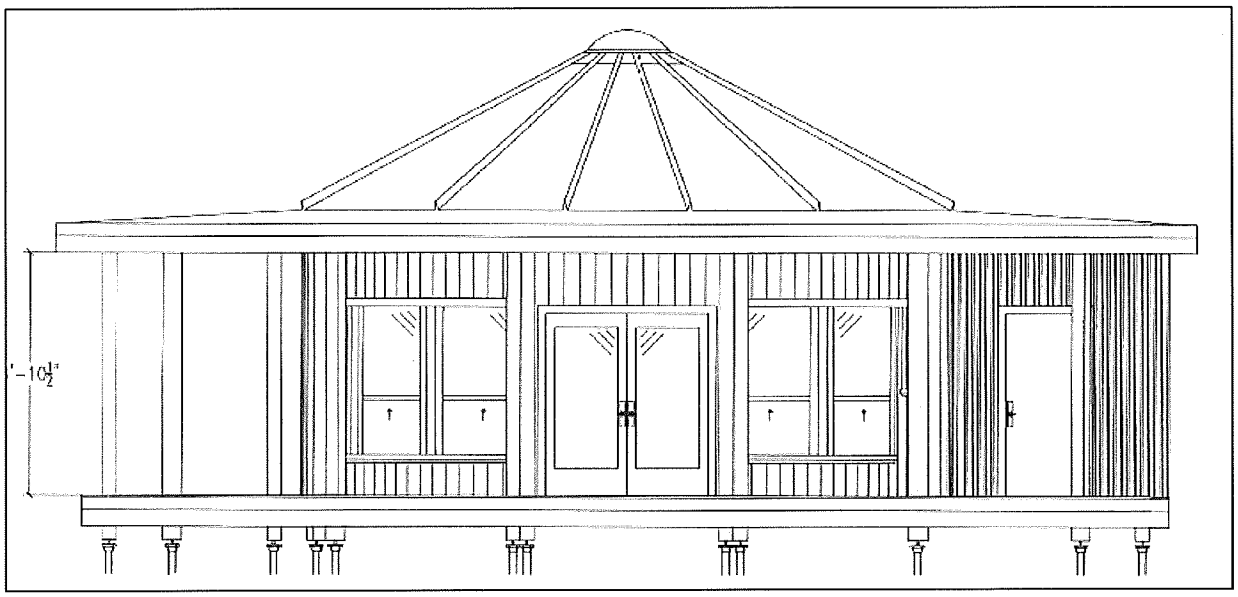


Figure 5 – Yurt Elevation

All RV spaces and yurt units will be connected to the District of Ucluelet sewer system. A garbage receptacle will be supplied, screened in a wooden cedar enclosure and be of a style that is bear proof. The access and exit to the gravel lot will be paved or concrete as indicated in the staff sketch and the curb cuts will be integrated as per industry standard.

ZONING BYLAW REQUIREMENTS:

The Property is in the CS-5 zone – Tourist Commercial. This zone is intended to provide for tourist commercial accommodations and other related recreational and primarily tourist commercial uses outside the District's Village Square and its residential areas. The Application proposes the primary use of "*CS-5 1.1. (1) (e) Campground*" use with campground is defined as:

> ***"Campground"*** *means the use of land for commercial tourist accommodation of a recreation nature only, in tents, campers and motorized recreational vehicles, specifically excluding Park Models and other buildings, structures and vehicles that are or appear permanent or residential in nature;*

The immediately constructed Yurt structure, because it does not fit within the *"Motel"* definition of providing four(4) or more separate guest rooms, will be considered a Auxiliary building:

> ***"Motel"*** *means a building, or group of buildings on the same lot, providing four (4) or more separate guest rooms or dwelling units with the entrance to each room being to the outside of the building, for commercial tourist accommodation use only, functioning from an on-site staffed office, and with on-site parking in close proximity to each guest room or dwelling unit;*

The Applicant is showing 3 future yurt units that are planned to be built at a later date so that the application will meet the motel definition criteria at that time. The application meets all other zoning criteria with the exception of the yurt encroachment into the front yard setback. This encroachment will require a Development Variance Permit.

Development Variance Permit

The applicant is asking that the front yard setback be reduced to 3.13m (10.3ft) for a 2.87m (9.4ft) encroachment of a yurt auxiliary structure (**Figure 6**) where section CS-5.6.1 of the District of Ucluelet Zoning Bylaw No. 1160, 2013, indicates a front yard setback requirement of 6.0m (20ft).

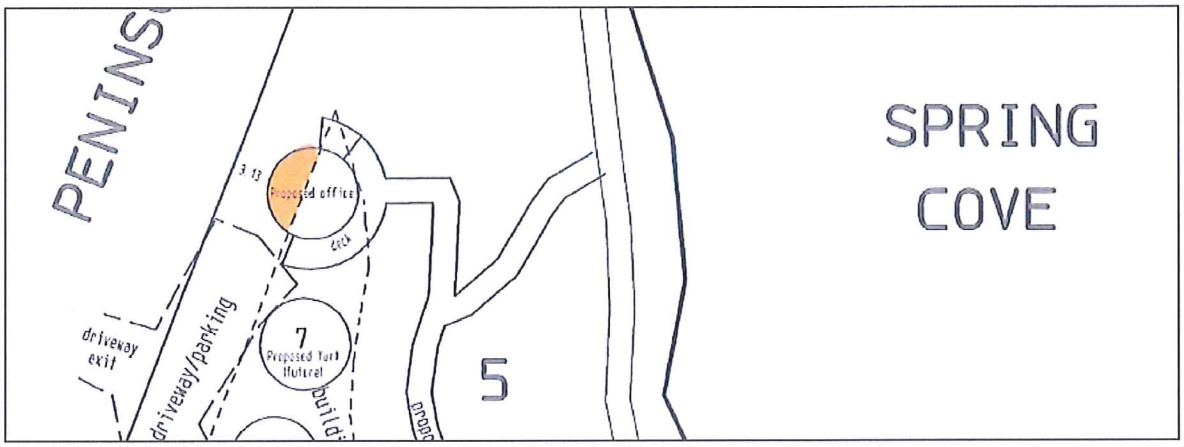


Figure 6 – Variance request

The subject property shape and 25m green space make it difficult for the applicant to utilize this narrow end of the property. The setback reduction is mitigated by a natural vegetation buffer between the road and the yurt. This Variance is detailed in the attached permit (**Appendix C**)

TIME REQUIREMENTS – STAFF & ELECTED OFFICIALS:

Staff time will be required to monitor and review the progress of this application.

FINANCIAL IMPACTS:

Development Cost Charges will be charged for only the building aspects of this application and a building permit fee will be charged based on project cost. The value of the property will increase with the proposed improvements increasing the districts tax base. Water and sewer fee will be collected based on usage. There are no other direct financial impacts from this application.

POLICY OR LEGISLATIVE IMPACTS:

The Reef Point / Terrace Beach / Spring Cove area is known to have high archeological value. The original development of the area in 2000 did an extensive archeological review. From that report, archeological sites were identified and mapped out and development Lots were created around those sites or covenants were positioned on title to regulate how those lots can develop. The Subject Property was not identified as having an archeological site and it does not have an archeological covenant on title. The District of Ucluelet's standard practice for the requiring archeological reviews has been to require them at:

- The inception of a subdivision;
- The creation of a master development agreement that contemplated the development or rezoning of a large are;

- There is an identified archeological site on the property;
- A site is indicated on the title of the property.

A full archeological review and First Nations referral would be done for any of the above points to inform on how those lands are to be developed. The smaller form and character type development permits have not previously required archeologic reviews or referrals. It is important to note that the preservation of any archeological site is very important to the District of Ucluelet and that the District will ensure that all developments shall respect archaeological resources and comply with all relevant statutes for the protection of archeological sites. The District of Ucluelet has strongly recommended that the applicant retain the services of an eligible consulting archaeologist.

SUMMARY:

This proposal conforms to the Reef Point Development Permit area tourist commercial vision. The proposal works with the challenges on the property and incorporates the properties natural beauty and rich ecological qualities.

OPTIONS REVIEW:

1. Approve the permit application as presented (recommended option).
2. Defer consideration pending receipt of further information to be identified.
3. Refuse the permit application, citing the OCP guidelines with which the proposal does not conform.

Staff recommend Option 1 as the proposed development meets the intent of the Reef Point Development Permit Area Guidelines.

Respectfully submitted:

John Towgood, Planner 1

Mark Boysen, Chief Administrative Officer

Wild Pacific Yurts & Campground

Phase 1 Development Permit application

Please find attached the supporting documents for our phase 1 development.

Intro: We wish to create a family friendly resort focused on the raw beauty of the area and the land. We will minimize our footprint using helical piles as foundation piers, reducing / eliminating the need for substantial excavation and concrete.

Our building style is based on the Yurt round design, however as you will see in the plans, we have created the first Yurt cabin that meets the building code, while being aesthetically pleasing to the eye and using time tested materials and building techniques, thus minimizing the wear and tear due to exposure to the harsh climate.

In Phase 1 there will be 5 serviced RV sites, which should help to alleviate some of the camper congestion in Ucluelet for the summer months. These sites will eventually be replaced by 5 Yurt cabins, as you can see on the Phase 2 layout survey.

Our vision is for our guests to be able to enjoy the Wild Pacific trail at their finger tips, as well as relaxing within a beautiful calm bay setting and watching the amazing bird and sea life.

Cabin #1 placement: The first cabin will sit elevated on a higher ground ridge line. This is the best and safest spot for the cabin on the north side of the lot. It has been positioned like this to be within the building boundaries as much as possible. The site sits at approximately 12-15 feet higher than Peninsula road, and 20-22 feet higher than the high water line.

We wish to apply for a variance because the cabin needs to sit partially within the district's front yard set back. Please note: the site is higher than Peninsula road by about 15 feet, as well as a vegetation buffer will be kept as thick as possible so the cabin will barely be visible from the road.

On the water side, the attached deck will be partly within the 25m set back area, however it will be attached to, and all our decks will be an integral part of a raised wooden pedestrian cedar boardwalk network (as mentioned in covenant EL 10359, Clause 4B) that will link the resort to the Wild Pacific Trail at the foreshore. This boardwalk will all be supported on helical piles, and will not need any excavation or concrete foundations. This will assure minimal impact to the green space.

Resort Layout:

Driveway flow: The driveway will be uni-directional to save space and to maximize the ease of flow and enhance safety. The entrance will be on the south end of the lot. Incoming traffic will be able to see, and to be seen by opposite side traffic, before coming into the driveway.

The exit will be further north along Peninsula road, and allows vehicles to be facing the right direction while exiting (northbound) enhancing safety.

Parking: There will be a total of 12 comfortable parking spots that can be seen on the layout map.

Garbage bin: The pad will sit on the south end by the entrance, It will be easy for the garbage truck to come and empty the bin, drive our driveway, and exit safely.

Transformer: This location was recommended by many people that visited the site from electricians, excavation services, and arborists. There is a massive old growth cedar tree that sits on the lots edge and would be most likely killed if we had to dig the roots closer to it. This means the ideal placement for the small transformer would be on district property. The location is exactly where the 3 phase power pipes currently come out of the ground.

Electrical shed: There will be a small utility shed as marked on the map that will house the electrical meters, etc. as recommended by our local contracted electrician.

Vegetation Buffer: Maximum vegetation will be retained on the road side to create privacy and be visually pleasing from Peninsula road.

Conclusion: We wish to create a unique and fun family experience that will enhance offerings for year round vacationers to the west coast.

We hope that you ind our development exciting and a positive addition to Ucluelet.

Thank you kindly for your attention,

Alex Paquin & Shane Korpan
Owners / Wild Pacific Yurts & Campground
250-423-4433

AG SURVEYS

110-545 MARINE DRIVE
UCLUELET, B. C.
V0R 3A0
Phone: 726-2755
File: 142-Pen
July 17/2017

Site Plan of:

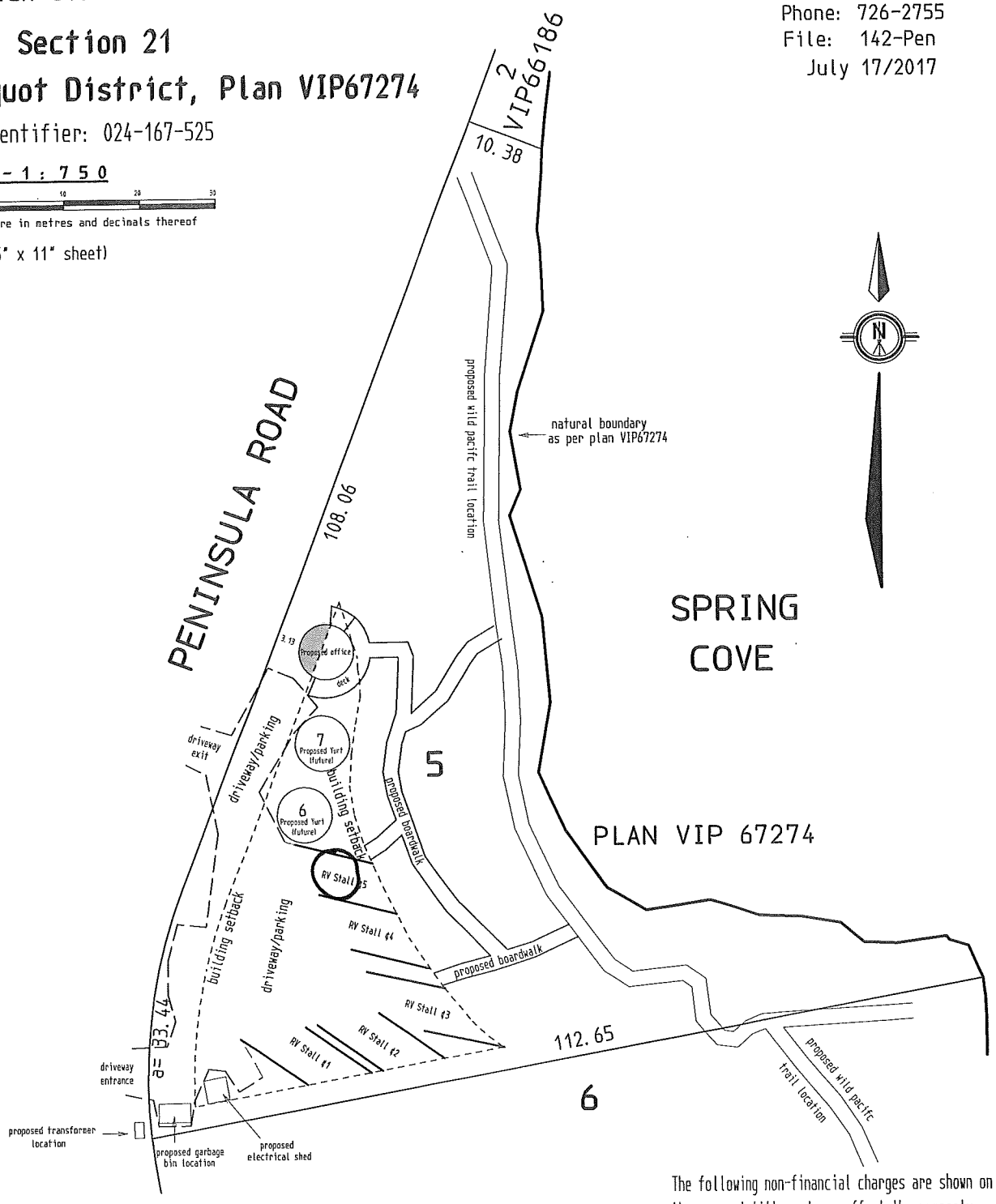
Lot 5, Section 21
Clayoquot District, Plan VIP67274

Parcel Identifier: 024-167-525

SCALE - 1 : 750

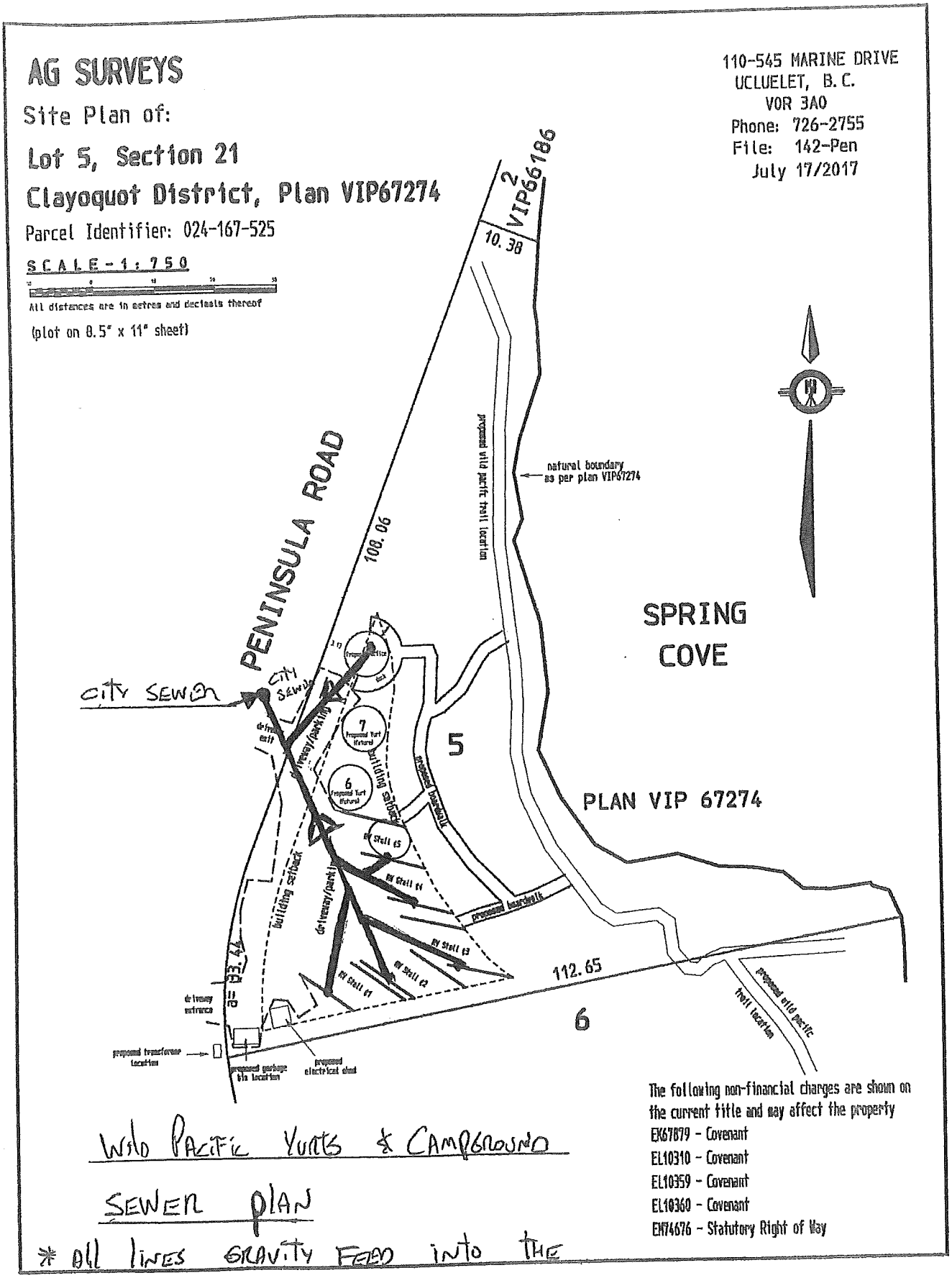
All distances are in metres and decimals thereof

(plot on 8.5" x 11" sheet)



The following non-financial charges are shown on the current title and may affect the property

EK67879 - Covenant
EL10310 - Covenant
EL10359 - Covenant
EL10360 - Covenant
EM74676 - Statutory Right of Way



Wild Pacific Yurts & Campground

Sewer plan

* All lines gravity feed into the city's system

AG SURVEYS

110-545 MARINE DRIVE
UCLUELET, B.C.
V0R 3A0
Phone: 726-2755
File: 133-Pen
May 1/2017

Site Plan of:

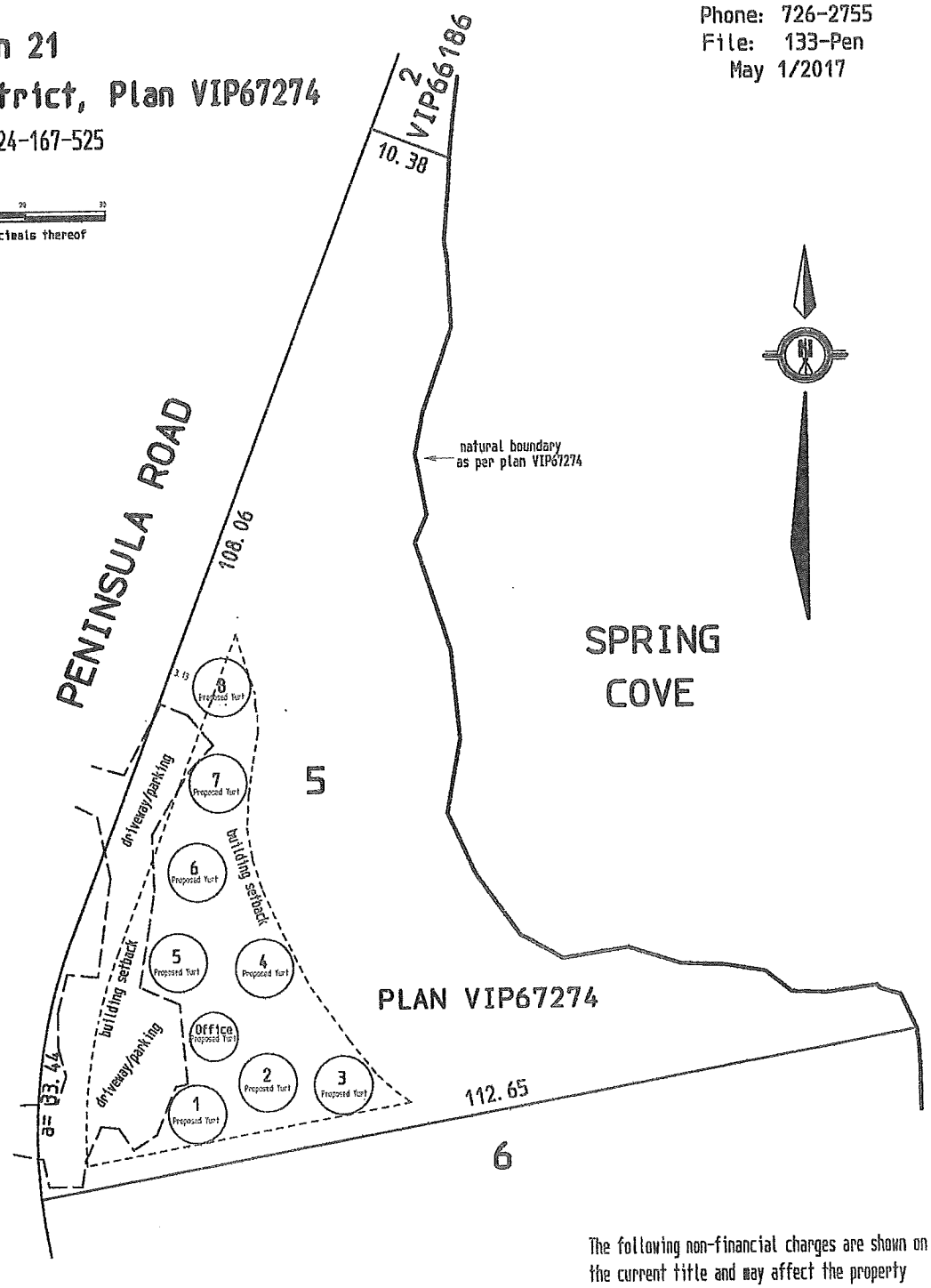
Lot 5, Section 21
Clayoquot District, Plan VIP67274

Parcel Identifier: 024-167-525

SCALE - 1 : 750

All distances are in metres and decimals thereof

(plot on 8.5" x 11" sheet)

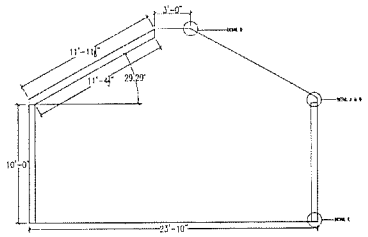


The following non-financial charges are shown on the current title and may affect the property

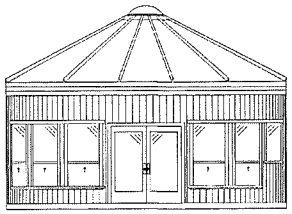
EK67079 - Covenant
EL10310 - Covenant
EL10359 - Covenant
EL10360 - Covenant
EM74676 - Statutory Right of Way

PHASE 2

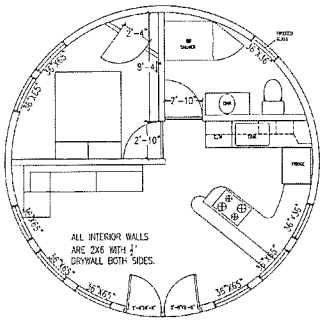
6 GALV NUTS, BOLTS AND WASHERS WITH DYMONIC CAULKING SQUEEZE FLOOR PIES TOGETHER STAGGERED 1-1/2" FROM TOP, 1-1/2" FROM BOTTOM
A-1 FLOOR PIE BOLT PATTERN
3/8"=1'-0"
A-1 FOUNDATION PLAN
3/8"=1'-0"
A-1 FLOOR PIES
3/8"=1'-0"
A-1 ROOF FRAMING PLAN
3/8"=1'-0"
39 Rafters
A-1 ROOF AND WALL FRAMING PLAN
3/8"=1'-0"
DETAIL E
9.23
2.81
Client:
Dave Byers
Date:
JULY 5TH 2017
Scale:
As Noted
Designer:
ANDREW JOHNSON
CONTACT: 250-897-5306
TIMBER BOX
HOME DESIGNS
A-1



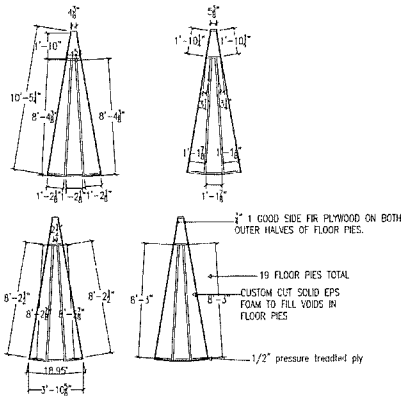
A-2 SECTION



A-2 FRONT ELEVATION

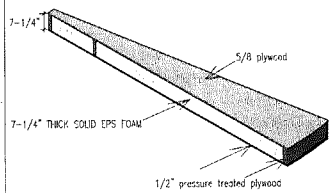


A-2 FLOOR PLAN



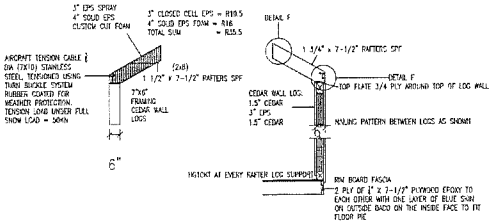
A-2 FLOOR PIES 1/4"=1'-0"

ON THE UNDERSIDE OF EVERY FLOOR PIE THERE WILL BE DYVAC STAPLED TO EACH ONE TO FORM A CONTINUOUS AIR BARRIER. OVERLAP 6INCHES AND TAPE SEAMS WITH TUCK TAPE.



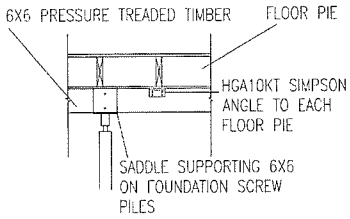
7-1/4" SOLID EPS = R29
1/2" PLY = R0.62
⅝ PLY = R0.77
TOTAL SUM = R 30.39

A-2 FLOOR PIE SECTION

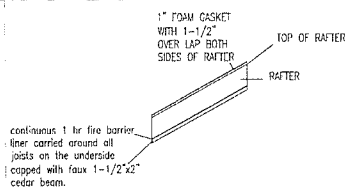


A-2 DETAIL A

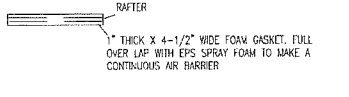
A-2 DETAIL B



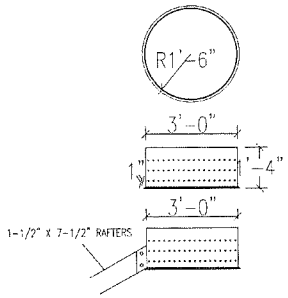
A-2 DETAIL C



A-2 DETAIL F



A-2 DETAIL F TOP VIEW



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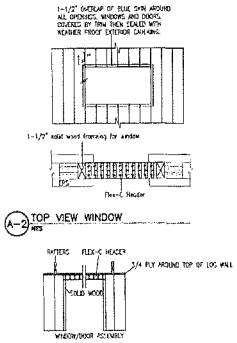
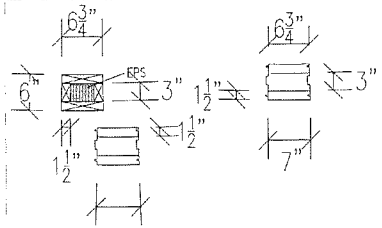


A-2 TOP VIEW WINDOW

A-2 DOOR/WINDOW ASSEMBLEY



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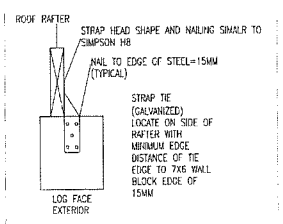

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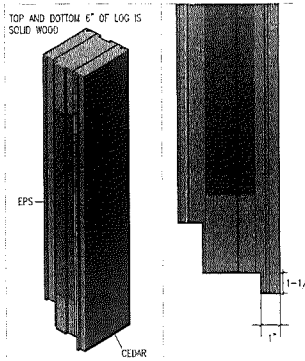


A-2 LOG DETAIL

A-2 LOG DETAIL

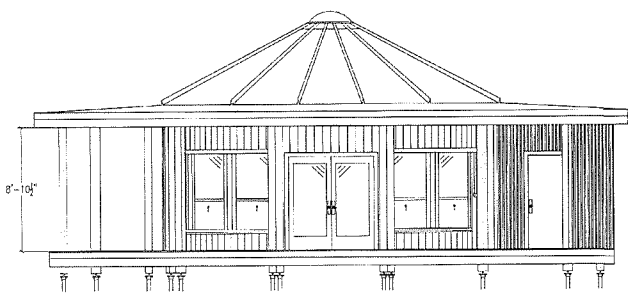
Client:
Dave Byers
Date:
JULY 5TH 2017
Scale:
As Noted

Designer:
ANDREW JOHNSON
CONTACT: 250-897-5306

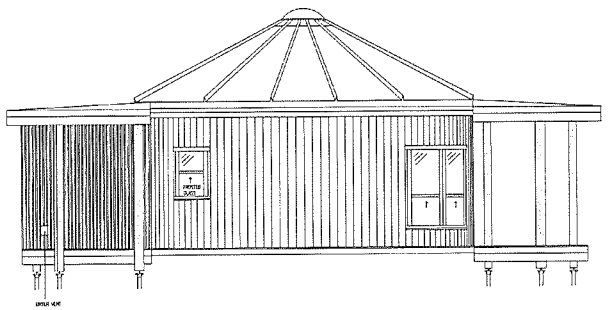
TIMBER BOX
HOME DESIGNS

A-2

TIM BER BOX



A-3 FRONT ELEVATION 1/4"=1'-0"



A-3 REAR ELEVATION 1/4"=1'-0"

NOTES:
ALL DRAWINGS ARE FOR A 24' DIAMETER YURT.
CONTRACTOR TO VERIFY ALL MEASUREMENTS BEFORE CONSTRUCTION.
ALL SOLID EPS FOAM TO BE CUSTOM CUT FOR FLOOR PIES AND CEILING RAFTERS.
THE ROOF OF THE DECK HAS A 6" SLOPE FOR RAIN WATER TO RUN OFF.
THE ROOF WILL OVERHANG 1' BEYOND THE DECK FLOOR.
THE WALLS OF THE SHED ARE 2X4 CONSTRUCTION TYP. EXTERIOR OF SHED IS CORRUGATED METAL SIDING.

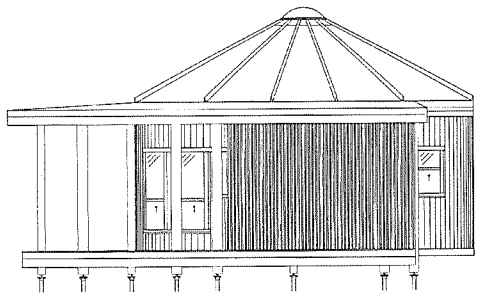
NOTES:
SINCE VARIATIONS CAN OCCUR WITH SITE CONDITIONS, LOCAL BUILDING CODES, WEATHER ETC., TIMBER BOX HOME DESIGNS CAN NOT ASSUME ANY RESPONSIBILITIES FOR ERRORS OR OMISSIONS. IT IS RECOMMENDED THAT THE OWNER AND OR BUILDER CONSULT A LOCAL ENGINEER AND CHECK WITH LOCAL BUILDING OFFICIALS PRIOR TO START OF CONSTRUCTION

Client:
Dave Byers
Date:
JULY 5TH 2017
Scale:
As Noted

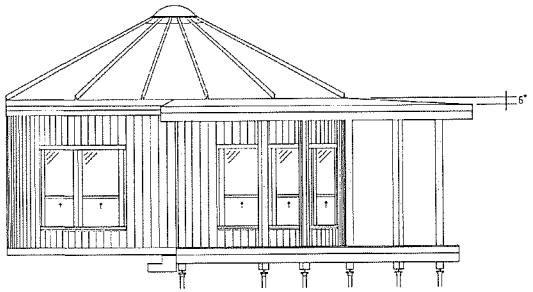
Designer:
ANDREW JOHNSON
CONTACT: 250-897-5306

TIMBER BOX
HOME DESIGNS

A-3



A-3 RIGHT ELEVATION 1/4"=1'-0"



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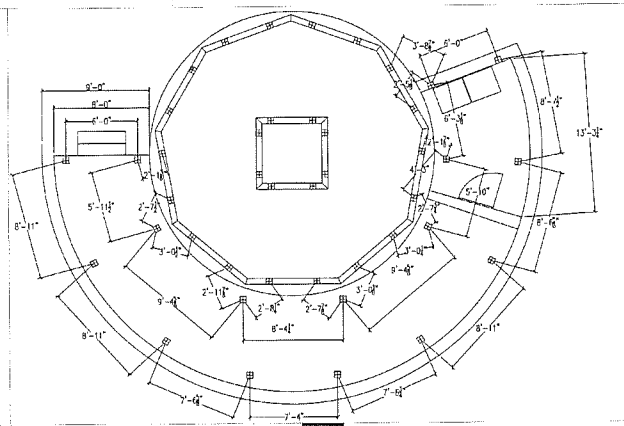
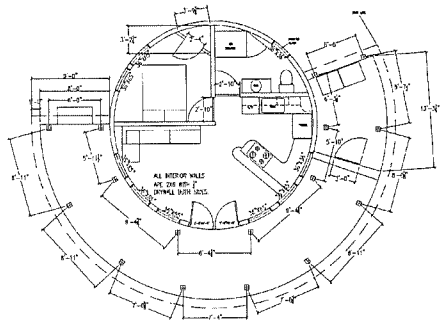
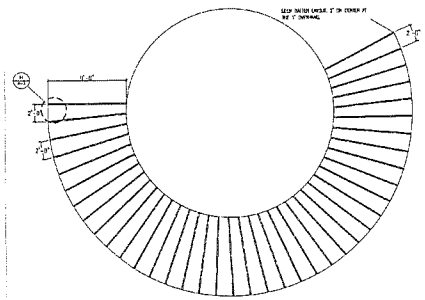
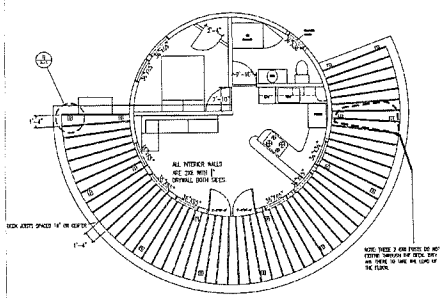




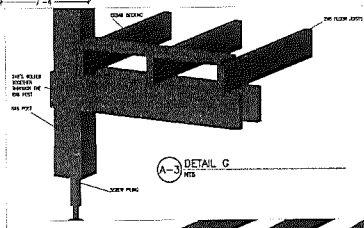
A-3 SCREW PILINGS LAYOUT 1/4"=1'-0"



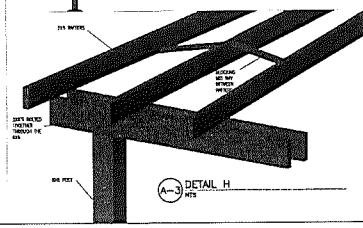
A-3 DECK RAFTERS NTS



A-3 DECK JOIST LAYOUT NTS



A-3 DETAIL G NTS



A-3 DETAIL H NTS

TIM BER BOX

DISTRICT OF UCLUELET

DEVELOPMENT PERMIT DP17-07

Pursuant to Part 14, Division 7 of the Local Government Act, R.S.B.C 2015 C.1 as amended:

1. This Development Permit is issued to:

   Wild Pacific Yurts & Campground; 5862 Aldergrove Drive Courtenay, BC, Canada, V9J 1W2

2. This Development Permit applies to and only to those lands within the District of Ucluelet described below and all buildings, structures, and other development thereon:

   Lot 5 (PID 024-167-525), Plan VIP67274, District 09 (the "**Lands**").

3. This Development Permit is issued subject to compliance with all of the bylaws of the District of Ucluelet, except as specifically varied or supplemented by this Permit.

4. This Permit authorizes the construction of the following improvements on the Lands:

   a. 4 Yurt structures with Helical Pile Foundations
   b. 6 RV spaces, reduced to 5 when the 3 future yurt units are built.
   c. Servicing of the above units.
   d. Cut of the Peninsula Road fill pile on the property line bordering Lot 6;
      i. This does not include the excavation of pre-fill or native soils
      ii. The bank created cannot exceed 45% or cause the neighboring property to be destabilized.
      iii. The bank is to be replanted with native species.
      iv. The applicant is to ensure that they do no not cross the property line.
      v. That the proper environmental precautions are followed.
   e. The relocation of file and additional gravel to complete the parking area. The applicant is to ensure that any work within 30m of a wetland or stream to have an environmental report and is to follow all recommendations.
   f. No trees are to be cut under this permit.
   g. The exit and access connection to Peninsula is fully paved to at least 3m from curb.
   h. All connecting trails within the Districts Green Space are to completed under the supervision of District Staff in consultation with the Wild Pacific Trail Society. These connecting trails are to build without effecting natural soils by building on top of grade as per WPT standards.
   i. The garbage receptacle is to be bear proof and enclosed in a cedar screening.
   j. All areas to be landscaped fully with native species ground cover.
   k. All exiting trees and ground cover buffering Peninsula and Lot 6 to be maintained.

   These improvements apply only in the locations indicated, and otherwise in accordance with, the drawings attached to this Permit as **Schedule A**.

5. The work authorized by this Permit may only be carried out:

DISTRICT OF UCLUELET

a. in compliance with the requirements of the District of Ucluelet Zoning Bylaw No. 1160, 2013, except where specifically varied or supplemented by this development permit.

b. in compliance with all federal, provincial, and municipal statutes, regulations, and bylaws.

6. It is strongly recommended that Wild Pacific Yurt & Camp Ground, retain the services of an eligible consulting archaeologist as the Archeological Branch of the Ministry of Lands, Forest and Natural Resources Operations deems any lands within 50m of a known archaeological site to have high archeological potential.

7. Notice shall be filed in the Land Title Office under Section 503 of the Local Government Act, and upon such filing, the terms of this Permit or any amendment hereto shall be binding upon all persons who acquire an interest in the land affected by this Permit.

8. This Permit is NOT a Building Permit.

9. **Schedules "A"** attached hereto shall form part of this Permit. The Municipality's Chief Administrative Officer is hereby authorized to approve minor amendments to the plans provided that such amendments are consistent with the overall character and intent of the original plans.

AUTHORIZING RESOLUTION passed by the Municipal Council on the day of , 2017.

IN WITNESS WHEREOF this Development Permit is hereby executed and issued by the Municipality the day of , 2017.

THE DISTRICT OF UCLUELET
by its authorized signatories:

_____ _____

Dianne St. Jacques – Mayor Mark Boysen – Corporate Officer

OWNER, by its authorized signatory:

_____

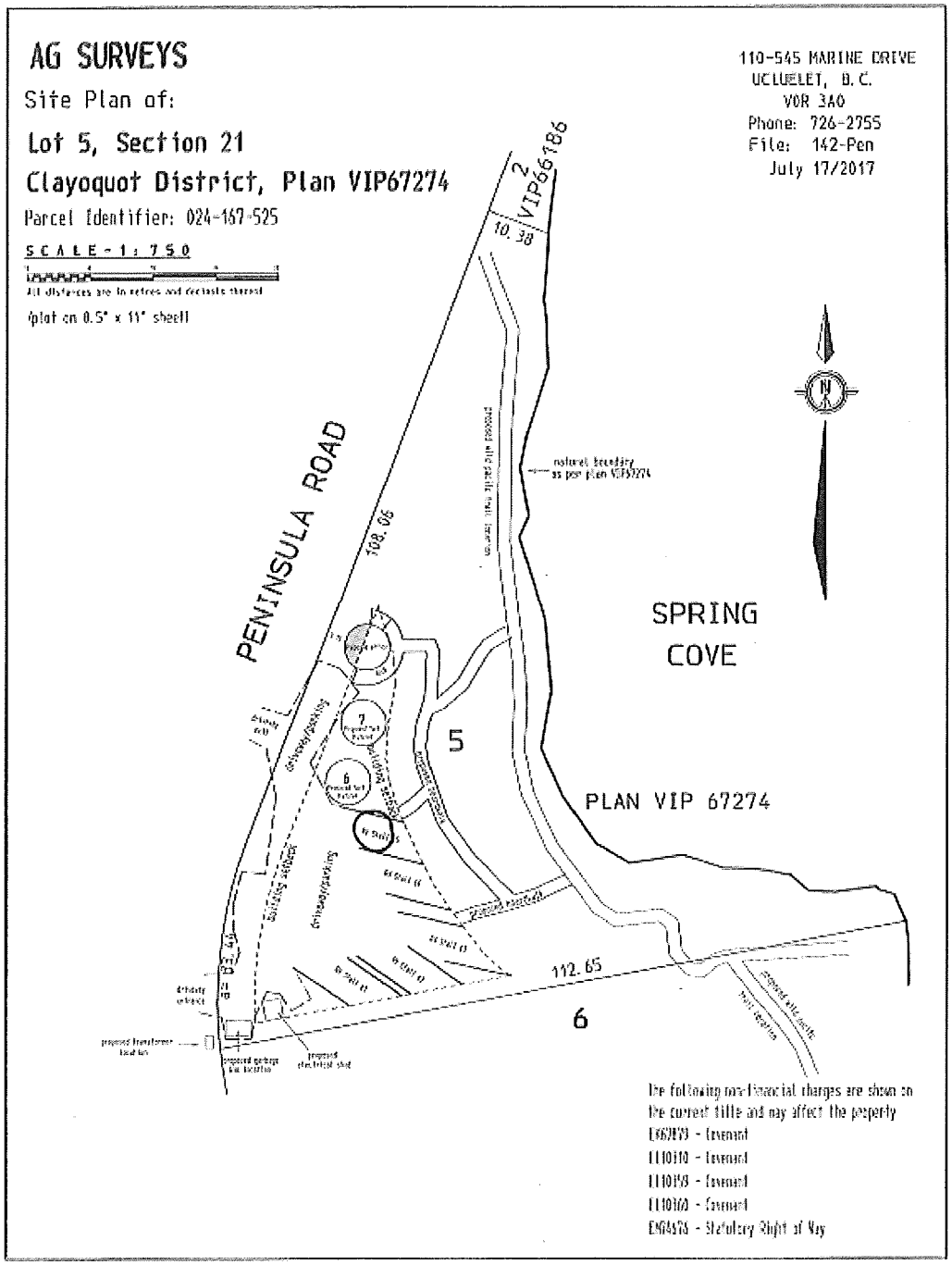
ISSUED the day of , 2017.

_____

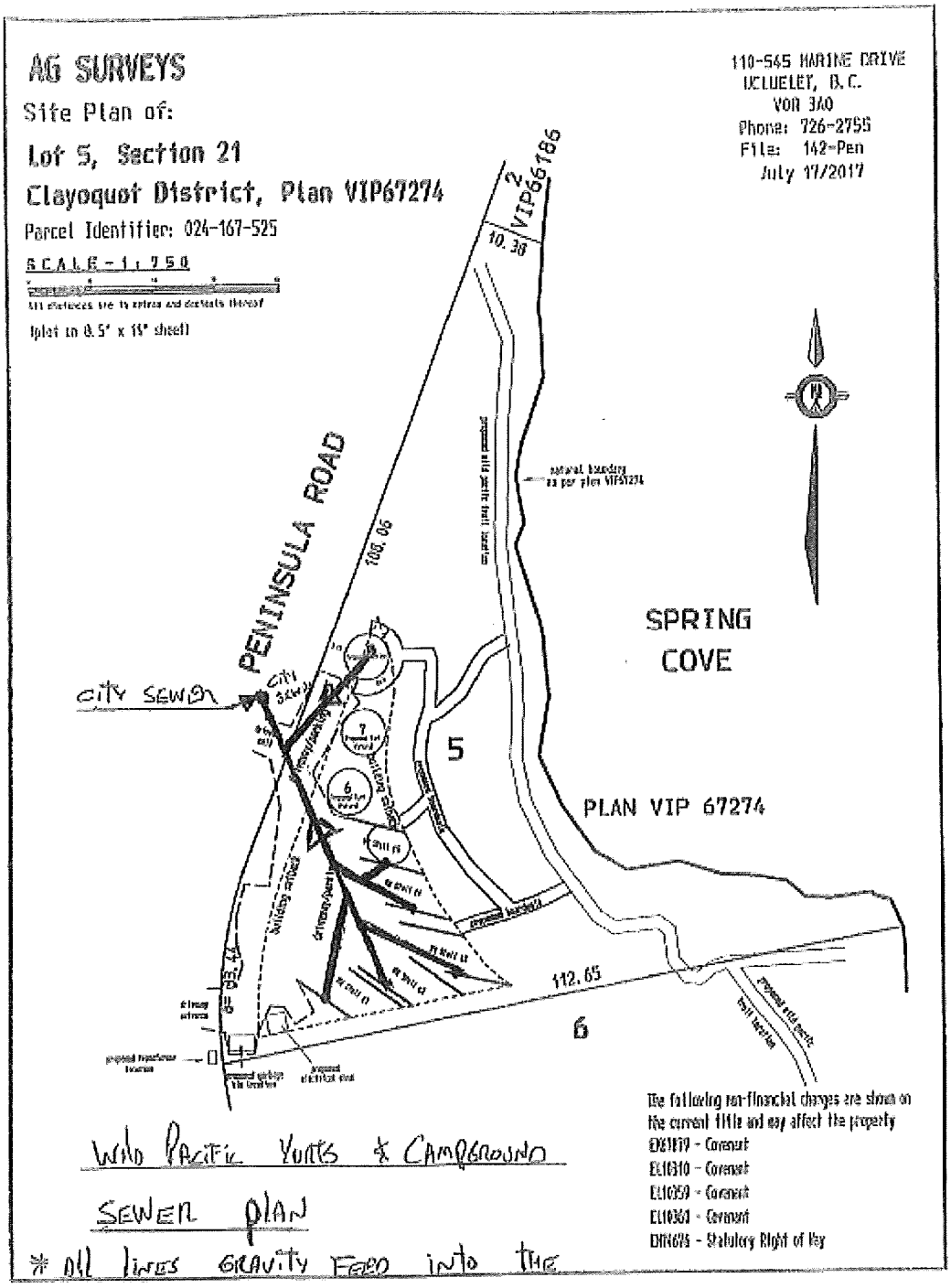
John Towgood, Planner 1 Ucluelet

DISTRICT OF
UCLUELET

SCHEDULE A – Development Drawings



DISTRICT OF UCLUELET



WILD PACIFIC YURTS & CAMPGROUND

SEWER PLAN

* ALL LINES GRAVITY FEED INTO THE CITY'S SYSTEM

DISTRICT OF UCLUELET

DISTRICT OF UCLUELET

Appendix C - DVP

DEVELOPMENT VARIANCE PERMIT DVP17-03

Pursuant to section 498 of the Local Government Act, 2015:

1. This Development Variance Permit is issued to:

   Alex Paquin / Spring Cove Resort Limited, 1015 Peninsula Road, Ucluelet, BC, V0R 3A0

2. This Development Variance Permit applies to, and only to, those lands within the District of Ucluelet described below, and all buildings, structures, and other development thereon:

   Lot 5 (PID 024-167-525), Plan VIP67274, Section 21, District 09
   (the "Lands").

3. This Development Variance Permit is issued subject to compliance with all the bylaws of the District of Ucluelet, except as specifically varied or supplemented by this Permit.

4. This Permit authorizes the following zoning variances on the Lands:

   a. Section CS-5.6.1 of the District of Ucluelet Zoning Bylaw No. 1160, 2013, indicates a front yard setback of 6.0m (20ft) to the front yard lot lines. This setback is to be reduced to 3.13m (10.3ft) for the 2.87m (9.4ft) encroachment of a yurt auxiliary building structure.

   These zoning variances apply only in the locations indicated, and otherwise in accordance with, the drawings attached to this Permit as Schedule A.

5. The work authorized by this Permit may only be carried out:

   a. in compliance with the requirements of the District of Ucluelet Zoning Bylaw No. 1160, 2013, except where specifically varied or supplemented by this development variance permit.

   b. in compliance with all federal, provincial, and municipal statutes, regulations, and bylaws.

6. Notice shall be filed in the Land Title Office under Section 503 of the Local Government Act, and upon such filing, the terms of this Permit or any amendment hereto shall be binding upon all persons who acquire an interest in the land affected by this Permit.

7. This Permit is NOT a Building Permit.

DISTRICT OF
UCLUELET

AUTHORIZING RESOLUTION passed by the Municipal Council on the day of , 2017.

IN WITNESS WHEREOF this Development Variance Permit is hereby executed and issued by the Municipality the day of , 2017.

THE DISTRICT OF UCLUELET
by its authorized signatories:

_____ _____

Dianne St. Jacques – Mayor Mark Boysen – Corporate Officer

OWNER
by its authorized signatory:

_____

Name:

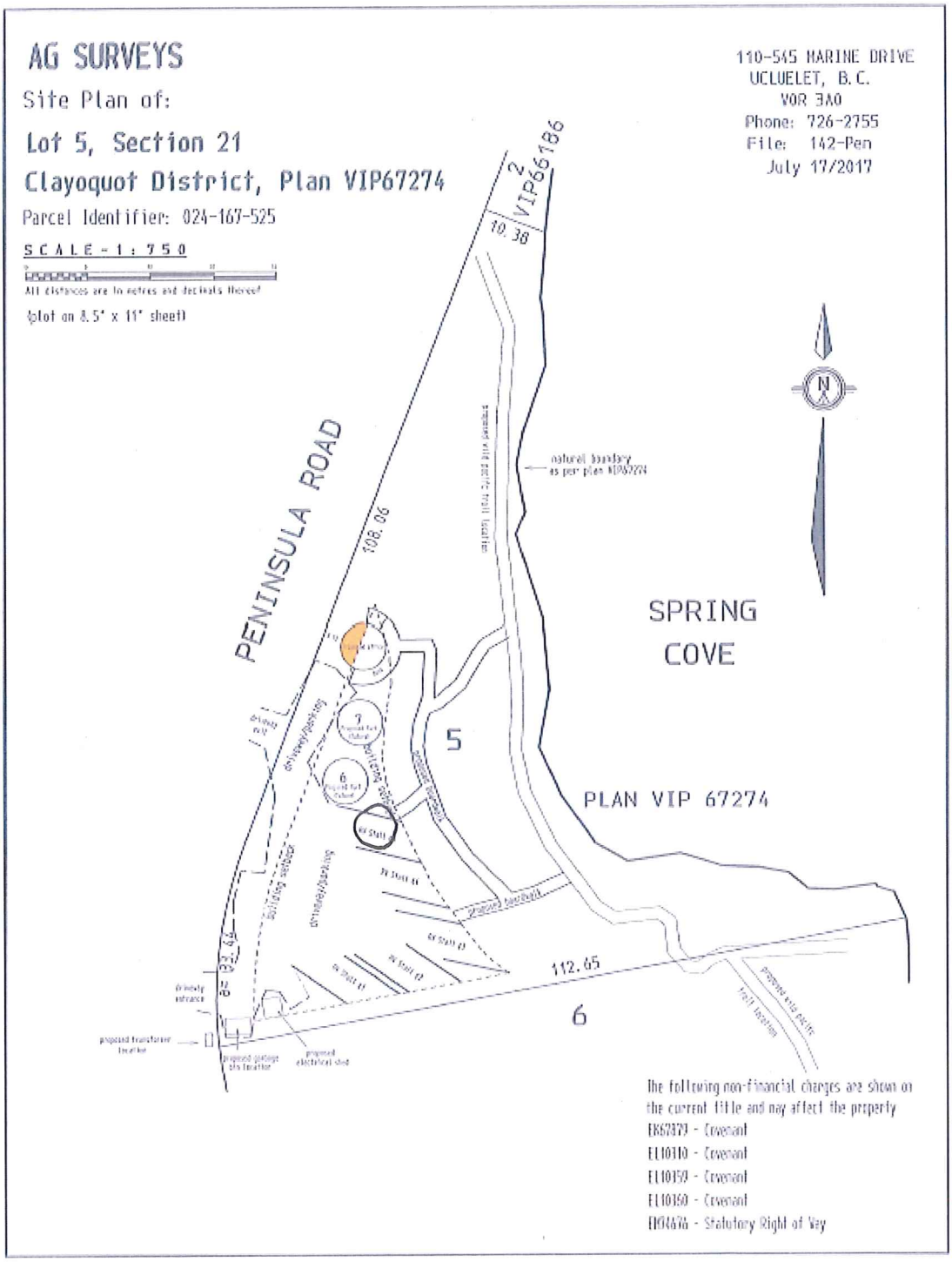
ISSUED the day of , 2017.

_____

John Towgood
Planner 1 Ucluelet

DISTRICT OF UCLUELET

SCHEDULE A – Development Drawings



DISTRICT OF
UCLUELET

STAFF REPORT TO COUNCIL

Council Meeting: AUGUST 8, 2017
500 Matterson Drive, Ucluelet, BC V0R 3A0

FROM: ABBY FORTUNE, DIRECTOR OF PARKS & RECREATION **FILE NO:** 6380-20 WPT

SUBJECT: WILD PACIFIC TRAIL SOCIETY – BOG INTERPRETIVE WALK

ATTACHMENT(S): APPENDIX A - LIGHTHOUSE LOOP BOG INTERPRETIVE WALK, BOG SIGNAGE

RECOMMENDATION(S):

1. **THAT** Council support the Lighthouse Loop Bog Interpretive Walk project **and**
2. **THAT** Council authorizes the release of the funds from Special Projects Budget of $10,000;

PURPOSE:

The purpose of this report is to have Council officially release the funds set aside, by budget, for a Wild Pacific Trail Society project as outlined.

BACKGROUND:

As in the past, the District of Ucluelet has budgeted $10,000 to support the Wild Pacific Trail Society for an annual project as identified by the society. It is the intent of the Wild Pacific Trail Society to complete the Lighthouse Loop Bog Interpretive Walk project as laid out in the attached Appendix A.

The Lighthouse Loop Bog Interpretive Walk project was originally slated for 2016. At the time, the Wild Pacific Trail decided to revisit the project to ensure that any environmental issues were identified and addressed. The revision to this trail plan implements recommendations from Andy MacKinnon (author of Plants of Coastal BC) and his UVIC students who generated nine reports of this bog. No species of concern or invasive species were reported.

Two monitoring plots have been established for long term plot studies, at least two years of which will be conducted by UVIC students. WPTS has changed the trail route to capture features highlighted by the students.

A review of an archeological study in the area showed no direct implications with the interpretive trail being proposed.

TIME REQUIREMENTS – STAFF & ELECTED OFFICIALS:

Limited time is required for staff for this project. Once the project is completed a final walk through will be required from the Director of Parks & Recreation and Superintendent of Public Works.

This section of the trail for maintenance, will be captured through the regular maintenance contract with the WPTS.

FINANCIAL IMPACTS:

As per 2017 budget $10,000 has been set aside for Wild Pacific Trail Society Special Projects.

POLICY OR LEGISLATIVE IMPACTS:

N/A

OPTIONS REVIEW:

1. **THAT** Council support the Lighthouse Loop Bog Interpretive Walk project **and**
2. **THAT** Council authorizes the release of the funds from Special Projects Budget of $10,000;

   or

3. **THAT** denies the release of the funds for the Lighthouse Loop Bog Interpretive Walk project

Respectfully submitted:

Abigail K. Fortune, Director of Parks & Recreation

Mark Boysen, Chief Administrative Officer

LIGHTHOUSE LOOP BOG INTERP WALK

First proposed May 2016.
Proposal modified updated in June 2017

The revision to this trail plan implements recommendations from Andy MacKinnon (author of Plants of Coastal BC) and his UVIC students who generated nine reports of this bog. No species of concern or invasive species were reported (California Wax Myrtle is to be protected if found). Two monitoring plots have been established for long term plot studies, at least two years of which will be conducted by UVIC students. WPTS has changed the trail route to capture features highlighted by the students.

Location: 70 m NW from CG Rd across from Whale Parking Lot

Length: 300 m

Description: A one way directional loop through the bog area

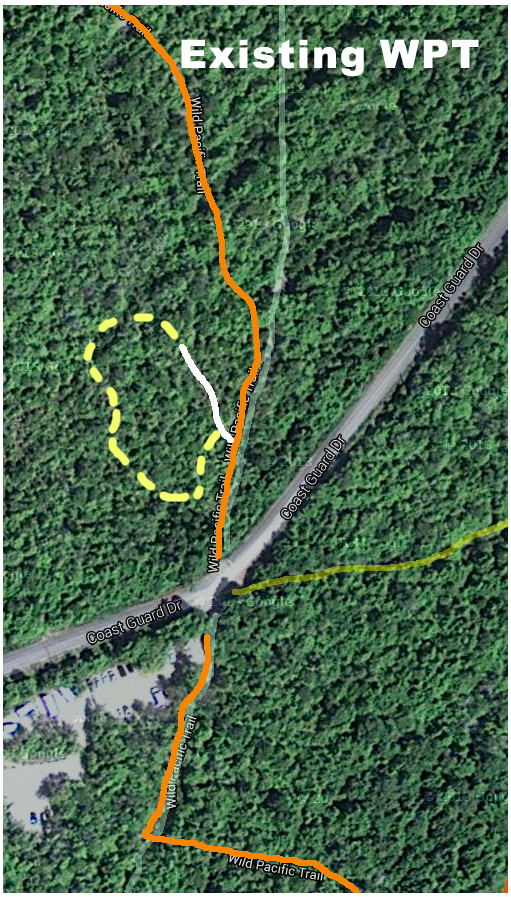
Construction Method: standard gravel on cloth on grade

Environmental Concerns: sensitive mosses and wet areas

Preservation Prescriptions: The trail bed will be located on established forest root masses where possible. All low areas will have 4" culverts installed to insure water cross-transfer to maintain bog integrity. Single runs of SS cables will be installed along trail side in sensitive areas to maintain foot traffic onto the gravel trail.

Signage: Directional and interpretive signage will educate visitors about this special ecosystem. Bog plants such as moss hummocks, stunted Shorepines, carnivorous sundews and bog ecology will be highlighted on trail-side lobes. Signs will stress that people should not walk on the moss.

ed Coast guard parcel boarder is
vay from the bog trail.



This photo is of shore pines on moss hummocks in the bog area.
This is a woodland bog, open water is not visible even in winter.

Aerial photos shows the location of the loop – the white line marks the ‘test section’ Jim has bushed out for review of the wire barrier designed to prevent people leaving the trail.

Bog Interpretive Trail Estimate

The bog loop will be located off the lighthouse loop

Location: 70m NW from Coast Guard Road across from Whale Parking Lot

Length: 300 meters in length with 7 lobe-type widenings to accommodate interpretive signs.

Description: A directional loop through the bog area

Construction Method: standard gravel on cloth on grade. 3 feet(average) wide one-way gravel trail using WPT methods. Reduce brush, cover with geotek and apply 3" of packed road base gravel. Every low area will receive 4" PVC pipe to facilitate cross flow of water. Single-cable barriers will be installed as required to protect sensitive areas.

Interpretive Lobes: 7 lobes where up to 4 people can stand to read and still allow single-file movement past site. Various topics to be interpreted include; Cedar Mangrove, skunk cabbage, electric wires (steel & later aluminum) that serviced the station, flora/fauna, monitoring plot.

Environmental Concerns: Sensitive mosses in bog areas. This bog is a woodland bog, not open water, but frequent drainage pipes will be used to make sure any water flow will not be interrupted.

Preservation Prescriptions: The trail bed will be located on established forest root masses where possible. All low areas will have 4”culverts installed to insure water cross---transfer to maintain bog integrity. Single runs of SS cables will be installed along trail side in sensitive areas to maintain foot traffic onto the gravel trail.

Signage will stress that people should not walk on the moss and interpretive content will educate people about the value of wetlands. The WPTS will cover the cost of signage.

COSTS

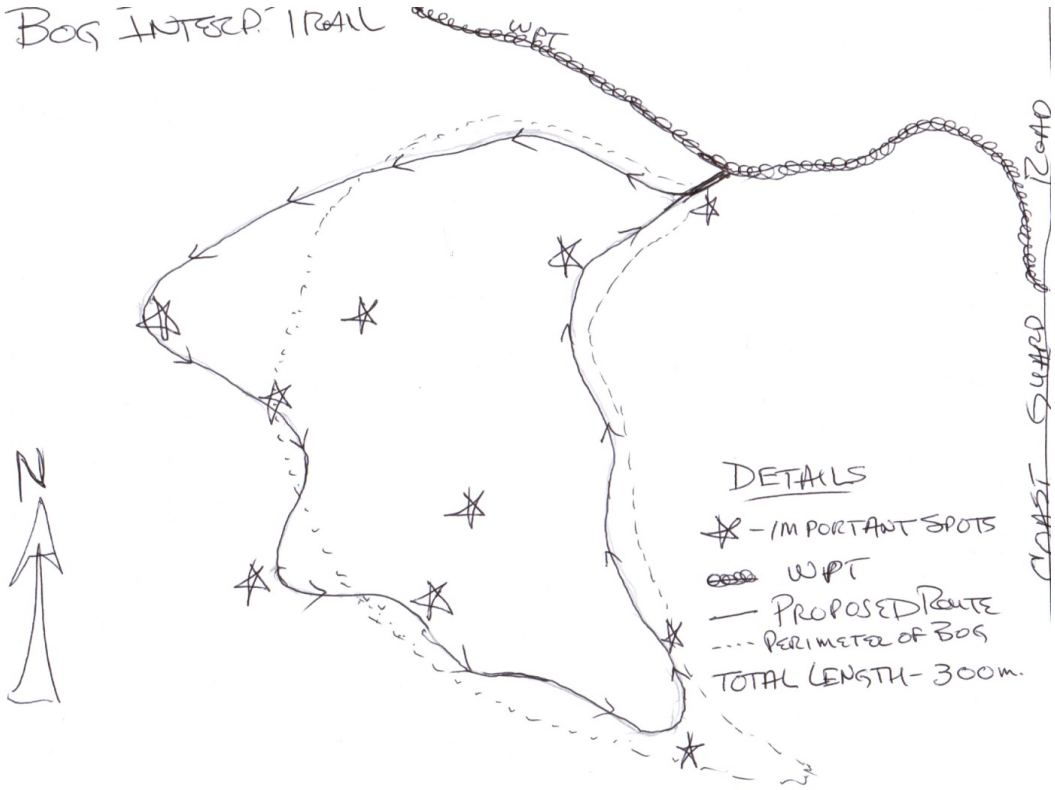
The cost estimate varies from the original (2016) project estimate. These differences allow for more site preparation and mapping. The new project proposal contemplates building trail over more difficult to build terrain (more into the trees) and more extensive hand transport of gravel.

Material on hand (WPTS)	Cable and Geotec Paper	
Material to be purchased		
6 loads of crush @$285/ load		$1,710
Miscellaneous materials (approx)		$400
Labour approx 250 hours @$50/ hour (includes mapping and site prep)		$12,500
TOTAL COSTS		**$14,610**

SOURCE OF FUNDS

District of Ucluelet	**$10,000**
WPTS	**$4,610**
Total	$14,610

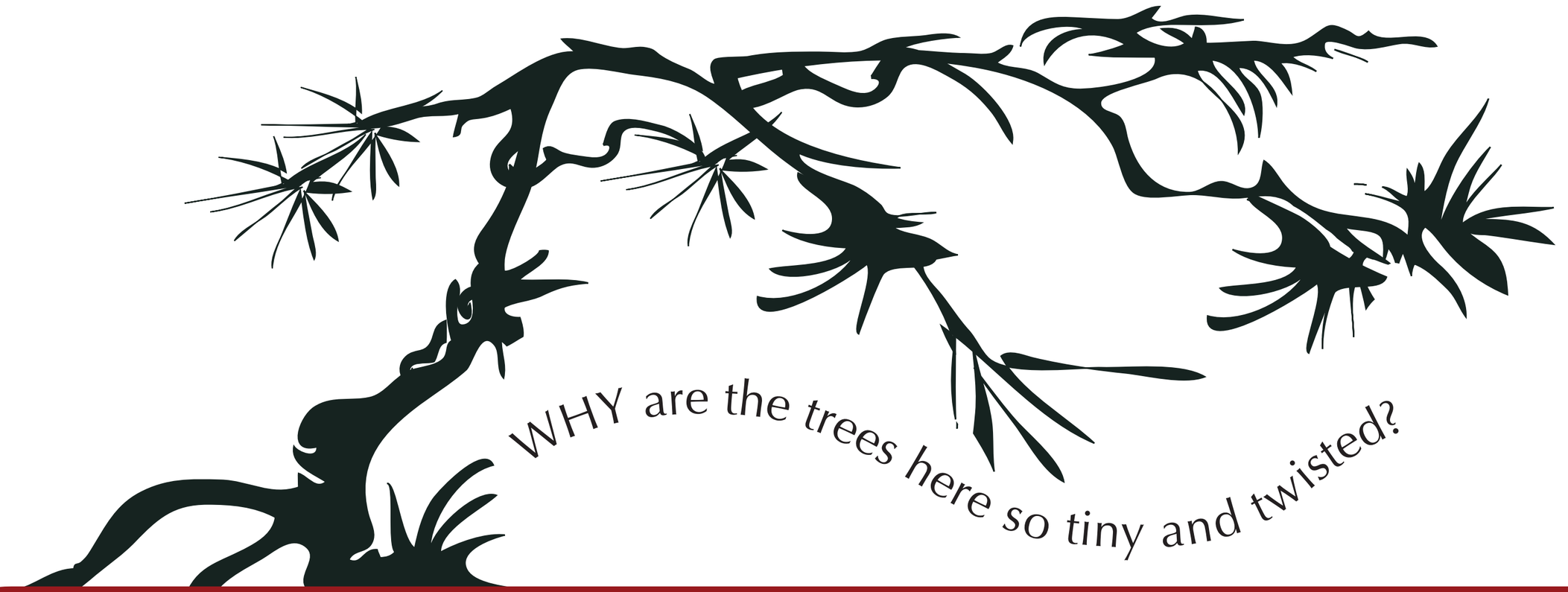
This map shows the new route proposed for the bog trail in July 2017. Stars mark special features and lobes in the one way trail to allow for interpretive signs. A series of interpretive signs will be done with CBT funding. That approved proposal is available upon request.



The trail society believes this trail section will be an attraction and educational opportunity that will also build up relationships in the scientific community.

Sincerely,

Jim Martin and the WPTS



Bog Woodland

300 metre Interpretive Loop

NO HUMANS or DOGS allowed off trails

Footprints can take years to heal.

18 x 11 inches white sintra, black and red vinyl

Do not pick plants! • **Please stay on the trail**

Bog challenge !

How many plant species can YOU count as you walk this trail?

Twinflower *(Linnaea borealis)*

Watch for this evergreen plant often seen trailing along the dry edges of trails.

Slough sedge

(Carex obnupta) č'itapt

A popular indigenous *weaving material. Skilled weavers can make baskets so tight that they can hold water!*

Red huckleberry

(Vaccinium parvifolium)

hisʔinwa

A tart spring berry bush (growing on the top of this stump).

Mosses (species too numerous to list)

- Oregon beaked moss *(Kindbergia oregana)*
- Lanky moss *(Rhytidiadelphus loreus)*
- Small red peat moss *(Sphagnum spy.)*
- Common green sphagnum *(Sphagnum spy.)*

ṗuʔup : See next sign to learn about indigenous use.

Bunch berry

or Dwarf Dogwood *(Cornus canadensis)*

Can grow up tree trunks. White flowers and red berries.

cikuwas (bog)

Yuułuʔiłʔatḥ meaning "soft wet ground"

Important place for useful mosses, indigenous medicines and foods like bog cranberries.

clayoquot BIOSPHERE TRUST

Wild Pacific Trail UCLUELET, B.C.

19× species grow on this stump!

Salal *(Gaultheria shallon)*

y'am'a

An important food, berries were dried for winter use in the past. Also a favourite food for bears, turning their dung purple !

Deer fern *(Blechnum spicant)*

kaackuuxsmapt

Yuułuʔiłʔatḥ meaning: "standing up plant"

Chewed as a breath sweetener. Also a medicine for skin sores. Deer rub antlers on this fern to heal stubs.

False lilly of the valley

(Maianthemum dilatatum)

This plant enjoys deep shade

Running clubmoss

(Lycopodium clavatum)

Also called Staghorn moss due to its "horns"

False azalea

(Menziesia ferruginea)

Straggly shrub growing on the top of this stump. Flowers look like huckleberry but the fruit is inedible.

University of Victoria students counted 19 plant species on this stump. Other students will be monitoring this site for climate and human impacts.

Please stay on the trail to keep this area healthy.

Graphics by Schramm Design. Funded by the Clayoquot Biosphere Trust & donations to the Wild Pacific Trail Society • Thanks to Dr. Andy MacKinnon & UVIC students for their help.

DISTRICT OF UCLUELET

Please stay on the trail to protect delicate bog plants

Insect-eating plants?

Plants evolve in remarkable ways to survive

Sundews lure flies, ants and mosquitoes with sparkling droplets of mucus. Sticky glandular tentacles trap their prey, then slowly enclose the struggling victim. Leaf hairs then secrete enzymes to digest the prey. Sundews (and butterworts) have evolved to "hunt" for vital nutrients lacking in the scant soil of the bog.

" I care more about Drosera than the origin of all the species in the world" –Charles Darwin

Darwin studied sundews by feeding them various "meals". He learned that this plant only responds to organic foods containing nitrogen. Remarkably, sundews **do not waste energy curling around indigestible debris.** *Darwin wrote 285 pages about Drosera, but mysteries remain about this plant's behavior.*

Round-leaved Sundew
(Drosera rotundifolia)

This perennial is seen May to August

Fun fact:
Sundews are being studied for use as a natural adhesive for human tissue engineering!

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Wild Pacific Trail UCLUELET, B.C.

Graphics by Schramm Design. Funded by the Clayoquot Biosphere Trust & donations to the Wild Pacific Trail Society • Thanks to Dr. Andy MacKinnon & UVIC students for their help.

Please stay on the trail to protect this important ecosystem

How can a bog be thirsty?

Shallow roots dry out in the summer when rainfall stops.

Most of the year plants have plenty of rain to drink at the surface (~ 3 metres per year) but summer weather can burn plants. Bogs have a vulnerable "comfort zone" because the high water table kills deeper roots. This makes bogs especially sensitive to climate change. Monitoring of this bog is planned.

Peatlands cover only **3% of the earth** but they capture **25% of the world's soil carbon***.

* Heijmans et al., 2008
From monitoring project proposed by Theresa Dearden, UVIC student

Fun fact:
Bogs generate tannins, giving outflow water a brownish tea-like colour that acts like a sunscreen for aquatic creatures !

clayoquot BIOSPHERE TRUST

Wild Pacific Trail UCLUELET, B.C.

Graphics by Schramm Design. Funded by the Clayoquot Biosphere Trust & donations to the Wild Pacific Trail Society • Thanks to Dr. Andy MacKinnon & UVIC students for their help.

DISTRICT OF UCLUELET

For Peat's Sake

Stay on the trail to protect delicate bog plants

This tiny woodland bog may be growing!

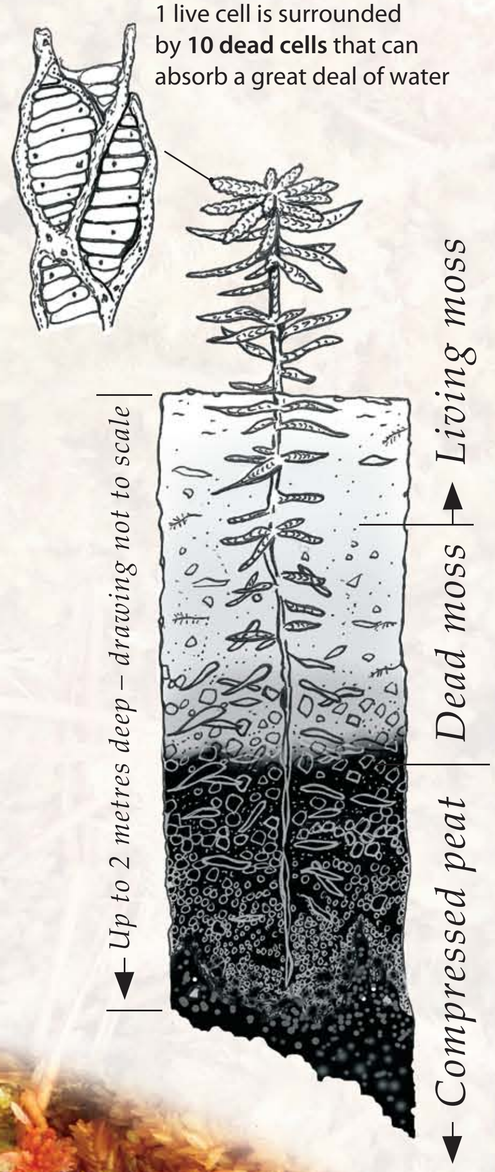
Sphagnum moss grows continuously on top of itself, piling meters high over the centuries. This growth can slowly drown the muskeg forest as moss raises the water table more effectively than a huge sponge. Notice the dead trees nearby; they were likely killed by this slow invasion.* The tannic acid released by moss also hinders soil bacteria from recycling nutrients to plants.

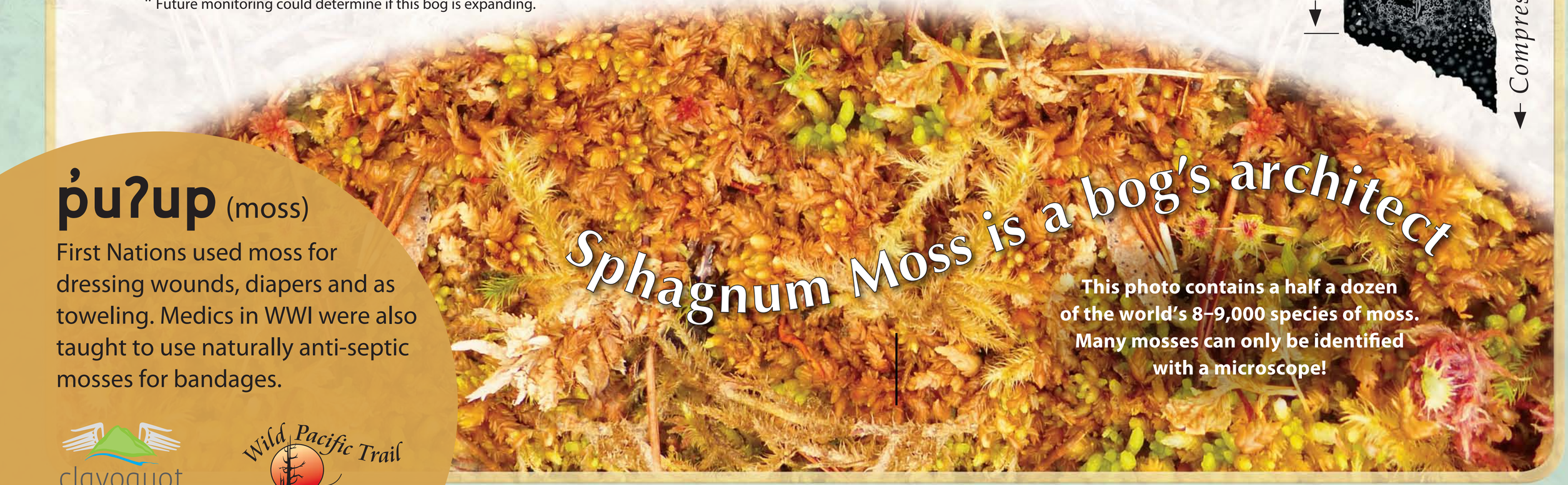
This bog has little drainage so **why is open water not visible?**
Even during heavy rains moss can absorb over 16 times their weight in water.

* Future monitoring could determine if this bog is expanding.

Cell structure

1 live cell is surrounded by **10 dead cells** that can absorb a great deal of water





ṗuʔup (moss)

First Nations used moss for dressing wounds, diapers and as toweling. Medics in WWI were also taught to use naturally anti-septic mosses for bandages.

clayoquot BIOSPHERE TRUST

Wild Pacific Trail UCLUELET, B.C.

Funded by the Clayoquot Biosphere Trust & donations to the Wild Pacific Trail Society • Thanks to Dr. Andy MacKinnon and UVIC students for their help.

DISTRICT OF UCLUELET

Graphics by Schramm Design, illustration by Laura Timmermans

Please stay on the trail • Do not pick plants!

Westcoast Bonsai

Why are trees twisted into a giant broccoli forest?

Bonsai gardeners prune plants in shallow containers to make miniature trees—nature does the same thing in a bog.
Tree roots can only grow a few inches (~10 cm) before the high water table kills them. This stunts growth so severely that trees the size of children can be hundreds of years old, twisted into broccoli-like shapes by a lack of nutrients. Growing tips of branches are also pruned by summer droughts.

Dwarf trees can be hundreds of years old

Shore pines are unique to coastal bogs, but hemlocks and cedars also manage to survive. Bogs mimic **alpine** conditions so high elevation plants like yellow cedars may occur.
Notice how trees grow taller where land has better drainage on the fringe of this bog.
Size is not a predictor of age.

Shore pine
(Pinus contorta)

This slow growing pine is a coastal variety of lodgepole pine, native to mountainous regions.

Fun fact:

Bonsai-like trees also appear on **coastal rocks** where soil is scarce and fierce, salty winds prune growth.

clayoquot BIOSPHERE TRUST

Wild Pacific Trail UCLUELET, B.C.

DISTRICT OF UCLUELET

Funded by donations to the Wild Pacific Trail Society and the Clayoquot Biosphere Trust • Thanks to Dr. Andy MacKinnon and Pacific Rim National Park for source material.

Please stay on the trail to protect delicate bog plants

Hummock Islands

Shore pines and stumps offer a refuge in the moss

The triple mounds in front of you are an especially artistic example of root mounds that support plants escaping the damp moss. These hummocks will eventually collapse as the support tree dies.

What is a woodland bog?

A rain-fed low area where stunted trees mix with bog plants. Bogs have fewer trees, swamps have better drainage, and marshes have moving water. All wetlands are vital ecosystems.

clayoquot BIOSPHERE TRUST

Wild Pacific Trail UCLUELET, B.C.

DISTRICT OF UCLUELET

Funded by donations to the Wild Pacific Trail Society and the Clayoquot Biosphere Trust • Thanks to Dr. Andy MacKinnon and Pacific Rim National Park for source material.

Graphics by Schramm Design

DISTRICT OF
UCLUELET

STAFF REPORT TO COUNCIL

Council Meeting: AUGUST 8, 2017
500 Matterson Drive, Ucluelet, BC V0R 3A0

FROM: MARK BOYSEN, CHIEF ADMINISTRATIVE OFFICER **FILE NO:** {0640-30}

SUBJECT: QUARTERLY PROJECTS UPDATE – 2ND QUARTER 2017

ATTACHMENT(S): APPENDIX A – 2017 QUARTERLY PROJECT STATUS REPORT TABLE

RECOMMENDATION(S):

1. **THAT** Council receive this update on the progress of staff projects budgeted for 2017.

PURPOSE:

The purpose of this report is to provide a quarterly update on the progress of key projects that were budgeted for 2017. Financial actuals for these projects are reported to June 30th, 2017.

BACKGROUND:

To ensure Council are regular informed of the status of budgeted projects, staff are pleased to provide this quarterly update on the status of departmental projects for 2017.

Table 1 below provides a summary of the 2017 projects that are On Schedule and those that will carry into 2018.

Table 1: 2nd Quarter 2017 Status of Departmental Actions.

Department	Planning	Env-Emg Services	Parks/Rec	Public Works	Admin/ Finance	**Totals**
On Schedule Actions	4	5	7	4	2	**22**
Completion in 2018	2	1	1	5	2	**11**

Of these 2017 projects, all but 1 of them will be initiated this year.

2nd Quarter Highlights

- The OCP Review has been progressing this summer.
- A new fire truck was added to the Fire Department and is now operational.
- The skateboard park has been installed and has been well received by the community.
- The repair of the lagoon is nearing completion.
- The installation of the Matterson Reservoir Interconnection is nearing completion.

3rd Quarter Reporting will be provided at the November 14th, 2017 Council meeting.

FINANCIAL IMPACTS:

Departments have provided an update on the financial status for projects in **Appendix A**.

OPTIONS REVIEW:

1. Council receives this Quarterly Projects Update – 2nd Quarter 2017.

Respectfully submitted:

Mark Boysen, Chief Administrative Officer

DISTRICT OF UCLUELET

STAFF REPORT TO COUNCIL

Council Meeting: August, 8th, 2017

500 Matterson Drive, Ucluelet, BC V0R 3A0

Appendix A – 2017 Quarterly Project Status Report Table

Planning

Project	Budget	Actuals	Completion Status	Comments
OCP Review (Strategic Plan Priority #9)	$40,000	$10,000	25%	Phase 1 work with the VIU Planning Program has been collecting feedback from residents and reviewing the OCP document. Further engagement slated for Fall 2017. Phase 2 OCP update in 2018.
Subdivision Bylaw	$30,000	$921	5%	Set to start process in Fall 2017 with RFP. This is a joint project with Public Works.
Development Cost Charges Bylaw	$7,000	$7,000	0%	DCC engineering report completed in 2016. RFP on public engagement and bylaw approval this Fall.
LED Lighting	$6,333	$3,862	20%	Received two new test lights and will put them up in the next few weeks. $10,000 from this budget was transferred to the building inspector role. Completion in 2018.
Heritage Sign Plaques	$3,000	$0	0%	Working with Consultant. Draft fall 2017.
Zoning Bylaw Review	$10,000	$0	0%	Planned for 2018

Environmental and Emergency Services

Project	Budget	Actuals	Completion Status	Comments
New Fire Truck	$485,000	$455,840	100%	Purchase completed and truck in operation.
Tsunami Kiosk Stations	$75,000	$6,701	15%	Pilot kiosk built, signage and equipment under development. Completion in 2018.
Community Emergency Container	$5,000	$0	0%	Planned for Fall of 2017. 2018 - $7,000
Turnout Gear and Furnishings	$16,600	$0	0%	Planned for Fall of 2017.
Recovery Plan	$2,000	$0	0%	Planned for Fall of 2017.
Electric Vehicles Charging Stations	$0	$0	30%	DC Fast Charging Station installation is nearing installation. (BC Hydro Funded). Level 2 charging station options are currently being explored.

Parks and Recreation

Project	Budget	Actuals	Completion Status	Comments
Skate Board Park	$140,000	$109,685	90%	(Billing to end of July) Complete. Final payment being issued with hold back. Landscaping completed this quarter, final report by October 31.
St. Jacques Playground	$65,000	$1,740	10%	Community consultation has taken place. RFQ to go out this week. Funds spent to date were for a land survey.
Banner Program	$13,520	$0	25%	Banner arms to be ordered by the end of the month – banners up in the Fall
Seniors Project	$24,650	$0	10%	Deadline for RFQ August 11. (New Horizons Grant)
Terrace Beach Improvements	$13,900	$0	0%	Recommend move to 2018. (RMI)
UCC Conference Room – AV Equip	$60,000	$0	25%	RFP awarded, installation beginning in September.
Wild Pacific Trail	$10,000	$0	50%	Report to Council for August 11 to release funds for bog trail – special project.
Knotweed Project	$2,000	$0	50%	Half the project completed – final spray and pull in the fall CWFS to bill. (invoices under review)

Public Works

Project	Budget	Actuals	Completion Status	Comments
Lagoon Rebuild	$1,730,000	$1,421,769	90%	Nearing completion. (Federal and Provincial funding support) First claim submission in August.
Matterson Reservoir Interconnection (ST-1 Cedar Road Altitude Valve)	$200,000	$114,469	85%	Nearing completion.
Kennedy Lake Water Supply Design	$140,000	$0	0%	Scope of work requested and will be initiated in Fall 2017. Completion for early 2018.
SCADA – Water System	$90,000	$77,120	95%	Nearing completion.
Filtration Pilot Testing	$80,000	$0	0%	Will begin in Fall 2017 and complete in Fall 2018.
Well Upgrade (ST-4)	$57,000	$0	0%	Will start in Fall 2017. First phase of multi-year project.
Matterson Reservoir Upgrade (ST-3)	$46,000	$0	0%	RFP will be drafted in 2017. Work will begin in early 2018 due to timing of the water system.
Unidirectional Flushing	$45,000	$50,600	100%	Completed in June.
Pigging Chambers	$30,000	$0	0%	RFP will be drafted in 2017. Work will begin in early 2018 due to timing of the water system.

Administration and Finance

Project	Budget	Actuals	Completion Status	Comments
Carbon Offsets	$2,500	$0	90%	Resolution for creation of carbon reserve fund pending.
Records Management System	$50,000	$6,600	10%	Contract cancelled with consultant. Intent to use funds to hire part-time staff to finish work in 2017.
Health Care Building Feasibility	$50,000	$0	0%	Funding set aside for proposal, awaiting RFP from VIHA.
Harbour Dock Repair – 15 Small Docks	$30,000	$0	5%	Quotes received. Design will be completed in Fall 2017 and installation completed by early 2018.

DISTRICT OF
UCLUELET

STAFF REPORT TO COUNCIL

Council Meeting: AUGUST 8, 2017
500 Matterson Drive, Ucluelet, BC V0R 3A0

FROM: WARREN CANNON, PUBLIC WORKS SUPERINTENDENT **FILE NO:** {5600-01}

SUBJECT: WATER MASTER PLAN UPDATE

ATTACHMENT(S): **APPENDIX A** – UCLUELET WATER MASTER PLAN
APPENDIX B - UCLUELET WATER MASTER PLAN PRESENTATION

RECOMMENDATION(S):

1. **THAT** Council receive this information report on the Water Master Plan.

PURPOSE:

The purpose of this report is to inform Council regarding the status of the District's water service system, future water supply options, and current actions by staff already underway.

BACKGROUND:

Koers & Associates Engineering Ltd. (Koers) recently completed a Water Master Plan (**Appendix A**) on behalf of the District of Ucluelet. The purpose of the document is to allow the District of Ucluelet to plan and manage strategies, develop long- term economic and social benefits, and maintain sustainable water infrastructure. The report included an analysis of the water systems and its history, a review of current and potential water sources, and a list of Proposed Works for the short term (ST), long term (LT) and for improved Fire Flow (FF).

The scope of the work involved a variety of tasks to develop the Water Master Plan. Some of these tasks were to review the existing supply, system storage, water quantity, and future supply and demand. Based on the finding and the conclusions in the report, Koers provided the following five recommendations to the District of Ucluelet (**Table 1**).

Table 1: District of Ucluelet – Water Master Plan Recommendations

1. Implement the improvements listed in 11 Proposed Works. These works will improve available fire flow and peak hour pressures. The 11 Proposed Works are provided in **Table 2** below along with Cost Estimates provided in the report and the Timeline for the action.

2. **Comply with the provincial government's new Water Act and apply for a groundwater license(s) for the LSCA good field wells as discussed in 6.3 Lost Shoe Creek Well field.** This is a permitting process action that will be completed by staff in Fall 2017. No budget required.
3. **Proceed with the planning stage development of Kennedy Lake source to ensure a reliable long term water supply for the District.** The action has been previously identified as a priority for the District and is a budgeted action for 2017. The District will work with Koers to initiate the review in the Fall of 2017.
4. **Review the option of completing an infrastructure assessment for the existing asbestos watermains in the destruction system to assist with the planning and funding of the future watermain replacement.** This recommendation is addressed in non-capacity actions listed in Table 2 and will also be incorporated in the developing asset management framework for the District.
5. **Develop a unit-directional flushing plan as part of the District's on going supply and distribution system maintenance program.** The Uni-Directional Flushing program has been developed and implemented in 2017.

Table 2 below includes the 11 Proposed works (Recommendation 1) with class D (feasibility study) estimates made without preliminary design input. There are three actions that support increased capacity of the system (Capacity): ST-1, ST-5, and LT-1. All other actions are related to upgrades to aging infrastructure.

Table 2: Water Master Plan Proposed Works

Short-Term Actions	Cost Estimate	Timeline
ST-1: Cedar Road Altitude Valve (Capacity)	$170,000	Budgeted for 2017. 85% complete.
ST-2: Pressure Zone Boundary Modifications	$5,000	Consideration for 2018 budget.
ST-3: Matterson Reservoir Valve Chamber Modifications	$ 46,000	Budgeted for 2017. Not started.
ST-4: Well field VFD and pressure transducer installation	$200,000	Budgeted for 2017. Start in October.
ST-5: Highway Reservoir Check Valve (Capacity)	$ 35,000	Consideration for 2018 budget.
Fire Flow Actions	**Cost Estimate**	**Timeline**
FF-1: Check Valve installation on Matterson Dr. at Victoria	$100,000	Consideration for 2018 budget.
FF-2: Replace line from Hemlock Road: Lychee Road to Peninsula Rd. Connect to existing 300mm dia. Main on Peninsula Rd.	$ 42,000	Consideration for 2018 budget.
FF-3: Replace line from Peninsula Road: Bay St. to Main St.	$210,000	Consideration for 2018 budget.
FF-4: Replace line from Bay Street: Peninsula Rd. to St. Jacques Blvd.	$114,000	Consideration for 2018 budget.
FF-5: Replace line from Garden Street and Eber Rd: Helen Rd. to Alder St.	$ 90,750	Consideration for 2018 budget.
Long-Term Actions	**Cost Estimate**	**Timeline**
LT-1: Construct a duplicate 1,400 m3 reservoir at the Hwy reservoir site (Capacity)	$1,250,000	Consideration for 2018 budget.
LT-2: Replace line from Victoria Rd: Matterson Dr to Marine Dr	$249,000	Consideration for 2018 budget.
LT-3 Replace line from Marine Dr: Victoria Rd. to Edwards Place	$ 54,000	Consideration for 2018 budget.
LT-4: Replace line from Forbes Rd: 371 Forbes Rd to Marine Dr.	$222,000	Consideration for 2018 budget.

Total:	**$2,817,750.00**	

Additional budgeted items for 2017 pertaining to the water master plan are:

Filtration Pilot Testing: $80,000

Pilot testing is an important first step in the process of selecting a potential treatment technology for water discolouration. Small scale pilot plants are used to prove out the treatment technology to make sure it can achieve the desired results. Staff will begin testing current water supply sources in November.

Kennedy Lake Planning Stage Development: $140,000

Kennedy Lake has been identified as the only source of water that can meet the long term needs for Ucluelet and the rest of the west coast region. Based on the Municipal Infrastructure Review DL 281 & 282 and Former Forest Land Reserve completed by Koers in February 2007, it recommends the District plan for an ultimate connection to a reginal water supply from Kennedy Lake in the next 10-15 years. The Water Master Plan recommends moving forward with the planning stage review Staff plan to move forward with the initial steps with the budgeted funds for 2017.

TIME REQUIREMENTS – STAFF & ELECTED OFFICIALS:

Staff have the capacity to move forward with the 2017 tasks outlined above.

FINANCIAL IMPACTS:

Table 2 provides an update of the 2017 budgeted actions and proposed costs for future actions.

Actions listed in **Table 2** for consideration in the 2018 budget will be reviewed during the 5-year financial planning process in the Fall of 2017.

RELATED POLICY OR LEGISLATIVE IMPACTS:

Official Community Plan 2011 – Section 5 Servicing 5.1 Water Supply

- In the medium to long term (possibly beyond 20 years) an alternate source of water will be needed to support growth and industry within the District.
- An engineering analysis weighing the pros and cons of each source needs to be undertaken.
- There is a current shortfall in recommended storage volume requirements with the two existing reservoirs, therefore the District may plan for constructing a new facility, which could be partially funded through a Development Cost Charge Bylaw.

Municipal Infrastructure Review DL 281 & 282 And Former Forest Land Reserve

February, 2007- Section 9.0 Conclusions and Recommendations

- Unless it is certain that fish processing water demands, or industrial demands will not be a major factor in the future, the District will require a new significant water source to support projected development.

- The only significant water source of water in the vicinity of the Ucluth Peninsula that is capable of servicing Ucluelet's projected growth, as well as growth in the rest of the west coast region is Kennedy Lake

Water Conservation Study March 2014- Section 5 Conclusions and Recommendations 5.1 Conclusions

- Based on the information available, the District of Ucluelet would benefit the most by water conservation/reduction through elimination of overflows at the Matterson Reservoir by installing a pressure reducing station.

OPTIONS REVIEW:

1. Council receive this information report on the Water Master Plan.

Respectfully submitted: _____

for Warren Cannon, Public Works Superintendent

_____

Mark Boysen, Chief Administrative Officer

DISTRICT OF UCLUELET

- FINAL REPORT -

JULY 2017

KOERS & ASSOCIATES ENGINEERING LTD.
Consulting Engineers

Parksville, BC

KOERS
& ASSOCIATES
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July 7, 2017
1581-01 (Final Report)

District of Ucluelet
PO Box 999 – 200 Main Street
Ucluelet, BC V0R 3A0

Attention: **Mr. Warren Cannon**
Superintendent of Public Works

Re: DISTRICT OF UCLUELET - WATER MASTER PLAN, Final Report

We are pleased to submit three bound copies and a digital pdf copy of the final report entitled "District of Ucluelet – Water Master Plan."

This report presents a Water Master Plan, which will allow the District to: Plan and Manage Strategies; Develop Long – Term Economical and Social Benefits; maintain a sustainable Water System. The report reviewed existing System Operations and Water Sources as well as the potential for a new water source.

The plan entailed a detailed review of the water system from its inception to its current condition. The existing surface source Mercantile Creek and groundwater source Lost Shoe Creek Aquifer were reviewed considering their current quantity, quality and level of treatment. Island Health Permit requirements were review noting the surface water source policy adopted in 2012. The report reviewed alternate sources of water including Kennedy Lake and commented on the quantity, quality and treatment required.

The report studied current and future population projections identifying that the District's total and maximum day water demands have decreased dramatically for year 2003 compared to 2013. This significant reduction is in large part in response to the decline in fish processing demands. Metered demands account for around 25% of system demands. Water Conservation was reviewed and it was noted that efforts in Ucluelet will have the most effect if they are directed at reducing non-metered water demands which count for more than 70% of water demand. This is a significant change from 10 years ago, when metered demands accounted for more than 50% of system demands and fish processing demand made up more than 80% of the metered demands, or 40% of the system demands.

1. The District operates two water supply sources:
    i. **Mercantile Creek**, a surface source on the east side of Ucluelet Inlet
    ii. **Lost Shoe Creek Well field**, a groundwater source at the junction of Hwy 4A and Pacific Rim Hwy
2. The LSCA well field acts as the primary source. Mercantile is brought on-line to meet large fish processing demands and the seasonal (summertime) demand increase. The two water supply sources are currently isolated from each other with the manual closing of valves at ten (10) road intersections, which we understand are:
    a. Peninsula Rd at Pacific Crescent
    b. Seaplane Base Rd at Peninsula Rd

c. Norah St at Peninsula Rd
d. Hemlock St near Peninsula Rd
e. Marine Dr at Matterson Dr
f. Victoria Rd at Marine Dr
g. Edward Pl at Peninsula Rd
h. Marine Dr at Peninsula Rd
i. Cedar Rd &d Park Ln
j. Cedar Rd at Main St

3. Water is spilled at the Matterson Reservoir when the Mercantile Creek source is not running and the reservoir is supplied by the Highway Zone.

4. Water treatment consists of the following:

   Mercantile Creek
   Raw water passes through a course screen to catch larger debris prior to being withdrawn from the Creek. At the Bay Street water treatment pump station, the water is treated by Ultra Violet lights followed by disinfection using a sodium hypochlorite solution (NaClO).

   Lost Shoe Creek Well field
   The water is treated by the addition of sodium hypochlorite solution (NaClO).

5. Water quality issues for the water sources consist of the following:

   Mercantile Creek: elevated turbidity levels during the winter months and periods of heavy rainfall

   Lost Shoe Creek Well field: elevated levels of manganese

6. Mercantile Creek source cannot accommodate an increase in withdrawal limits.

7. LSCA recharge rate is influenced by rainfall as shown in **Figure 4**.

8. LSCA Well Number 2 is not operated in summer months due to low water levels.

9. Kennedy Lake is considered a suitable source option for the District.

10. The minimum peak hour pressure is 234 kPa (34 psi) at Athlone Road (elevation 40 m).

11. The areas that do not meet the fire flow requirements for the zoning serviced are listed in **Table 17**.

We thank you for the opportunity to be of service the District of Ucluelet on this interesting assignment. We have enjoyed working with you and your staff and would be pleased to assist in implementation of the report's recommendations.

Please do not hesitate to contact us to discuss the findings in greater detail and we look forward to your response.

District of Ucluelet
Mr. Warren Cannon 3

July 7, 2017
1581-01

Yours truly,

KOERS & ASSOCIATES ENGINEERING LTD.

Jul. 7 2017

Chris Downey P.Eng
Project Manager

DISTRICT OF UCLUELET

WATER MASTER PLAN
- Final Report -

Table of Contents

TABLES

FIGURES **after page**

1 INTRODUCTION

1.1 Authorization

On October 28, 2015, the District of Ucluelet authorized Koers & Associates Engineering Ltd. to carry out a water master plan study for the District of Ucluelet. The study is to allow the District to plan and manage strategies, develop long-term economic and social benefits and maintain a sustainable water system. The study was to be carried out in accordance with Koers' proposal dated October 22, 2015.

1.2 Study Objectives

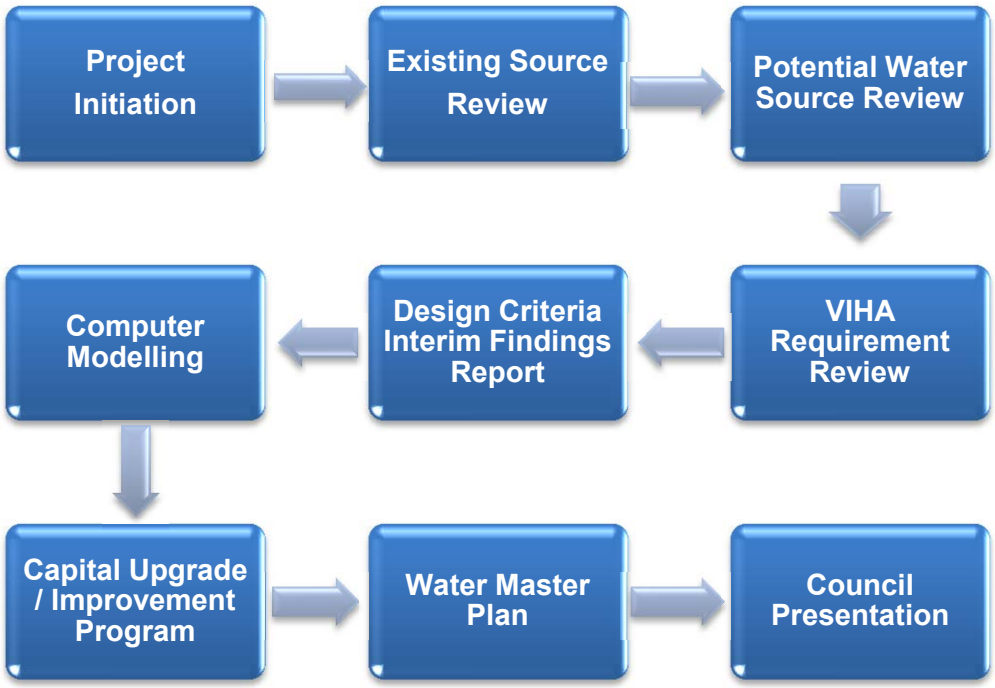
The District is seeking to develop a Water Master Plan which will allow it to:

- Plan and Manage Strategies
- Develop Long-term Economical & Social Benefits
- Maintain a Sustainable Water System

1.3 Scope of Work

To meet the study objectives, a detailed work plan was established as shown in the flow chart below. A detailed description of the work to be carried out with each task is presented after the flow chart.

Work Plan Flow Chart



Task 1 - Project Kick-off Meeting, Data Collection & Review, Site Visit

- Obtain copies of reports and studies including: record drawings; daily bulk water meter records; individual water meter records.
- Obtain copies of: DCC Bylaw; OCP and planning documents; Vancouver Island Health Association's (VIHA) water system operating permits; and pertinent correspondence relating to surface water treatment requirements.
- Obtain digital copy of the District's cadastral, water infrastructure map & zoning maps.
- Visit the water supply sources.

Task 2 - Existing System Operational Review

- Meet with the District's Superintendent and Publics work staff to review the system operation and identify known areas of concern within the water supply and distribution networks.
- Review types of tasks that are carried out daily, weekly, monthly, seasonally, and annually.
- Review known issues with the system, such as: areas with water quality issues, low pressures and flows; watermains with a large amount of sediment; valving concerns; reservoir access, inlet/outlet piping and controls.
- Review Bay Street turbidity meter & U/V system operation.
- Review Lost Shoe Creek Aquifer (LSCA) water quality (Iron & Manganese).
- Review annual watermain flushing program and line pigging procedures.

Task 3 - Existing Water Sources Review

- The two existing water sources to be reviewed in detail and operating conditions and concerns discussed with District Staff.
- Review source quantity, quality, treatment, licencing and observations in source water availability during dryer summers and if there have been noticeable changes/trends in water levels water level year over year.

Task 4 - Potential Water Source Review

- Develop recommendations for a long term water supply strategy to meet the forecasted growth.
- Assess the District's current groundwater (Lost Shoe Creek Wellfield) and surface (Mercantile Creek) supply sources.
- Review of a third source. Location of the third water source (Kennedy Lake, a new groundwater source, or other), will be discussed with staff during the project initiation meeting and a consensus reached prior to advancing the report.

Task 5 - VIHA Permit Review

- Review the District's VIHA permit regulations.
- Provide recommendations and timelines for implementation of the requirements outlined by VIHA.

Task 6 - Design Criteria

- Establish design service population and the timeframe to reach it (rate of growth).

- Establish type of development to occur and where it will occur such as: anticipated land development projects (Weyerhaeuser Lands, Wynd & Sea development); new business development (economic development strategies); tourism; Industry (fishing, logging, mining, energy); First Nations business; Regional airport upgrade/expansion, West Coast Multiplex.
- Analyse average day, maximum day and peak hour water demands from past studies and for the past three years.
- Review annual metered demands for typical land-uses (such as hotel, restaurant, school, service commercial) from the Institutional/Commercial/Industrial metered data.
- Assess potential reductions in residential (per capita) and business (commercial, industrial and institutional) demands in response to varying conservation programs.
- Developed three growth projections (low, medium, and high) for assessing the ability of a water supply source(s) to meet the projected long-term demands, and the ability of the water distribution system to the demands to where the growth is expected to occur.
- Confirm fire flow requirements for the various land use categories. Fire flows will be based on Fire Underwriters Survey and Master Municipal Contract Documents requirements and will be reviewed with the District prior to completion of the computer modelling.

Task 7 - Interim Findings Report

- Interim report will be prepared for the findings of Task 1 to 5. The purpose of this interim report is to assist the District in selecting a long-term water supply source(s) as well as determining the future demand and population conditions for water modelling purposes.
- The report will be presented in a technical memorandum format and will be incorporated into the Water Master Plan document.
- Upon acceptance of the interim report and selection by the District of the long-term water supply source(s), the computer model will be developed.

Task 8 - Computer Modelling

- Update Koers in-house water model of the District's system incorporating capital and new development work that has been carried out since the model was last updated.
- The integrity of the water model will be checked with record drawing information and actual system pressures.
- Wellfield pump curves provided by the District will be compared and updated in the computer model. Modelled pipe diameters and material will be checked in each pressure zone against available information provided by the District.
- Individual demands that are metered in the District (Institutional, Commercial, and Industrial properties) will be added to the model based on their physical locations. Residential demands, which are not metered, will be applied spatially in the model based on residential development densities.

- Review and confirm water distribution system design criteria with District staff.
- Run model under existing and future conditions, identify upgrading works required.

Task 9 - Capital Upgrade / Improvement Program

- Findings of the computer modelling will be combined with the growth projection information to develop a capital upgrade/improvement program complete with Class D (order of magnitude) construction cost estimates.
- A brief summary discussion of each project will be included.
- Each project identified for the capital upgrade/improvement program will be reviewed for eligibility as a DCC project and a tabular list created.

Task 10 - Water Master Plan

- The study work will culminate in the development of the Water Master Plan document. This document will be designed to serve as the guiding plan for capital works and long-term planning.
- The document will include:
  - study findings
  - discussion
  - plans and illustrations
  - graphs and tables
  - project cost estimates
  - conclusions and recommendations
  - A coloured plan drawing showing the District's water system and proposed works
- A draft report will be issued. Koers will meet with staff to discuss the report findings, recommendations and confirm any proposed modifications or additions.
- The report shall be finalized upon receipt of District comments. A digital (pdf) copy and three bound copies will be provided.

Task 11 - Council Presentation

- A PowerPoint will be developed an overview of the Water Master Plan for presentation to Council by Koers.

1.4 Acknowledgements

Koers & Associates Engineering Ltd. acknowledges with thanks the assistance provided by the following District staff during the course of this study:

- Mr. Warren Cannon – Superintendent of Public Works

2 WATER SYSTEM

2.1 Historical & Current Settlement Area

Prior to the arrival of the first European settlers in the early 1870's, the area was inhabited by the Nuu-Chah-Nulth First Nations. Ucluelet or "safe harbour" as named by the Nuu-Chah-Nulth First Nations is situated on the West Coast of Vancouver Island at the south end of the Pacific Rim National Park.

The Village of Ucluelet was incorporated in 1952. Its status changed to a District in 1997, in part to reflect the growing population. The municipal boundaries encompass the entire Ucluth Peninsula, covering an area of more than 1,100 ha.

Ucluelet was established around the logging and fishing industry, but has become known as an eco-tourism based resort area. Development is concentrated on the southern half of the peninsula where there is a municipal sewer collection system. Development on the northern half consists mostly of undeveloped lands with some rural residential properties on larger parcels, and a few industrial and commercial businesses. The northern developed lands are serviced by on-site septic fields. A total of 283 ha of land in the northern west half of the municipality were taken out of the Forest Land Reserve in the early 2000's. Partial development of these lands has started but has been significantly hampered by the economic downturn in 2008. The three largest employment industries are reported to be Hospitality, Fishing, and Logging.

2.2 Supply Source & System Storage

The District operates two water supply sources:

i) **Mercantile Creek**, a surface source on the east side of Ucluelet Inlet, and

ii) **Lost Shoe Creek Wellfield**, a groundwater source at the junction of Hwy 4A and Pacific Rim Hwy.

Both sources are located outside of the District's municipal boundaries.

A discussion of each source is presented below.

2.2.1 Mercantile Creek

Water Licences

The District has been granted five water licences by the provincial government for the diversion of water from Mercantile Creek for the operation of a local water system. The first was granted in January 1958 and the most recent was granted in June 1992. There is also two other water licence holders on Mercantile Creek: Ucluelet Indian Band, and a numbered company. The first licence is for a local water system, the second is for ice making. A list of the water licences is presented in **Table 2** under Section **3.1 Water Quantity**.

Intake Structure

Water is withdrawn from the Creek via an intake structure, the location of which was moved in 1972 to a slightly higher elevation than the original. It is now at an elevation of approximatley 40 m geodetic and has a catchment area of approximately 11.5 km^2. A small 3.3 m high concrete dam with removable stop logs was constructed creating an inmpoundment area. A 9.1 m long by 1.5 m wide covered concrete channel, located just upstream of the dam, conveys water through a course screen before entering a 250 mm diameter intake.

The water is transported approximately 2.5 kms down the hill and under the inlet to the Bay Street water treatment building and pump station. The supply line is reported to consist of 520 m of 350 mm diameter pipe connected to 1,300 m of 250 mm diameter pipe which connects to 690 m of 300 mm diameter High Density Polyethylene (HDPE) submarine pipeline.

Bay Street Water Treatment Plant

The Bay Street water treatment and pump station building, located at the foot of Bay Street, was constructed around 1985. The water treatment system is presently being upgraded to become compliant with the Vancouver Island Health Authority's 4-3-2-1 surface water source treatment policy. This includes replacement of the sand filters with Ultra Violet light and an on-line turbidity meter which automatically stops the supply when the turbidity levels exceed 1 NTU.

Matterson Drive Reservoir

Treated water is pumped into the distribution system by one of two variable speed 40 hp centrifugal vertical pumps and fills the 1,200 m^3 (250,000 ig) bolted steel water storage reservoir on a local high spot off of Matterson Drive.

Constructed in 1983, the Matterson Drive Reservoir is 8.8m in diameter and 19.8 m tall. Its top water level of 57 m geodetic generates a static pressure of 560 kPa (81 psi) at sea level. The exterior of the reservoir was repainted (recoated) in 2000.

Mercantile Creek Usage

Mercantile Creek operated as the District's water source until the development of the Loss Shoe Creek Wellfield, which came on line in 1997. From 1997 to 2002, and from 2005 to 2008 Mercantile Creek acted as an emergency source due to turbidity issues attributed to active logging in the watershed.

In 2014, the Mercantile Creek water treatment process at the Bay Street pump station was upgraded to include Ultra Violet lights in addition to the existing sodium hypochlorite

disinfection. This was done as Stage 1 of compliance with the Island Health 4-3-2-1-surface water treatment policy. An on-line turbidity meter was also added as an interim step to full compliance.

2.2.2 Lost Shoe Creek Aquifer

In 1996, an additional water supply was developed using groundwater wells in the Lost Shoe Creek Aquifer (LSCA). The wellfield is located at the junction of Highway 4A and Pacific Rim Highway, approximately 3 kms north of the District's municipal boundary.

Wellfield Pumping Capacity

The District operates four wells at the wellfield. There is allowance for the installation of a 5th well, which has not yet been developed. The original design capacities of the wells are presented in **Table 3** under Section **4 Lost Shoe Creek Wellfield**.

Highway Reservoir

The LSCA wellfield pumps into the 1,400 m^3 (300,000 ig) bolted steel water storage reservoir (Hwy Reservoir) located along Peninsula Road approximately 3 kms south of the wellfield. Constructed in 1997, the reservoir is 12.5 m in diameter and 11.6 m tall. Its top water level of 64.8 m generates a static pressure of 635 kPa (92 psi) at sea level.

The wellfield water source was developed to meet the very large demand from the growing fish process industry, as the Mercantile Creek source capacity was insufficient.

Need for Lost Shoe Creek Source

From 1997 through 2003, the operation of the wellfield at full capacity was required to keep up with the fish processing industry demands. During this time, the capacity of the wells declined significantly due to biofouling of the well screens and the immediately surrounding aquifer materials from iron and sulphur bacteria. In 2002, chemical re-development of the wells resulted in significant recovery, estimated at 90%, of the original design capacity.

The fish processing industry began to decline starting in 2004; resulting in a notable drop in water demands. Up to 2003, the maximum month water demand was as high as 250,000 m^3. From 2004 to present, the maximum month demand ranges from 100,000 m^3 to 130,000 m^3.

During the 2002 well redevelopment program, the Mercantile Creek source was put back on line in mid-August to meet the summertime demand increase. Water quality had improved in the watershed with the cessation of logging activity. Near the end of January 2005, Mercantile Creek was taken off-line in response to a landslide in the watershed. It was not brought back on-line until three years later, in January 2008.

2.3 Treatment

Mercantile Creek
Raw water passes through a course screen to catch larger debris prior to being withdrawn from the Creek. At the Bay Street water treatment pump station, the water is treated by Ultra Violet lights followed by disinfection using a sodium hypochlorite solution (NaClO).

Lost Shoe Creek Wellfield
The water is treated by the addition of sodium hypochlorite solution (NaClO).

2.4 Distribution System

The distribution system contains 35 kms of pipe ranging in diameter from 100 mm to 450 mm of various material types. **Table 1** lists the lengths of pipe for various materials and diameters.

Table 1 – Water Distribution System Pipe Material, Diameters & Lengths

Pipe Diameter (mm)	Length of Pipe (m)				
	Asbestos Cement, AC	Polyvinyl Chloride, PVC	High Density Polyethylene, HDPE	Steel	Total Length (m)
100	425	65			490
150	6,165	3,900		10	10,075
200	1,485	8,540	125	7	10,157
250		3,105		10	3,115
300		1,085	2,630		3,715
350		1,445		5	1,450
400			4,370		4,370
450			1,670	15	1,685
900				25	25
Total:	8,075	18,140	8,795	72	35,082
% of Total	23%	52%	25%	-	100%

A plan drawing of the District's water supply and distribution system is located in the pocket at the end of this report.

2.5 Current System Operation

The LSCA well field acts as the primary source. Mercantile is brought on-line to meet large fish processing demands and the seasonal (summertime) demand increase.

The two water supply sources are currently isolated from each other with the manual closing of valves at ten (10) road intersections, which we understand are:

1) Peninsula Rd at Pacific Crescent
2) Seaplane Base Rd at Peninsula Rd
3) Norah St at Peninsula Rd
4) Hemlock St near Peninsula Rd

5)	Marine Dr	at	Matterson Dr
6)	Victoria Rd	at	Marine Dr
7)	Edward Pl	at	Peninsula Rd
8)	Marine Dr	at	Peninsula Rd
9)	Cedar Rd	at	Park Ln
10)	Cedar Rd	at	Main St

When these 10 valves are closed, the LSCA services the northern end customers southwest of Rainforest Drive utilizing the Highway Reservoir. Mercantile Creek services the remainder of the District utilizing the Matterson Drive Reservoir. When the Mercantile source is not available, water is supplied from the Highway Reservoir to the Mercantile Zone through a throttled valve (no.9 in the list above) at the intersection of Cedar Rd at Park Lane. The existing water supply and distribution system is shown on **Figure 1**.

HIGHWAY RESERVOIR 65m HGL

CLOSED VALVE NO.1
PENINSULA ROAD AND PACIFIC CRES

CLOSED VALVE NO.2
PENINSULA ROAD AND SEAPLANE BASE ROAD

CLOSED VALVE NO.3
PENINSULA ROAD AND NORAH STREET

CLOSED VALVE NO.4
HEMLOCK ROAD

CLOSED VALVE NO.9
CEDAR ROAD AND PARK LANE

CLOSED VALVE NO.10
CEDAR ROAD TO MAIN STREET

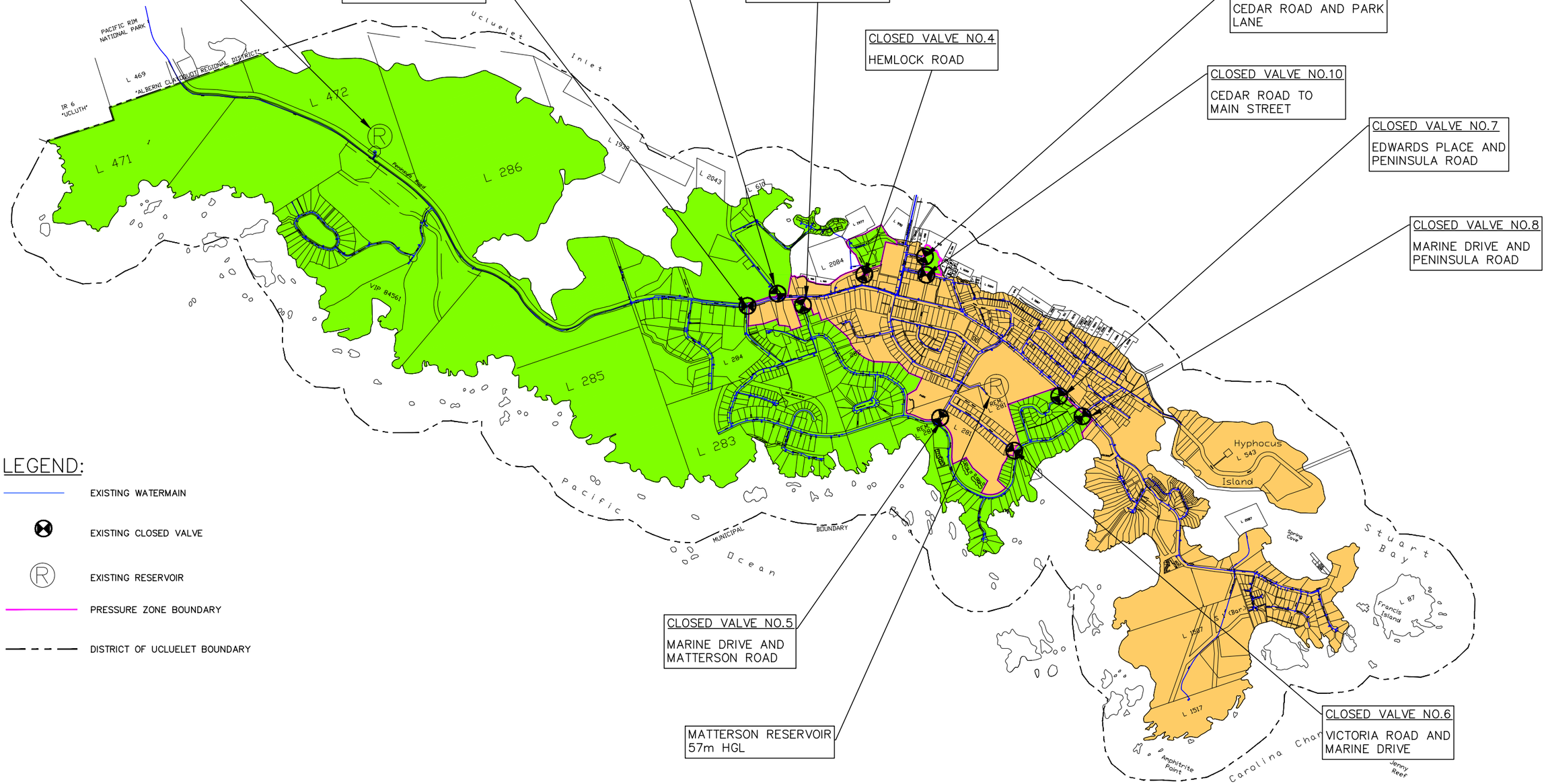
CLOSED VALVE NO.7
EDWARDS PLACE AND PENINSULA ROAD

CLOSED VALVE NO.8
MARINE DRIVE AND PENINSULA ROAD

CLOSED VALVE NO.5
MARINE DRIVE AND MATTERSON ROAD

MATTERSON RESERVOIR
57m HGL

CLOSED VALVE NO.6
VICTORIA ROAD AND MARINE DRIVE



LEGEND:

- EXISTING WATERMAIN
- EXISTING CLOSED VALVE
- EXISTING RESERVOIR
- PRESSURE ZONE BOUNDARY
- DISTRICT OF UCLUELET BOUNDARY

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Consulting Engineers

CLIENT	DISTRICT OF UCLUELET
PROJECT	WATER MASTER PLAN

TITLE	EXISTING PRESSURE ZONES
APPROVED	
DATE	
PROJECT No.	1581
SCALE	1: 20,000
DWG No.	FIGURE 1

3 MERCANTILE CREEK

3.1 Water Quantity

The District has been granted five water licences by the provincial government for the diversion of water from Mercantile Creek for the operation of a local water system. The first was granted in January 1958 and the most recent was granted in June 1992. There is also two other water licence holders on Mercantile Creek: Ucluelet Indian Band, and a numbered company. The first licence is for a local water system, the second is for ice making. A list of the water licences is presented in **Table 2**.

Table 2 – Mercantile Creek Water Licences

Licence No. & Priority Date		Amount, m^3	
		Average Day	Maximum Day
District of Ucluelet			
C 024206	January 1958	113.65	113.65
C 026923	March 1961	113.65	113.65
C 029963	January 1965	113.65	113.65
C 035653	June 1969	2,273.00	2,273.00
C 104912	June 1992	625.23	1,250.15
District of Ucluelet Total		**3,239.18**	**3,864.10**
Ucluelet First Nation			
C 061385	October 1982	227.30	454.60
District & First Nation Total		**3,466.48**	**4,318.70**
465792 BC Ltd.			
C 109594	January 1941		327.31

At the point of the District's withdrawal, the creeks upstream catchment area is approximately 11.5 km^2.

Mercantile Creek Low Flow Review

Water Survey of Canada recorded flows in Mercantile Creek during the months of May through November from 1979 to 1984. The minimum, average and maximum recorded flows were reported as follows in the report *Water Quality Assessment & Objectives for Mercantile Creek Community Watershed*, Technical Report, Ministry of Environment, Water Stewardship Division, 2007±:

Water Survey of Canada Mercantile Creek Flows, May to November, 1979 - 1984

- minimum day flow 9,100 m^3/day (0.106 m^3/s)
- maximum day flow 1,753,900 m^3/day (20.30 m^3/s)

The creek's recorded minimum day flow equals 2.1 times the licenced maximum day withdrawal limit.

The Ministry of Environment report further noted that Triton Environmental Consultants Ltd. in 1996 used hydrometric measurements from nearby watersheds to estimate flows in Mercantile Creek. The calculated mean annual and 7 day low flows were reported to be:

Mercantile Creek Flow Based on Nearby Watershed Hydrometric Measurements

- mean annual flow 103,700 m^3/day (1.20 m^3/s)
- mean summer 7 day low flow 11,200 m^3/day (0.13 m^3/s)
- mean winter 7 day low flow 19,000 m^3/day (0.22 m^3/s)

The estimated summer 7 day low flow is 2.6 times the licence max day withdrawal limit.

Additional Licenced Withdrawal Availability

The availability to withdraw/allocate additional water from Mercantile Creek was assessed and the findings presented in the Long Beach Water Allocation Plan, November 1997 by the Ministry of Environment, Lands and Parks, Regional Water Management, Vancouver Island Region.

In determining water availability, the reported noted that the ability to "maintain the natural stream environment and instream uses are of paramount importance for present and future generations" (page 11). In creeks where fish are present, minimum flows required to sustain spawning, as well as rearing habitat, was based on 10% of the Mean Annual Discharge (MAD). If the average 7 day low flow falls below 10% of the MAD, the withdrawal licenced demands should only be allowed for the period when the monthly average flows is greater than 60% of the MAD. Mercantile Creek is a salmon bearing and salmon rearing watercourse with documented escapements of Chinook, Chum, Coho and Sockeye salmon as reported on the BC Ministry of Environment Fisheries Information Summary System on-line database (www.env.gov.bc.ca/fish/fiss).

Because the summer 7 day low flow (11,200 m^3/day) is less than the fisheries resources minimum instream flow requirement of 10% of the MAD (10,370 m^3/day) plus existing licenced withdrawal limits (4,320 m^3/day), there is no additional water available for licenced withdrawal during the months of May through September as shown in **Figure 2**.

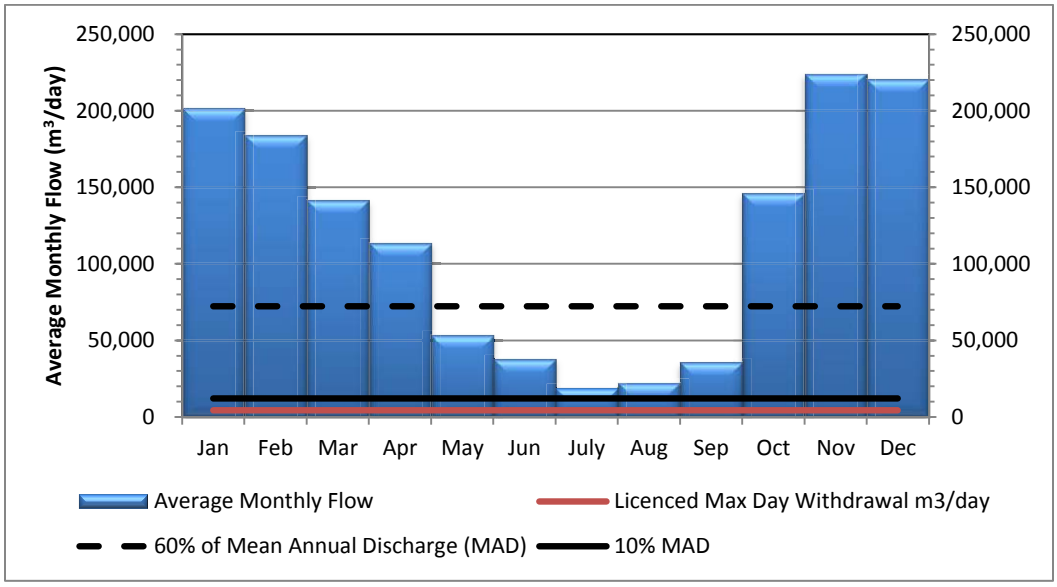

Figure 2 – Mercantile Creek Monthly Average Flow

3.2 Water Quality

Mercantile Creek operated as the District's water source until the development of the Lost Shoe Creek Wellfield, which came on line in 1997. From 1997 to 2002, and from 2005 to 2008 Mercantile Creek acted as an emergency source due to turbidity issues attributed to active logging in the watershed.

The Island Health 4-3-2-1 surface water treatment policy requires a turbidity level of less than 1 NTU. The guidelines for Canadian Drinking Water Quality requires average turbidity levels of less than 1 NTU and no more than two events over 5 NTU in one calendar year.

The source is also affected by organics in the water which can cause disinfection by products (THM's) when mixed with chlorination.

Figure 3 graphs turbidity readings on Mercantile Creek from 2010 to mid-2012.

3.3 Treatment

Water treatment begins with the raw water passing through a course screen at the intake structure on Mercantile Creek. This water is conveyed to the water treatment building at the foot of Bay Street. This building was constructed around 1985 with a treatment process consisting of two large cylindrical steel vessels containing green sand which filtered the water. The filtered water was then disinfected by the injection of chlorine gas prior to discharge into a wet well (constructed underneath the floor of the building) which provided contact time. Water was then pumped out of the wet well and into the distribution system.

In the early 1990's, the green sand was removed from the steel vessels but not replaced; the exact reason for its removal is not known. Water continued to flow through the steel vessels and disinfected by the injection of chlorine gas.

In 2014, the steel vessels were removed and Ultra Violet disinfection was installed as part of becoming compliant with the Island Health authority's 4-3-2-1 surface water treatment policy. After UV, sodium hypochlorite (NaCLO) is injected for disinfection. The section of piping immediately after the injection point was enlarged to 900 mm diameter to provide contact time for disinfection. An on-line turbidity meter was added as an interim step to full compliance. The turbidity meter automatically stops the use of the water when the turbidity levels exceed 1 NTU.

Treated water is pumped into the distribution system by one of two in-line variable speed 40 hp pumps. The pumps are controlled by the water level of the Matterson Drive reservoir.

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Mercanticle Creek
Turbidity Readings (at weir)
January 2010 - July 2012

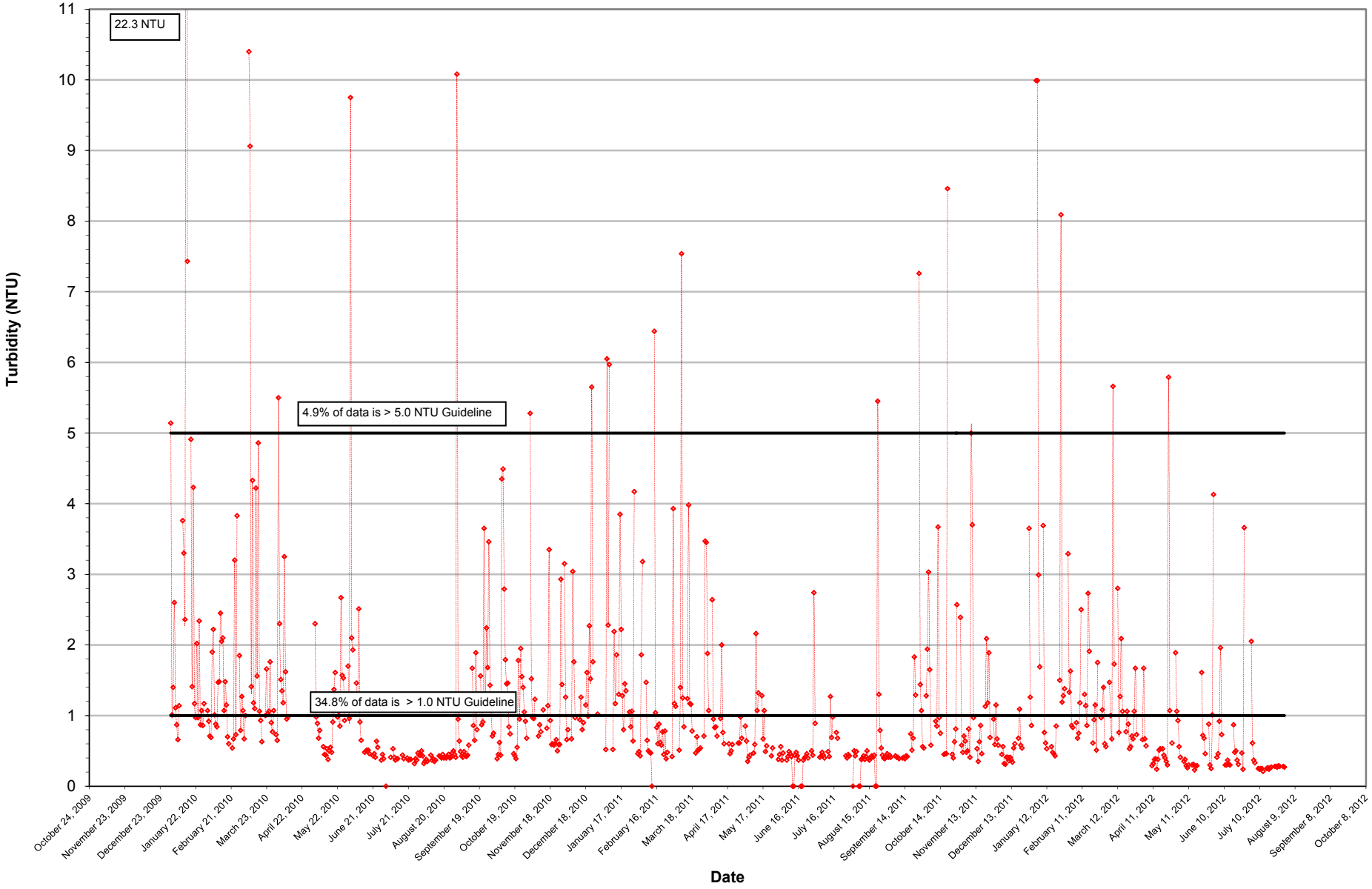

FIGURE 3

4 LOST SHOE CREEK WELLFIELD

In 1996, an additional water supply was developed using groundwater wells in the Lost Shoe Creek Aquifer (LSCA). The wellfield is located at the junction of Highway 4 and Pacific Rim Highway, approximately 3 kms north of the District's municipal boundary.

The wellfield was developed to meet the very large demand from the growing fish process industry, as the Mercantile Creek source was insufficient.

Wellfield Pumping Capacity

The District operates four wells at the wellfield. There is allowance for the installation of a 5th well, which has not yet been developed. When developed in 1997, the pumping capacity of the four wells totalled 10,497 m^3/day. Over the next five years, the capacity of the wells declined significantly due to biofouling of the well screens and the immediately surrounding aquifer materials from iron and sulphur bacteria. In 2002, chemical re-development of the wells resulted in significant recovery, estimated at 90%, of the original design capacity.

Well No. 3 pump motor reduction

In 2015, the 60 hp motor in Well No. 3 was replaced with a 40 hp motor due to ongoing issues of the operation of the pump triggering low water level alarms during the summer months requiring the shutdown of the pump each time the alarm was triggered. The alarm may be in response to decline in the opening area of the well screen and plugging of the surrounding gravels. This would restrict the flow of water into the well casing. The reduced flow would result in a lowering of the water level in the casing until it reached the low level alarm sensor.

Well No. 2 Seasonal Shutdown

During the summer months, District staff does not operate Well No. 2 due to low level alarm issues. This well has its well screen set slightly higher than the three other wells as follows:

- Well No. 1 top of screen set 0.7 m below Well No. 2 top of screen
- Well No. 3 top of screen set 3.3 m below Well No. 2 top of screen
- Well No. 4 top of screen set 0.9 m below Well No. 2 top of screen

District staff monitors the groundwater level of the provincial government monitoring well No. 329 during the spring and into the summer as the groundwater level falls in response to less rainfall and warmer weather. The well is located in the Emcon Service Ltd. works yard approximately 600 m northwest just off of the Pacific Rim Highway (Hwy 4). When the groundwater level drops to 8 m below the surface, staff turns off Well No. 2. As a result, staff has indicated that Well No. 2 is generally not in use for approximately three continuous months each year and most often for the period of August through November.

In order to optimize the well field operation it is recommended that variable frequency drives (VFDs) be installed on the existing pumps. The VFDs will adjust the pump motors to run at a lower frequency, allowing the pumps to operate at a range of flows on the pump curve depending on the well level. Pressure transducers should also be installed in the well casings to provide accurate drawdown levels and adjustment of the pump shutdown alarms.

Table 3 presents a summary of the design capacity of each well and the estimated current seasonal capacity for each for the 9 month period when all four pumps are available for use and for the 3 month period Well No. 2 is not in use due the (low) level of the groundwater.

Table 3 – Lost Shoe Creek Aquifer Well Pump Design Capacities

Well No.	Design Capacity		Estimated Current Seasonal Capacity	
	(L/s)	(m^3/day)	Nov - July (m^3/day)	Aug - Oct (m^3/day)
1	25.2	2,177	1,960 (1)	1,960 (1)
2	28.4	2,454	2,200 (1)	- (2)
3	44.2	3,818	2,100 (3)	2,100 (3)
4	23.7	2,048	1,840 (1)	1,840 (1)
5	Undeveloped	-	-	-
Total	121.5	10,497	8,100	5,900

Note:

(1) Capacity estimated at 90% of design capacity to allow reduction over time before well cleaning/redevelopment is carried out.

(2) Well No. 2 is turned off when the low water level alarm is activated. District staff has indicated that this generally occurs for three months starting in August as the groundwater level continues to drop.

(3) In 2015, the 60 hp pump in well number was replaced with a smaller 40 hp and a lower pumping rate (385 usgpm). This was done in response to the drawdown from the 60 hp pump during the summer months triggering the low water level alarm and shutting down.

4.1 Water Quantity

The provincial government operates and monitors groundwater levels in the Lost Shoe Creek Aquifer

Figure 4 graphs groundwater levels readings at the provincial government Observation Well No. 329 for the past 12 years (Dec 2003 to Feb 2016). The well is located approximately 600 m northwest of the Lost Shoe Creek Aquifer Wellfield, just off of the Pacific Rim Highway (Hwy 4) and within the works yard of Emcon Services Ltd. As shown in the figure the water levels in the well follow a cyclical pattern with the water level being the lowest in late September early October and the highest in February and March.

Figure 5 graphs the groundwater level readings and rainfall data from 2014 to March 2016. As shown in the graph the aquifer level is at its lowest levels during periods of high demand and low rainfall in the summer months. As the rainfall levels increase in September, and the system demands decrease, the aquifer level increases

It should be noted that during the fall of 2013 and winter of 2014 the recorded rainfall was the lowest on record, which resulted in the lowest aquifer level during the winter months.

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BC Government Observation Well No. 329
(located 600 m Northwest of Ucluelet Lost Shoe Creek Wellfield)
Hourly Groundwater Level, Dec 2003 - June 20, 2017

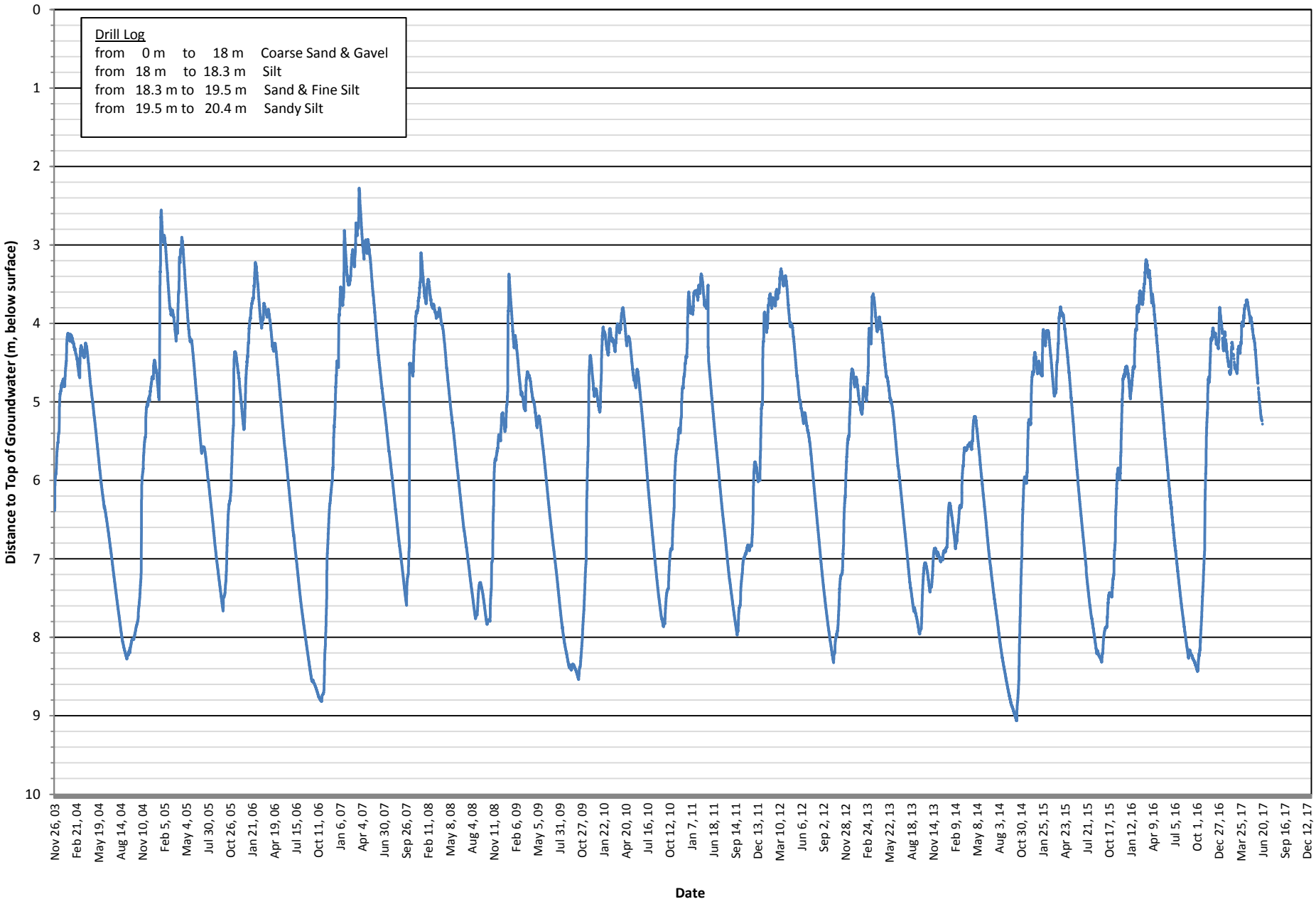

FIGURE 4

KOERS & ASSOCIATES ENGINEERING LTD.
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Observation Well No, 329
(located 600 m Northwest of Ucluelet Lost Shoe Creek Wellfield)
Groundwater Depth vs Rainfall, 2014 - June 20, 2017

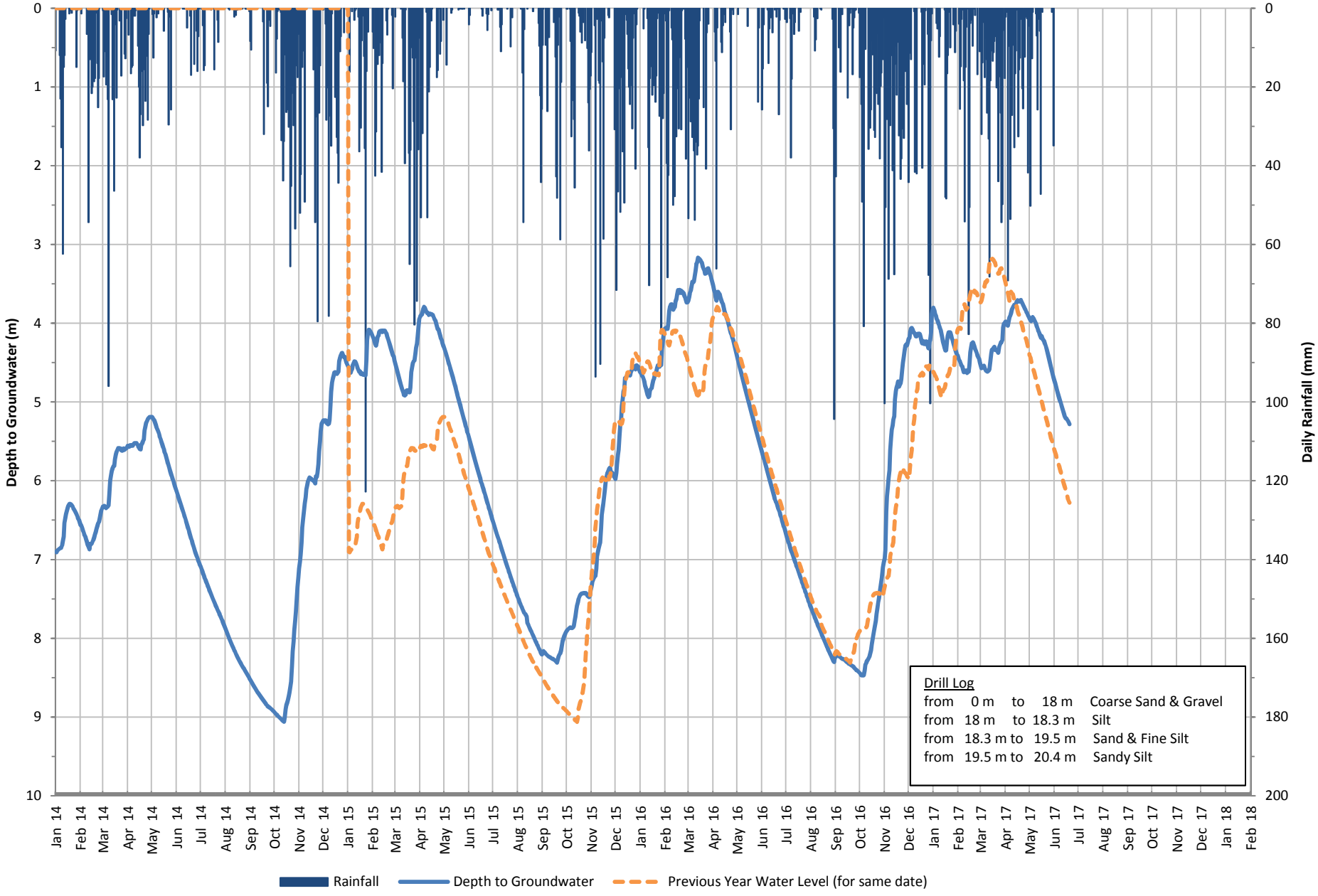

FIGURE 5

The aquifer catchment area boundary as delineated by the provincial government and the location of wells within the catchment is shown on **Figure 6**.

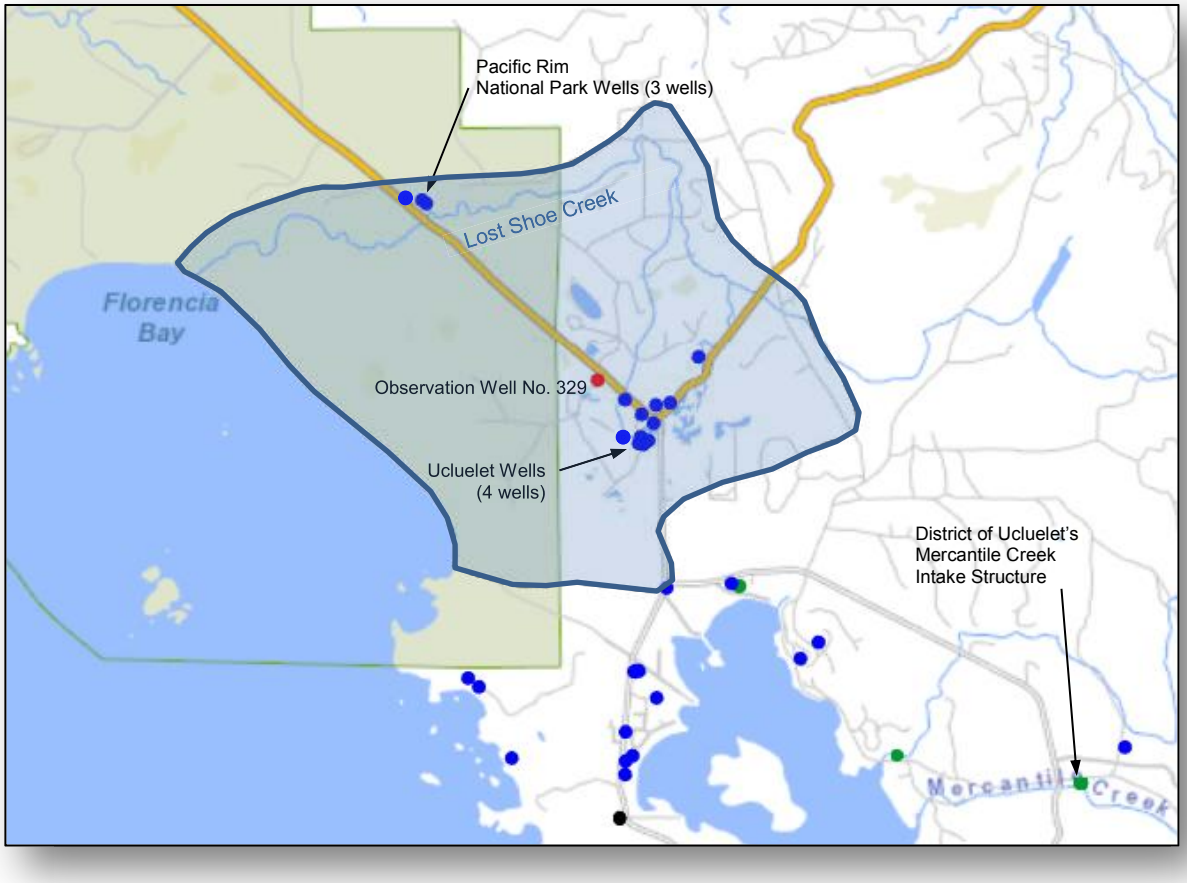

Figure 6 – Lost Shoe Creek Aquifer Boundary

The BC Water Resource Atlas identifies this as Aquifer No. 159. It is reported to be Sand & Gravel with high productivity, high vulnerability and high demand. The catchment area is approximately 3.5 km wide by 3.5 km long; covering 12.5 km^2.

It should be noted that three new wells have been developed in the Pacific Rim National Park at the northwestern edge of the Lost Show Creek Aquifer, as shown in **Figure 6.** Based on discussions with the National Park, it is understood that the wells are groundwater under direct influence of surface water (GUDI) and will have negligible impact on the Lost Shoe Creek Aquifer.

4.2 Water Quality

The groundwater has concentrations of manganese above the Aesthetic Objective (AO) limits of 0.05 mg/L recommended by the Canadian Drinking Water Guidelines. At concentrations above 0.15 mg/L, manganese stains plumbing fixtures and laundry and produces undesirable tastes in beverages. As with iron, the presence of manganese in water may lead to the accumulation of microbial growths in the distribution system. Even at concentrations below 0.05 mg/L, manganese may form coatings on water distribution pipes that may slough off as yellowish brown to black precipitates.

A review of laboratory water quality testing results spanning from Year 1995 to Year 2014 showed manganese concentrations varied from year to year and from well to well. A summary of the findings is shown in **Table 4** and presented in **Figure 7**.

Table 4 – LSCA Wellfield Manganese Concentrations (1995 – 2014)

Description	Manganese Concentration Range (mg/L)
Well No. 1	0.074 – 1.38 mg/L
Well No. 2	0.164 – 1.27 mg/L
Well No. 3	0.039 – 0.15 mg/L
Well No. 4	No data available
Distribution System	0.019 – 0.310 mg/L
CDWQG - AO limit (1)	≤ 0.05 mg/L

Note:
(1) Canadian Drinking Water Quality Guidelines (CDQWG) - Aesthetic Objectives (AO).

4.3 Treatment

The water from the Lost Shoe Creek Wellfield is treated by the addition of sodium hypochlorite solution (NaCLO) at the well pump house building.

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Water Supply & Distribution System
Manganese Concentrations, mg/l
1995, 1997, 1998, 2012 - 2014

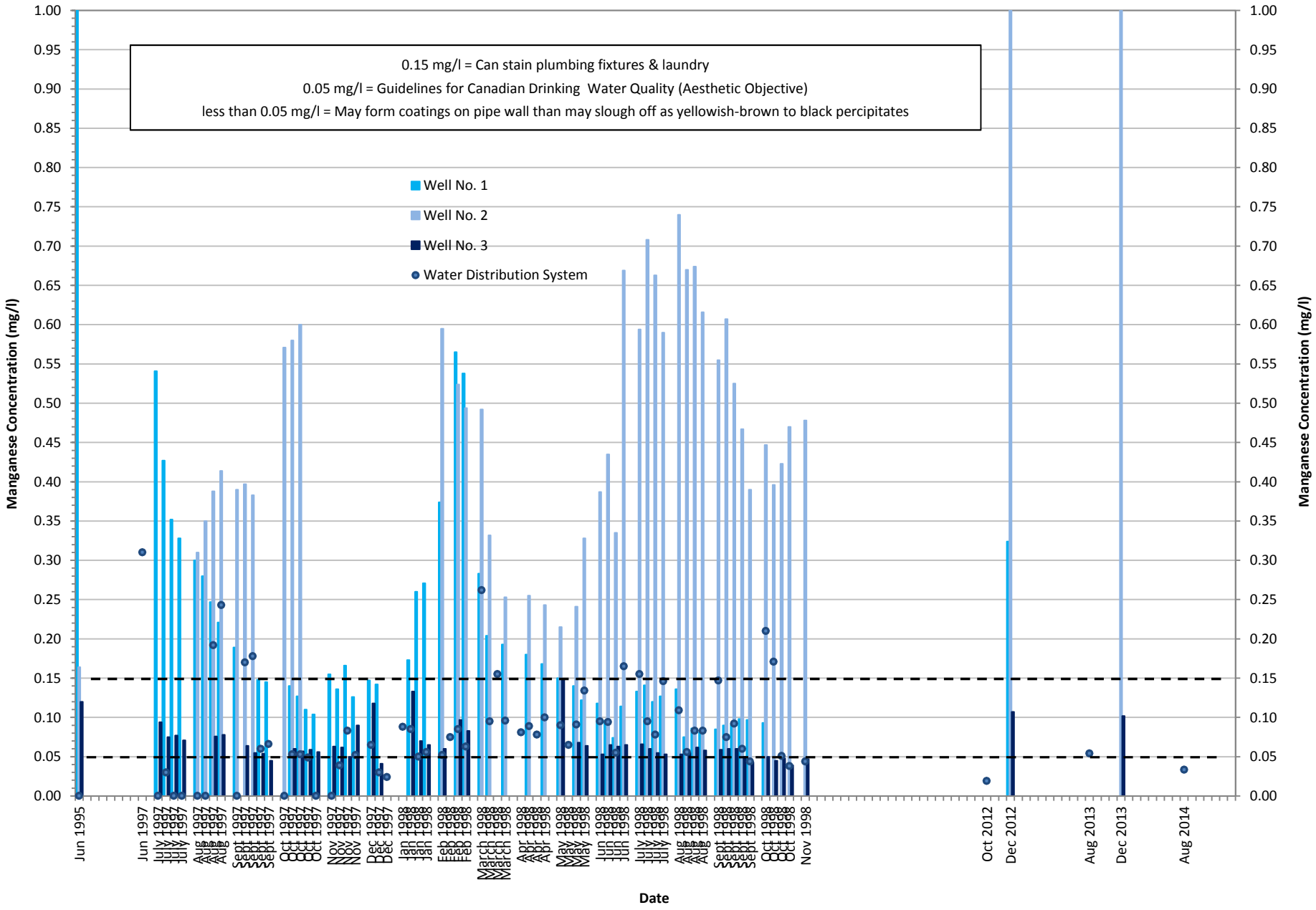


FIGURE 7

5 KENNEDY LAKE

Kennedy Lake is approximately 7 m above sea level and is the largest freshwater lake on Vancouver Island which lies approximately 7.5 km east along Highway 4 from the Lost Creek Wellfield. Kennedy Lake is supplied by two main sources of water the Clayoquot and Kennedy Rivers and discharges through the Kennedy River into the Tofino Inlet.

5.1 Water Quantity

The catchment area of Kennedy Lake is shown in **Figure 8** and is approximately 457 km^2 (121 km^2 Clayoquot River and 336 km^2 Kennedy River) which receives an average of 3,020 mm of precipitation each year. The lake has an estimated volume of 2,136,000,000 m^3 and an average water residence time of 1.22 years. The District's current annual demand of 900,000 m^3 represents 0.0004% of the water within the lake.

Figure 8 – Kennedy Lake Catchment Area

5.2 Water Quality

Metal Concentrations

In 2001 water samples were taken on the main body of Kennedy Lake and in the Clayoquot Arm of Kennedy Lake on May 28, Aug 9, and Nov 5. Water was collected from the surface and at a depth of 20 m at each site during each sampling date. The approximate location of the two sites is shown in **Figure 9** below.

Figure 9 – Kennedy Lake Water Quality Sampling Sites, 2001

The concentrations of the samples were below the current drinking water guideline criteria.

Total Organic Carbon

The concentration of total organic carbon is one indicator of the level of disinfection that may be required.

A criterion of 4.0 mg/L of Total Organic Carbon in source water has been recommended in the BC Water Quality Criteria. This level was exceeded in one sample collected on November 5th from the surface of the main body of Kennedy Lake. All other samples contained levels of Total Organic Carbon ranging from 1.9 to 2.9 mg/L.

Microbiological (Total & Fecal Coliform)
Microbiological analysis reported measurable levels of Total Coliform and Fecal Coliform in the water samples collected from Kennedy Lake.

The Total Coliform counts that ranged from 2 to 6 colonies per 100 mL are within the warning levels.

Fecal Coliform was present at detectable levels only in the November samples that were collected after a period of heavy rain. However, any measure of Fecal Coliform is unacceptable and the only site with Fecal Coliform counts below detection was at the 20 m depth at the main body of Kennedy Lake site.

These test results indicate that the raw water will have to be treated to neutralize coliform presence. Total and fecal coliforms naturally occur in surface waters and all surface waters require disinfection to remove coliform presence.

Trihalomethanes
Trihalomethanes (THM) are formed in drinking water primarily as a result of the interaction between chlorine and organic matter in the raw water. THM formation potential was determined following methods prescribed by the United States Environmental Protection Agency (US EPA).

The formation potential ranged from 0.12 to 0.51 mg/L of total THM. Generally, the formation potential of the samples from Clayoquot Arm were lower than those from the main body of Kennedy Lake site. The results indicate that applying chlorine disinfection to Kennedy Lake water has the potential to produce total THM in excess of the 0.1 mg/L criterion set by the Canadian Drinking Water Guidelines.

Cryptosporidium & Giardia
Samples were collected once on August 9, 2001 and tested for Cryptosporidium and Giardia. There were no detectable levels of either protozoa was found in the water samples from either site.

5.3 Treatment

The results of the January 2002 study by Gartner Lee Limited show that the Kennedy Lake water to be pristine and suitable for public consumption with some treatment, particularly for microbiological parameters thought to be of natural origin. The level of natural contaminants and those introduced from human sources, present in raw Kennedy Lake water were very low.

The trihalomethane formation potential of Kennedy Lake water is related to the organic content that is often measured by the concentration of total organic carbon (TOC). The comparison of TOC and the results of THM formation potential support the relationship between TOC and THM. The elevated levels of THM formation potential indicates that development of the water treatment process should address the levels of organic matter and disinfection options to minimize the formation of THM.

The results of the seasonal water sampling provided a general indication of the water treatment that a water supply system would have to include. Should Kennedy Lake be considered as a water source for the District, then further water sampling and analysis would be required as well as a pilot study during the preliminary design stage of water treatment.

6 LICENCING/PERMITTING

6.1 Island Health 4-3-2-1 Surface Water Source Policy

Water suppliers are required to provide potable water to all users of their system. The 4-3-2-1 surface water treatment policy is a performance target for water suppliers to ensure the provision of microbiological safe drinking water. Vancouver Island Health Authority (VIHA) supports water suppliers to meet this objective. All existing water suppliers serving populations greater than 500 people/day should have an implementation plan to meet this policy.

This policy will also be applied as a performance target for all new surface water systems, regardless of size. Many existing water systems already meet most of this standard. Risk to human health is substantially reduced when water suppliers meet this goal.

Surface water suppliers will be required to provide long term plans to reach the goals of:

- **4 log inactivation** of viruses
- **3 log removal** or inactivation of Giardia cysts and Cryptosporidium oocysts
- **2 treatment processes** for all surface drinking water systems
- **Less than 1 NTU** of turbidity in finished water

4 log inactivation of viruses
Viruses are easily inactivated by the use of chlorine. Achieving a 0.5 mg/L residual of free chlorine for 30 minutes is adequate in most cases.

3 log removal or inactivation of Giardia cysts and Cryptosporidium oocysts
Giardia cysts may be inactivated by large doses of free chlorine, ultraviolet light, ozone and chlorine dioxide, or removed by filtration.

Health Canada has developed design guidelines to determine that the proposed treatment will provide the inactivation desired. For example, chemically assisted rapid sand filtration with sedimentation is given a credit of 3.0 log inactivation. Log inactivation credits of 3.0 for slow sand filtration and 2.5 for direct filtration are given. The remaining credit must be accomplished by another means such as ultraviolet disinfection or free chlorine with a long contact time.

Health Canada has also developed guidelines for Cryptosporidium oocyst removal that outline treatment methods, which will provide the inactivation, desired. Systems with optimized conventional rapid sand filtration are given a credit of 3.0 logs. Membrane filtration may be required to demonstrate removal efficiency through challenge testing and verified by direct integrity testing. Ultraviolet disinfection is given a credit of 3.0 logs if the dose is a minimum of 42mJ/cm2.

2 treatment processes are a minimum for all surface water sources. A dual disinfection approach to water treatment is associated with providing potable water
The main risk to water quality is from microbiological agents. Some of these microbial risks are more resistant to some forms of treatment than others. It is recognized that effective treatment for all microbial risks by a single treatment process is not effective.

Dual treatment processes are required for all surface water to reduce the risk of microbial or health threats to drinking water. Water filtration and disinfection will become the norm for many surface water supplies in order to meet the 4-3-2-1 policy objectives. For other sources where the filtration waiver can be met, dual treatment may mean two forms of disinfection, usually chlorination and UV light disinfection. It may also include watershed protection measures to ensure good raw water quality.

Less than 1 NTU in Turbidity

Events such as sedimentation from road surfaces, higher surface runoff peak flows, landslides and debris flows increase a condition commonly referred to as "turbidity." Turbidity in water is caused by suspended organic and colloidal matter, such as clay, silt, finely divided organic and inorganic matter, bacteria, protozoa and other microscopic organisms. It is measured in nephelometric turbidity units (NTU) and is generally acceptable when less than 1 NTU, and becomes visible when above 5 NTU.

A surface water supply system may be permitted to operate without filtration if the conditions for exclusion of filtration listed in **Table 5** are met or a timetable to implement filtration has been agreed to by the drinking water officer:

Table 5 – Conditions for Surface Water Source Filtration Waiver

Condition No.	Description
1	Overall inactivation is met using a minimum of two disinfections, providing: • 4 log reduction of viruses, and • 3 log reduction of Cryptosporidium and Giardia
2	The number of E. coli in raw water does not exceed: • 20/100 mL, or • if E. coli data are not available, less than 100/100 mL of total coliform in at least 90% of the weekly samples from the previous six months. The treatment target for all water systems is to contain no detectable: • E. coli, or • fecal coliform per 100 ml. Total coliform objectives are also zero based on one sample in a 30-day period. When more than one sample taken in a 30-day period: • at least 90% of the samples should have no detectable total coliform bacteria per 100 ml, and • no sample should have more than 10 total coliform bacteria per 100 ml.
3	Average daily turbidity levels measured at equal intervals (at least every four hours) immediately before the disinfectant is applied are to be: • around 1 NTU, but • do not exceed 5 NTU for more than two days in a 12-month period.
4	A watershed control program is maintained that: • minimizes the potential for fecal contamination in the source water. (Health Canada, 2003)

Applying the exclusion of filtration criteria listed in **Table 5** does not mean filtration will never be needed in the future. A consistent supply of good source water quality is critical to the approach, but source quality can change. Therefore, the exclusion of filtration must be supported by continuous assessment of water supply conditions. Changing source water quality can occur with changes in watershed conditions. Increased threats identified through ongoing assessment and monitoring may necessitate filtration. Maintaining the exclusion condition relies on known current and historic source water conditions, and provides some level of assurance to water suppliers that a filtration system may not be necessary unless the risk of adverse source water quality increases.

6.2 Mercantile Creek

The Mercantile Creek Surface Water Supply meets the first three requirements for Island Health surface water, however it does not meet the <1 NTU and will require filtration in order to become compliant with the Island Health Policy.

6.3 Lost Shoe Creek Wellfield

The Lost Shoe Creek Wellfield is a groundwater source and that does not fall under the Island Health surface water treatment objectives, however the water must be disinfected with chlorine to maintain a chlorine residual within the system.

6.3.1 Water Sustainability Act – Groundwater Licencing

Recently the Provincial Government passed the Water Sustainability Act. This act manages surface and groundwater as a single resource, whereas the previous Water Act managed only surface water. The regulation of groundwater will result in groundwater users having the same rights and responsibilities, including priority rights. In return, the user will be required to obtain a water licence which will require payment of an application fee and an annual water rental fee. The fees vary depending on how the water is being used and who the user (consumer) is. Domestic properties that use groundwater for household needs will be exempt from licensing and fees. Municipalities, like the DoU, will be required to obtain a licence and pay the fees.

A review of the application and annual water rental fee rates for 2016 indicate the estimated costs for the DoU for registration of their wells could consist of:

- One Time Application Fee: $5,000 (for 100,000 m^3/yr. to < 5,000,000 m^3/yr.)
- Annual Rental Fee: $2,000± ($2.25 per 1,000 m^3)

A copy of the Water Sustainability Act and Table of Fees can be found on the BC Government web site.

6.4 Kennedy Lake

Preliminary information shows that the Kennedy Lake water would be pristine and suitable for public consumption with treatment. Should Kennedy Lake be considered as a water source for the District, then further water sampling and analysis would be required as well as a pilot study during the preliminary design stage of water treatment.

7 DESIGN CRITERIA

7.1 Current & Future Population Projection

District of Ucluelet

Ucluelet has seen population fluctuations over the years peaking at 1,760 in Year 1995, followed by a gradual decline to 1,463 by Year 2003. The District's population experienced steady between 2003 and 2011, averaging 1.32% per year. Since 2011, BC Stats has estimated the District's population has declined and as of July 2015, was estimated to be 1,515.

In the fall of 2011 with the passing of Bylaw No. 1140, 2011, Council adopted the Official Community Plan 2011. The OCP projects population growth over 25 years to average 0.60% per year. This would result in the population increasing to 1,928, a 16% increase, by Year 2036 based on Stats BC's Year 2011 population estimate of 1,660.

Ittatsoo 1, IRI

The residents and businesses located within the Ittatsoo 1, IRI of the Yuulu-it-ath First Nation (YFN) obtain potable water from the District of Ucluelet.

A review of Stats Canada population data revealed the population has fluctuation over the past two decade from a low of 191 in Year 1996 to a high of 240 in Year 2011. These counts do not include the YFC members that live off of YFN lands, which in Year 2012 was estimated to be just under 430, for a combined total of 633.

In October 2013 the YFN published their OCP covering all of their lands and foreshore. The OCP included population projections to Year 2042 people based on four different constant annual rates of growth; 0.5%, 1.0%, 1.5% and 2.0%. Applying the lowest and highest growth rate to the Year 2011 on lands population count of 240, results in the service population increasing to between 280 to 443 by Year 2042; a 17% to 85% increase; respectively. When the growth rates are applied to all of the YFN peoples, the total population increases to between 728 and 1,103 by Year 2042.

50 Year Population Projections (Year 2066)

Population projections for both communities have been developed for the next 50 years (to year 2066) for three separate growth rates (low, medium and high) based on the information in their OCP's and extrapolation of historical growth rates. **Table 6** presents the growth rates separately and combined for each community in 10 year increments to Year 2066.

Table 6 – DOU & Ittatsoo Past and Projected Populations (to Year 2065)

Year	DoU	Ittatsoo 1	Combined
2001	1,559	208	1,367
2006	1,487	200	1,687
2011	1,627	240	1,867
2015	1,515	245	1,760
	Slow Growth		
	0.44% to 0.23%	**0.5%**	
2025	1,580	260	1,840
2035	1,630	270	1,900
2045	1,670	285	1,955
2055	1,700	230	2,030
2065	1,740	315	2,055
50 Year Increase (%)	225 15%	70 28%	315 17%
	Moderate Growth		
	0.6%	**1.52%**	
2025	1,800	295	2,095
2035	1,920	345	2,265
2045	2,030	400	2,430
2055	2,160	465	2,625
2065	2,290	540	2,830
50 Year Increase (%)	550 51%	295 121%	1,070 61%
	High Growth		
	1.32%	**2.0%**	
2025	1,950	320	2,270
2035	2,230	385	2,615
2045	2,540	470	3,010
2055	2,890	575	3,465
2065	3,300	700	4,000
50 Year Increase (%)	1,785 118%	455 186%	2,240 127%

The information in **Table 6** is graphically presented in **Figure 10** for the District of Ucluelet, **Figure 11** for Ittatsoo 1, and **Figure 12** for the two communities combined.

7.2 Water Demands

7.2.1 Design Criteria

In establishing the capacity of a water supply and distribution system, three levels of water demand are normally considered, in addition to fire flows. These are:

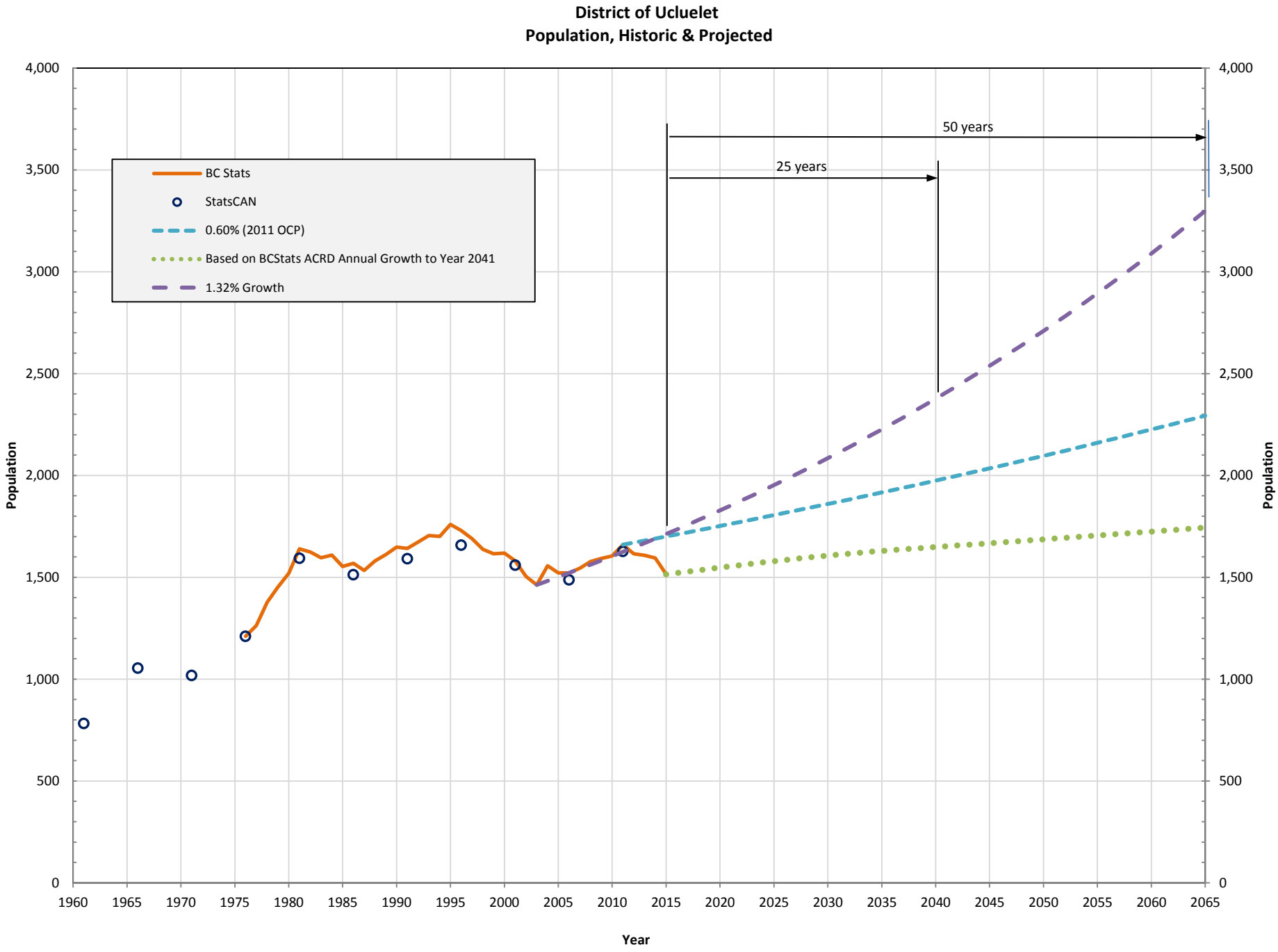

District of Ucluelet
Population, Historic & Projected
BC Stats
StatsCAN
0.60% (2011 OCP)
Based on BCStats ACRD Annual Growth to Year 2041
1.32% Growth
50 years
25 years
Population
Year
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065

FIGURE 10

KOERS & ASSOCIATES ENGINEERING LTD.
Consulting Engineers

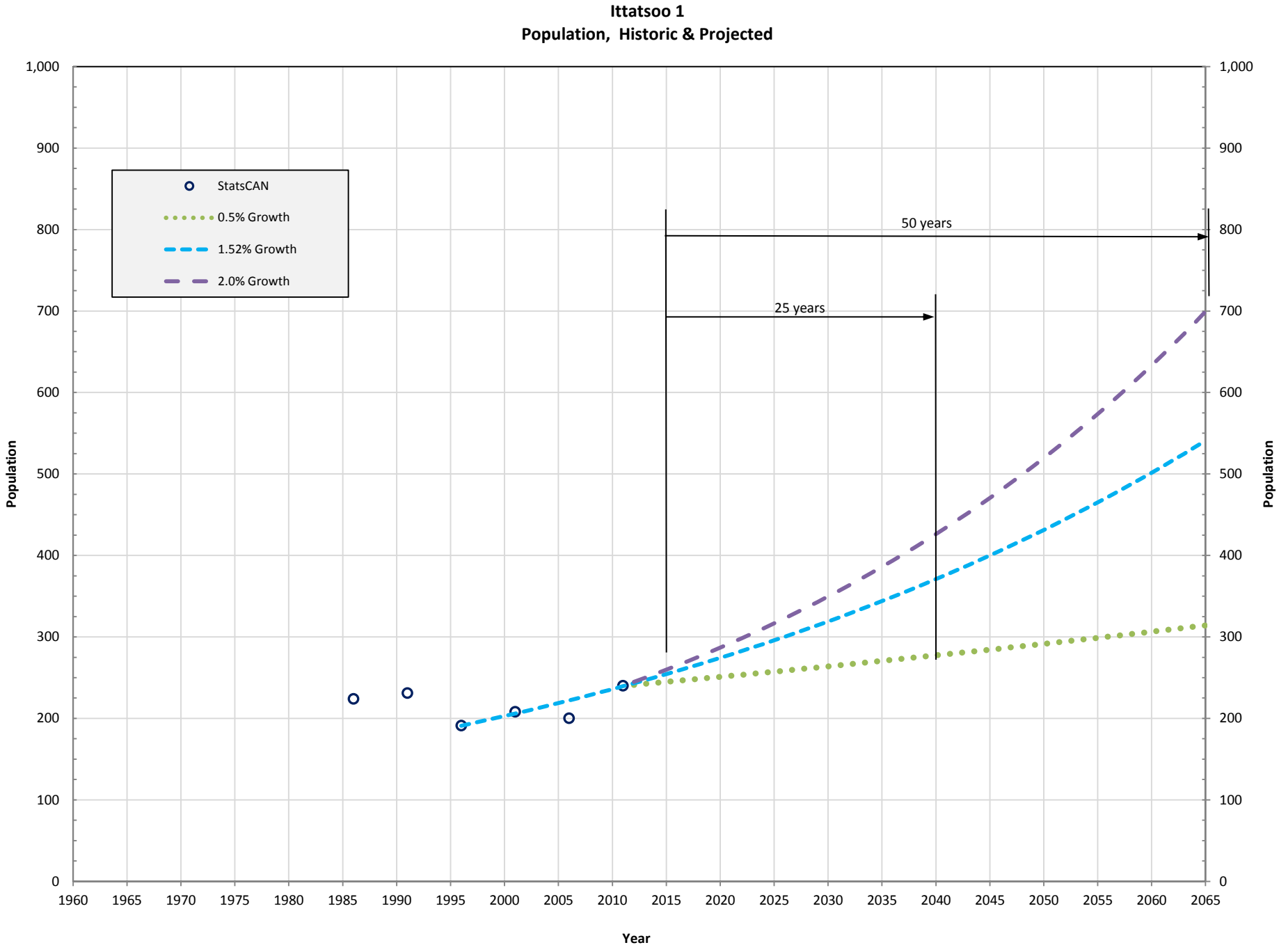


FIGURE 11

KOERS & ASSOCIATES ENGINEERING LTD.
Consulting Engineers

District of Ucluelet & Ittatsoo
Population, Historic & Projected

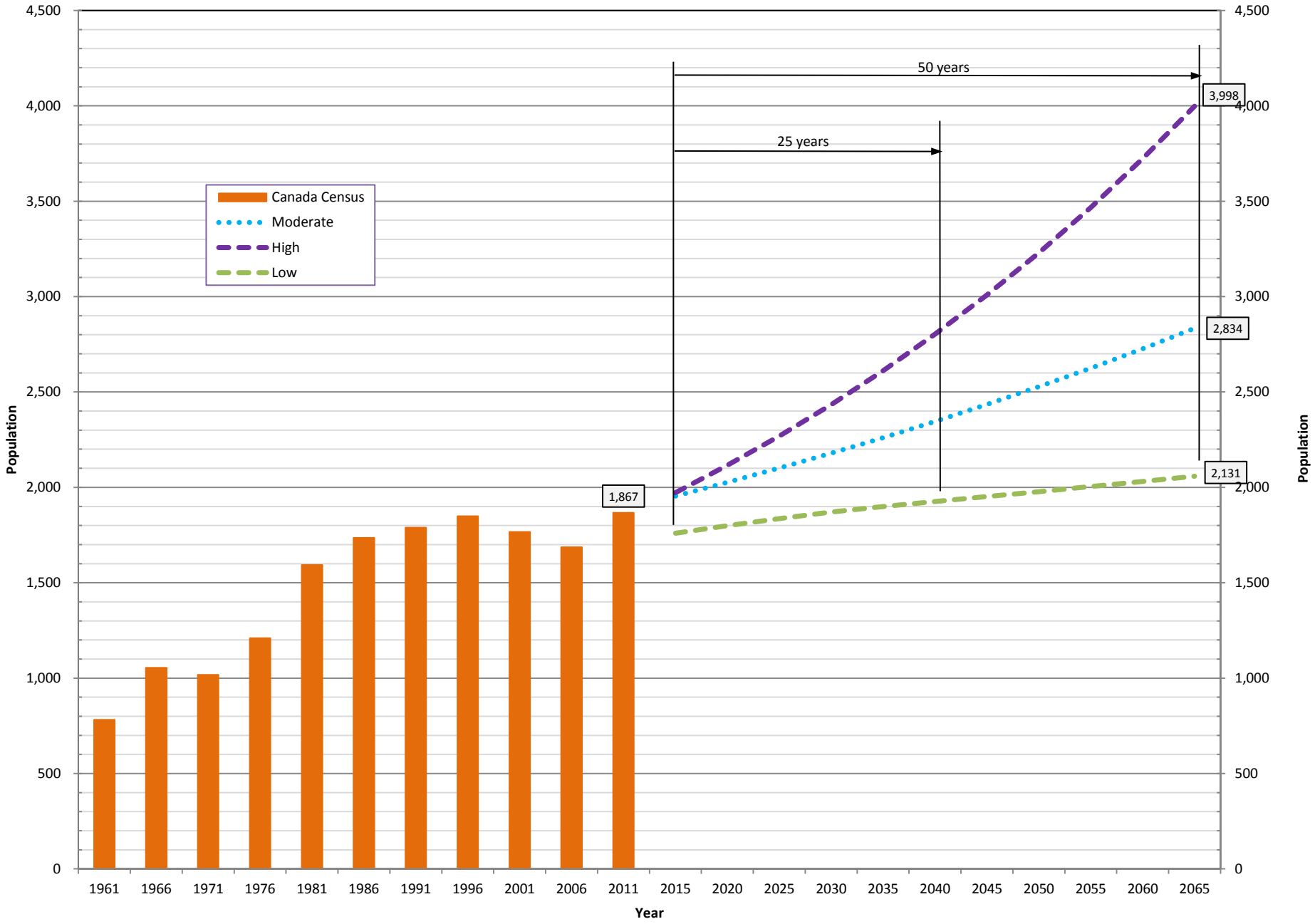


FIGURE 12

Average Day Demand = $\frac{\text{Total annual consumption}}{365 \text{ days}}$

Maximum Day Demand = Day with highest demand for the year

Peak Hour Demand = Highest flow rate maintained for one hour (generally occurring on maximum day of the year)

The system must also be capable of delivering fire flow demands during maximum day demands.

7.2.2 Current Demands

Annual Demands

A review of the water system total annual water usage for the past 24 years (1991 to 2015) was carried out along with the total metered demand (commercial and industrial properties) for the two five year periods 2000 to 2004 and 2008 to 2012. This data is graphically presented in **Figure 13** along with the total annual demand for the Ittatsoo 1.

Since 2004, total annual water usage has averaged between 750,000 m^3 and 950,000 m^3. Since 2008 total metered demand has been stable with a slight downward trend. Demand by the Ittatsoo 1 has relatively stable and was the single largest user during the five year period of 2008 to 2012.

Monthly Demands

Figure 14 presents the monthly total demand and metered (commercial and industrial properties) demands from January 2008 to present. Metered data after August 2012 was not available. As can been seen, demands increase in the summer and decrease in the fall. The peak summer demand has steadily decreased since reaching a high in October 2011 while fall demand has steadily increased. The reason for the increase in fall demands is not known. It is suspected that more frequent spillage at the Matterson Reservoir may be the cause. This spillage is the result of the winter supply from the Highway Reservoir through a throttled gate valve that provides continuous supply to the Matterson Reservoir. **Table 7** presents annual system demand vs metered demand from the past eight years.

Table 7 – Annual Demand vs Metered Demands, 2008 to 2015

Year	System Demand	Metered Demand			
		All meters		Ittatsoo 1, IRI	
	m^3	m^3	(%)	m^3	(%)
2008	916,612	214,754	23	54,219	6
2009	761,780	206,951	27	56,425	7
2010	669,747	205,034	31	55,708	8
2011	943,527	229,290	24	53,868	6
2012	750,887	162,365	22	39,080	5
2013	762,992	189,173	25	42,437	6
2014	905,251	213,112	24	55,838	6
2015	861,892	193,379	22	51,336	6

KOERS & ASSOCIATES ENGINEERING LTD.
Consulting Engineers

District Of Ucluelet
AnnualWater Demand
1991 - Nov 2015

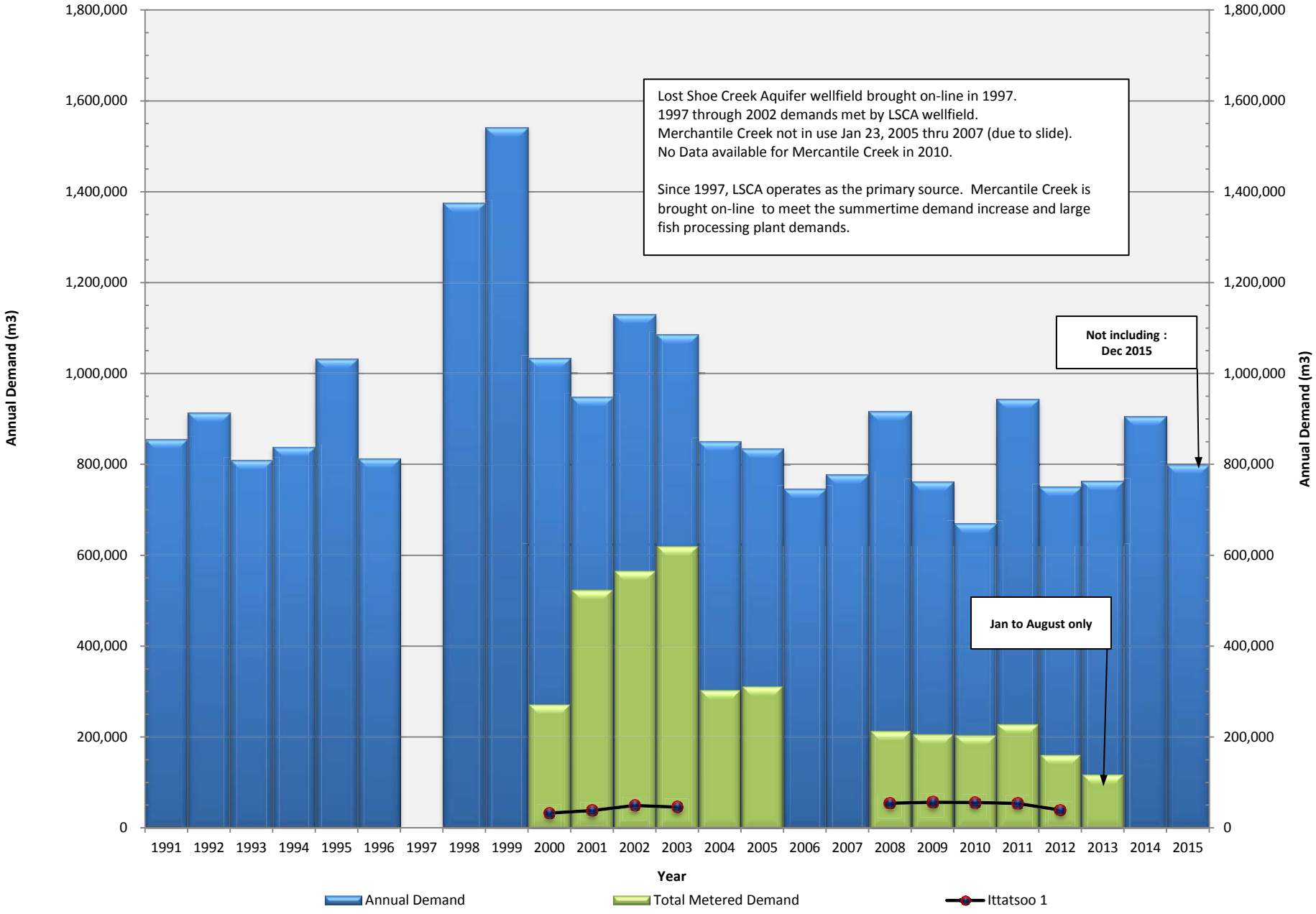


FIGURE 13

KOERS & ASSOCIATES ENGINEERING LTD.
Consulting Engineers

District of Ucluelet
Monthly Demands
1998 to 2015

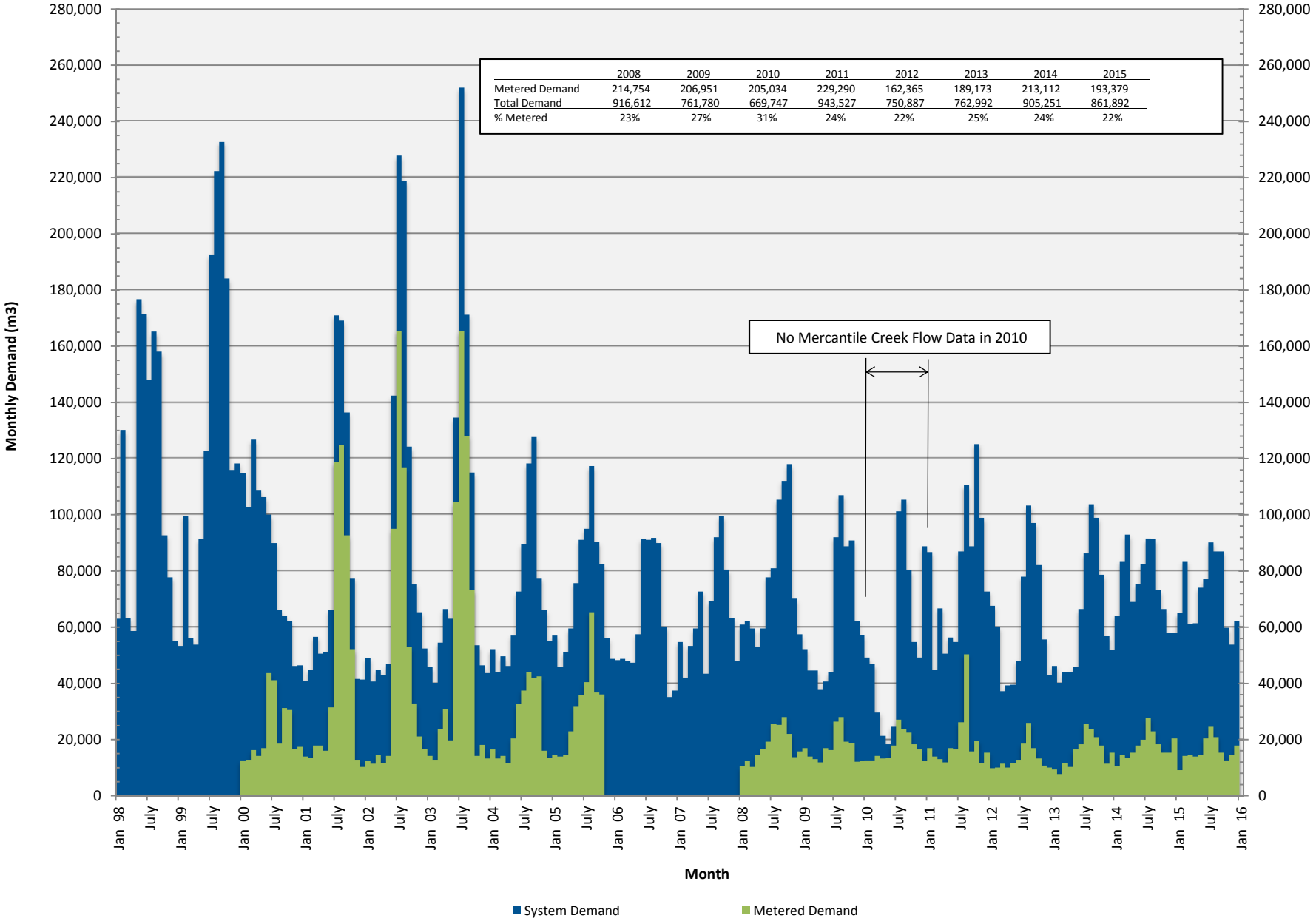


FIGURE 14

Daily Demands

Figure 15 presents daily demands for the period 1998 to 2005 and 2013 to present. No daily flow data from 2006 through 2012 was available. During the early 2000's when fish processing was very active, with up to 4 processing plants operating, both of the District's water supply sources (Mercantile Creek and LSCA) were required to meet maximum day demands. While the decline in the fish processing demands is clearly evident, demands in the summer months continue to exceed the Mercantile Creek water licence maximum withdrawal limits. The data shows that the pumping capacity of the wellfield is well (approximately 9,400 m^3/day) is well below the maximum day demands which have been less than 5,000 m^3/day for the past three years as well as in 2005. No flow data was available from 2006 through 2012.

Table 8 presents the total system average and maximum day demands for the past 18 years along with the calculated per capita demand based on the BCStats published population estimates for the District of Ucluelet.

Table 8 – Average and Maximum Day Demands, 1998 – 2015

	Average Day		Maximum Day			Max Day Ave Day
Year	(m^3/day)	(lpcd)	Month	(m^3/day)	(lpcd)	
1998	3,758	2,260	June	10,595	6,370	2.8
1999	4,237	2,680	July	10,340	6,290	2.4
2000	2,848	1,720	March	7,349	4,440	2.6
2001	2,612	1,610	August	10,573	6,500	4.0
2002	3,105	1,900	August	10,581	6,480	3.4
2003	2,976	1,780	July	10,228	6,110	3.4
2004	2,339	1,260	August	7,780	4,200	3.3
2005	2,383	1,250	August	4,871	2,560	2.0
2006	2,047	1,350		-	-	-
2007	2,131	1,380		-	-	-
2008	2,504	1,590		-	-	-
2009	2,087	1,310		-	-	-
2010	1,835	1,140		-	-	-
2011	2,585	1,560		-	-	-
2012	2,052	1,270		-	-	-
2013	2,102	1,310	Sept	4,427	2,755	2.1
2014	2,480	1,555	July	4,571	2,865	1.8
2015	2,409	1,535	August	4,496	2,970	1.9

Figure 16 graphically presents the average and maximum per capita day demands listed in **Table 8** but spanning the 24 year period of 1991 to 2015 and includes the calculated non-metered average day demand per capita. The non-metered demand was calculated as the difference between the total system demand and the metered (commercial and Industrial) demand for each year that data was available.

A Max Day vs Ave Day ratio of 2 is typical for water systems with a service population of the District's size. Peak hour demand data is not available. In general, peak hour demands can be expected to be in the range of 1.5 to 2 times the maximum day demands for a water system with a service population of the District's size.

KOERS & ASSOCIATES ENGINEERING LTD.
Consulting Engineers

District of Ucluelet
Daily Water Demand
1998 - 2015

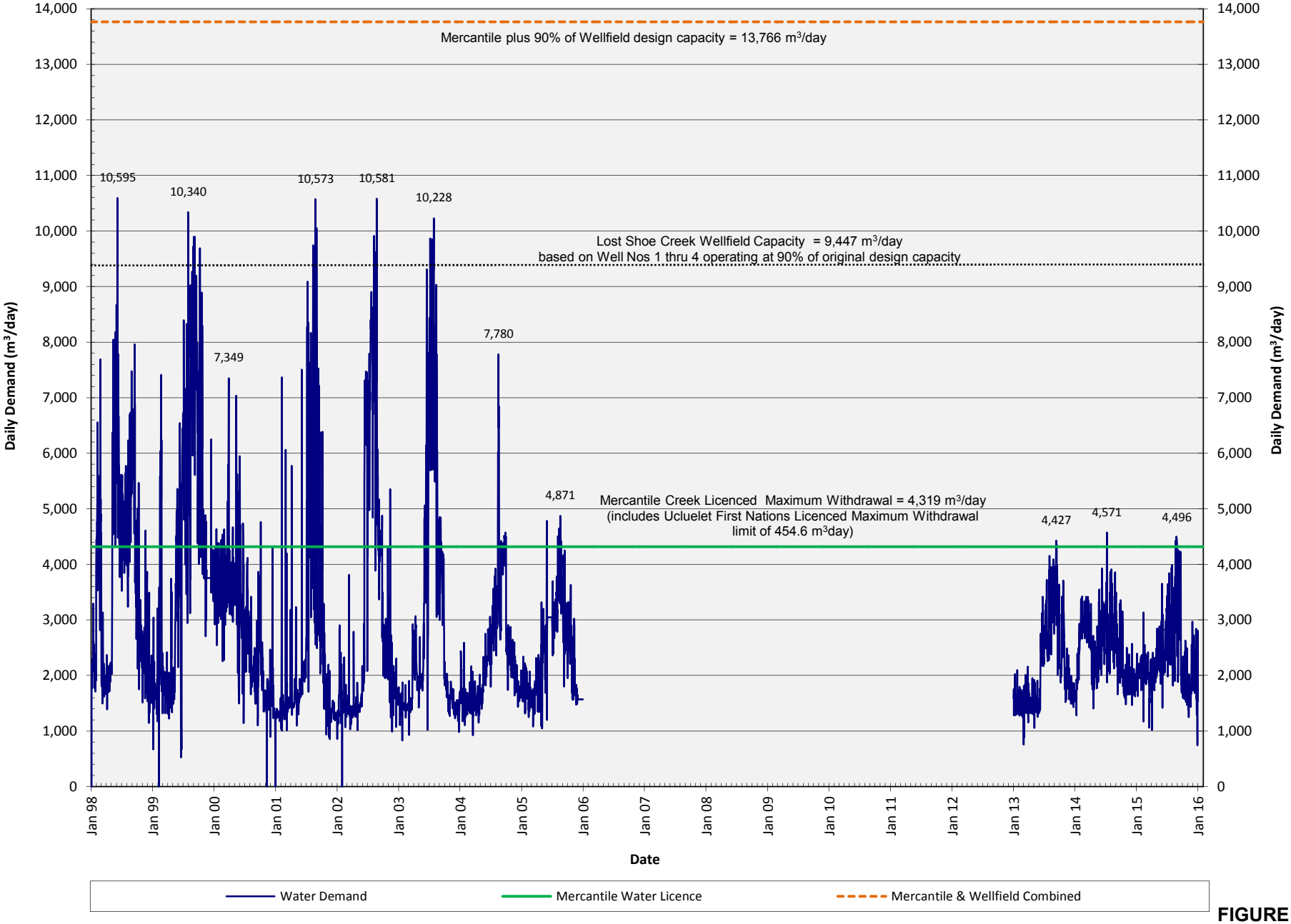


FIGURE 15

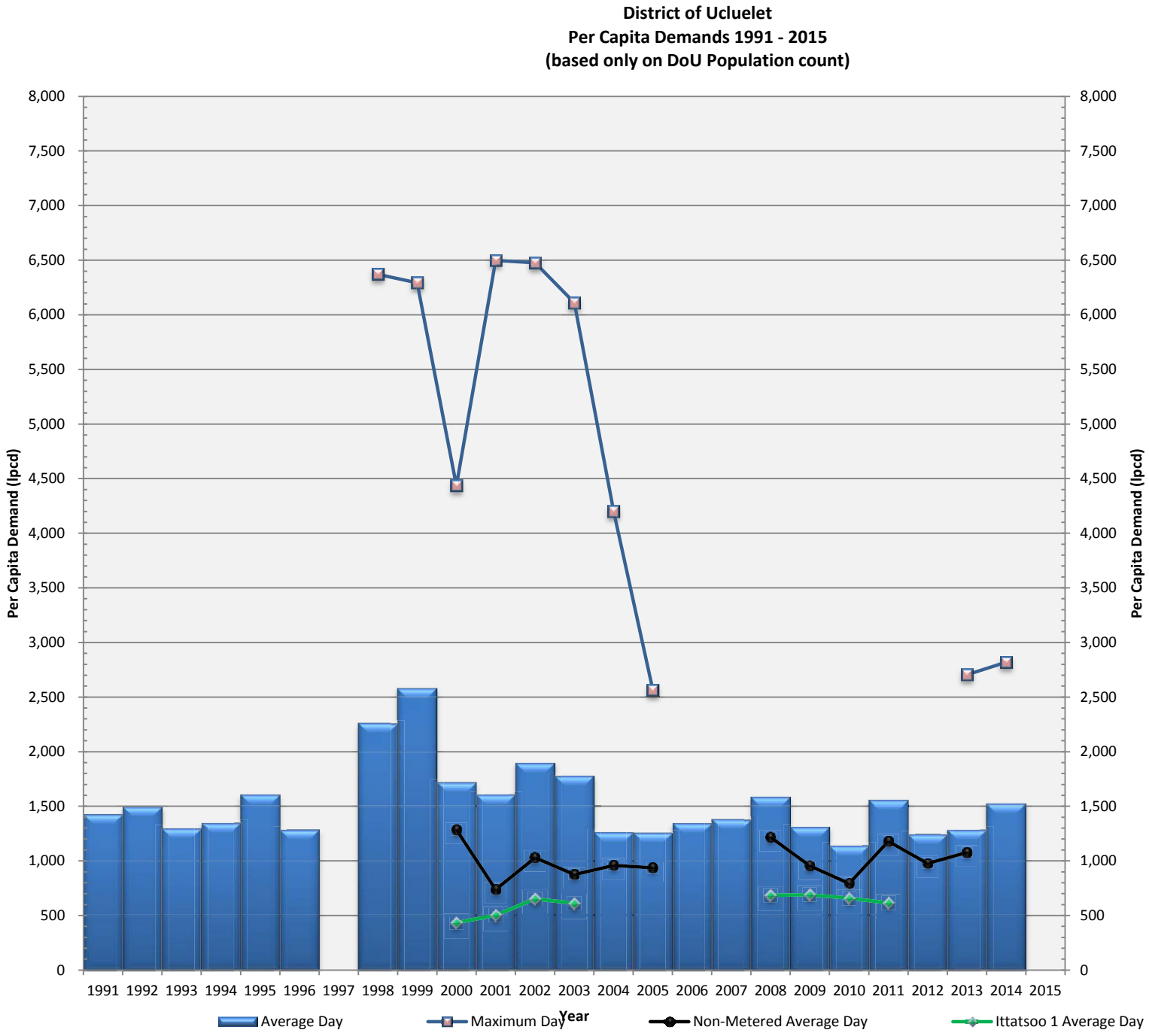

District of Ucluelet
Per Capita Demands 1991 - 2015
(based only on DoU Population count)
Per Capita Demand (lpcd)
8,000
7,500
7,000
6,500
6,000
5,500
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Year
Average Day
Maximum Day
Non-Metered Average Day
Ittatsoo 1 Average Day

FIGURE 16

7.2.3 Future Demands

The District of Ucluelet's Subdivision Servicing Bylaw does not include design water demand criteria. An average day and maximum day per capita design demand have been established based on a review of the calculated per capita demands in **Table 8** and are presented in **Table 9**.

Table 9 – Per Capita Design Demands

Description (Demand)		Per Capita Design Demand (lpcd)		
		District of Ucluelet (1)	Ittatsoo First Nation (2)	District of Ucluelet & Ittatsoo First Nation (3)
Average Day	(ADD)	1,550	700	1,350
Maximum Day	(MDD)	3,100	-	2,700
Peak Hour (4)	(PHD)	6,200	-	5,400

Notes:
(1) Based on total system demand, including Ittatsoo First Nation, divided by only the District of Ucluelet's population estimate.
(2) Based on Ittatsoo First Nation demand divided by its population estimate.
(3) Based on total system demand divided by the District's & Ittatsoo's combined population estimate.
(4) Peak hour demands are not recorded. They are based on 2 times the maximum day demand.

Based on a review of other municipalities on Vancouver Island, including Tofino and Port Alberni, the per capita demands for the District are between 2 to 2.5 times higher. This can be attributed to the fact that the District does not have residential metering in place and that the setup of the current supply and distribution system results in the wasting of water at the Matterson Reservoir when the Mercantile Creek source is not available.

Utilizing the per capita design demands of **Table 9** and the population projections in Table **5**, the average and maximum day demands to Year 2065 for the three growth rates are presented in **Table 10** and are graphically shown in **Figure 17**.

Table 10 – Average and Maximum Day Demands to Year 2065

Year	Average Day Demand (m^3/day)			Maximum Day Demand (m^3/day)		
2015	2,324			4,496		
Year	For Rate of Growth of			For Rate of Growth of		
	Low	Moderate	High	Low	Moderate	High
2025	2,640	2,840	3,060	5,270	5,670	6,130
2035	2,730	3,050	3,530	5,460	6,100	7,050
2045	2,800	3,290	4,060	5,600	6,570	8,120
2055	2,880	3,540	4,680	5,750	7,090	9,360
2065	2,950	3,830	5,400	5,910	7,650	10,800
50 Yr. Increase	540	1,420	2,990	1,410	3,150	6,300
(%)	22%	59%	124%	31%	70%	140%

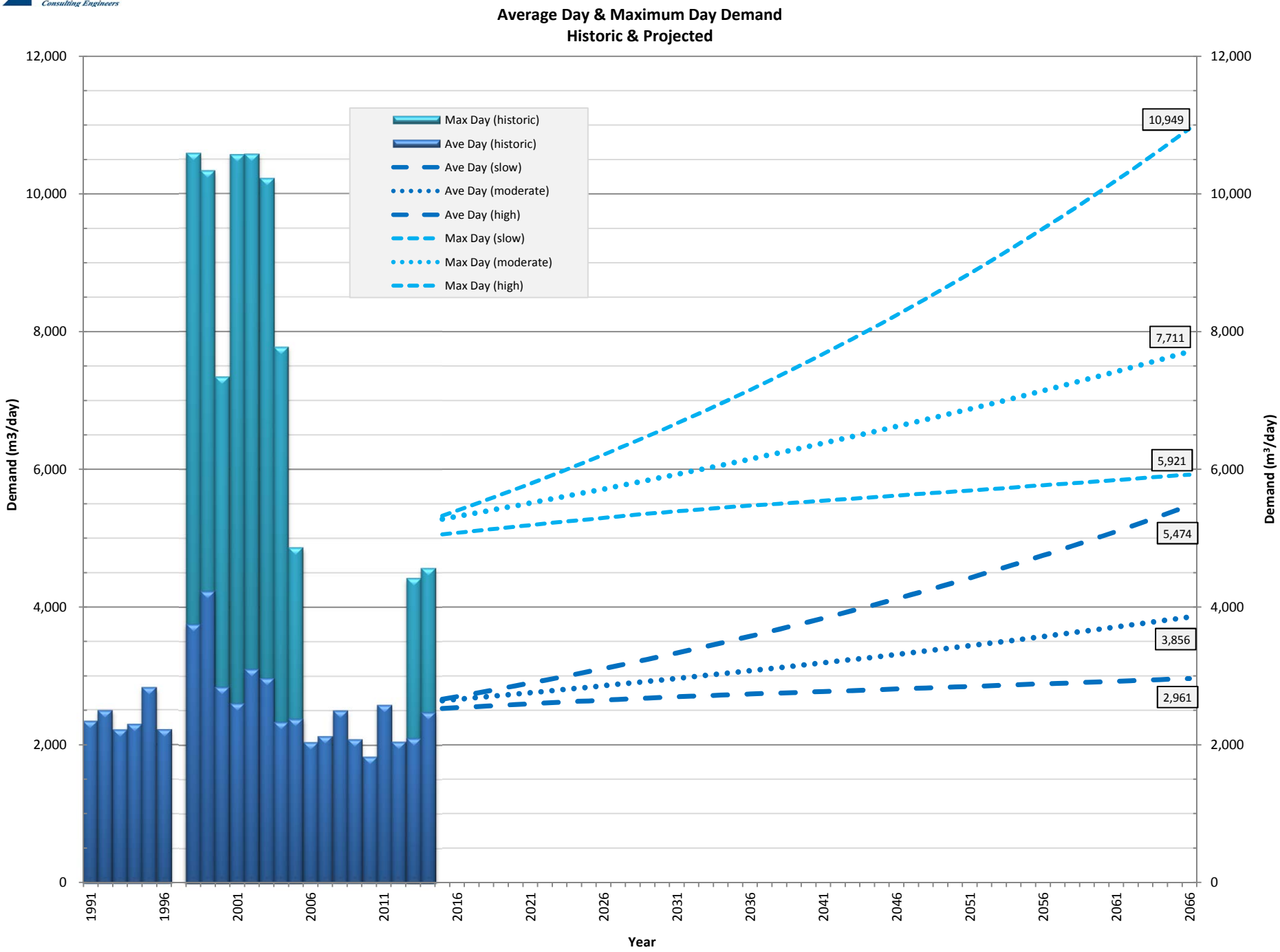

Average Day & Maximum Day Demand
Historic & Projected
Max Day (historic)
Ave Day (historic)
Ave Day (slow)
Ave Day (moderate)
Ave Day (high)
Max Day (slow)
Max Day (moderate)
Max Day (high)
10,949
7,711
5,921
5,474
3,856
2,961
Demand (m3/day)
Demand (m³/day)
Year
0
2,000
4,000
6,000
8,000
10,000
12,000
1991
1996
2001
2006
2011
2016
2021
2026
2031
2036
2041
2046
2051
2056
2061
2066

FIGURE 17

7.2.4 Fire Flow Requirements

The ability to provide adequate fire flow is an important feature of a properly designed water distribution system. Fire flow requirements vary, depending on building design, floor area, number of stories, construction materials, if a fire sprinkler system is installed, fire break walls, and spacing from adjacent buildings (exposure).

The District does not have a fire flow design standard. Most municipalities are or have adopted the requirement that fire flow demands are to be calculated in accordance with the most recent version of the "Water Supply for Public Fire Protection" by the Fire Underwriters Survey (FUS), for existing and anticipated land use and in general require the system to be capable of providing not less than 60 l/s and not exceed 300 l/s except in the case of an unusual risk. For 60 l/s to 300 l/s, the design duration is 1.75 hours and 4 hours. **Figure 18** below presents the FUS time requirements for varying fire flows. Note 60 L/s and 300 L/s equate to 3,600 L/minute and 18,000 L/min; respectively.

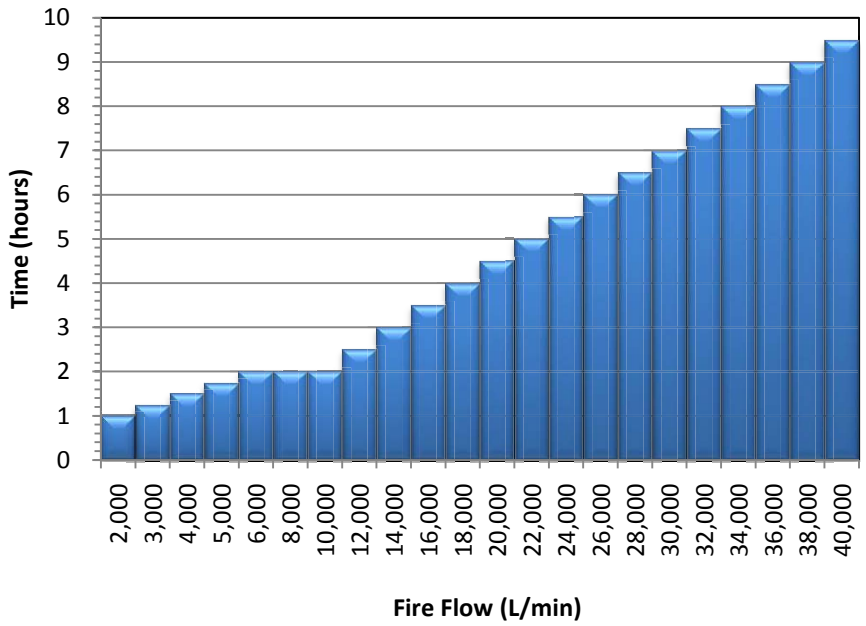


Figure 18 – Fire Underwriters' Survey Fire Flow vs Time

Using the Master Municipal Contract Documents (MMCD) as a design standard the MMCD – Design Guideline Manual notes fire flows are to be determined in accordance with FUS. The minimum requirements noted in the MMCD – Design Guideline Manual for developments without sprinklers is presented in **Table 11**.

Table 11 – Fire Flow Demands

Land Use	Assumed Minimum Required Fire Flow		Volume (m^3)
	Demand (L/s)	Duration (hrs)	
Single Family	60	1.5	324
Apartments, Townhouses	90	1.75	567
Commercial	150	2	1,080
Institutional	150	2	1,080
Industrial	225	3	2,430

There are several larger wood frame institutional structures and industrial businesses in Ucluelet. The fire flow demands for these structures may be higher than the minimum flows listed in **Table 11.**

7.3 Water Conservation

In 2008, the provincial government launched the Living Water Smart program emphasizing water conservation. This program requires 50% of new municipal water needs to be acquired through conservation by Year 2020.

A water conservation study was recently carried out for the District and the findings were presented in the District of Ucluelet Water Conservation Study, March 2014 by Koers & Associates Engineering Ltd. The principle findings of the study were:

- Conservation efforts in Ucluelet will have the most effect if they are directed at reducing non-metered water demands which count for more than 70% of water demand. This is a significant change from 10 years ago, when metered demands accounted for more than 50% of system demands and fish processing demand made up more than 80% of the metered demands, or 40% of the system demands.
- The motivation for conservation of water use is immediate reduction in O&M costs and the future postponement of major capital expenditures for water supply and distribution.
- It is believed the most appropriate starting point for a successful water conservation program is the elimination of overflows at the Matterson Reservoir with the installation of pressure control valves. This will create two pressure zones; the Highway Reservoir zone and the Matterson Reservoir zone.
- The second step would be an emphasis on understanding non-metered water demand usage and the causes for the large summertime demand increases and/or a concerted effort on leak detection, with initial emphasis on the 23% of the water system with AC mains.
- It is believed that a successful water conservation\leak reduction program in Ucluelet may result in a 27% or greater reduction in water as noted in **Table 12**.

Table 12 – Potential Demand Reduction through Water Conservation Program

Description	Potential Annual Demand Reduction
50% reduction in loss/unaccounted water	15 %
20% reduction in indoor residential use	5%
25% reduction in non-metered summertime demand (July/Aug/Sept/Oct)	8 – 10 %
Total Reduction:	28 – 30 %

For the purposes of this Water Master Plan, water conservation has not been included in the demand projections, as it provided a more conservative approach for the purposes of assessing the capability of the long range water supply source and infrastructure sizing.

8 LONG RANGE SUPPLY

Table 13 presents a summary of the issues related to each of the three water supply sources.

Table 13 – Water Supply Source Issues

Description	Mercantile Creek	Lost Shoe Creek Aquifer Wellfield	Kennedy Lake
Quantity			
Daily Withdrawal Limit (m^3/day)	4,319 m^3 **(1)**	10,497 m^3 **(2)**	TBD
Can Meet Year 2015 Demands			
Ave Day (2,409 m^3/day)	Yes	Yes	Yes
Max Day (4,496 m^3/day)	No	Yes	Yes
Can Meet Year 2065 Demands			
Ave Day (2,950 – 5,400 m^3/day)	Yes - No	Yes	Yes
Max Day (5,910 – 10,800 m^3/day)	No	Yes	Yes
Quality			
Source Type	Surface Water	Ground Water (GUDI)	Surface Water
Filtration Exempt	No **(3)**	No **(4)**	unknown **(5)**
(Reason)	(Turbidity)	(Fe & Mn)	(Surface Source)
Disinfectant Required	UV & Chlorine	Chlorine	UV & Chlorine
Water Licences			
Licenced Volume Sufficient	No **(6)**	Yes	No
Infrastructure			
Infrastructure In Place			
Water Withdrawal	Yes	Yes	No
Complete Water Treatment System	No **(3)**	No **(4)**	No
Supply Main	Yes	Yes	No
Timeline			
Source Approval	-	**(7)**	3 – 4 yrs. ±
Treatment Approval/Detail Design	1 – 2 yrs.	1 – 2 yrs.	2 – 4 yrs. ±
Construction	1 yr.	1 yr.	2 yrs. ±
Total	**2 – 3 yrs.**	**2 – 3 yrs.**	**7 – 10 yrs.**

Notes:

(1) Based on combined licenced daily maximum withdrawal limits for the District of Ucluelet and the Ucluelet First Nations (3,864 + 454.6 = 4,319 m^3/day).

(2) Daily pumping capacity of 10,497 m^3/day based on the four wells operating at 90% of the original design capacity.

(3) The water system operating permit issued by Island Health to the District of Ucluelet for Mercantile Creek requires implementation of a treatment system to ensure turbidity levels are less than 1 NTU in the treated water as previously discussed in **3.2 Water Quality**. This will require installation of a filtration system.

(4) It is assumed the District will institute a process to remove Iron & Manganese (Fe & Mn) from the well field water in response to water quality complaints from the consumers and businesses, as discussed in **4.2 Water Quality**.

(5) Water quality sampling will be required to determine the treatment requirements required for water withdrawn from Kennedy Lake in order to comply with Island Health treatment policy for surface water source (4-3-2-1).

(6) The licenced maximum withdrawal limit is not sufficient to meet current maximum day demand and projected Year 2065 demands. As per the discussion in Section **3.2 Water Quantity** and **Figure 2**, there is no additional capacity on Mercantile Creek to permit additional licenced withdrawals.

(7) As part of the recently passed provincial Water Sustainability Act, water licences are required for the extraction of groundwater. The District must apply for a licence(s) for the LSCA wellfield wells as discussed in **6.3 Lost Shoe Creek Wellfield**.

8.1 Long Term Supply Cost Estimates

Table 14 presents a summary of the costs associated with each long term water supply option.

Table 14 – Long Term Water Supply Cost Estimates

Description	Mercantile Creek	Lost Shoe Creek Aquifer Wellfield	Kennedy Lake
Capital Costs			
Intake	Existing Intake Upgrades **$150,000**	N/A	New intake in Lake **$1,000,000**
Pump Station	N/A	N/A	New Pump Station and wet well **$1,000,000**
Supply Main	Access Road to main **$300,000**	N/A	Construct new **400** mm dia. supply main (8,000 m) **$8,000,000**
Treatment Plant	Existing Cl_2 and UV Required Filtration for Surface Water **$1,200,000**	Existing Cl_2 Required Iron and Manganese **$3,000,000**	Required UV and Cl_2 for Surface Water **$2,500,000**(1)
Total Capital Costs	**$1,650,000**	**$3,000,000**	**$12,500,000**

Operation and Maintenance Costs (per year)			
Intake Maintenance	$2,500	N/A	$2,500
Supply Main Pigging	$7,000	$7,000	$7,000
Pump Maintenance	$5,000	$20,000	$5,000
Well Rehabilitation	N/A	$15,000	N/A
Treatment Plant Maintenance and operation	$120,000	$120,000	$120,000
Water Quality Testing	$3,000	$3,000	$3,000
Permitting Costs			
Consultation with Government Agencies	$5,000	$10,000	$50,000

Notes:

(1) Based on water quality information available the Kennedy Lake source could qualify for a filtration deferral. For the purposes of this report it has been assumed that filtration will not be required at Kennedy Lake.

8.2 Climate Change Impact

As outlined in **Sections 3.1** and **4.1** the impact of the drier periods of weather is evident on the quantity of source water available at Mercantile Creek and the LSCA.

Figure 2 shows that the Mercantile Creek flow rates are lower in the summertime during periods of high demand in the system. Based on the MoE requirements to maintain adequate fish habitat, additional withdrawal from the creek is not available to service future demands. In addition future climate change resulting in a 20% decrease in creek flow would reduce the available water in the creek below the 10% of MAD requirement for fisheries resources. This would result in a potential reduction of the allowable withdrawal from the source to 3,450 m^3, and would shift the demand requirements to the LSCA.

Figures 4 and **5** show that the LSCA is dependent on rainfall to recharge the water levels of the aquifer during the lower demand periods in the winter months. A decrease of the water level in the aquifer of 20% would result in a reduction of the overall well field capacity to 7,200 m^3. In order to operate the well field at the lower capacity VFDs would be required to adjust the pump frequency to provide the required flows at the resulting water levels.

In order to ensure that the District has a reliable source of water to accommodate future growth, it is recommended that the Kennedy Lake source option be pursued and the District proceed with the initial planning stage for the project.

9 WATER MODEL

9.1 Computer Program

Modelling of the Dsitrict's water distribution system was carried out utilizing the computer software program WaterGems, an enhanced version of WaterCAD. This water distribution modelling and management software is in use throughout North America by engineering consultants, municipalities, and utility companies and is used by Koers because of its reliability, versatility, AutoCAD and GIS interface, and support by its creator Bentley Systems Inc.

WaterGems is a powerful, easy-to-use program to analyse, design, and optimize water distribution systems. The programs many features include; steady state and extended time modelling, fire flow event modelling while evaluating flows and pressures across the entire system, peak hour pressure analyses, optimization of fixed and variable speed pumps and reservoir storage to minimize energy usage and cost, and automated model calibration. Other analyses features include; system leakage, water loss and unaccounted for water, reservoir mixing, and water-age. The modelling results are presented in tabular and graphical form.

9.2 Allocation of Demands

9.2.1 Existing Conditions

Water demands were distributed evenly throughout the model at nodal points (pipe intersections, end of mains and pipe diameter changes). The average day demand was used as the base. Maximum day demands were modelled by multiplying each individual demand by the appropriate ratio (maximum day to average day).

9.2.2 Future Conditions

Future demands were added to the model to the various future development areas in accordance with the District's OCP. This permitted identifying improvements required to service the additional population growth where it is designated to occur. The demands for each area were calculated based on the land-use designation and the associated population density. Long term improvements required to service the future demand conditions are identified in **Section 11.3**.

9.3 Analysis Design Standards

9.3.1 Reservoir Sizing

Reservoirs perform three functions:

- Storage for fire fighting
- Storage for equalization to manage hourly peaks in demand
- Storage for emergencies, such as a watermain break

The storage volume requirement for the District was assessed using the following formula listed in the Master Municipal Contract Document (MMCD) Association Design Guideline Manual:

Storage Volume = A + B + C

Where:

A = Fire Storage	(from Fire Underwriters Survey Guide)
B = Equalization (Peaking) Storage	(25% of Maximum Day Demands)
C = Emergency Storage	(25% of A + B)

Emergency storage requirement can be reduced or eliminated based on several factors, including: water source dependability, reliability of the supply system (e.g., gravity vs pumped, duplication of mains and treatment, standby emergency power), multiple sources, more than one storage reservoir, and reservoir water circulation needs. For the District, no allowance for a reduction in emergency storage volume requirements was made.

9.3.2 Distribution System

The adequacy of the distribution system for various demand conditions is judged by the residual pressure available throughout the system and by the maximum velocity in the mains. The criteria applied to assess the District's distribution system are as shown in **Table 15**.

Table 15 – Distribution System Design Criteria Example

Under Peak Hour Demand Conditions		
Minimum residual pressure at property line	305 kPa	(44 psi)
Maximum velocity in mains	1.5 m/s	(5 ft./s)
Under Fire Flow Demand Conditions (during Maximum Day Demands)		
Minimum residual pressure at hydrant	138 kPa	(20 psi)
Minimum residual pressure at property line	105 kPa	(15 psi)
Under Static Conditions		
Maximum service pressure – ideal	700 kPa	(101 psi)
Maximum service pressure – absolute	770 kPa	(112 psi)

9.3.3 Pipe Friction Factors

A Hazen Williams friction factor was entered in the model for varying pipe materials, as listed in **Table 16**.

Table 16 – Pipe Friction Factors

Pipe Material		Friction Factor, "C" (Hazen Williams formula)
Name	**Abbreviation**	
High Density Polyethylene	HDPE	145
Polyvinyl Chloride	PVC	140
Asbestos Cement	AC	130
Ductile Iron	DI	130
Steel with Coating	SC	130
Pre-stressed Concrete	PConc	120
Cast Iron	CI	110

To better calibrate the friction factors in the water system, controlled field testing would be required during times of peak hour flows, where pressure losses in the various pipe types and sizes could be determined.

Flow testing was not included in the scope of work for this study and due to the significant system operators' time required to conduct flow tests, no specific flow testing was carried out.

Flow rate and pressure loss determinations along typical sections of the larger supply mains should be carried out when possible, for comparison with the assumed pipe friction values used in this analysis. In general, except for the oldest pipe sections, the pipe friction values listed are believed to be conservative

10 SYSTEM ANALYSIS

10.1 Modelling of Peak Hour & Maximum Day plus Fire Flow

The water system was evaluated under steady state conditions to determine the system pressures under peak hour conditions and during maximum day demands plus fire flows for existing and future conditions.

The modeling analyses are discussed below:

10.1.1 Peak Hour Demand Pressures

The distribution system is capable of meeting current peak hour demands and maintaining pressures greater than the minimum design standard of 280 kPa (40 psi) with the exception of at the top end of Athlone Rd (elevation 40 m). The calculated pressure at this location is 234 kPa (34 psi).

The highest pressures in the water distribution system are along Park Lane at the intersection of Cypress Road where the pressure is approximately 614 kPa (89 psi).

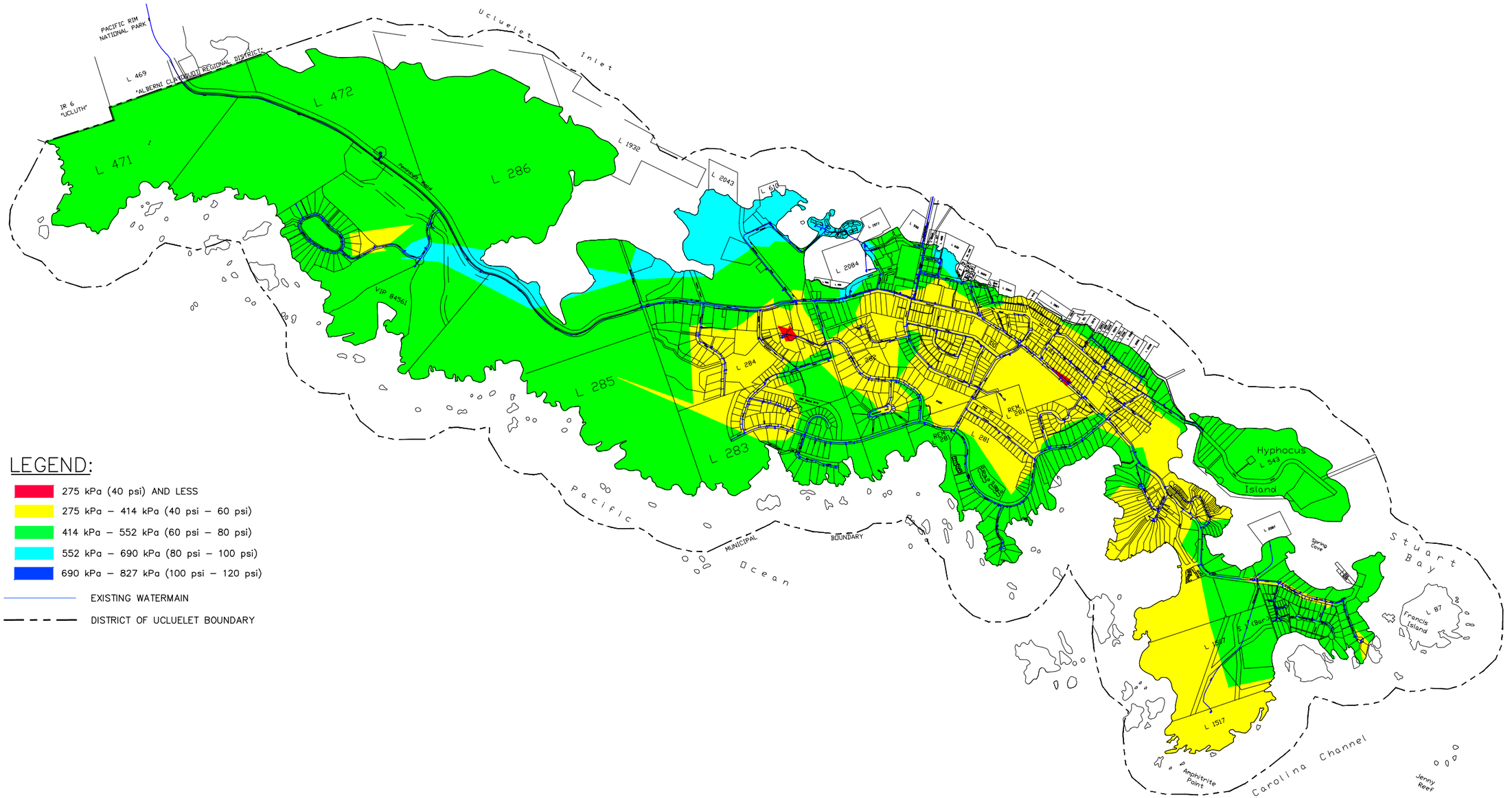
The calculated residual pressures in the water distribution system during peak hour demands under existing conditions are shown in **Figure 19**.

10.1.2 Maximum Day Plus Fire Flow

The available fire flows during maximum day demand for the current conditions is shown in **Figure 20**. The areas that do not meet the fire flow requirements for the zoning serviced are listed in **Table 17**.

Table 17 – Areas with Fire Flow Below Zoning Requirements

Land Use	Fire Flow (lps)		Location
	Available	Required By Zoning	
P-1	36	150	End of Coast Guard Drive
CD-2A	49	150	Marine Dr & Sunset Point Rd
CS-2	50	150	Peninsula Rd & Norah St
CD-2B	51	150	Marine Dr & Rainforest Dre
CD-2A	51	150	Marine Dr & Matterson Rd
CS-3	60	150	Peninsula Rd & Pacific Cres
CD-2A	67	150	Marine Dr & Matterson Road
CS-5	69	150	Peninsula Rd & Seaplane Base Rd
P-1	31	60	Athlone Rd
R-1	33	60	Edwards Place
CS-1	83	150	1728 Peninsula Rd
CS-6	86	150	Hemlock St & Lyche Rd
CS-5	88	150	Peninsula Rd & Hemlock St
MH	53	90	Cynamocka Rd & Norah St
CD-1	90	150	342 Forbes Rd



LEGEND:

- 275 kPa (40 psi) AND LESS
- 275 kPa – 414 kPa (40 psi – 60 psi)
- 414 kPa – 552 kPa (60 psi – 80 psi)
- 552 kPa – 690 kPa (80 psi – 100 psi)
- 690 kPa – 827 kPa (100 psi – 120 psi)
- EXISTING WATERMAIN
- DISTRICT OF UCLUELET BOUNDARY

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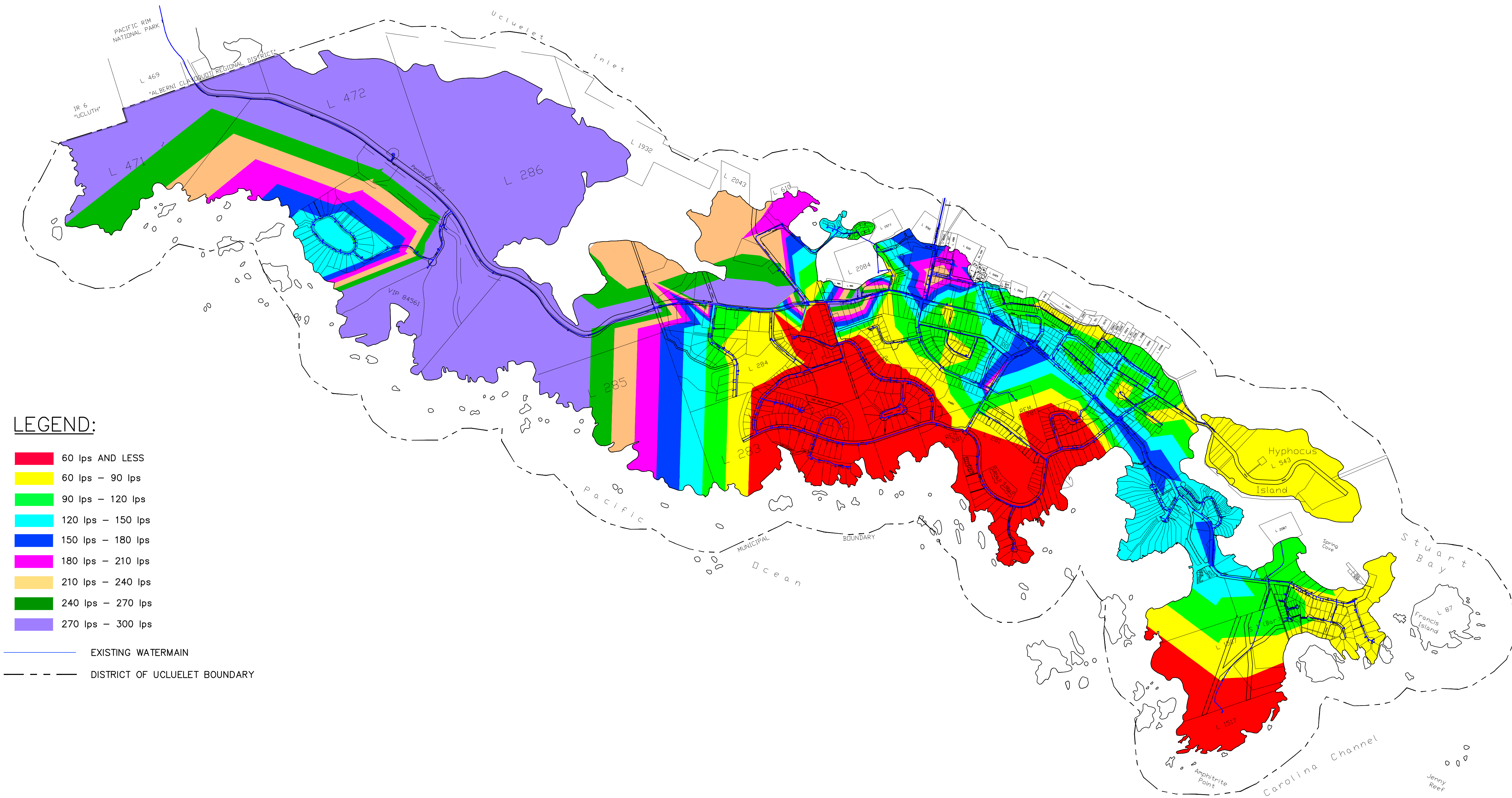
Consulting Engineers

CLIENT	DISTRICT OF UCLUELET
PROJECT	WATER MASTER PLAN

TITLE	PEAK HOUR PRESSURES EXISTING CONDITIONS
APPROVED	
DATE	
PROJECT No.	1581
SCALE	1:20,000
DWG No.	FIGURE 19



LEGEND:

Red	60 lps AND LESS
Yellow	60 lps – 90 lps
Light green	90 lps – 120 lps
Cyan	120 lps – 150 lps
Blue	150 lps – 180 lps
Magenta	180 lps – 210 lps
Tan	210 lps – 240 lps
Dark green	240 lps – 270 lps
Purple	270 lps – 300 lps

EXISTING WATERMAIN

DISTRICT OF UCLUELET BOUNDARY

KOERS & ASSOCIATES ENGINEERING LTD.
Consulting Engineers

CLIENT: DISTRICT OF UCLUELET

PROJECT: WATER MASTER PLAN

TITLE: AVIALBLE FIRE FLOWS EXISTING CONDITIONS

APPROVED		SCALE	1:20,000
DATE		DWG No.	FIGURE 20
PROJECT No.	1581		

Table 17 – Areas with Fire Flow Below Zoning Requirements

Land Use	Fire Flow (lps)		Location
	Available	Required By Zoning	
CD-1	91	150	368 Forbes Rd
R-1	38	60	Edwards Place
P-1	96	150	Victoria Rd & Matterson Rd
CD-3 MF	97	150	St Jacques Blvd & Bay St
CS-1	101	150	Fraser Lane & Imperial Lane
CD-5	40	60	835 Marine Dr
CS-5	104	150	Hemlock St & Waterfront Dr
R-1	43	60	Marine Dr & Edwards Place
R-1	43	60	350 Marine Dr
CD-5	46	60	2036 Cynamocka Rd
R-1	46	60	Victoria Rd & Marine Dr
CS-2	117	150	Peninsula Rd & Forbes St
CD-1	117	150	310 Forbes St
CD-2A	47	60	End of Sunset Point Rd
M-1	118	150	Multi-family at end of Harbor Cres
GH	47	60	470 Marine Dr
CD-5	48	60	841 Marine Dr
R-1	50	60	Athlone Rd & Norah St
CS-1	124	150	Main St & Cedar Rd
CS-5	125	150	277 Boardwalk Blvd
CD-3	50	60	812 Rainforest Dr
CD-3	51	60	764 Rainforest Dr
CD-3	51	60	1701 Rainforest Lane
CD-3	51	60	Rainforest Drive & Rainforest Lane
CD-3	51	60	1768 Rainforest Lane
CD-3	51	60	636 Rainforest Dr
R-1	52	60	Cynamocka Rd & Norah St
CD-5	52	60	835 Marine Dr
CD-5	52	60	720 Marine Dr
CD-5	52	60	760 Marine Dr
CD-5	53	60	Cynamocka Rd & Marine Dr
CD-5	53	60	End of Odyssey Lane
CD-5	53	60	812 Odyssey Lane
CD-5	53	60	Odyssey Lane & Marine Dr
R-2	80	90	1633 Holly Crescent
R-3	133	150	Yew St & Larch Rd

10.1.3 Reservoir Storage

The water storage requirements within the distribution system are based on the formula from the MMCD Design Guideline Manual, which is:

Water Storage Volume = A + B + C

Where:

A = Fire Storage (from Fire Underwriters Survey Guide)
B = Equalization (Peaking) Storage (25% of Maximum Day Demands)
C = Emergency Storage (25% of A + B)

The requirement for Emergency Storage (C) can be reduced or eliminated based on several factors, including water source dependability; reliability of the supply system (e.g. gravity vs pumped, duplication of mains and treatment, standby emergency power); multiple sources; more than one storage reservoir; and reservoir water circulation needs. The calculated storage volume for the District of Ucluelet is shown in **Table 18** for Year 2065.

Table 18 – Reservoir Storage Volume Requirements

Reservoir	Storage Volume				
	Required (m^3)			Existing (m^3)	Shortfall (m^3)
	Equalization	Fire Flow	Total		
Matterson	742 (1)	1,080 (3)	1,822	1,200	**622**
Highway	1,170 (2)	1,080 (3)	2,250	1,400	**850**
Total	**1,912**	**2,160**	**4,072**	**2,600**	**1,472**

(1) Based on a 2065 Maximum Day outflow of 34.3 lps at the reservoir

(2) Based on a 2065 Maximum Day outflow of 54.2 lps at the reservoir

(3) Based on a 150 lps fire flow

It should be noted that with the construction of the Cedar Road Altitude Valve will allow the Highway Reservoir to supplement the Matterson Reservoir. Therefore the future additional storage requirements can be consolidated at the Highway Reservoir site.

The additional storage at the Highway Reservoir should be added when the reservoir outflow reaches 14.8 lps, or 80% of the equalization storage capacity of the reservoir.

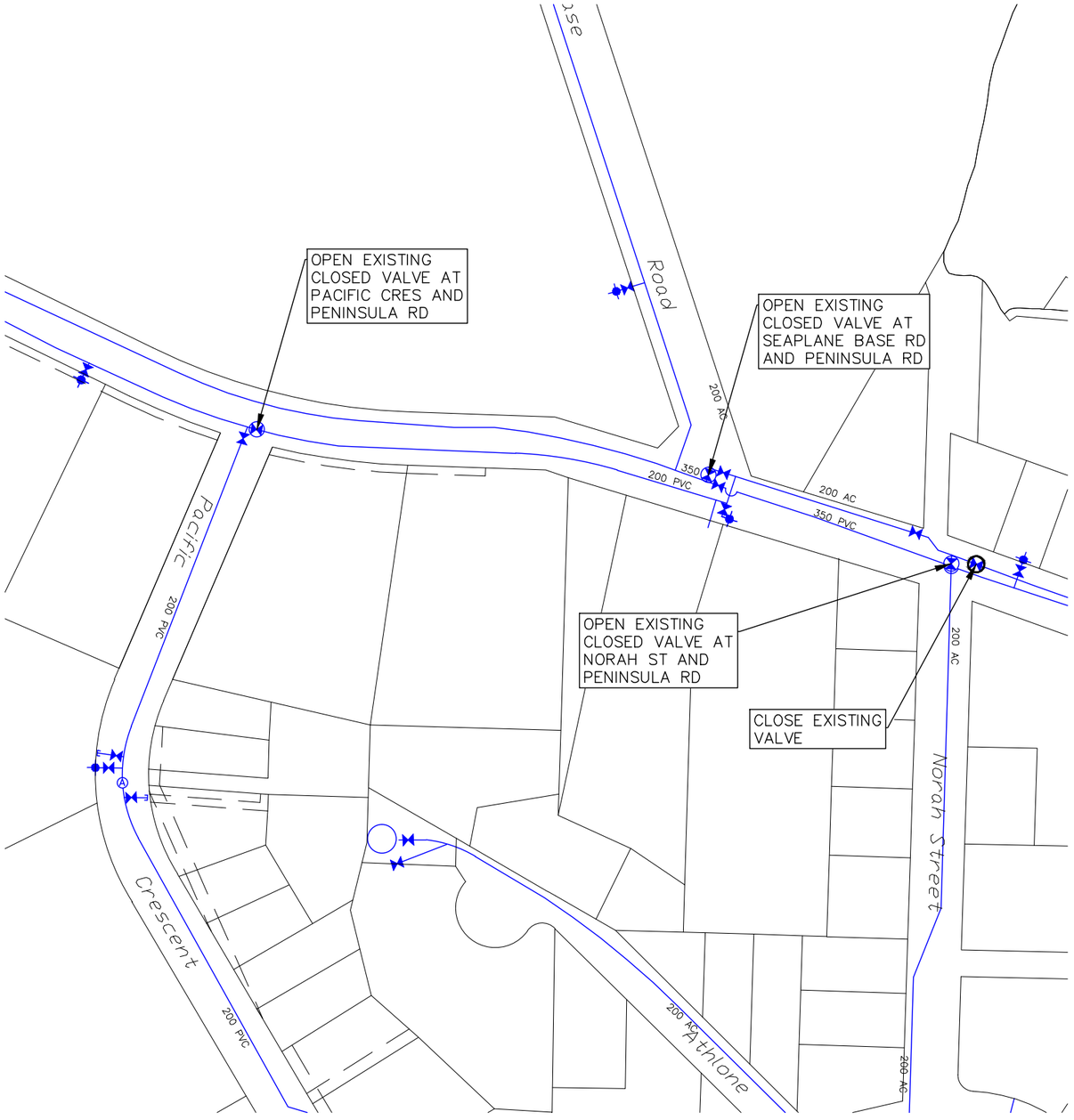
11 PROPOSED WORKS

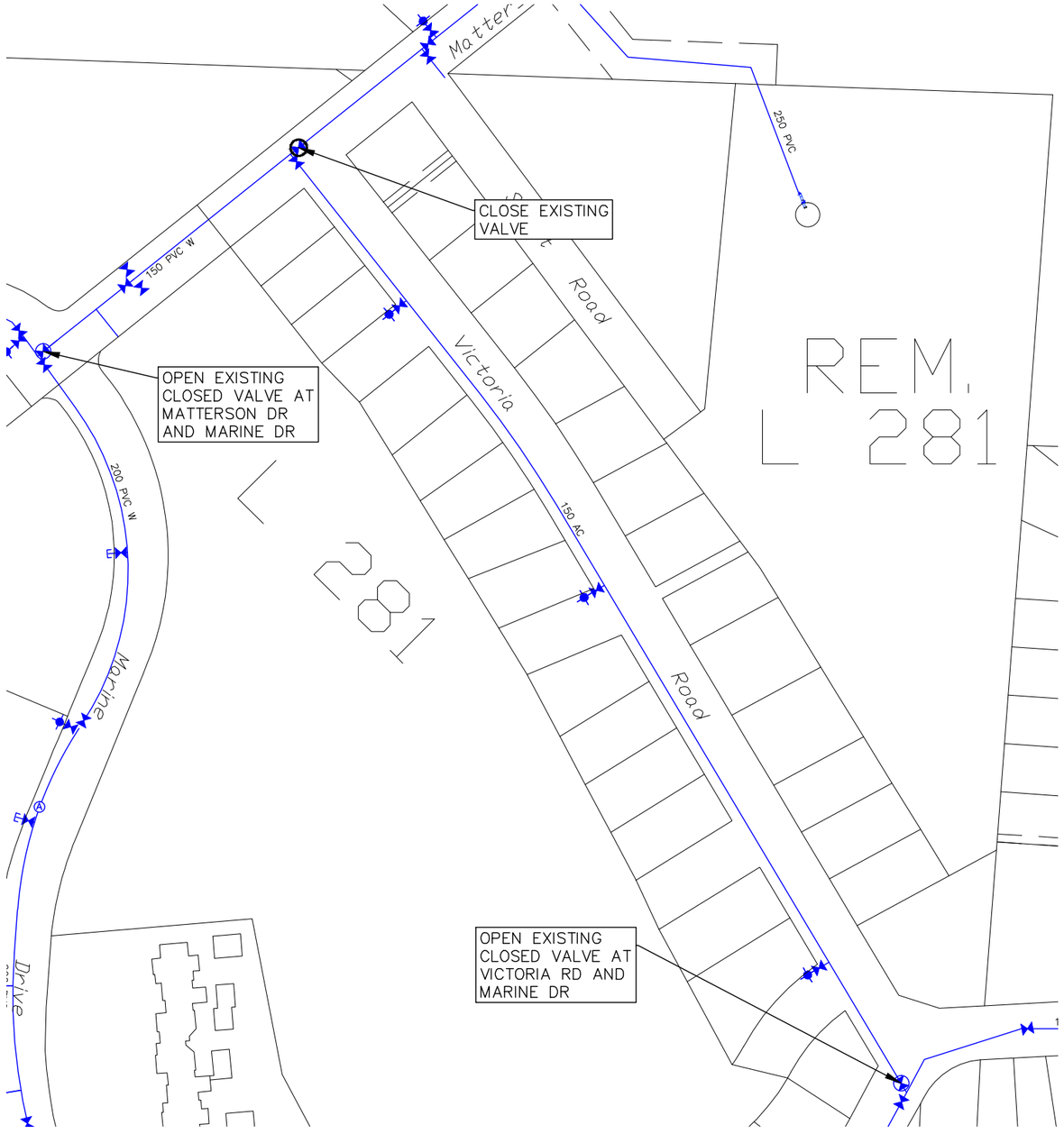
11.1 Short Term Improvements

The improvements required in order for the system to operate within the distribution system design requirements (**Table 15**) and provide the recommended minimum fire flow are presented in **Table 19** and shown on **Figures 21 to 23**.

Table 19 – Interim Works

Project No.	Location	Description
ST-1	Cedar Road Altitude Valve	Install a new above ground altitude valve station on Cedar Road to interconnect the Highway and Matterson Pressure Zones. The altitude valve will be controlled by the top water level of the Matterson Reservoir and will allow flow between the two pressure zones
ST-2	Pressure Zone Boundary Modifications	Open the following Closed Valves: - Pacific Crescent and Peninsula Road - Seaplane Base Road and Peninsula Road - Norah Street and Peninsula Road - Matterson Drive and Marine Drive - Victoria Road and Marine Drive Close the following valves: - East valve at Norah Street and Peninsula Road - North valve at Matterson Drive and Victoria Road
ST-3	Matterson Reservoir Valve Chamber Modifications	Remove the interconnecting spool pieces in the altitude valve chamber and install blind flanges
ST-4	Well field VFD and pressure transducer installation	Install VFDs on the existing LSCA wells and install pressure transduces in the well casings.
ST-5	Highway Reservoir Check Valve	Install check valve at highway reservoir outlet to prevent water from Mercantile Creek to flow through outlet piping.





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Consulting Engineers

CLIENT: DISTRICT OF UCLUELET

PROJECT: WATER MASTER PLAN

TITLE: PRESSURE ZONE BOUNDARY MODIFICATIONS

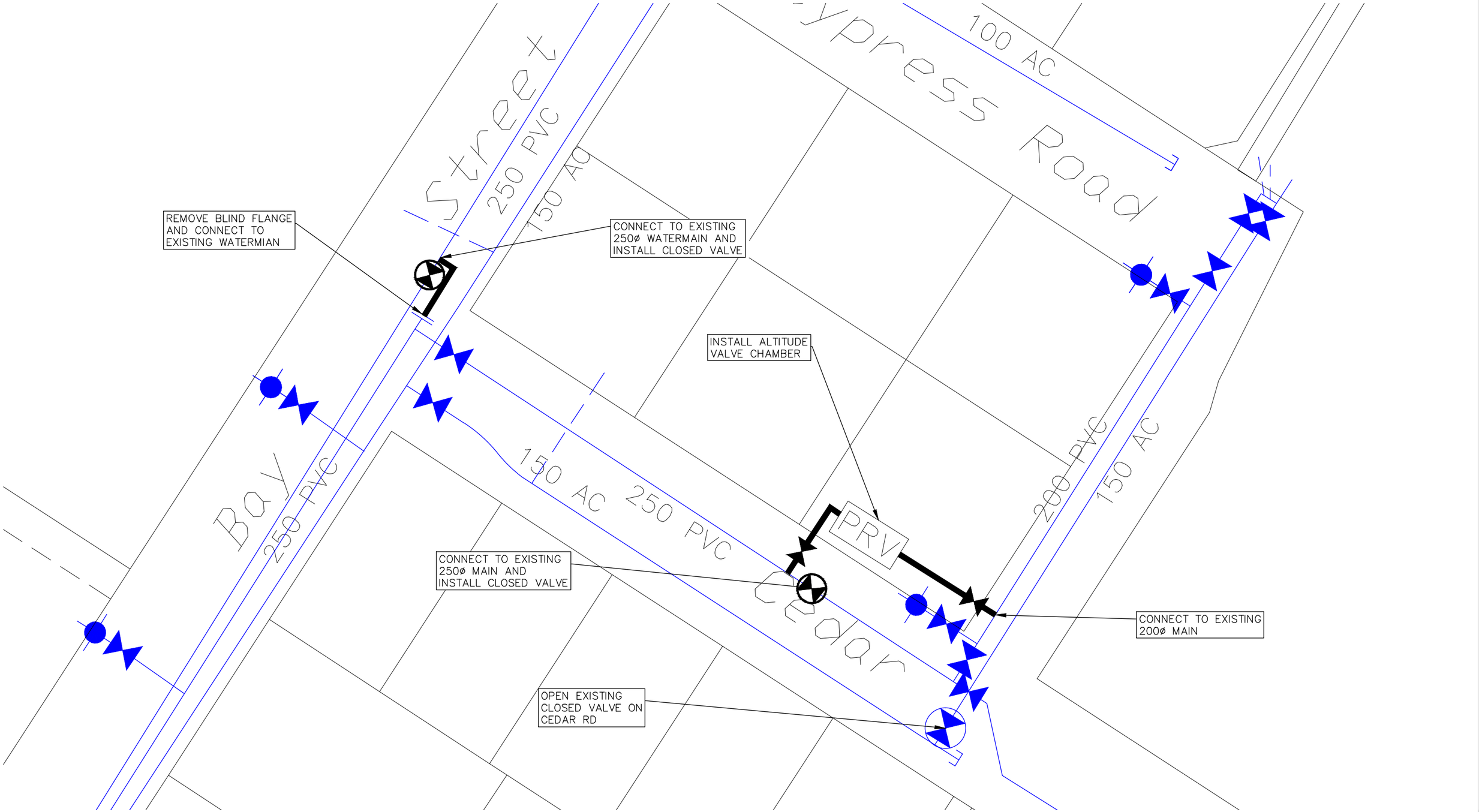
APPROVED

DATE

PROJECT No. 1581

SCALE 1:500

DWG No. FIGURE 21



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Consulting Engineers

CLIENT: DISTRICT OF UCLUELET

PROJECT: WATER MASTER PLAN

TITLE: ALTITUDE VALVE CHAMBER INSTALLATION

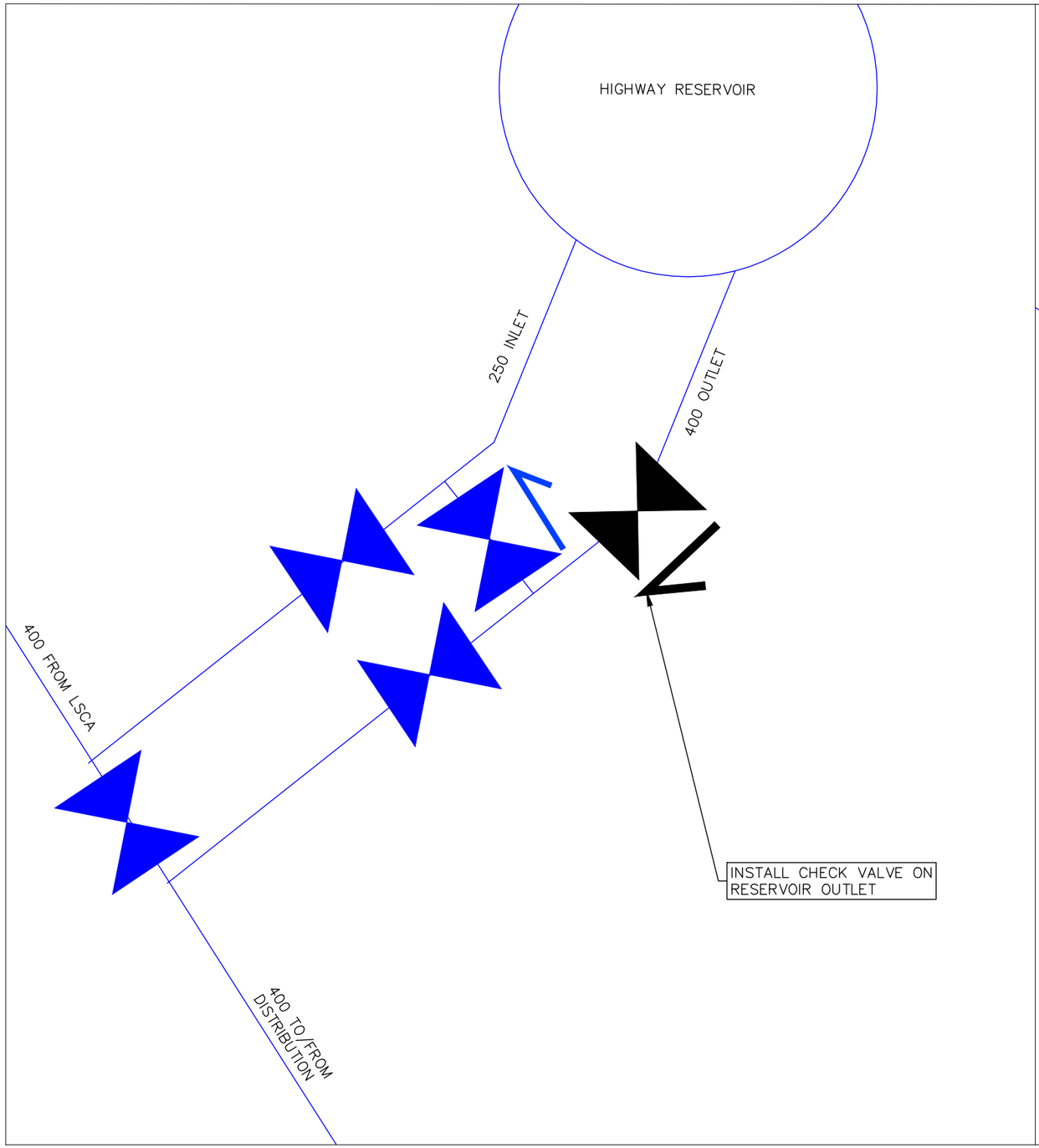
APPROVED

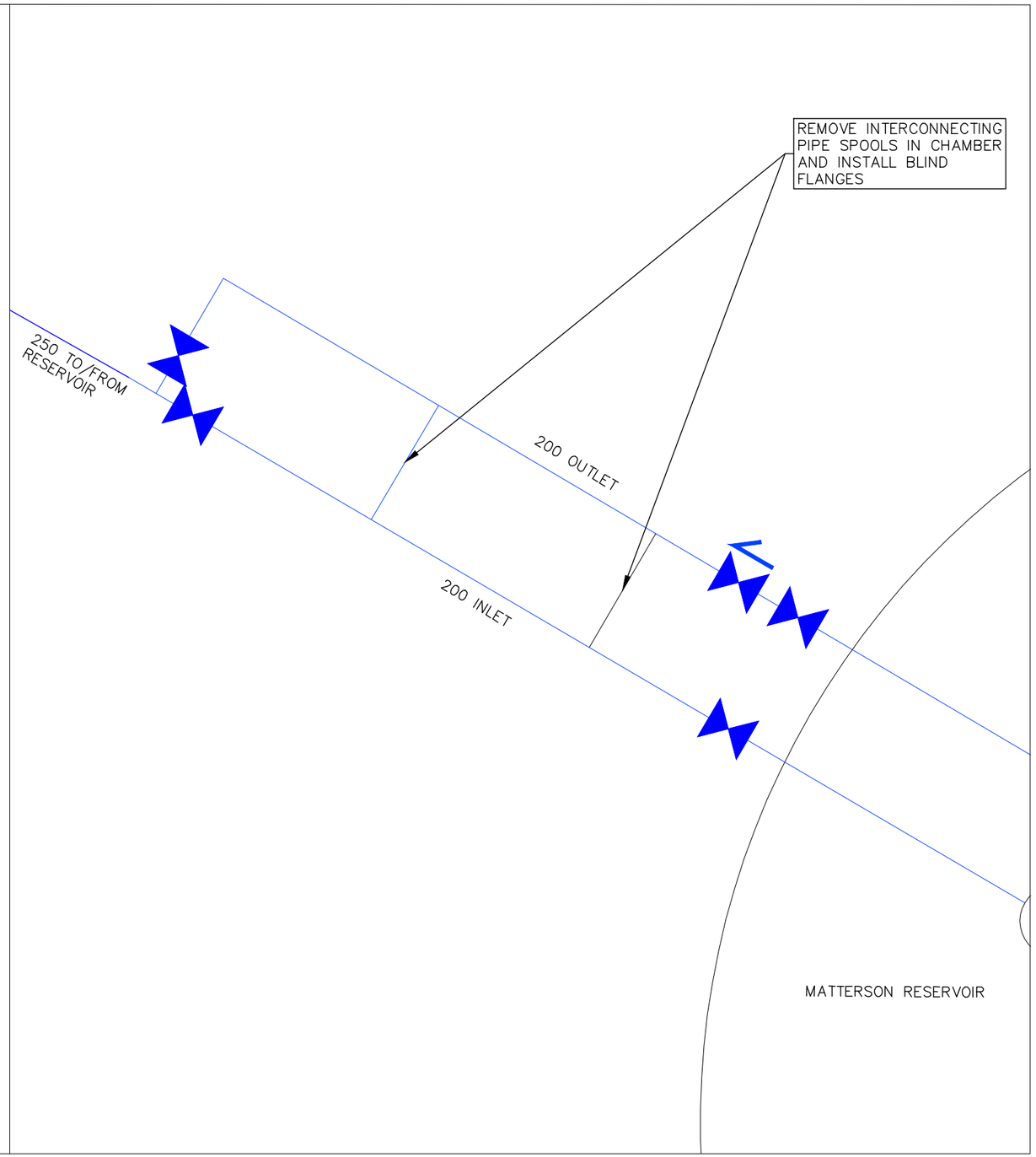
DATE

PROJECT No. 1581

SCALE 1:50

DWG No. FIGURE 22





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CLIENT	DISTRICT OF UCLUELET
PROJECT	WATER MASTER PLAN

TITLE	MATTERSON AND HIGHWAY RESERVOIR PIPING IMPROVEMENTS
APPROVED	
DATE	
PROJECT No.	1581
SCALE	NTS
DWG No.	FIGURE 23

11.2 Fire Flow Improvements

Listed in **Table 20** and shown on **Figure 24**, below are the following improvements that are required to improve the fire flows in the District's distribution system:

Table 20 – Required Fire Flow Improvement Works

Project No.	Location	Diameter (mm)		Length (m)
		Existing	Proposed	
FF - 1	Check Valve installation on Matterson Dr at Victoria Rd	-	-	-
FF - 2	Hemlock Rd: Lyche Rd to Peninsula Rd. Connect to existing 300 mm dia. main on Peninsula Rd	150	200	70
FF - 3	Peninsula Rd: Bay St to Main St	150	200	350
FF - 4	Bay St: Peninsula Rd to St. Jacques Blvd	150	200	190
FF - 5	Garden St & Eber Rd: Helen Rd to Alder St	100	150	165
		Total Length:		**775**

11.3 Long Term Improvements

Listed in **Table 21**, and shown on **Figure 25**, below are the following improvements that are required to improve the fire flows in the District's distribution system:

Table 21 – Long-Term Works

Project No.	Location	Diameter (mm)		Length (m)
		Existing	Proposed	
LT - 1	Construct a duplicate 1,400 m^3 reservoir at the Hwy Reservoir site	-	-	-
LT - 2	Victoria Rd: Matterson Dr to Marine Dr	150	200	415
LT - 3	Marine Dr: Victoria Rd to Edwards Place	150	200	90
LT - 4	Forbes Rd: 371 Forbes Rd to Marine Dr	-	200	370
LT - 5	Watermains for future development in the DL 281 & 282 and Former Forest Land Reserve	-	200	TBD(1)
		Total Length:		**875**

(1) Final piping configuration and requirements to be determined by the developer. Based on a preliminary alignment the minimum pipe size for the supply piping in this area should be 200 mm diameter.

11.4 AC Mains

There are approximately 35 kilometers of watermain in the District, of which approximately 8 kilometers are AC piping. The majority of these mains are more than 40 years old.

The life span of AC mains ranges from 30 to 90 years, depending on many factors, such as water quality, type of soils, groundwater levels, pipe manufacturer, quality of

FF-3 PENINSULA ROAD:

UPGRADE EXISTING 150ø MAIN TO 200ø FROM BAY STREET TO MAIN STREET

FF-5 EBER AND GARDEN:

UPGRADE EXISTING 100ø MAIN TO 150ø FROM HELEN ROAD TO ALDER STREET

FF-2 HEMLOCK ROAD:

UPGRADE EXISTING 150ø MAIN TO 200ø AND CONNECT TO 300ø MAIN ON PENINSULA ROAD

FF-1 MATTERSON ROAD:

INSTALL CHECK VALVE AT THE INTERSECTION OF MATTERSON DRIVE AND VICTORIA ROAD

FF-4 BAY STREET:

UPGRADE EXISTING 150ø MAIN TO 200ø FROM St. JACQUES BLVD TO PENINSULA ROAD

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CLIENT: DISTRICT OF UCLUELET

PROJECT: WATER MASTER PLAN

TITLE: FIRE FLOW WATERMAIN IMPROVEMENTS

APPROVED

DATE

PROJECT No. 1581

SCALE 1:7500

DWG No. FIGURE 24

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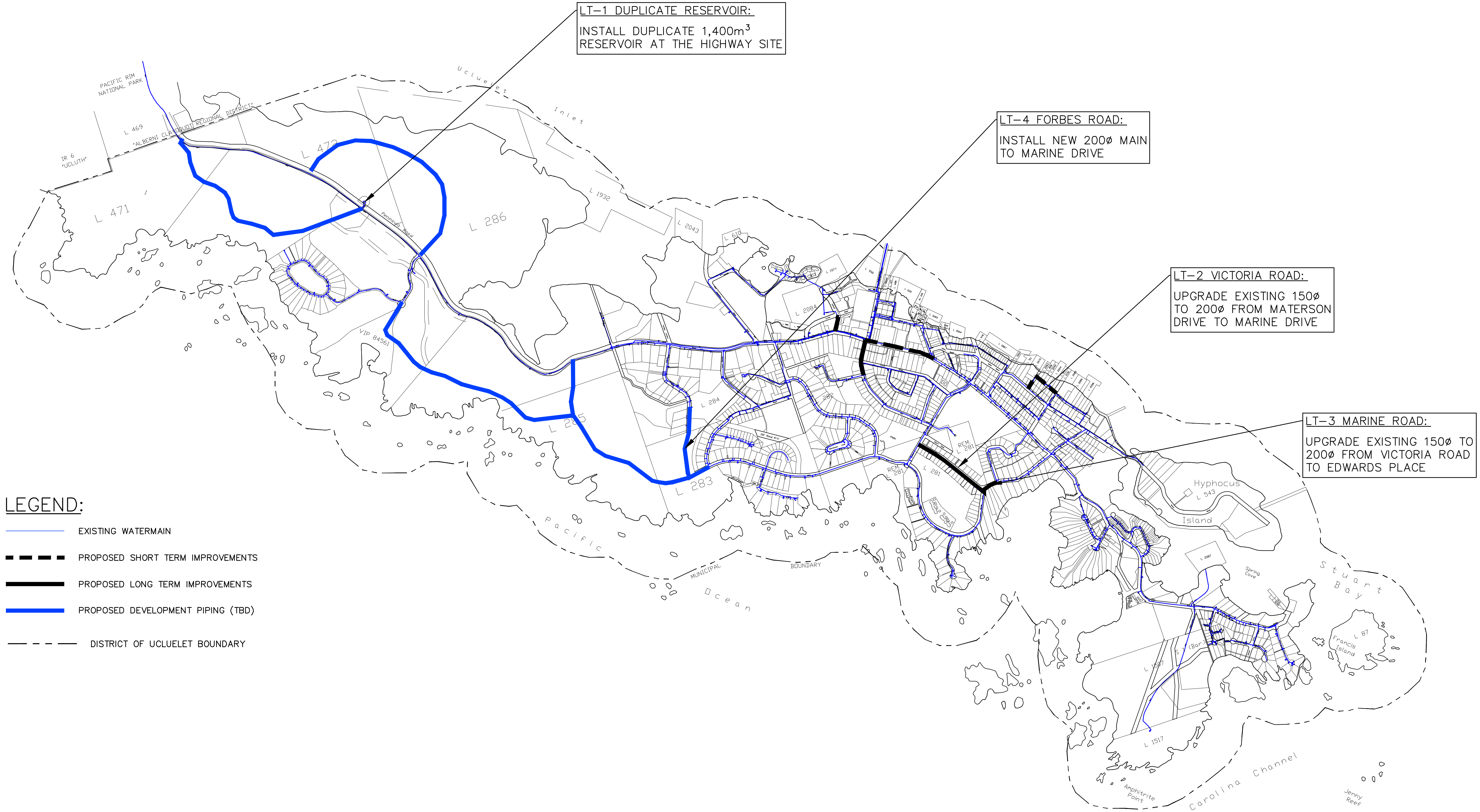


KOERS & ASSOCIATES ENGINEERING LTD.
Consulting Engineers

CLIENT	DISTRICT OF UCLUELET
PROJECT	WATER MASTER PLAN

TITLE	PROPOSED IMPROVEMENTS LONG TERM		
APPROVED		SCALE	1: 20,000
DATE			
PROJECT No.	1581	DWG No.	FIGURE 25

File: H:\8250 Ucluelet District\1581 Water Master Plan\03 Drawings\Figures.dwg Plot Time: May 16, 2016 – 1:40pm User: mbrook

installation, depth of bury, and traffic loading. The major problem experienced with AC pipe, other than wall fractures, is the leaching of the cement mortar binder out of the pipe. This can occur on the internal and the external surfaces, severely weakening the pipe strength. The rate of leaching depends on the aggressiveness of the groundwater and potable water in contact with the AC pipe. Leaching can be highly localized, and vary from pipe to pipe.

The remaining service life in an AC main can be estimated by a series of laboratory tests, requiring removal of a section of the watermain. Records of main and service connection repairs would aide in identifying known problem areas.

It is recommended that the District review the option of completing an asset management plan for the existing AC watermain infrastructure, to assist in planning and funding future AC watermain replacement projects.

11.5 Uni-directional Flushing Program

It is recommended that the District work to develop and implement a uni-direction flushing program in an effort to minimize the amount of sediment in the distribution system, particularly as the presence of iron and manganese has led to water quality complaints from some residents and businesses in the past. The flushing program should be completed at a minimum of once per year.

12 COST ESTIMATES

The cost estimates in this report are based on Class 'D' (feasibility study) estimates, made without preliminary design input. The estimates include a 30% allowance for construction and engineering costs. No allowance has been made for interim financing or administrative costs. The estimates are exclusive of GST.

Cost estimates are derived from our in-house construction cost data of watermain construction projects in the mid-Vancouver Island area.

A comparison of the estimated total capital cost and operating cost for each water supply source is presented in **Table 22.**

Table 22 – Project Cost Estimates

Project No.	Location	Length (m)	Dia. (mm)	Unit Price	Extension
ST - 1	Cedar Road Altitude Valve	-	-	-	$200,000
ST - 2	Pressure Zone Boundary Modifications	-	-	-	$5,000
ST - 3	Matterson Reservoir Valve Chamber Modifications	-	-	-	$46,000
ST - 4	Well field VFD and pressure transducer installation	-	-	-	$200,000
ST - 5	Highway Reservoir Check Valve	-	-	-	$35,000
FF - 1	Check Valve installation on Matterson Dr at Victoria Rd	-	-	-	$100,000
FF - 2	Hemlock Road: Lyche Road to Peninsula Rd. Connect to existing 300 mm dia. main on Peninsula Rd	70	200	$600	$42,000
FF - 3	Peninsula Road: Bay St to Main St	350	200	$600	$210,000
FF - 4	Bay Street: Peninsula Rd to St. Jacques Blvd	190	200	$600	$114,000
FF - 5	Garden Street and Eber Rd: Helen Rd to Alder St	165	150	$550	$90,750
LT - 1	Construct a duplicate 1,400 m^3 reservoir at the Hwy Reservoir site	-	-	-	$1,250,000
LT - 2	Victoria Rd: Matterson Dr to Marine D	415	200	$600	$249,000
LT - 3	Marine Dr: Victoria Rd to Edwards Place	90	200	$600	$54,000
LT - 4	Forbes Rd: 371 Forbes Rd to Marine Dre	370	200	$600	$222,000
			Total:		**$2,817,750**

13 CONCLUSIONS

Based on the findings of this interim study, the following conclusions are made:

1. The District operates two water supply sources:
   i. **Mercantile Creek**, a surface source on the east side of Ucluelet Inlet
   ii. **Lost Shoe Creek Well field**, a groundwater source at the junction of Hwy 4A and Pacific Rim Hwy
2. The LSCA well field acts as the primary source. Mercantile is brought on-line to meet large fish processing demands and the seasonal (summertime) demand increase. The two water supply sources are currently isolated from each other with the manual closing of valves at ten (10) road intersections, which we understand are:

.1	Peninsula Rd	at	Pacific Cres
.2	Seaplane Base Rd	at	Peninsula Rd
.3	Norah St	at	Peninsula Rd
.4	Hemlock St	near	Peninsula Rd
.5	Marine Dr	at	Matterson Dr
.6	Victoria Rd	at	Marine Dr
.7	Edward Pl	at	Peninsula Rd
.8	Marine Dr	at	Peninsula Rd
.9	Cedar Rd	at	Park Ln
.10	Cedar Rd	at	Main St

3. Water is spilled at the Matterson Reservoir when it is supplied by the Lost Shoe Creek Well field (via the highway reservoir). This occurs when the Mercantile Creek source is not in use.
4. Water treatment consists of the following:

   Mercantile Creek
   Raw water passes through a course screen to catch larger debris prior to being withdrawn from the Creek. At the Bay Street water treatment pump station, the water is treated by Ultra Violet lights followed the addition of liquid sodium hypochlorite (NaClO).

   Lost Shoe Creek Well field
   The water is treated by the addition of liquid sodium hypochlorite (NaClO).
5. Water quality issues for the water sources consist of the following:

   Mercantile Creek:
   Elevated turbidity levels during the winter months and periods of heavy rainfall.

   Lost Shoe Creek Well field:
   Elevated levels of manganese.
6. Mercantile Creek source cannot accommodate an increase in withdrawal limits.
7. LSCA recharge rate is influenced by rainfall as shown in **Figure 4** and **Figure 5**.

8. LSCA Well Number 2 is generally not operated from mid-August to the end of September in response to the seasonal decline in the groundwater level.
9. Kennedy Lake is considered a suitable water supply source option for the District.
10. During current peak hour demands, the water distribution system is capable of maintaining pressures greater than the minimum design standard of 280 kPa (40 psi) with the exception of at the top end of Athlone Rd (elevation 40 m). The calculated pressure at this location is 234 kPa (34 psi). This area is serviced from the highway reservoir with its top water level elevation of 68.4 m geodetic.
11. The areas that do not meet the fire flow requirements for the zoning serviced are listed in **Table 17**.

14 RECOMMENDATIONS

Based on the conclusions listed in this interim report, it is recommended that the District:

1. Implement the improvements listed in **11 Proposed Works**. These works will improve available fire flow and peak hour pressures in the distribution system.
2. Comply with the provincial govermnent's new Water Act and apply for a groundwater licence(s) for the LSCA well field wells as discussed in **6.3 Lost Shoe Creek Well field**.
3. Proceed with the planning stage development of the Kennedy Lake source in order to ensure a reliable long term water supply for the District.
4. Review the option of completing a infrastructure assessment for the existing AC watermains in the distribution system to assist with the planning and funding of the future AC watermain replacement.
5. Develop a uni-directional flushing plan as part of the District's on going supply and distribution system maintenance program.

2016 Water Master Plan

Final Report Presentation

KOERS & ASSOCIATES ENGINEERING LTD.
Consulting Engineers

Presented By: Chris Downey, P.Eng, Project Manager

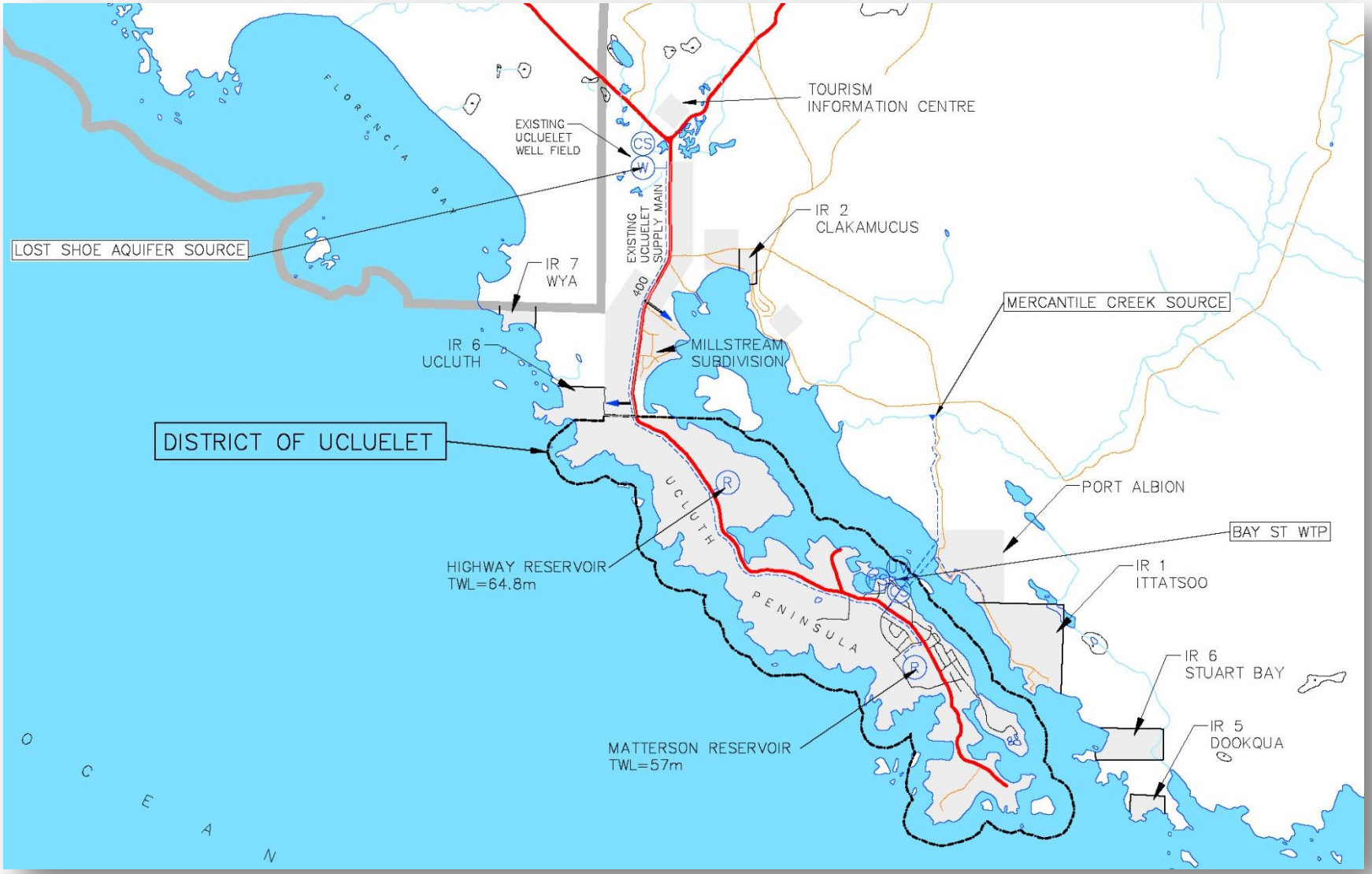
Date: August 8, 2017

DISTRICT OF UCLUELET

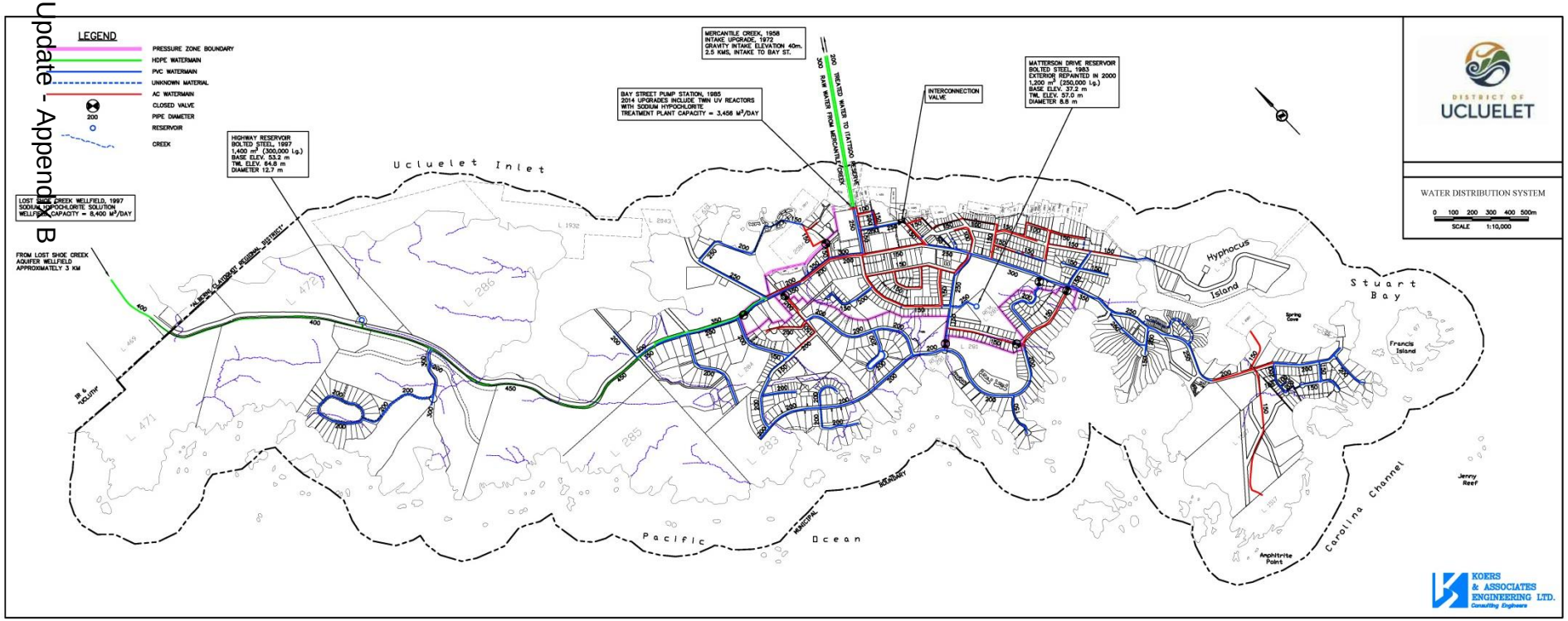
Overview

- Existing Water System
  - Sources, Water Quantity, Water Quality and Treatment
  - Distribution System
- Treatment and Licencing Requirements
- Long Range Planning
  - Distribution System Improvements
  - Supply System Improvements

Existing Water System



Distribution System



- The distribution system contains 35 kms of pipe ranging in diameter from 100 mm to 450 mm of various material types

Mercantile Creek Source

- Surface source on the east side of Ucluelet Inlet
- Water is withdrawn from the Creek via an intake structure
- The water is transported approximately 2.5 kms under the inlet to the Bay Street water treatment building and pump station

Mercantile Creek Impoundment

Mercantile Creek Water Quantity

- Mercantile Creek
  - 5 water licenses for a total Max Day withdrawal of 3,239 m^3
  - Based on historical low flow data there is no additional capacity in the creek for consumption

Mercantile Creek Looking Upstream

Mercantile Creek Water Quality

- Mercantile Creek
  - Subject to turbidity
  - Turbidity impacts the effectiveness of UV and chlorine disinfection
  - System is programmed to shut down source if turbidity is > 1 NTU
  - The source is also affected by organics in the water which can cause disinfection by products (THM's) when mixed with chlorination.

Mercantile Creek Source Treatment

- The Bay Street water treatment and pump station building treats water supplied from Mercantile Creek with Ultra Violet (UV) and Chlorine
- The treated water is pumped into the Matterson Drive Reservoir
- The Matterson Drive Reservoir has a top water level of 57 m and a storage volume of 1,200 m^3 (250,000 ig)

UV Reactors at Bay Street PS

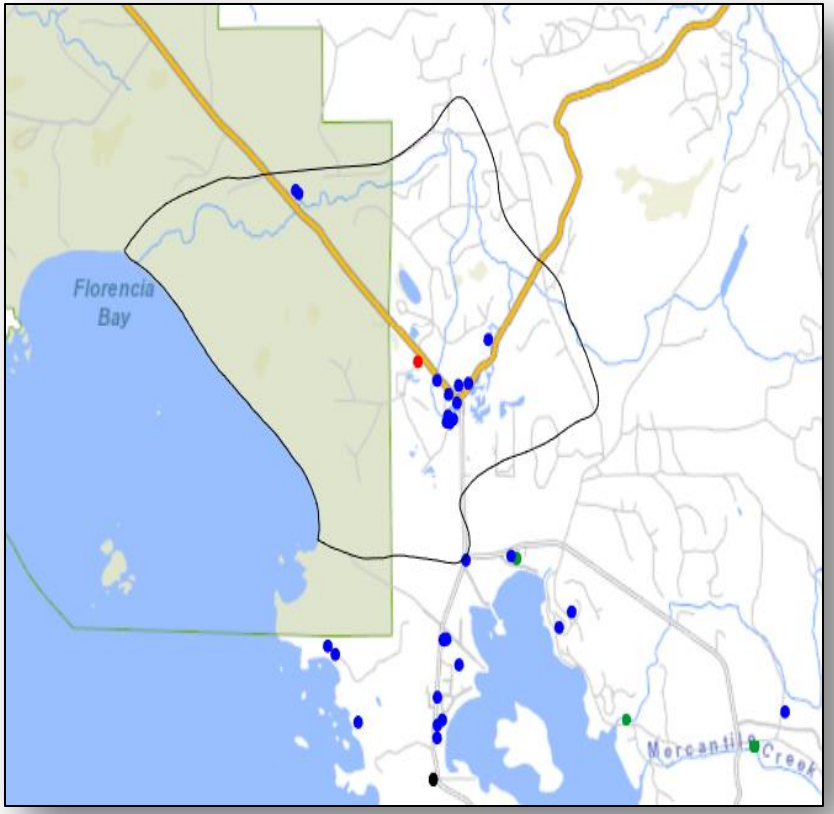
Lost Shoe Creek Aquifer Source

- The wellfield is located at the junction of Highway 4A and Pacific Rim Highway, approximately 3 kms north of the District's municipal boundary.
- The District operates four wells at the wellfield
- There is an allowance for a fifth well that has not been developed at this time

Lost Shoe Aquifer Wellfield Building

Lost Shoe Creek Aquifer Water Quantity

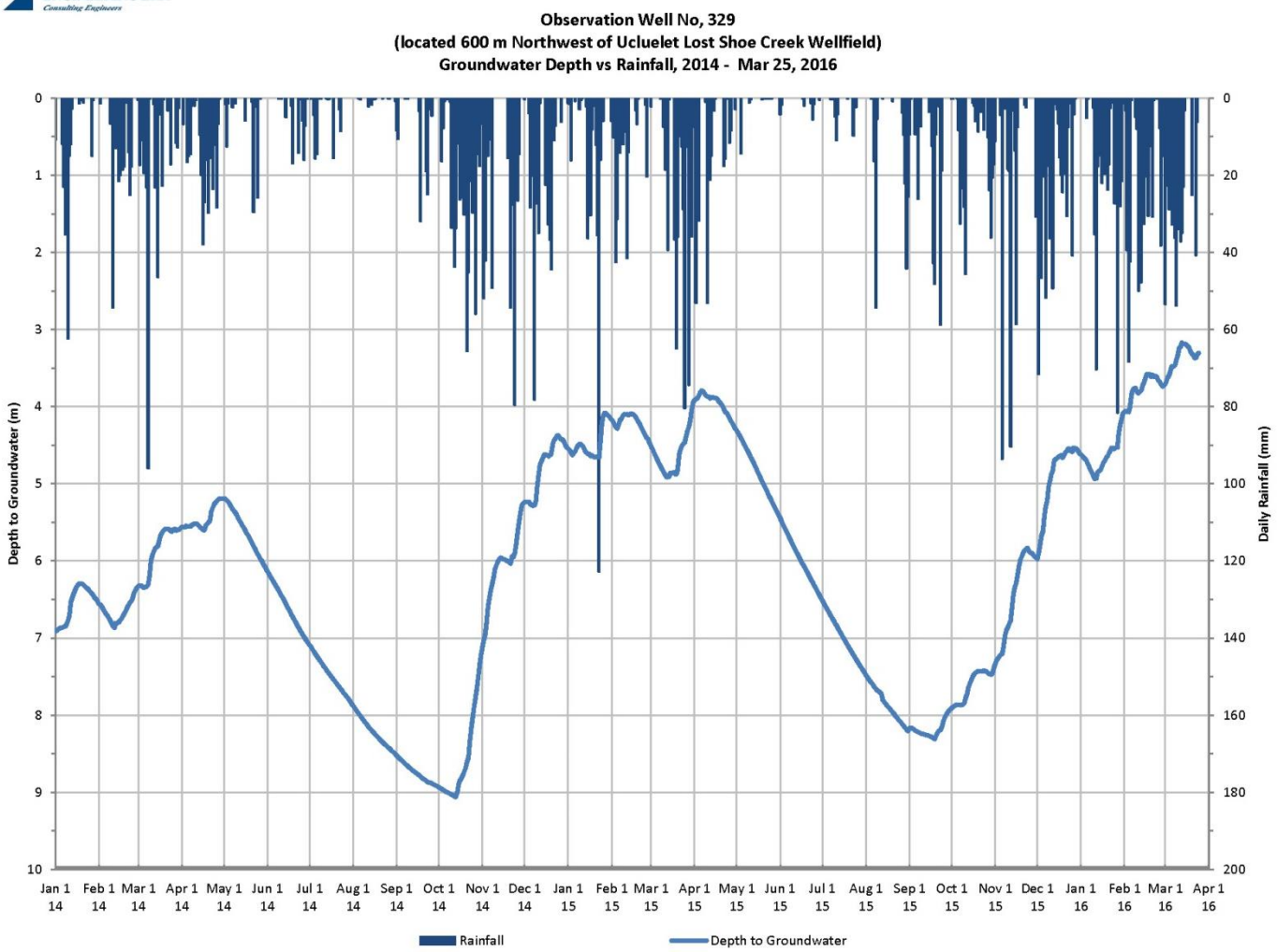
- Lost Shoe Aquifer
  - Wellfield design capacity is 10,497 m^3/day
  - Wellfield operating capacity ranges between 5,900 and 8,100 m^3/day
  - Aquifer levels and recovery are impacted by the amount of rainfall. The less rainfall the slower the recovery rate.



Lost Shoe Creek Aquifer Boundary

Lost Shoe Creek Aquifer Water Quantity

KOERS & ASSOCIATES ENGINEERING LTD.
Consulting Engineers



Lost Shoe Creek Aquifer Water Quality

- Lost Shoe Creek Aquifer
  - Iron and manganese above the aesthetic objectives set by the Canadian Drinking Water Guidelines.
  - Iron and manganese stains plumbing fixtures and laundry and produces undesirable tastes in beverages.
  - Manganese may form coatings on water distribution pipes that may slough off as yellowish brown to black precipitates.

Lost Shoe Creek Aquifer Source Treatment

- The well water is treated with Chlorine at the wellfield building
- The treated water is pumped into the Highway Reservoir located on Peninsula Road
- The Highway Reservoir has a top water level of 65 m and storage volume of 1,400 m^3 (300,000 ig)

Control Valves at Wellfield Building

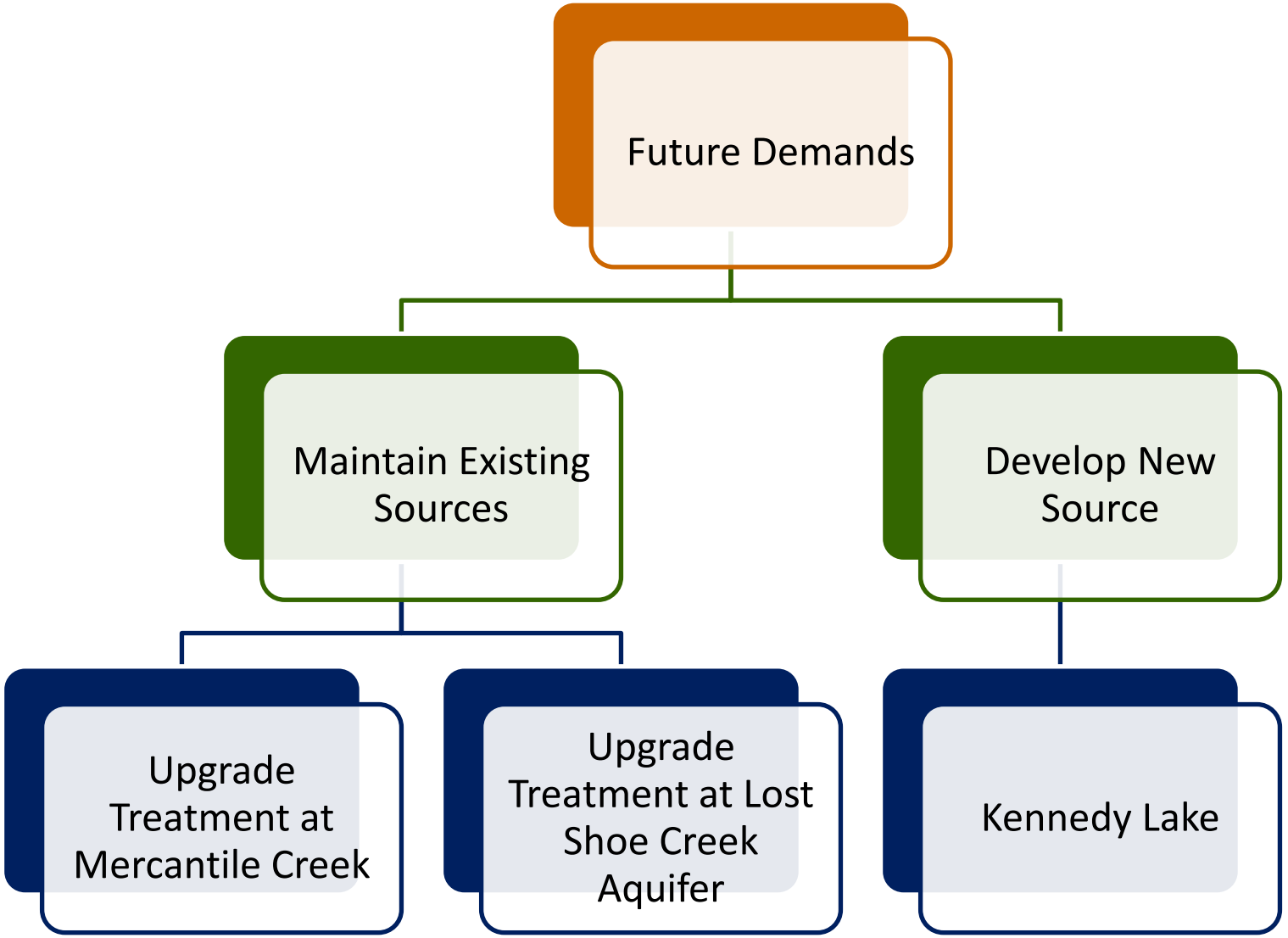
Treatment and Permit Requirements

- Mercantile Creek
  - Treatment Requirements:
    - ✓ 4 log inactivation of viruses
    - ✓ 3 log removal or inactivation of Giardia cysts and Cryptosporidium oocysts
    - ✓ 2 treatment processes for all surface drinking water systems
    - × **Less than 1 NTU** of turbidity in finished water
- Lost Shoe Creek Aquifer
  - Treatment Requirements:
    - ✓ Chlorine Disinfection
    - × **Iron and Manganese Removal**
  - Groundwater Licencing
    - One Time Application Fee: $5,000
    - Annual Rental Fee:$2,000± ($2.25 per 1,000 m^3)

Distribution System Improvements

- Short Term Improvements
  - Variable Frequency Drives on well pumps to optimize wellfield performance
  - Cedar Road altitude valve to optimize Matterson Reservoir performance
  - Pressure Zone boundary modifications to eliminate dead ends in the system
  - Watermain improvements to improve fire flows and pressures
- Long Term Improvements
  - Additional reservoir storage at the Highway Reservoir site
  - Future watermains for development in the DL 281 & 282 and Former Forest Land Reserve
- Total Costs: $2.75 to $3.0 Million

Supply System Improvements



Supply System Improvements

Maintain Existing Sources
Capital Costs approx $4.65 million

PROS

- Existing infrastructure in place
- Licencing and permits in place
- Combined sources can provide future demands
- Less expensive options

CONS

- Additional treatment required
  - Filtration at Mercantile Creek
  - Iron and Manganese Removal at Lost Shoe Creek
- Sources are impacted by climate change and seasonal weather variations

Supply System Improvements

Develop New Source at Kennedy Lake
Capital Costs approx $12.5 million

PROS

- Impact of climate change and seasonal weather variations is negligible
- Reliable water source
- Source can provide future demands
- Potential to service Parks Canada and First Nations

CONS

- New infrastructure required including:
  - Intake at lake
  - Pump station
  - Supply main
  - Treatment plant
- New licencing and permitting required
- More expensive alternative

Next Steps

- Implement the short term, fire flow and long term improvements to water system to improve pressure and available fire flows.
- Comply with the provincial government's new Water Act and apply for a groundwater licence for the Lost Shoe Creek wellfield.
- Proceed with the planning stage development of the Kennedy Lake source to ensure a reliable long term water supply for the District.
- Review the option of completing an infrastructure assessment for the existing AC watermains in the distribution system to assist with the planning and funding of the future AC watermain replacement program.
- Develop a uni-directional flushing plan as part of the District's on going supply and distribution system maintenance program.

Timeline

- Recommend that the District considering adding the short term, fire flow and long term improvements to its 5 year capital plan.
- Recommend the District proceed with an application to the province for a groundwater licence for the Lost Shoe Creek wellfield before the end of 2018.
- Recommend that the District develop a scope of work by the of September 2017 to undertake a Pilot testing program during the optimal months of November 2017 through January 2018.
- Recommend that the District move forward with detailed work in the Kennedy Lake Planning stages such as engaging stakeholders and reviewing permit applications with various provincial and federal ministries.
- Recommend updating the District's assessment management program to include an AC watermain replacement program.
- The District in 2017 implemented a uni-directional flushing plan and it is now part of the District's maintenance program on an annual basis and budgeted accordingly.

Questions?

DISTRICT OF
UCLUELET

STAFF REPORT TO COUNCIL

Council Meeting: AUGUST 8, 2017
500 Matterson Drive, Ucluelet, BC V0R 3A0

FROM: KARLA ROBISON, ENVIRONMENTAL & PROTECTIVE SERVICES MANAGER **FILE NO:** 4020

SUBJECT: SHORT-TERM RENTAL PROGRAM – THE HOST COMPLIANCE TOOL AND NEXT STEPS

RECOMMENDATION(S):

1. **THAT** Council receives this Short-Term Rental Program report for information purposes.

PURPOSE:

The purpose of this report is to provide an overview of Ucluelet's Short-Term Rental (STR) Program and the Host Compliance monitoring and associated services tool currently being utilized to support this program.

BACKGROUND:

On February 22, 2017, Staff signed a contract with *Host Compliance LLC* for STR compliance monitoring and associated services for $7,965 USD (approximately $10,700 CDN).

Host Compliance LCC provides solutions, by means of research, software, data, enforcement, and consulting services, for local governments to address challenges associated with STRs. It remains unclear to what extent STRs impact the rental housing market. The Host Compliance software tool is recognized as an innovative and progressive strategy to learn about this impact, while providing considerations for the affordable housing issue. The software tool has demonstrated to be a consistent, efficient, and comprehensive with supporting the STR Program in Tofino and various other communities in Canada and North America.

Definitions

Short-Term Rental* and *Commercial Tourist Accommodation are terms that are used interchangeably. From a land-use and zoning perspective, they are commercial uses rather than residential uses. An STR or *Commercial Tourist Accommodation* means the non-*residential*, daily or short-term (not exceeding 30 consecutive days) accommodation of paying guests, transient motorists, tourists or vacationers, as commonly associated with *hotels, motels,* resorts, *vacation rentals, guest houses, hostels, bed and breakfasts, and campgrounds.*

The District of Ucluelet's Zoning Bylaw defines the STR terms as follows:

- ***Vacation Rental*** means the use of an otherwise *residential dwelling unit* for *commercial tourist accommodation*, provide in accordance with Section 406 of this bylaw;

- ***Bed and Breakfast or B&B*** means the *accessory* use of a *single-family dwelling* where up to a maximum of three *bedrooms* are used or designated for use as *guest rooms*, provided in accordance with Section 404 of this bylaw;
- ***Resort Condominium*** means a *building,* or group of *buildings,* providing two or more separate *dwelling units*, for *commercial tourist accommodation* use only, without the *accessory* uses commonly associated with or specifically permitted with *hotels* or for the parcels within the SC-5 Zone along Peninsula Road, in which case there may be only one unit per lot;
- ***Guest House*** means the *accessory* use of a single-family dwelling where a minimum of three and up to a maximum of six bedrooms for use as *guest rooms,* if provided in accordance with Section 405 of this bylaw;
- **A *Guest Room*** means a room used or designated for use for sleeping purposes, with or without an *en suite* bathroom and cooking facilities limited to:
    - Kettle, coffee maker, toaster (not including a toaster-oven), and microwave (excluding convection/microwave combination), and is used for *commercial tourist accommodation;* and
- ***Guest Cottage*** means an *accessory* detached *dwelling unit* built on a full and continuous foundation on the same lot as the principal use of a *guest house*, and is used for *commercial tourist accommodation*;
- ***Hotels, Motels and Hostels*** are theoretically recognized as STRs. For more information regarding these terms, please visit review the Zoning Bylaw at: http://ucluelet.ca/images/Zoning_Bylaw_1160_2013.pdf.

Regulations

Regulations regarding STRs are found in two Ucluelet bylaws.

- District of Ucluelet Business License Regulation Bylaw
    - This Bylaw requires owners or operators of businesses to hold valid business licenses, sets the license fees and establishes different regulations for different classes of business.

- District of Ucluelet Zoning Bylaw
    - This Bylaw divides the District of Ucluelet into zones, and provides regulations governing the use of land, buildings, structures, parking, and landscaping.

Host Compliance Preliminary Review

Staff have undertaken a preliminary STR review for Ucluelet and determined, as of August 1, 2017, there were 236 STR listings in Ucluelet, with 7 new STR properties added over the last month. Out of these 236 STR listings, 169 are recognized as individual properties termed as *Unique STR Properties. Unique STR Properties* are defined as one property that could include multiple listings advertised on various STR websites.

Of the 169 individual properties, 141 properties or 83% were successfully identified by *Host Compliance LLC*, meaning that all information, such as GPS coordinates, owner name, etc. obtained through the Host Compliance tool match information, such as address, parcel number, etc. provided by BC Assessment. The remaining 28 STR properties or 17% still require analysis from the Host Compliance LLC team, as they are not recognizable by the Host Compliance tool due to minimal information online for specific units within a property.

To further understand the dynamic of the STR community in Ucluelet, *Host Compliance LLC,* with the assistance of *BC Assessment*, incorporated assessor data to determine that the 141 *Identified Unique STR Properties* are:

- 47% are single family dwellings that utilize 15% of the *partial home (i.e., Owner is onsite);
- 51% are multi-family dwellings that utilize 85% of entire home (Owner is not onsite); and
- 2% of these listening are unknown.

*Partial home statistics may not be accurate. Property owners may choose not to advertise a caregiver suite or owner residence on site within the STR websites, such as AirBnB, Vacation Rental by Owner, Home Away, etc.

Additional demographics features for the STR community in Ucluelet are outlined below:

- 91% of the STR bookings are for 1 to 7 nights, while the other 8% are not specified; and
- Figure 1 illustrates the number of bedroom and bathroom percentages for these listings.

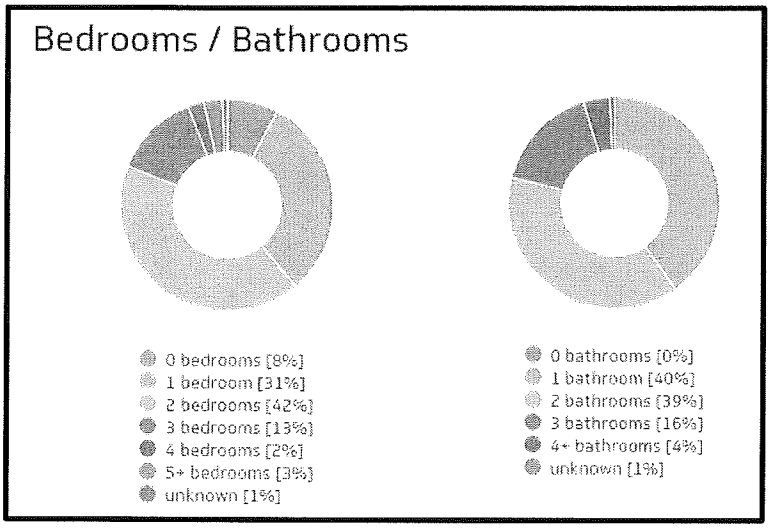


Figure 1: Average percentage of bedroom and bathrooms for the 169 STR properties in Ucluelet

Zoning and Business Licenses

Ucluelet's Zoning bylaw divides Ucluelet into *zones*, and provides regulations governing the use of land, buildings, structures, parking, and landscaping.

Short-term rentals in Ucluelet are allowed in the following *Zones* outlined below.

- ***Residential zones***: R-1, R-2, R-4, RU
- ***Commercial and mixed commercial accommodation zones***: CS-2, CS-4, CS-5, CS-7, GH, HS, VR-1, VR-2
- ***Comprehensive development zones***: CD-1, CD-2, CD-3, CD-5, CD-6 and the following subzones: CD-2A, CD-2B, CD-5A, CD-5B, CD-5C, CD-5D, CD-5E

The *Zone* names and the grouping into categories reflects the predominant uses for the respective *Zones*, but mixed uses and uses from other categories may be permitted in accordance with the detailed listing and regulations in each respective *Zone* and this bylaw. These various zoning stipulations will require staff to conduct multiple investigations into the known and unknown

business licenses to ensure compliance. Furthermore, this information is based on reporting to the District and to the zoning bylaw. While current business licenses have been issued for 2017, this does not confirm compliance with all District bylaws.

Proposed Next Steps for Consideration

Staff is currently developing a strategic approach for the District's Short-Term Rental Program. The following is a proposed approach that is currently under consideration:

Phase 1 – Voluntary Compliance

Staff would develop a public outreach and communication strategy, as well as future compliance and enforcement protocols for the STR Program. Staff will also develop policies pertaining to Ucluelet's STR Program to help support public participation. Through various communication systems, Staff could utilize the remaining 2017 year and early 2018 as a period of voluntary compliance for residents and visitors. During this time, Staff may conduct a business license and zoning review for all STRs in Ucluelet.

Phase 2 – Active Enforcement

Following the voluntary compliance phase, Staff would proceed with the next steps required to ensure an effective STR Program.

- Determine which STR properties do not have a business licenses and issue warning letters to these property owners.
- Determine what STRs are operating outside the terms of their business license (e.g., full-time residential use not on site) and issue warning letters to these property owners operating outside of the business license parameters.
- Conduct a review of the STRs zoning parameters and issue warning letters to these property owners operating outside of their approved zoning.

In both phases staff would work with business owners to gain compliance with all applicable bylaws.

TIME REQUIREMENTS – STAFF & ELECTED OFFICIALS:

The District has recently hired a full-time Bylaw Services Officer. It is estimated that this Officer will spend 70 to 80% of his time working on Ucluelet's STR Program at the initial stages. Other Departments (Planning, Finance) will be involved with this program through public outreach and communications, business license and zoning review, administering bylaw violations, etc.

FINANCIAL IMPACTS:

Recognizing that the STR predicament is a long-term issue, Staff foresee an annual contract required with *Host Compliance LCC.* The current cost for this service is $10,000 CDN, which translates to a 0.5% addition to the District's total tax levy. Contract renewal rate increases are the larger of the 12-month Consumer Price Index (not seasonally adjusted) as published by the Bank of Canada or five (5.0) percent of the contract cost. Therefore, the annual Tax Rate increase is only an approximation.

With Ucluelet's new Bylaw Services Officer spending approximately 70 to 80% of his time towards the STR Program, including enforcement for this initiative, it is anticipated that approximately $50,000 to $60,000 in wages will be required to ensure an effective program.

POLICY OR LEGISLATIVE IMPACTS:

It is important for the residents of Ucluelet to obtain compliance with the current business license and zoning bylaws. To support participation, Staff will develop polices pertaining to Ucluelet's STR Program and review associated bylaws interconnected to this program to support community standards. These polices, along with Ucluelet's civic bylaws, are intended to keep the community of Ucluelet clean, healthy, and safe. The enforcement of these polices and bylaws are intended to promote and facilitate general compliance that pertain to the health, safety and welfare of the community.

OPTIONS REVIEW:

1. Council receives this Short-Term Rental Program report for information purposes.

Respectfully submitted:

for Karla Robison, Environmental & Protective Services Manager

Mark Boysen, Chief Administrative Officer

Short-Term Rental Program:
Host Compliance Tool and Next Steps

Ucluelet, BC
August 8, 2017

Karla Robison
Environmental and Protective Services Manager

SHORT-TERM RENTAL PROGRAM

HOST COMPLIANCE TOOL AND NEXT STEPS

Purpose

The purpose of this report is to provide an overview of Ucluelet's Short-Term Rental (STR) Program and the Host Compliance monitoring and associated services tool currently being utilized to support this program.

Background - Host Compliance LCC

- *Host Compliance LCC* provides solutions, by means of automated research, software, data, enforcement, and consulting services, for local governments to address challenges associated with STRs.

- The software tool has demonstrated to be a consistent, efficient, and comprehensive with supporting the STR Program in Tofino and various other communities in Canada and North America.

- Contract for STR compliance monitoring started in 2017 for $10,700.

Definitions

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There are various zoning stipulations will require staff to conduct multiple investigations into the known and unknown business licenses to ensure compliance.

Proposed Next Steps for Consideration

Staff is currently developing a strategic approach for the District's Short-Term Rental Program. The following is a proposed approach that is currently under consideration:

Phase 1 – Voluntary Compliance

- Develop a public outreach and communication strategy and compliance protocols
- Propose remaining 2017 year/early 2018 as a period of voluntary compliance.
- During this time, staff can conduct a business license and zoning review for all STRs in Ucluelet.

Phase 2 – Active Enforcement

- Issue warning letters to property owners without license.
- Determine what STRs are operating outside the terms of their business license.
- Conduct a review of the STRs zoning parameters and issue warning letters.

Staff will work with business owners to gain compliance with all applicable bylaws.