



REGULAR MEETING OF COUNCIL
Tuesday, November 13, 2018 @ 7:30 PM
George Fraser Room, Ucluelet Community Centre,
500 Matterson Drive, Ucluelet

AGENDA

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1. CALL TO ORDER	
2. ACKNOWLEDGEMENT OF FIRST NATIONS TERRITORY	
2.1. Council would like to acknowledge the Yuułu?i?ath First Nations on whose traditional territories the District of Ucluelet operates.	
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- 10.3. Hwy 4 Kennedy Hill Safety Improvements Traffic Interruptions Update
Emil Anderson Construction (EAC) Inc.

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[I-3 HWY 4 Kennedy Hill Update](#)

11. COUNCIL COMMITTEE REPORTS

11.1 Councillor Rachelle Cole

Deputy Mayor October - December 2019

- Clayoquot Biosphere Trust Society (Alternate)
- Coastal Family Resource Coalition
- Sea View Seniors Housing Society
- Ucluelet Volunteer Fire Brigade
- Westcoast Community Resources Society

=> *Other Reports*

11.2 Councillor Jennifer Hoar

Deputy Mayor July - September 2019

- Vancouver Island Regional Library Board (Alternate)
- Aquarium Board
- Central West Coast Forest Society
- Ucluelet & Area Historical Society
- Wild Pacific Trail Society

=> *Other Reports*

11.3 Councillor Lara Kemps

Deputy Mayor April - June 2019

- Recreation Commission
- Education Liaison - PACs
- Pacific Rim Whale Festival Society
- Tourism Ucluelet
- Ucluelet & Area Child Care Society

=> *Other Reports*

11.4 Councillor Marilyn McEwen

Deputy Mayor November 2018 - March 2019

- Alberni-Clayoquot Regional District Board (Alternate)
- Harbour Advisory Commission
- Vancouver Island Regional Library Board
- Food Bank on the Edge
- Pacific Rim Arts Society

- West Coast Multiplex Society

=> *Other Reports*

11.5 Mayor Mayco Noël

- Alberni-Clayoquot Regional District Board
- Airport Committee
- Ucluelet Health Centre Working Group
- West Coast Committee
- Barkley Community Forest
- Coastal Community Network
- DFO Fisheries Committee for Groundfish & Hake
- Groundfish Development Authority
- Regional Fisheries Committee
- Ucluelet Chamber of Commerce

=> *Other Reports*

12. REPORTS

- | | | |
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| 12.1. | Quarterly Projects Update - 3rd Quarter 2018
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| 12.2. | Cheque Listing - October 2018
<i>Marlene Lagoa, Deputy Municipal Clerk</i>
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| 12.3. | 2018 Election Report
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| 12.4. | Clean Water and Waste Fund (Green Infrastructure Environmental Quality Program)
<i>Mark Boysen, Chief Administrative Officer</i>
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13. LEGISLATION

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| 13.1. | Application to Amend Zoning Bylaw No. 1160, 2013 (1672 Cedar Road)
<i>John Towgood, Planner 1</i>
L-1 RZ18-06
District of Ucluelet Zoning Bylaw Amendment Bylaw No. 1239, 2018 | 317 - 324 |
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14. OTHER BUSINESS

15. QUESTION PERIOD

16. CLOSED SESSION

- 16.1. *Procedural Motion to Move In-Camera:*

THAT the meeting be closed to the public in order to address agenda items under Section 90(1)(e) 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, October 9, 2018 at 7:30 PM

Present: **Chair:** Mayor St. Jacques
 Council: Councillors McEwen, Mole, Noel, and Oliwa
 Staff: Mark Boysen, Chief Administrative Officer
 Marlene Lagoa, Deputy Municipal Clerk
 Bruce Greig, Manager of Community Planning
 John Towgood, Planner 1

Regrets:

1. CALL TO ORDER

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

2. ACKNOWLEDGEMENT OF FIRST NATIONS TERRITORY

2.1 Council acknowledged the Yuułu?ił?ath First Nations on whose territories the District of Ucluelet operates.

3. ADDITIONS TO AGENDA

- 3.1**
- **Pertaining to Agenda Item No. 12.6 Zoning Amendment Application – Pacific Rim Charters & Guest Lodge (354 Forbes Road);**
 - **Add – Glenn & Dianna Kaczmar Correspondence Re: 354 Forbes Road**
 - **Addition of Agenda Item No. 12.7 Cedar Road Public Parking Hub Status Update**
 - **Pertaining to Agenda Item No. 14. Other Business;**
 - **Add – Letter to Department of Fisheries and Oceans, Re: Species at Risk**
 - **Add – Letter to New Minister of Fisheries and Oceans Canada, Re: Coast Guard Building.**

4. APPROVAL OF AGENDA

4.1 October 9, 2018 Regular Agenda

2017-001 **It was moved by Councillor Mole and seconded by Councillor McEwen**
 THAT Council approve the October 9, 2018 Regular Agenda as amended.

CARRIED.

5. ADOPTION OF MINUTES

5.1 August 21, 2018 Special Minutes

- Correction to the Minutes under Agenda Item **11.2 OCP Update**
– Councillor Mole and Oliwa Opposed.

2017-002

It was moved by Councillor Oliwa and seconded by Councillor Noel

THAT Council approve the August 21, 2018 Special Minutes as amended.

CARRIED.

5.2 September 18, 2018 Special Minutes

2017-003

It was moved by Councillor McEwen and seconded by Councillor Mole

THAT Council approve the September 18, 2018 Special Minutes as presented.

CARRIED.

5.3 September 25, 2018 Regular Minutes

2017-004

It was moved by Councillor Noel and seconded by Councillor Oliwa

THAT Council approve the September 25, 2018 Regular Minutes as presented.

CARRIED.

6. UNFINISHED BUSINESS

6.1 Proposed Amended Recovery Strategy for Northern and Southern Killer Whales in Canada Species at Risk Program - Fisheries and Oceans Canada

2017-005

It was moved by Councillor Mole and seconded by Councillor McEwen

THAT Council receive unfinished business item, "Proposed Amended Recovery Strategy for Northern and Southern Killer Whales in Canada" for information.

CARRIED.

6.2 Let's Talk OPP: Legislative Amendment Discussion Paper Transport Canada

2017-006

It was moved by Councillor Oliwa and seconded by Councillor McEwen

THAT Council receive unfinished business item, "Let's Talk OPP: Legislative Amended Discussion Paper" for information.

CARRIED.

7. MAYOR'S ANNOUNCEMENTS

- 7.1
- Last meeting for the 2014 - 2018 Council.
 - Thanked Council and staff.
 - Reminded people to vote.

8. PUBLIC INPUT, DELEGATIONS & PETITIONS

8.1 Public Input

E. Larson, resident, attended the public Killer Whale meeting and was disappointed. He felt the event was held so the Department of Fisheries and Oceans could tick off a box for First Nations consultation. He is concerned that a fishing closure would significantly reduce the number of visitors to Ucluelet who will go to Tofino instead. He asked what Council is doing about it and would like to see a coordinated regional effort.

L. Kemps, resident, Ucluelet and West Coast Chambers will be meeting with Minister of Fisheries and Oceans Canada on Thursday. There needs to be a bigger West Coast voice. Tofino Mayor Josie Osbourne just got appointed to the Advisory Panel but there needs to be more west coast representation.

C. Johnson, resident, interested in the effect of a possible petition to send the Department of Fisheries and Oceans. Noted there were people whose voices are not getting heard as they have been unable to contact a representative.

9. CORRESPONDENCE

9.1 Oceans Protection Plan Pacific Dialogue Forum Invitation
Oceans Protection Plan BC

2017-007 **It was moved by Councillor McEwen and seconded by Councillor Mole**
THAT Council direct the Chief Administrative Officer to send a representative to attend the Oceans Protection Plan Pacific Dialogue Forum on October 22.
CARRIED.

9.2 Oceans Protection Plan - Hazardous & Noxious Substances
Oceans Protection Plan BC

2017-008 **It was moved by Councillor Mole and seconded by Councillor Oliwa**
THAT Council refer correspondence item, "Oceans Protection Plan - Hazardous & Noxious Substances" to staff for action.
CARRIED.

9.3 District of Tofino Letter to The Honourable Adrian Dix
District of Tofino - Office of the Mayor

2017-009 **It was moved by Councillor Oliwa and seconded by Councillor McEwen**
THAT Council receive correspondence item, "District of Tofino Letter to The Honourable Adrian Dix" for information.
CARRIED.

9.4 Letter from Ministry of Agriculture Re: Meeting at 2018 UBCM Convention
Honourable Lana Popham, Minister

2017-010 **It was moved by Councillor Mole and seconded by Councillor McEwen**
THAT Council receive correspondence item, "Letter from Ministry of Agriculture Re: Meeting at 2018 UBCM Convention" for information and forward to Tourism Ucluelet

CARRIED.

9.5 Letter from Ministry of Children and Family Development
Honourable Katrine Conroy, Minister

2017-011 **It was moved by Councillor Noel and seconded by Councillor McEwen**
THAT Council receive correspondence item, "Letter from Ministry of Children and Family Development" for information and forward a copy to the Ucluelet Chamber of Commerce and Westcoast Community Resource Society.

CARRIED.

10. INFORMATION ITEMS

10.1 Hwy 4 Kennedy Hill Safety Improvements Traffic Interruptions Update
Emil Anderson Construction (EAC) Inc.

2017-012 **It was moved by Councillor McEwen and seconded by Councillor Mole**
THAT Council receive information item, "Hwy 4 Kennedy Hill Safety Improvements Traffic Interruptions Update" for information.

CARRIED.

11. COUNCIL COMMITTEE REPORTS

11.1 Councillor Sally Mole
Deputy Mayor January – February

There were no reports from Councillor Mole.

11.2 Councillor Marilyn McEwen
Deputy Mayor March – April

West Coast Multiplex Society

- Attended meeting on October 1st.
- Planning another ice-skating day for students this winter.

=> Other Reports

Senior's Fall Forum

- Attended forum on October 1st.

- BC Seniors Advocate Isobel MacKenzie presented.
- Group is already planning the next forum.
- Would like to identify who the seniors are in our community and the option of gathering data from the District on how many seniors are claiming the 65 and over home owners grant.

DFO Species at Risk Meeting

- Attended public meeting on October 4th.
- Encouraged the public to visit the SARA website and give input by November 3.

11.3 Councillor Mayco Noel
Deputy Mayor July – October

Central West Coast Forest Society

- Attended meeting two weeks ago.
- The Society has reached its 25-year anniversary and are still frustrated they lack adequate funding.
- There is a need to talk to Federal and Provincial powers to keep the dialogue going on creek restoration and highlighting our local efforts.

=> **Other Reports**

Seniors Fall Forum

- Attended Forum on October 1st.
- Learned a lot of new information including that 85% of seniors remain in their home.

11.4 Councillor Randy Oliwa
Deputy Mayor May – June

There were no reports from Councillor Oliwa.

11.5 Mayor Dianne St. Jacques

Alberni-Clayoquot Regional District Board

- Attended meeting on September 26th.
- The Surf Junction property did complete its rezoning process for the addition of staff housing and recreational camping sites. Noted that the new addition is outside our fire agreement with the ACRD and the need to open-up

that conversation with them.

West Coast Committee

- Attended meeting last week.
- BC Transit presented on the feasibility study findings.
- They will begin public engagement over the winter months and may be contacting the District for assistance with that.
- Discussed the Parks Canada Lease of airport lands which has expired and looking for upgrades to the buildings. The District may have to participate quite heavily with that.

=> **Other Reports**

McMillian Fish

- Mayor and CAO met with Barry McMillian two weeks ago for an update on Hake and Groundfish.
- Progress has been slow in guaranteeing a catch for our plants.

2016-13

It was moved by Councillor Noel and seconded by Councillor Mole.

THAT Council receive the verbal committee reports.

CARRIED.

12. REPORTS

12.1 Cheque Listing - September 2018

Marlene Lagoa, Deputy Municipal Clerk

- Tent rental was for water testing at Kennedy Lake.
- The portable ESS kits are being stored at the Fire Hall which serves as the Emergency Operations Centre.

2017-014

It was moved by Councillor McEwen and seconded by Councillor Noel

THAT Council approve recommendation 1 of report item, "Cheque Listing - September 2018" which states:

1. *THAT Council receive the District of Ucluelet's September 2018 Cheque Listing for information.*

CARRIED.

12.2 Resolution Tracking - September 2018

Marlene Lagoa, Deputy Municipal Clerk

2017-015

It was moved by Councillor Noel and seconded by Councillor Oliwa

THAT Council approve recommendation 1 of report item, "Resolution Tracking - September 2018" which states:

1. *THAT Council receive the District of Ucluelet's Resolution Tracking List from September 2018 for information.*

CARRIED.

12.3 Halloween Howl Road Closure & Community Invite
Abigail Fortune, Director of Public Works

2017-016

It was moved by Councillor Mole and seconded by Councillor McEwen
THAT Council approve recommendation 1 and 2 of report item, "Halloween Howl Road Closure & Community Notice" which states:

1. **THAT** Council authorizes the following road closures on Wednesday, October 31, 2018:
 - a. *Matterson Road from 8:45 – 9:30 p.m. from Victoria Road to the corner of Matterson Road and Marine Drive; and*
 - b. *Marine Drive from 7:00 p.m. – 9:00 p.m. from Marine Drive and Matterson Drive to Rainforest Drive in front of the Ucluelet Community Centre; and*
2. **THAT** Council attend the Halloween Howl Festivities and invite the community to join them.

CARRIED.

12.4 Asset Management Program Update
Mark Boysen, Chief Administrative Officer

- CAO presented an overview of the new asset management program being implemented by all departments.
- There is no annual fee but there are opportunities in the future to purchase upgrades.

2017-017

It was moved by Councillor Oliwa and seconded by Councillor McEwen
THAT Council approve recommendation 1 of report item, "Asset Management Program Update" which states:

1. **THAT** Council receives for information the District of Ucluelet's Asset Management Program Update report.

CARRIED.

12.5 Development Permit; 239 Boardwalk Boulevard
John Towgood, Planner 1

- Manager of Community Planning provided an overview of the development permit application for 239 Boardwalk Boulevard.
- Proposal includes building a trail through the trees and having a crossing point down to a pier.
- Council provided the following questions and comments:
 - Like seeing the Fire report comments.
 - Would be good to see a subheading on staff housing.
 - Would like to see sidewalks – new developments need to be mindful of pedestrian traffic and crosswalks getting

built.

- Questioned the applicant if it was going to be a complete build out or phased. Applicant noted it will depend on the pre-sale.
- Questioned staff why a fire hydrant is not required as part of the Development Permit. Staff noted that servicing is part of the building permit process.

2017-018

It was moved by Councillor Oliwa and seconded by Councillor McEwen

THAT Council approve recommendation 1 of report item, "Development Permit; 239 Boardwalk Boulevard" which states:

1. **THAT** Council approve Development Permit DP18-09 for the construction of 21 Resort Condo units with an accessory basement storage unit on the property at 239 Boardwalk Boulevard: Lot 8 and Lot 9, Section 21, Clayoquot District Plan, VIP66186.

CARRIED.

12.6 Zoning Amendment Application - Pacific Rim Charters & Guest Lodge (354 Forbes Road)

Bruce Greig, Manager of Community Planning

- Correspondence from Glenn & Dianna Kaczmar was added as a late agenda item.
- Manager of Community Planning provided an overview of the zoning amendment application and provided the history of development and bylaw issues with the site.
- The applicant submitted an architect's assessment which was completed to show the path forward on bringing the building into compliance.
- The applicant is seeking an indication from Council that the request for re-zoning to allow tourist accommodation would be considered.

The applicant, Glenn Kaczmar, was present to answer any questions and provided the following information:

- The building took three years to build and was completely authorized to be built by the District staff at the time. Unfortunately, not all the information is available to the current Staff.
- We have been in business for 37 years in Ucluelet and we realize there is a shortage of accommodations which affects our fishing charters. We built the building thinking of the future of our business.
- The main thing about that report is the building can comply and there are options available to us. We could keep the building intact if we decide putting in sprinklers is cost effective, or

possibly separate the building to avoid the cost of putting in sprinklers.

- We added the 6 staff accommodations because we need them and are trying to figure out what to do with the excess square footage of our building.
- Originally, we had talked about putting in 12 staff accommodations, we are willing to look closer at that.
- Staff accommodations can be a covenant with conditions to add a minimum of 6 staff accommodations, but don't make it a condition where it has to be in place before we open because the financial burden would be too much.
- Confirmed they are open April 1st until September 30th and closed for the winters.
- If we shut down for a year, we would lose half our clientele and they may never come back.

Bruce Greig, Manager of Community Planning, provided the following responses to Council's questions:

- The size and complexity of the building is such that, if they get through the rezoning to a point where it makes sense for them to invest in upgrading the building, they will need to apply for and obtain a building permit. For that they need to have a coordinating registered professional, an architect, for the building permit. An architect like they used for the building assessment is a code expert and is responsible for making sure all the sections of the code are met. The job of our building inspector is to overview the application and the construction. At the end of the day though, the coordinating professional is signing off on their drawings and their inspections of the work.
- Putting a motel in the middle of an industrial area is not a combination of uses that we would typically recommend since it has a potential for conflict. This is a unique combination of uses: it is a fishing charter business which requires space for storing and maintaining boats, which has a place in the light industrial area but they now want to add accommodations. If that unique combination is part of the Council decision to allow that use over and above what the other neighbouring properties have, then it can be tied together so it doesn't just become a motel in an industrial area. A future purchaser with a different business model would have to approach Council to amend or remove that covenant.

Council comments on the proposed application included the following:

- Assurance that the property would not be occupied until the proper permits are issued.

- General concern with the architect's assessment which lists several things that needs to be done to make the building safe for occupancy.
- Concerns for public safety, liability and costs to taxpayers.
- Noted that staff accommodation would be a benefit but questioned when they would be built.
- Need to base zoning decisions on future land use and not the current owner.
- We have a very limited area for industry and concerned with taking space away for a motel use.
- Concern that the project was originally exempt from paying Development Cost Charges.
- We want to see you get to compliance, but we cannot sidestep the minimum of six staff housing units which need to be a high priority there.
- To be clear, we are saying that we would be interested in considering the zoning for a motel, but we are not adopting anything by these motions. We also can not guarantee with this motion that your property will be rezoned.

2017-019

It was moved by Councillor McEwen and seconded by Councillor Oliwa

THAT Council approve recommendation 1a, b, & c of report item, "Zoning Amendment Application - Pacific Rim Charters & Guest Lodge (354 Forbes Road), which states:

1. **THAT** Council indicate support for the concept of adding 12 commercial tourist accommodation rooms and a minimum of 6 staff housing units as permitted uses on the property at 354 Forbes Road and:
 - a. *indicate to the applicant that detailed building, site, and landscape plans are required to show the impact of the proposal on the surrounding industrial lands, public streetscape and park land;*
 - b. *indicate that adoption of a zoning amendment bylaw would be subject to the following:*
 - i. *the owners first obtaining a building permit, then completing the necessary building renovations to bring the building up to code and finally obtaining an occupancy permit to clarify that the building is safe for its intended use;*
 - ii. *the owners entering into a Housing Agreement to ensure that the employee housing units are occupied by seasonal or long-term resident workers;*
 - iii. *to owners providing a restrictive covenant to ensure the provision of staff housing and that occupancy of the guest accommodation units is tied to the ongoing operation of a fishing guide business from the property; and,*
 - c. *once a complete set of rezoning plans has been submitted by the*

owners, direct staff to prepare the zoning amendment and housing agreement bylaws for consideration by Council at a future meeting.

CARRIED.

12.7 Cedar Road Public Parking Hub

- Report was added as a late agenda item.
- Staff presented a proposed design layout for a new parking hub on Cedar Road.
- The plan is to have a contract in place before the end of the year to begin clearing the lot.
- The Washrooms on Forbes Road will be moved to the parking hub.
- Council asked about working with the neighbours. Staff responded it is going well and in various stages.

2017-020 **It was moved by Councillor Mole and seconded by Councillor McEwen**
THAT Council receive report item, "Cedar Road Public Parking Hub" for information.

CARRIED.

13. LEGISLATION

13.1 REPORT - Adoption of Bylaw No. 1237 - Permissive Tax Exemption (Amendment)

Marlene Lagoa, Deputy Municipal Clerk

2017-021 **It was moved by Councillor McEwen and seconded by Councillor Noel**
THAT Council approve recommendation 1 of legislation item, "Adoption of Bylaw No. 1237 - Permissive Tax Exemption (Amendment) which states:

1. **THAT Council adopt District of Ucluelet 2018-2022 Permissive Tax Exemption Bylaw Amendment Bylaw No. 1237, 2018.**

CARRIED.

13.2 BYLAW - District of Ucluelet 2018 - 2022 Permissive Tax Exemption Bylaw Amendment Bylaw No. 1237, 2018

2017-022 **It was moved by Councillor Noel and seconded by Councillor McEwen**
THAT District of Ucluelet 2018 - 2022 Permissive Tax Exemption Bylaw Amendment Bylaw No. 1237, 2018 be adopted.

CARRIED.

14. OTHER BUSINESS

14.1 Letter to Department of Fisheries and Oceans, Re: Species at Risk DFO Species at Risk Letter

- **Mayor read the letter aloud and asked Council if there was**

anything to add.

- Council to send any additional input to Staff who will prepare the final letter.
- A copy of the letter should be sent to the other local communities and the Chamber of Commerce calling for a collaborative approach on how to deal with it.
- Chamber representative asked that the District request more west coast representation on the advisory board.

2017-023

It was moved by Councillor McEwen and seconded by Councillor Oliwa THAT Council refer other business item, "Letter to Department of Fisheries and Oceans, Re: Species at Risk" to Staff to complete and adding to the letter representation on the advisory committee.

CARRIED.

14.2 Letter to New Minister of Fisheries and Oceans Canada, Re: Coast Guard Building

2017-024

It was moved by Councillor McEwen and seconded by Councillor Mole THAT Council direct staff to write a letter to the new Minister of Fisheries and Oceans Canada on the coast guard building.

CARRIED.

15. QUESTION PERIOD

15.1 E. Larson, resident, thanked Mayor St. Jacques for her service.

A. Horne, resident, asked what is being planned for the Cedar Road Parking Hub. He would like to see an electric vehicle charging station, a taxi spot, a little shop, and an information board. Mayor responded that parking is a priority and not sure of the other items.

L. Skene, resident, was seeking clarification on the historical hotel designation and re-designation for the lots 8, 9, 10 on Boardwalk Boulevard. Staff responded that the use and density for the lots are defined in the current bylaw.

16. ADJOURNMENT

16.1 Mayor St. Jacques adjourned the meeting at 9:19 PM.

CERTIFIED CORRECT: Minutes of the Regular Council Meeting held on Tuesday, October 9, 2018 at 7:30 pm in the George Fraser Room, Ucluelet Community Centre, 500 Matterson Road, Ucluelet, BC.

Dianne St. Jacques
Mayor

Mark Boysen
CAO



Our Ref. 113997
X Ref. 113750

October 16, 2018

Her Worship Dianne St. Jacques, Mayor
District of Ucluelet
200 Main St
PO Box 999
Ucluelet BC V0R 3A0
E-mail Address: info@ucluelet.ca

Dear Mayor St. Jacques:

I would like to thank you for meeting with me at the Union of British Columbia Municipalities (UBCM) Convention at the Whistler Convention Centre. The annual UBCM Convention is a great opportunity to discuss matters of importance to communities and Government.

As a Minister with roots in both rural and urban parts of the province, I have an appreciation for the unique challenges and opportunities each region presents.

Thank you for bringing to my attention an opportunity you are proposing for a community educational facility in a vacant building now owned by the Federal government. I understand that Vancouver Island University has indicated support for exploring the potential with regard to this proposal. Partnerships and collaborations between communities and post-secondary institutions are encouraged and help to grow our province.

As discussed, please share a business plan or letter outlining your approach for the facility, and contact information for the individual at the Department of National Defence that you referenced in our meeting, with my Assistant Deputy Minister, Mr. Kevin Brewster.

I welcome the opportunity to visit the District of Ucluelet as schedules allow.

Again, it was a pleasure to meet and discuss the important issues that affect your community.

Respectfully,

Melanie Mark
Hli Haykwhl Wii Xsgaak
Minister



October 9, 2018

Ref: 241519

Her Worship Mayor Dianne St. Jacques
and Members of Council
District of Ucluelet
PO Box 999
Ucluelet BC V0R 3A0

Dear Mayor St. Jacques and Councillors:

As Minister of Municipal Affairs and Housing, I would like to extend my sincere thanks to your delegation for meeting with me, together with Jacqueline Dawes, Deputy Minister, and ministry staff at the 2018 UBCM Convention. I truly appreciate and value these meetings with community delegates to learn more about the successes and challenges facing your community.

You may also have had meetings with my Cabinet colleagues. The information gathered during these conversations is invaluable to our government as we continue to work together to make life better for everyone in British Columbia. This means working hard to make life more affordable, to improve the services you count on and to build a strong, sustainable economy. The problems facing British Columbians did not appear overnight and they will not be fixed overnight, but by learning about your communities and the challenges you face, we are setting the stage to keep working together on the issues that matter.

A follow-up letter will be prepared and sent in October to capture the content of our specific meeting and to provide additional information for items discussed that required further action. I trust this will be helpful for your council/board as they form once the local elections are completed on October 20th.

I hope you agree that it was a very productive UBCM Convention. Again, I thank you for taking the opportunity to meet with ministry staff and me, and I look forward to continuing our partnership, based on communication, collaboration and cooperation, in the following year.

Sincerely,

Selina Robinson
Minister

pc: Mark Boysen, Chief Administrative Officer

**Ministry of Municipal Affairs
and Housing**

Office of the Minister

Mailing Address:
PO Box 9056 Stn Prov Govt
Victoria BC V8W 9E2
Phone: 250 387-2283
Fax: 250 387-4312

Location:
Room 310
Parliament Buildings
Victoria BC V8V 1X4



October 29, 2018

Ref: 240705

Her Worship Mayor Dianne St. Jacques
Mayor-Elect Mayco J. Noel
and Members of Council
District of Ucluelet
PO Box 999
Ucluelet BC V0R 3A0

Dear Mayor St. Jacques, Mayor-Elect Noel and Councillors:

I greatly appreciated the opportunity to meet with your delegation at the 2018 Union of British Columbia Municipalities (UBCM) Convention. Mayor St. Jacques, I would like to take this opportunity to thank you for your service to your community and offer my welcoming sentiments to Mayor-Elect Noel. Our government is committed to partnering with local governments to build vibrant and healthy communities that are more affordable, economically resilient, and socially and environmentally responsible.

The issues brought forward in our meeting were of great interest to me. Our government is committed to supporting the services that people rely on for a better quality of life. We are putting people first and improving the lives of British Columbians.

I commend your initiative to complete the pilot testing to examine the viability of establishing Kennedy Lake as a water supply and for taking a regional view to find a solution to the drinking water supply. I also understand that you have submitted an application to the Province of British Columbia's Environmental Quality infrastructure funding program intake that recently closed. Applications are currently undergoing reviews and final decisions are anticipated in spring 2019. I wish you the best of luck with your application. I also encourage you to continue to seek creative partnerships with neighbouring local governments and First Nations as you move towards a regional approach for this project.

Other potential funding opportunities with the Ministry of Municipal Affairs and Housing are now available for infrastructure projects. The Province of British Columbia has partnered with the federal government on the Investing in Canada Infrastructure Program (ICIP) and as I announced at Convention there are current intakes for two programs: the Community, Culture and Recreation Program and the Rural and Northern Communities Program. Both of these programs support projects that will improve access or increase the quality of cultural, recreational or community infrastructure. Additional outcomes for eligible projects are available in the Rural and Northern Communities Program; these projects include outcomes that focus on food security, more efficient and reliable energy and environmental quality. Details are available on the program website at: www.gov.bc.ca/Investing-in-Canada-Infrastructure-Program.

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Ministry of Municipal Affairs
and Housing

Office of the Minister

Mailing Address:
PO Box 9056 Stn Prov Govt
Victoria BC V8W 9E2
Phone: 250 387-2283
Fax: 250 387-4312

Location:
Room 310
Parliament Buildings
Victoria BC V8V 1X4

Her Worship Mayor Dianne St. Jacques
Mayor-Elect Mayco J. Noel
and Members of Council
Page 2

For more details or if you have any questions about the programs please contact Brian Bedford, Director, Infrastructure and Engineering Unit, Local Government Division, by telephone at: 778 698-3232, or by email at: Brian.Bedford@gov.bc.ca. I encourage you to discuss future funding applications with ministry staff before or during the application period to ensure your project fits with the program, as all programs have slightly different goals and objectives.

I also appreciate your bringing to my attention your request for the Province to update Section 644(2) of the *Local Government Act* (LGA) to modernize the one percent tax on utilities to include internet and cellular services. As you know, the LGA provides a “one percent utility tax” on local subscription revenue in lieu of taxing the linear assets of a utility located within a municipality. The scope of this section of the LGA is traditionally limited to utilities and companies that rely heavily on expensive linear assets like cables and pipes. Cellular phones and wireless internet do not rely on linear assets. In this respect, they are similar to broadcast (i.e., wireless) television and radio, which have not been captured under the one percent utility tax.

Based on this framework, my understanding is that the current one percent utility tax is more lucrative than taxing the exempt linear assets and that in 2018 the District of Ucluelet received \$42,000 in one percent utility taxes. Instead of a utility tax, if the municipality had been able to tax the exempt linear assets located within the district boundaries, \$6,700 would have been raised (i.e., \$166,000 in assessment x \$40.59/1000 tax rate). Ministry of Municipal Affairs and Housing staff are available to discuss this topic in detail. To that end, please contact Sean Grant, Director, Local Government Finance Unit. Mr. Grant can be reached at: 778 698-3241 or by email at: Sean.Grant@gov.bc.ca.

As my second Convention as Minister has come to an end, I trust we will continue to embrace this year’s theme of “Communication, Collaboration and Cooperation”. Through meaningful connections and productive dialogue, I look forward to working in partnership with local governments to deliver the services that British Columbians count on.

Thank you again to your delegation for taking the time to meet with me.

Sincerely,



Selina Robinson
Minister

Enclosure

pc: Brian Bedford, Director, Infrastructure and Engineering Unit
Local Government Division, Ministry of Municipal Affairs and Housing

Sean Grant, Director, Local Government Finance Unit
Ministry of Municipal Affairs and Housing



October 16, 2018

Her Worship Dianne St. Jacques
Mayor of the District of Ucluelet
PO Box 999
Ucluelet BC V0R 3A0

Dear Mayor St. Jacques:

I would like to thank the delegation from the District of Ucluelet for such an informative meeting at this year's Union of British Columbia Municipalities Convention in Whistler. I am writing to follow up on our discussion regarding police resourcing at the Ucluelet RCMP Detachment.

I appreciate the District's concerns with regards to police resources at the Ucluelet RCMP Detachment. As you know, the RCMP maintains internal processes by which local detachments may report pressures to BC RCMP Headquarters to identify and address resourcing needs. Local requests for increases are prioritized and considered in the context of the larger needs of the Provincial Police Service. Let me assure you that in addition to the four regular members assigned to the Ucluelet Provincial Unit, the RCMP has additional provincial and District level resources throughout the Island District available for surge capacity if and when needed. In particular, the Vancouver Island Integrated Major Crime Unit provides major crime investigations for Ucluelet when they occur.

I appreciate opportunities to hear the views of local governments and share information. Thank you again for a very informative meeting.

Sincerely,

A handwritten signature in blue ink, appearing to read "Mike Farnworth".

Mike Farnworth
Minister of Public Safety
and Solicitor General

pc: Mr. Clayton Pecknold
Ms. Tonia Enger
Assistant Commissioner Eric Stubbs, RCMP "E" Division, Criminal Operations Officer



BRITISH
COLUMBIA

October 30, 2018

VIA E-MAIL

Ref: 239964

Her Worship Mayor Dianne St. Jacques
Marilyn McEwen, Councillor
Mayco Noel, Councillor
Randy Oliwa, Councillor
Sally Mole, Councillor
Mark Boysen, CAO
District of Ucluelet
E-mail: info@ucluelet.ca

Dear Mayor St. Jacques, Ms. McEwen, Mr. Noel, Mr. Oliwa, Ms. Mole, and Mr. Boysen:

I am writing to thank you for meeting with me at the Union of British Columbia Municipalities (UBCM) Convention, which took place on September 10-14, 2018, at the Whistler Conference Centre, in Whistler, British Columbia.

I am greatly encouraged by the success of our meeting at this year's convention, themed *Communication, Collaboration, Cooperation*. With nearly 2,000 community leaders in attendance, local governments came together with a cohesive voice to discuss the needs and resources across communities, raised issues and ideas important to their communities, and learned about commonalities across the province.

In our meeting we discussed the wage enhancement for Early Childhood Educators (ECEs) - \$1 per hour in early 2019, retroactive to September 1, 2018, with a further \$1 per hour enhancement scheduled for April 2020. You mentioned that a non-profit society runs a daycare out of the community centre, but that the non-profit society struggles, which creates stress on the staff. Their wages are not on par with other unionized daycares and you asked how the Ministry of Children and Family Development (MCFD) can make it equitable for non-profit workers, who appreciate the increase but still are not making the same wages as other unionized centres.

On September 5, 2018, as part of [Child Care B.C., Caring for Kids, Lifting up Families: the Path to Universal Child Care](#), we announced the [Early Care and Learning Recruitment and Retention Strategy](#). Through this Strategy, the Province is investing \$136 million over three years to support the recruitment and retention of ECEs. This strategy is the first step in a long-term commitment to improve supports for Early Care and Learning professionals throughout the province and recognize them for their passion and dedication.

We have undertaken labour market research to help us better understand the complexities of the ECE workforce, and how wages and benefits differ across the sector. This important work has provided government with a more complete picture of the workforce, in order for us to appropriately target future initiatives effectively.

.../2

Ministry of
Children and Family
Development

Office of the
Minister

Mailing Address:
Parliament Buildings
Victoria BC V8V 1X4

Location:
Parliament Buildings
Victoria

You also inquired if child care will fall under the Ministry of Education (MoE) portfolio in the future. This is an important question as we consider the future of a universal child care system in British Columbia. Currently, MoE is an active partner in the Childcare BC plan and is engaged with us on a number of matters. In the short term, MoE is focused on supporting school boards in meeting their current mandate for K-12 education. We have opened up the dialogue with the MoE and will continue to explore this possibility in partnership with local school districts.

If you have any further questions or concerns regarding our discussions, please feel free to contact Christine Massey, Assistant Deputy Minister of Early Years and Inclusion, MCFD at: 778-698-7121 or by e-mail at: Christine.Massey@gov.bc.ca.

Thank you again for your input and participation. Your support and commitment to serving children, youth and families in your community is greatly appreciated.

Sincerely,

A handwritten signature in black ink, appearing to read 'Katrina', with a long horizontal stroke extending to the right.

Katrina Chen
Minister of State for Child Care

pc: Allison Bond, Deputy Minister
Christine Massey



Ref: 34655

October 16, 2018

Her Worship Mayor Dianne St. Jacques
 District of Ucluelet
 PO Box 999
 200 Main Street
 Ucluelet, BC V0R 3A0

Dear Mayor St. Jacques:

It was a pleasure to meet with your delegation at this year's Union of British Columbia Municipalities Annual Convention. I appreciated the opportunity to discuss matters of importance to you and your community.

The Ministry of Tourism, Arts and Culture (Ministry) is committed to building on our province's strengths to make British Columbia (BC) a global leader in arts and culture and tourism. We are expanding tourism-marketing efforts internationally; increasing investments in Creative BC; and, upgrading and building sports facilities, playgrounds and arts and culture spaces for all British Columbians.

Thank you for meeting with me to share the successes of the Resort Municipality Initiative (RMI) in your community. I am very pleased to hear about your culturally-rich and forward thinking projects and creative uses of RMI funding.

Ministry staff will follow up with you regarding other funding sources that could support upgrading the Lighthouse. Please feel free to contact Ms. Adrienne Beck at Adrienne.Beck@gov.bc.ca for more information.

Thank you again for taking the time to meet. I appreciate your passion and commitment to build a strong, sustainable, innovative economy that will benefit all British Columbians.

Sincerely,

Lisa Beare
 Minister of Tourism, Arts and Culture

.../2

Her Worship Mayor Dianne St. Jacques
Page 2

pc: Ms. Adrienne Beck
Manager
Tourism Policy and Programs
Tourism & Creative Sectors Division
Ministry of Tourism, Arts and Culture



OCT 23 2018

Ms. Dianne St. Jacques
Mayor
District of Ucluelet
c/o Darcey Bouvier
<dbouvier@ucluelet.ca>

Dear Ms. St. Jacques:

Thank you for your correspondence of July 11, 2018 addressed to my predecessor, the Honourable Dominic LeBlanc. Your letter deals with section 7 (critical habitat) of the draft *Amended Recovery Strategy for the Northern and Southern Resident Killer Whales (Orcinus orca) in Canada* (Amended Recovery Strategy).

Fisheries and Oceans Canada (DFO) understands the importance of fisheries to the economy of British Columbia. However, DFO must also do what it can to support the recovery of Chinook salmon and the endangered Southern Resident Killer Whale (SRKW) population.

I appreciate your concerns regarding the timing of the recent external review of the Amended Recovery Strategy. I acknowledge that the timing of the external review coincided with a busy time of year for harvesters, recreational fishers, and tourism operators. In 2018, the Government of Canada determined that SRKW face imminent threats to both survival and recovery. As such, the summer 2018 consultations on critical habitat could not be delayed.

I confirm that Indigenous peoples, stakeholders and interested individuals will have further opportunity to provide input. On September 4, 2018, we posted the proposed Amended Recovery Strategy on the Species at Risk Public Registry for a 60-day public comment period.

The summer 2018 fishery closures were put in place to support increased prey availability and to reduce disturbance from fishing vessels in key SRKW foraging areas. We understand that those closures have caused concern in fishing communities because some of the closure areas were in areas designated as SRKW critical habitat.

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It is important to note that the designation of an area as critical habitat does not automatically trigger fishery closures. If any management measures for resident killer whale recovery are proposed within the critical habitat, or any other location, DFO would engage with Indigenous peoples, harvesters and stakeholders through appropriate consultation processes to seek feedback.

No additional management measures are currently under consideration for the areas for 2018 within which the proposed critical habitat occurs. Fisheries management actions, based on the best science available, have been announced and are expected to remain unchanged for the remainder of the 2018 season. The Department will be reviewing our approach as part of the post-season Integrated Fisheries Management Plan (IFMP) review process.

I hope that the information provided clarifies DFO's position on this matter. I appreciate the opportunity to respond to your feedback.

Yours sincerely,



Jonathan Wilkinson, P.C., M.P.
Minister of Fisheries, Oceans and the Canadian Coast Guard



October 26, 2018

The Honourable Jonathan Wilkinson
Minister of Fisheries and Oceans Canada
Justice Building, Suite 09
House of Commons
Ottawa, Ontario
K1A 0A6

Dear Minister Wilkinson,

RE: Proposed Recovery Strategy for Northern and Southern Resident Killer Whales in Canada

At the October 24, 2018 Regular Board Meeting, the Alberni-Clayoquot Regional District Board of Directors discussed and reviewed the *Amended Recovery Strategy for Northern and Southern Resident Killer Whales in Canada*. While the Board respects and understands the urgent need to address the health of these cetacean populations, it's Directors have concerns about focusing on only one aspect of the issue.

Specifically, the Board requests that, in addition to the effect of sport and commercial salmon fishing to the resident whales' health, DFO study and determine ways to address the effects of:

- Pollution;
- Other predators competing for the food source;
- Improving the restoration of habitat for lifecycle of specific salmon species;
- The benefits and role of fish hatcheries.

The Board asks that traditional knowledge of indigenous communities be employed in DFO's review and that, to the extent that closures to fishing take place, the impacts of these closures on communities and industry be mitigated by Government.

In order to ensure a proper review is conducted considering all relevant data, perspectives and interests, the Board further requests that representatives be appointed to the Advisory from each affected community.

After this more comprehensive review is complete, the Board asks the Minister commit to further community engagement before imposing policy.

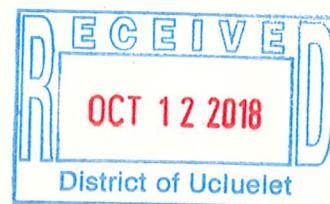
Thank you for receiving and considering the concerns of our communities. We share the overall conservation goals of your office and strongly support policy that achieves the conservation goal without introducing unintended and avoidable consequences of any policy that does not reflect the full spectrum of the problem and available solutions.

Sincerely,

A handwritten signature in black ink that reads "John Jack". The signature is written in a cursive, slightly slanted style.

John Jack
Chair, Alberni-Clayoquot Regional District

cc: Species at Risk Program – Fisheries and Oceans Canada
Wild Salmon Secretariat – Office of the Premier
District of Ucluelet
District of Tofino
Ucluelet First Nation
Toquaht Nation
Tla-o-qui-aht First Nation
Huu-ay-aht First Nation
Honourable Lana Popham, BC Minister of Agriculture



October 4, 2018

Mayor and Council
District of Ucluelet
PO Box 999
Ucluelet BC V0R 3A0

Dear Mayor and Council:

The Province will be able to issue licences for the retail sale of non-medical cannabis on or after October 17, 2018, and we are currently in the process of assessing the applications that have been submitted to us.

Our consultations with local governments indicated you wanted to ensure that the needs of your communities were considered as part of the licensing process. We would like to take this opportunity to explain the important role local governments have in cannabis licensing.

It will be up to each municipality to determine if and where non-medical cannabis can be sold, and whether it is sold in private or government stores, or a mixture of both.

Once an application is received by the provincial government and it is deemed to contain the required information, the Province will notify the respective local government of the area where the proposed store is located.

Upon receipt of notice, local governments can:

- choose not to make any recommendation in respect of the application for a cannabis retail store licence (Note: this would end a licence application in progress because the Province cannot issue a licence unless the local government gives a positive recommendation that the licence be issued)
- choose to make comments and recommendations in respect of an application for a cannabis retail store licence.

If the local government makes a recommendation to deny the application then the Province may not issue the licence, and if a recommendation in favour of the application is made, then the Province has discretion whether or not to issue the licence, but must consider the local government's recommendation in the decision whether to issue a licence.

.../2

Ministry of
Attorney General

Office of the
Attorney General

Mailing Address:
PO Box 9044 Stn Prov Govt
Victoria BC V8W 9E2
email: AG_Minister@gov.bc.ca
website: www.gov.bc.ca/ag

Telephone: 250 387-1866
Facsimile: 250 387-6411

Mayor and Council
Page 2

The Province will notify local governments about applications in the order that they are confirmed as complete. This ensures that you will have all the information you need to begin your process of making a recommendation.

We would also like to remind local governments that they may delegate the recommendation decision to staff.

We invite you to review the enclosed Local Government's Role in Licensing Cannabis Retail Stores for detailed information that will help you navigate the recommendation process. If after reviewing this information you have any questions, please email Cannabis.Licensing@gov.bc.ca.

Thank you for your consideration in this important new process.

Yours truly,



David Eby, QC
Attorney General



Mike Farnworth
Minister of Public Safety
and Solicitor General

Enclosure

pc: Chief Administrative Officer



Local Governments' Role in Licensing Non-Medical Cannabis Retail Stores

If you have any questions about this document, please contact the Liquor and Cannabis Regulation Branch toll-free at 1-866 209-2111, or email cannabisregs@gov.bc.ca. NOTE: This document will be updated from time to time as additional information surrounding the regulatory framework for cannabis retail sales becomes available. (Last updated 28 September, 2018)

Non-medical cannabis retail licence

The province will be issuing licences for non-medical cannabis retail stores. A cannabis retail store must be a standalone business. This licence requires input and a positive recommendation from a local government in whose area the proposed store is located.

The province recognizes the importance of ensuring carefully regulated access to non-medical cannabis in all areas of the province, including rural areas.

As a first step, the province will open opportunities to apply for regular retail licences. Once the regional distribution of retail non-medical cannabis stores is known, the province will consider issuing licences to service rural or remote areas that are not sufficiently served by existing retail cannabis stores.

The role of local governments in the cannabis retail store licensing process

Applicants for a non-medical cannabis retail store licence must submit a licence application to the LCRB. When an application is received, the LCRB will notify the local government of the area where the proposed store will be located.

Upon receipt of notice, local governments can:

- choose not to make any recommendation in respect of the application for a cannabis retail store licence (Note: this would end a licence application in progress because the LCRB cannot issue a licence unless the local government gives the LCRB a positive recommendation that the licence be issue)
- choose to make comments and recommendations in respect of an application for a cannabis retail store licence. Note that:
 - if the local government chooses to make a comments and recommendation on the licensee's application to the LCRB, it must gather the views of residents
 - if it makes a recommendation to deny the application then the LCRB may not issue the licence
 - if it makes a recommendation in favour of the application, then the LCRB has discretion whether or not to issue the licence, but must consider the local government's recommendation.

Local Governments (municipalities, regional districts or Islands Trust local trust committees) have some or all of the following regulatory powers in respect of cannabis retail store licences:

- Impose restrictions in its zoning bylaws regarding the location of cannabis retail stores
- Regulation of business (municipalities only): by terms and conditions in its business licensing bylaw, a municipality may limit the hours that cannabis retail stores can operate or impose other conditions such specifications regarding signage
- Charge the applicant fees if choosing to assess an application.

The above process applies to all relocations of existing cannabis retail stores.

Gathering residents' views

If the local government decides to consider the notice of application and to provide comments and recommendations as to the location of the proposed retail store, it must gather the views of residents of the area if the location of the proposed store may affect nearby residents. It may gather resident's views by using one or more of the following methods:

- Receiving written comment in response to a public notice of the application
- Conducting a public hearing in respect of the application
- Holding a referendum, or
- Using another method the local government considers appropriate.

It is up to the local government to determine the area, relative to the licensee's application, where resident's views must be gathered.

Please note: Gathering the views of residents of the area/providing a recommendation to the LCRB must be unique to each provincial licence application. In other words, past recommendations cannot be used in a new licensing process. Each individual application must be considered separately by the local government.

What must the local government's recommendation include?

The recommendations and comments the local government provides to the LCRB must:

- be in writing (this may or may not be in the form of a resolution)
- show that the local government has considered the location of the proposed store
- include the views of the local government on the general impact on the community if the application is approved
- include the views of residents if the local government has gathered residents' views, and a description of how they were gathered
- include the local government's recommendation as to whether the application should be approved or rejected and provide the reasons upon which the recommendation is based.

The local government should also provide any supporting documents referenced in their comments.

What if the local government does not want to provide a recommendation?

If a local government does not want to accept the notice of application and provide a recommendation for the proposed retail location, they should notify the LCRB. A licence for a cannabis retail store will not be issued without a positive recommendation from a local government. If a response is not received, LCRB will not consider the application any further.

What if the recommendation does not meet the regulatory requirements?

If the recommendation does not meet the regulatory requirements, the LCRB will ask the local government to provide new or amended comments that address outstanding issues.

How long does the local government have to provide comments?

Unlike in the process for liquor licensing, local governments are not required to provide a recommendation on a cannabis retail store application within a specific time period. Please note that delays in the application process can have a significant impact on the applicant. If the applicant is the reason for the delay, please notify the LCRB. If the applicant is not trying to move an application forward, the application can be cancelled.

Can the local government recommend approval subject to certain conditions?

In some circumstances, the local government can recommend that the LCRB approve the application as long as certain restrictions (e.g. hours of operation) are placed on the licence. In these situations, the recommendation should clearly explain the rationale for placing restrictions.

If the local government intends to request that the LCRB impose terms and conditions on a licence, prior to sending such a recommendation the local government should consult with the LCRB so that the LCRB can determine whether it has the authority to impose the requested terms and conditions before finalizing their conditional recommendation.

The local government may also have the ability to impose other operating rules on the proposed store through the terms and conditions of the applicant's business licence, zoning or bylaw. The local government is responsible for enforcing these rules.

Floor Plans

Applicants must submit a floor plan with their licence application for approval so the LCRB can identify store features such as sales, storage and delivery areas. Unlike for some kinds of liquor licence applications, local governments are not required to provide occupant load stamps or approve the applicant's floor plans as part of the provincial licensing process for cannabis retail stores.

A municipal council or regional district board can delegate authority to their staff to provide comments and a recommendation to the LCRB

A municipal council or regional district board may delegate its powers and duties to provide comments and a recommendation to the LCRB regarding a cannabis retail store licence application. If a council or board has delegated this authority, a cannabis retail store applicant may ask for comments and recommendations made by delegated staff to be reconsidered by the local government.

Council as defined in the Vancouver Charter:

A Council, as defined in the *Vancouver Charter*, choosing to delegate to its staff must establish procedures for a reconsideration of comments and recommendations made by delegated staff, including how a cannabis retail store applicant may apply for reconsideration. In undertaking a reconsideration, the Council will have the same authority as it delegated to staff.

Right of reconsideration:

Delegated local government staff must advise the cannabis retail store licence applicant that the applicant has the right of reconsideration of the staff's recommendation by the council or board.

How local governments inform the LCRB of delegation:

A local government that has delegated authority to staff should send a copy of the delegation to the LCRB at Cannabis.Licensing@gov.bc.ca.

Revised
September
2018

Subject: AVICC October Update - nominations for Electoral Area Representative, LGLA Sessions in February

From: AVICC <avicc@ubcm.ca>

Sent: October-31-18 3:12 PM

To: AVICC <avicc@ubcm.ca>

Subject: AVICC October Update - nominations for Electoral Area Representative, LGLA Sessions in February

Please forward to elected officials, the CAO and Corporate Officer:

Congratulations to those who have been returned to office, and welcome to all the new members of the [Association of Vancouver Island and Coastal Communities](#) as you begin to serve in your new roles.

Director Ian Winn from the Sunshine Coast Regional District has retired from local government service. The AVICC Executive would like to sincerely thank Director Winn for his contributions to the Executive as well as to the AVICC Special Committee on Solid Waste Management. He will be missed, and we wish him the very best in his retirement.

1. AVICC Electoral Area Representative - Nominations

With Director Winn's retirement, the AVICC Executive is seeking expressions of interest from our members to serve as the Electoral Area Representative on the AVICC Executive Committee. This is an interim appointment until the next AGM at the convention April 2019 in Powell River. The interim representative would be able to run for election at the 2019 AGM to continue for another term.

The Electoral Area Representative must be an elected official that represents an electoral area within the AVICC region. A document with the meeting schedule and a summary of the commitments involved in serving on the AVICC Executive is attached to this email.

The Executive would like to invite elected officials to nominate an EA Director that they feel can make a positive contribution to the Executive team by serving in this interim capacity. The EA Representative usually helps organize and chairs the EA Forum at the AVICC Convention. Nominees must also be available to meet as follows:

10:00 am to 3:00 pm on Saturday, January 12th in Nanaimo
9:00 am to 10:30 am on Friday, March 8th by teleconference
12:00 pm to 3:00 pm on Thursday, April 11th in Powell River

Candidates should forward nominations with a brief bio using the attached form by Friday, November 30th to avicc@ubcm.ca. The AVICC Executive will meet by teleconference on Friday, December 7th to review the nominations.

2. LGLA Sessions in Parksville, February 2019

The Local Government Leadership Academy (LGLA) is holding an Elected Officials Seminar for AVICC members. The seminars are open to newly elected and returning elected officials, as well as to senior staff from local governments and First Nations communities.

Since AVICC is the largest of the UBCM area associations, there will be two overlapping sessions for AVICC members. Members can sign up to **either** of the sessions:

AVICC Session #1: February 12-14, Parksville – [2019 AVICC SESSION #1 EOS AGENDA – DRAFT](#)

AVICC Session #2: February 13-15, Parksville – [2019 AVICC SESSION #2 EOS AGENDA – DRAFT](#)

Please contact Shawna Deagle-Leung at info@lgla.ca with any questions about the LGLA seminars.

Subject: Child Care Planning Project RFP
Attachments: RFD Child Care Planning program grant.docx; Child Care Planning - For ACRD.docx

From: Marcie DeWitt <marcie_dewitt@hotmail.com>

Sent: November-02-18 9:29 AM

Subject: Child Care Planning Project RFP

Dear Ucluelet Mayor and Council

After some discussion and investigation with local partners and organizations we have been made aware that no one community in our region has plans to apply for the Child Care Planning RFP in the ACRD. As this is an important piece of information for our communities and support system for families myself and cohorts Maggie Hodge Kwan and Tracy Smyth have approached the ACRD to ensure that this work takes place. We are proposing a regional project inclusive of all communities in the ACRD with the regional district as the fiscal host for the project.

During the October 10th ACRD Board Meeting a Request for Decision went forward and a motion was made:

THAT the Alberni-Clayoquot Regional District apply to the provincial Community Child Care Planning Program for funding to undertake child care planning activities and develop a 'community child care space creation action plan' for the region's communities;

AND THAT if successful, engage the services of Marcie DeWitt, Maggie Hodge Kwan and Tracy Smyth to complete the key project activities of the project

As we move forward on this application we are seeking Motions from the Municipalities of Ucluelet, Tofino and City of Port Alberni to support this application in collaboration with the ACRD. I have attached the RFD put forward to the ACRD, [meeting minutes](#) from the October 10th Directors meeting as well as a project backgrounder which went forward to support this decision. Here is a link to the [RFP information](https://www.civicinfo.bc.ca/grants?grantid=805) (https://www.civicinfo.bc.ca/grants?grantid=805) and the [application guide](https://www.ubcm.ca/assets/Funding~Programs/LGPS/Childcare/childcare-2019-planning-program-guide.pdf) (https://www.ubcm.ca/assets/Funding~Programs/LGPS/Childcare/childcare-2019-planning-program-guide.pdf) for further information.

We are looking forward to working on this application and subsequent project for the area and are requesting your support through a motion to support this application. Please do not hesitate to get in touch with any questions or clarifications required.

Regards

Marcie DeWitt
Consulting Services



To: Board of Directors

From: Josie Osborne, Mayor, District of Tofino
Douglas Holmes, CAO

Meeting Date: October 10, 2018

Subject: Community Child Care Planning Program

Recommendation:

THAT the Alberni-Clayoquot Regional District apply to the provincial Community Child Care Planning Program for funding to undertake child care planning activities and develop a 'community child care space creation action plan' for the region's communities;

AND THAT if successful, engage the services of Marcie DeWitt, Maggie Hodge Kwan and Tracy Smyth to complete the key project activities of the project.

Summary:

The Province of BC recently announced expanded investment in the child care sector totaling \$1 billion over three years. This includes \$237 million to improve access to child care, including funding the creation of 22,000 new licensed child care spaces. Strong planning at the community level will ensure that this and future investments create child care spaces in areas with the greatest need.

To support the identification of community needs, a funding stream entitled the 'Community Child Care Planning Program' has been created by the Province. The funding program will support local governments and child care stakeholders to:

- collect information regarding the child care needs of each community;
- create an inventory of existing child care spaces;
- identify space creation targets over the next 10 years; and
- identify actions that can be taken to meet those space creation targets.

The information gathered through these plans will be shared with the BC Ministry of Children and Family Development, and may inform future provincial investments in child care space creation

For efficiency and knowledge sharing in the ACRD region's closely connected communities and network of child care providers, a team of experienced consultants has proposed a regional approach to undertake this work for ACRD communities (see below). As the ACRD does not have a service (and therefore staff) to deliver this project, we recommend the consultant team be authorized to pursue the funding and, if successful, conduct the work on behalf of the ACRD. While the information from this project dovetails nicely with the

goals of the Alberni Clayoquot Health Network and will greatly inform their activities, the funding would flow directly from the Province to the ACRD and the contract would be separate from the ACHN’s activities.

The project would be conducted by the following team members:

Marcie DeWitt – Marcie has a decade of community development, engagement and systems change experience. This has included coordination of the Coastal Family Resource Coalition, where she also oversaw the Early Years Table, and the Alberni Clayoquot Health Network. Marcie has formal training in project management.

Maggie Hodge Kwan – Maggie has been a facilitator for the Alberni Children First Network and the Alberni Valley Childcare Connections group (the former is now defunct due to lack of funding). Maggie has formal training in project management, data analytics, and non-profit evaluation.

Tracy Smyth – Tracy has been an early year’s community developer for two decades with a focus on supporting multi-organization collaboration to improve supports to families. She was the community facilitator for both the Alberni Valley and West Coast communities and has been an instructor for North Island College’s Early Child Care and Education certificate and diploma program.

Time Requirements – Staff & Elected Officials:

Minimal staff time required to support the application submission.

Financial:

The Community Child Care Planning Program can contribute a maximum of 100% of the cost of eligible activities to a maximum of \$25,000 per community. A Board or Council resolution will be required for each participating local government.

Submitted by: _____
Josie Osborne, Mayor, District of Tofino

Submitted by: _____
Douglas Holmes, BBA, CPA, CA, Chief Administrative Officer



Alberni-Clayoquot Regional District

MINUTES OF THE BOARD OF DIRECTORS MEETING HELD ON WEDNESDAY, OCTOBER 10, 2018, 1:30 PM

Uchucklesaht Tribe Government Office, 5251 Argyle Street, Port Alberni, BC

DIRECTORS PRESENT: Josie Osborne, Vice-Chair, Mayor, District of Tofino
 Keith Wyton, Director, Electoral Area "A" (Bamfield)
 Mike Kokura, Director, Electoral Area "B" (Beaufort)
 Tony Bennett, Director, Electoral Area "C" (Long Beach)
 Penny Cote, Director, Electoral Area "D" (Sproat Lake)
 John McNabb, Director, Electoral Area "E" (Beaver Creek)
 Lucas Banton, Director, Electoral Area "F" (Cherry Creek)
 Mike Ruttan, Mayor, City of Port Alberni
 Jack McLeman, Councillor, City of Port Alberni
 Dianne St. Jacques, Mayor, District of Ucluelet
 Alan McCarthy, Member of Legislature, Yuułu?it?ath Government
 Wilfred Cootes, Councillor, Uchucklesaht Tribe Government
 Kirsten Johnsen, Member of Council, Toquaht Nation (via telecom)

REGRETS: John Jack, Councillor, Huu-ay-aht First Nation

STAFF PRESENT: Douglas Holmes, Chief Administrative Officer
 Teri Fong, Manager of Finance
 Rob Williams, General Manager of Environmental Services
 Wendy Thomson, Manager of Administrative Services
 Janice Hill, Executive Assistant
 Alex Dyer, Planner

1. **CALL TO ORDER**

The Vice-Chair called the meeting to order at 1:30 pm.

The Vice-Chair recognized the meeting this afternoon is being held in the Tseshaht First Nation and the Hupacasath First Nation Traditional Territories.

2. **APPROVAL OF AGENDA**

MOVED: Director Kokura

SECONDED: Director Ruttan

THAT the agenda be approved as circulated with the addition of the following late items: 9.1(b) Correspondence received re: TUP18013, Collings, 8905 Faber Road (Sproat Lake).

CARRIED

3. DECLARATIONS**4. ADOPTION OF MINUTES****a. Board of Directors Meeting – September 26, 2018**

MOVED: Director Cote

SECONDED: Director McNabb

THAT the minutes of the Board of Directors meeting held on September 26, 2018 be adopted.

CARRIED

b. West Coast Committee Meeting – October 3, 2018

MOVED: Director Cootes

SECONDED: Director Wyton

THAT the minutes of the West Coast Committee Meeting held on October 3, 2018 be adopted

CARRIED

Director Banton entered the meeting at 1:34 pm

5. PETITIONS, DELEGATIONS & PRESENTATIONS**a. Clair Lake, regarding TUP18013 (Collings/8905 Faber Rd) and TUP's in general.**

Ms. Lake expressed concern over Temporary Use Permits at Sproat Lake and her opposition to TUP18013.

6. CORRESPONDENCE FOR ACTION**a. REQUEST FOR ATTENDANCE**

Making Resilience and Recovery the New Norm for Your Business

(No action taken).

7. CORRESPONDENCE FOR INFORMATION**a. ISLAND COASTAL ECONOMIC TRUST**

ICET Funds Industrial and Employment Lands Strategies

b. VANCOUVER ISLAND REGIONAL LIBRARY

Child Care Planning Project Request for Support Alberni-Clayoquot Region...

MOVED: Director Kokura

SECONDED: Director Ruttan

THAT the Board of Directors receive items a-b for information.

CARRIED

8. REQUEST FOR DECISIONS & BYLAWS

a. Request for Decision regarding Finance Warrant No. 593

MOVED: Director McNabb

SECONDED: Director Ruttan

THAT the Board of Directors approve Finance Warrant Number 593 in the amount of \$680,652.77 dated September 30, 2018.

CARRIED

b. Request for Decision- ACRD - Recycle BC Curbside and Depot SOW Contract renewal

MOVED: Director McNabb

SECONDED: Director Cote

THAT the Alberni-Clayoquot Regional District Board of Directors approve entering into a contract renewal with Recycle BC for the new Statement of Work (SOW) for Curbside and Depot recycling collection, for just over a 5 year term, effective November 30, 2018 ending December 31, 2023.

CARRIED

c. Request for Decision - 3rd Ave Depot – lease lot renewal with Western Forest Products Inc.

MOVED: Director Cote

SECONDED: Director Banton

THAT the Alberni-Clayoquot Regional District Board of Directors approve the renewal of lease Lot 3, DL1, Alberni District, Plan VIP67137, except part in Plan VIP68454 (PID:024-147-885) containing 0.1175 acres (5118 sq. ft.) from Western Forest Products Inc. (WFP), for parking of the recycling trucks beside the 3rd Ave. depot for a 3 year term effective November 1, 2018 to October 31st, 2021 at a rate of \$2,500.00 annually.

CARRIED

d. Request for Decision - Rogers Communications – Proposal for Cellular Tower at West Coast Landfill

MOVED: Director Bennett

SECONDED: Director St. Jacques

THAT the ACRD Board of Directors direct staff to negotiate an agreement with Rogers Communications regarding the proposed construction of a cellular tower at the West Coast Landfill.

CARRIED

e. Request for Decision regarding Parks Canada Building Lease

MOVED: Director Banton

SECONDED: Director Cootes

THAT the ACRD Board direct staff to further investigate long-term lease options with Parks Canada to be completed in 2-3 months.

CARRIED

f. Request for Decision regarding Alberni Inlet Trail – license renewal with Island Timberlands LP.

MOVED: Director Cote

SECONDED: Director Banton

THAT the Alberni-Clayoquot Regional District Board of Directors approve the renewal of a non-exclusive license renewal from Island Timberlands LP, for the Alberni Inlet Trail from Ship Creek Road to Franklin River parking lot for a 2-year term effective January 1, 2019 to December 31, 2020.

CARRIED

g. Request for Decision regarding West Coast Transit Study

MOVED: Director St. Jacques

SECONDED: Director Bennett

THAT the ACRD Board of Directors approve BC Transit to move ahead with public engagement regarding the potential implementation of a West Coast conventional transit service as outlined in BC Transit's 2018 report – Tofino Ucluelet Transit Service Feasibility Study.

CARRIED

h. Request for Decision regarding Millstream Water Connection

MOVED: Director Bennett
SECONDED: Director Cootes

THAT the ACRD Board of Directors instruct staff to investigate the feasibility of expanding the boundaries of the Millstream water service area as requested by the property owner of 2401 Grant Avenue, Long Beach and report back on the feasibility of this request.

CARRIED

i. Request for Decision regarding Community Child Care Planning Program

MOVED: Director Cote
SECONDED: Director McNabb

THAT the Alberni-Clayoquot Regional District apply to the provincial Community Child Care Planning Program for funding to undertake child care planning activities and develop a 'community child care space creation action plan' for the region's communities;

AND THAT if successful, engage the services of Marcie DeWitt, Maggie Hodge Kwan and Tracy Smyth to complete the key project activities of the project.

CARRIED

j. Request for Decision regarding Long Beach Airport Advisory Committee – Terms of Reference - Amendments

MOVED: Director St. Jacques
SECONDED: Director Kokura

THAT the Alberni-Clayoquot Regional District Board approve the amended Terms of Reference for the Long Beach Airport (LBA) Advisory Committee, as presented.

CARRIED

k. Request for Decision regarding Volunteer Appreciation Events

MOVED: Director McNabb
SECONDED: Director Wyton

THAT the Alberni-Clayoquot Regional District Board of Directors instruct staff to organize Committee member appreciation events in early 2019 to be held in the Alberni Valley, West Coast and Bamfield to recognize the contributions of our many volunteers and to include \$7,000 in the 2019 proposed budget for General Government to cover the costs of the events.

CARRIED

Directors Ruttan, McLeman, McCarthy and Cootes left the meeting at 2:05 pm.
Director Cootes re-entered the meeting at 2:12 pm.

9. PLANNING MATTERS

9.1 ELECTORAL AREA DIRECTORS ONLY

- a. **DVD18010, EVANS, 10884 LAKESHORE ROAD (SPROAT LAKE)**
Development Variance Application – Memorandum and Permit

MOVED: Director Cote

SECONDED: Director Banton

THAT the Board of Directors issue development variance permit DVD18010.

CARRIED

- b. **TUP18013, COLLINGS, 8905 FABER ROAD (SPROAT LAKE)**
Temporary Use Permit Application – Memorandum and Permit

MOVED: Director Cote

SECONDED: Director Bennett

THAT the Board of Directors issue Temporary Use Permit TUP18013.

CARRIED

- c. **DVE18016, HERTER, 5470 FALLS STREET (BEAVER CREEK)**
Development Variance Application – Memorandum and Permit

MOVED: Director McNabb

SECONDED: Director Wyton

THAT the Board of Directors issue development variance permit DVE18016.

CARRIED

9.2 ELECTORAL AREA DIRECTORS AND TOFINO

- a. **RT18012, NON-MEDICAL CANNABIS PRODUCTION (ALL AREAS)**
Rezoning Application – Memorandum and Bylaw P1380

MOVED: Director McNabb

SECONDED: Director Banton

*THAT Bylaw P1380, Regional District of Alberni-Clayoquot Zoning Text Amendment
Bylaw be adopted.*

CARRIED

Director Ruttan and Director McLeman re-entered the meeting at 2:20 pm.
Director McCarthy re-entered at 2:21 pm

10. REPORTS

10.1 STAFF REPORTS

- a. **West Coast Landfill Hours**
- b. **Board Strategic Priorities and Resolved Staff Actions**

MOVED: Director Kokura

SECONDED: Director Ruttan

THAT the Board receives reports a-b.

CARRIED

10.2 COMMITTEE REPORTS

10.3 OTHER REPORTS

- a. **West Coast Marine Protected Area of Interest Advisory – Director Bennett - Verbal**

Director Bennett advised that he accepted his appointment to the Advisory and plans to attend the November 6th and 7th, 2018 meeting. He provided information on the status of the Resident Killer Whale Advisory and the need for more local government representation to the committee. Director Osborne has been appointed by AVICC to sit on the Resident Killer Whale Advisory committee.

MOVED: Director Cootes

SECONDED: Director Wyton

THAT the Board receives this verbal report.

MOVED: Director Bennett

SECONDED: Director Osborne

THAT the ACRD Board write a letter to Department of Fisheries and Oceans thanking them for their recent visits to the West Coast Communities and request that an

appointment from the ACRD Board of Directors and each adjacent regional district be accepted to the South Resident Killer Whale Advisory to ensure that all coastal communities have adequate representation, and copy AVICC and all AVICC members.

CARRIED

11. UNFINISHED BUSINESS

12. LATE BUSINESS

13. QUESTION PERIOD

14. RECESS

MOVED: Director Osborne

SECONDED: Director Banton

THAT the Regular Board of Directors meeting be recessed in order to conduct the Regional Hospital District meeting.

CARRIED

The meeting was recessed at 2:48 pm

15. RE-CONVENE

The meeting was re-convened at 2:53 pm.

16. IN-CAMERA

MOVED: Director Cootes

SECONDED: Director McNabb

THAT the meeting be closed to the public as per section:

- i. 90 (1) (k): negotiations and related discussions respecting the proposed provision of a regional district service that are at the their preliminary stages and that, in the view of the board, could reasonable to expected to harm the interests of the regional district if they were held in public;*
- ii. 90 (1) (j): information that is prohibited, or information that if it were presented in a document would be prohibited, from disclosure under section 21 of the Freedom of Information and Protection of Privacy Act.*

CARRIED

The meeting was closed to the public at 2:53 pm.

The meeting was re-opened to the public at 3:08 pm.

17. RECOMMENDATIONS TO THE BOARD FROM IN-CAMERA

The following resolution was reported out in the open meeting:

a. Request for Decision – Water Strip Lease – Long Beach Airport

THAT the Alberni-Clayoquot Regional District Board of Directors enter into a three (3) year lease agreement with Tofino Air Lines to operate the water strip at the Long Beach Airport commencing November 1, 2018 for the annual lease amount of 3,437.54 plus applicable taxes with CPI annual increases.

18. ADJOURN

MOVED: Director Cote

SECONDED: Director McLeman

THAT this meeting be adjourned at 3:08 pm

CARRIED

Certified Correct:



Josie Osborne,
Chairperson



Wendy Thomson,
Manager of Administrative Services

Community Child Care Planning Program

Project purpose: The development of a community child care space creation action plan. The provincial government recently announced a \$3 billion investment in the child care sector over the next three years. Funding for the creation of new child care spaces is underway and will continue until 22,000 new spaces have been created.

In order to ensure that community needs are met, the Community Child Care Planning Program is underway in tandem. The Planning Program supports local governments and child care stakeholders in understanding their current and upcoming child care needs.

Key project activities:

- Prepare a regional application for ACRD communities
- Inventory current child care spaces
- Develop methodology for data collection (i.e. utilizing existing information, stakeholder survey, community consultation)
- Define mechanisms for stakeholder engagement
- Synthesize data and community input
- Write community child care space creation action plan

Project team:

Marcie DeWitt – Marcie has a decade of community development, engagement and systems change experience. This has included coordination of the Coastal Family Resource Coalition, where she also oversaw the Early Years Table, and the Alberni Clayoquot Health Network. Marcie has formal training in project management.

Maggie Hodge Kwan – Maggie has been a facilitator for the Alberni Children First Network and the Alberni Valley Childcare Connections group (the former is now defunct due to lack of funding). Maggie has formal training in project management, data analytics, and non-profit evaluation.

Tracy Smyth – Tracy has been an early years community developer for two decades with a focus on supporting multi-organization collaboration to improve supports to families. She was the community facilitator for both the Alberni Valley and West Coast communities and has been an instructor for North Island College's Early Child Care and Education certificate and diploma program.

Subject: Congrats/Surf Safety Advocacy in Ucluelet/PRNPR
Attachments: 2018 June 1, Water Safety Meeting Minutes.docx; Pacific Rim Incident Report 2018.pdf

From: Nick Haisch [REDACTED]
Sent: October-26-18 6:12 PM
Subject: Congrats/Surf Safety Advocacy in Ucluelet/PRNPR

Hello Mayco and New Council.

Let me first congratulate all of you on your elections and I wish you all the best for your time serving Ucluelet. I just wanted to take the time to write and fill you in on something that all of the Surf Schools in Ucluelet have been collectively working on.

In late 2017 I asked all of the Surf Schools that operate regularly in Pacific Rim Nation Park Reserve to get together and have a discussion on a number of issues. On the top of this list was the need for an increased safety presence in PRNPR. We as a group, feel that there is a need to reinstate the Surf Guard Program in PRNPR at Long Beach. Unfortunately, since our first meeting there have been two more surfing deaths at Long Beach. On June 1st, 2018 we were able to meet with representatives from PRNPR to address our concerns. Both Mayors from Tofino and Ucluelet were present as well as Denise from TU. We advocated for Lifeguards. Without them Surf Instructors and Locals are left to provide water safety for the uneducated and unskilled. The answer we received from Parks was not a surprise. "No". PRNPR said they need hard data about the rescues that we regularly conduct before they will take action.

So we decided to reach out to the Lifesaving Society of Canada to help us create a form and log the data. With their help we created a form specific to our area and our needs. We are going to start a campaign for locals that have conducted rescues or witnessed incidents to come fill out one of the forms at both Relic Surf Shop and Long Beach Surf Shop.

We would ask your support in helping us make our beaches safer. I would be happy to meet with any of you to further discuss our goals. If you would like me to speak at a council meeting I'd be happy to do that as well. I have attached the minutes from our June 1st meeting in this email and our reporting form.

Thanks,

Nick Haisch - Surf Junction Campground

With support from:
Mike Bray - Relic Surf Shop and Surf School
Jay Rosene - Endless Ride Surf School
Andy Herridge - Wick'd Surf School
Bill Fend - Long Beach Surf Shop
Tyson Touchie - Wya Surf Shop and Surf School

Water Safety Meeting

June 1, 2018

PRNPR Administration building

Present (in person): Nick Haisch (Surf Junction Surf School), Mike Bray (Relic Surf School), Karen Haugen (PRNPR - Superintendent), Denise Stys-Norman (Executive Director - Tourism Ucluelet), Renee Wissink (PRNPR - Resource Conservation Manager), Dianne St. Jacques (Mayor – Ucluelet), Jon Hopkins (PRNPR – Law Enforcement Supervisor), Josie Osborne (Mayor – Tofino), Tyson Touchie (WYA Surf School), Andy Herridge (Wick'd Surf School), and Dave Tovell (PRNPR – Visitor Experience Manager)

Present (by teleconference): Dennis Wasylenko (Coastal BC Field Unit - Acting External Relations Manager), Randy Mercer (PRNPR – Acting Visitor Safety Specialist)

Regrets: Jay Rosene (Endless Ride Surf School)

Opening remarks;

Parks Canada: Thank you to everyone who organised this meeting together and bringing us all here to talk about how we can work together to prevent further incidents.

Our goal is that all of us can begin implementing CoastSmart and use the tools that were developed by the team which included Ucluelet District, Tofino District and Parks Canada. The team created brochures, websites, apps, signage etc. with the \$810k funding that the group received. These are great tools to help educate and provide prevention messages. We all have a collective responsibility and must take a regional approach

Surf Industry:

Today only included Surf Industries in Ucluelet as these industries utilise National Park beaches the most as Tofino industry has their own beaches.

The Surf Industry presented their 6 key points of discussions that was submitted to Pacific Rim National Park Reserve (PRNPR) by email on May 31, 2018.

Key Point #1 – Communications – Parks Canada Agency (PCA) liaison contact

Concerns raised was that there was no 1 person for the surf industry to contact, when they would contact the front desk they would be sent to different people.

The following will be the main contacts on behalf of PCA:

- The Parks Canada liaison for water safety in PRNPR is the Visitor Safety Specialist. Currently Randy Mercer (RM) is acting in this position and his contact info is:
 - Randy Mercer
Acting Visitor Safety Specialist
250-726-7165 extension #235
Randy.mercer@pc.gc.ca
- Dave Tovell (DT) is the Parks Canada contact for policy changes and business licences.
 - Dave Tovell
Visitor Experience Manager
250-726-3504
Dave.tovell@pc.gc.ca
- For emergencies - Parks Canada has a 24 hour dispatch 1-877-852-3100 or 250-726-3604
- Surf Industry will send their main contacts to Randy Mercer.

Discussion on business licenses not having contact information and that the surfing community have a form they use to record incidents but these forms are different for each other so collection of data is not easy. Discussion on creating a common incident form that can be used by all including PCA.

Discussion that the national park and Surf Industry used to get together once a year prior to 2012 and this was a place to share information and discuss concerns. It would be beneficial to have this come back so we have a venue to get together.

- Agreed to include all relevant contact info in Business Licence applications
- Randy to create a common incident report form and share with Surf Industry for feedback and implementation
- A request was made for all parties to meet at least once a year to discuss issues and solutions as a region. Dave to schedule annual meetings

Key Point #2 – Life Guards and bringing them back

There was concerns shared about bringing the lifeguard program back and in place especially for the high season when there is more visitors. Some concerns expressed by the industry included;

- More visitors to the region
- No safe place to send visitors who do not want lessons but want to experiment surfing
- Surfers are rescuing more and more people in the water that are in distress
- More people are watching when surf lessons are occurring on the beach
- Many of the industries are having to stop people before they enter the water to talk to them about prevention.
- There is no Parks Canada staff seen on the beaches.
- There needs to be someone to have “eyes” on the water.
- We are being pushed to areas of the beaches that are not safe as there are restricted areas for lessons. This has implications because we do get people on the beach that notice where the lessons are and feel they will be safe.
- Still a need even with prevention such as CoastSmart to have lifeguards – why can there not be both?

PCA Surf Program concluded in 2012 as it was no longer in step with the growth of the surf industry. Surf Guards would not have been on strength for the past 2 fatalities. Historically, Surf Guards were a 10 week program and did not operate in May or February.

PCA begin looking at other options that would be more of a regional based approach which is where the CoastSmart Program begin discussions with the region. The intent of CoastSmart was it was a prevention and education program that will inform visitors before they arrive and will be consistent messages throughout the region. In 2014, PCA and the Districts were successful in receiving \$810K to begin development of CoastSmart tools and conduct research. The group has been successful in developing a website where you can go to learn more, take water safety test, down load information, etc. the brochures, signs and app are all great tools for prevention. The motto of CoastSmart is; “Know before you go” and with partners like the Lifesaving Society and Adventure Smart we can all work together to build on this prevention and education

We were hopeful to have the new CoastSmart signs up by high season however there were deficiencies when the signs were fabricated so we had to send them back which has resulted in delays. We now have the signs back and they are scheduled to go up.

- PRNPR signage and Pacific Rim Visitor Centre (PRVC) will be installed in the next 2-3 weeks (by end of June)
- District signage installation will be going out to contract (hoping for installation in July)
- Cox Bay and Kwisis Visitor Centre (KVC) - will be done either by PC staff or by contract

For PCA, prevention and education is of key importance as we have human wildlife concerns, EI concerns and water safety concerns which is why all Parks Canada staff do prevention. And our Interpretative program and outreach focus on education messages along with prevention.

Question was raised “If data shows more deaths/rescues happening at certain locations is there the possibility of bringing back Life Guards to the areas where these incidents are happening?”

Before making a decision to bring back life guards we need to have all information beforehand which includes developing options and recommendations. We have to look at everything, including the time of year incidents occur such as these two which were not in the high season, as well how prevention is occurring, are visitors getting the messages and understanding the risks, to even looking at the shutting down certain parts of the beaches to surfing / water activities? A proper review will allow us to flush out options and do this together.

Many of us have not fully rolled out CoastSmart – need to fully implement and achieve CoastSmart and then evaluate the program. We have not done this yet. We cannot come to the solution of having Surf Guards back without doing the proper due diligence of implementing CoastSmart and looking at ways to work together.

Concerns were raised that the cutbacks in 2012 had a negative impact for safety and now Parks Canada is spending lots of funds on projects such as the trail, new washrooms and last year offering free entry to the national park. This is all great however there is no funding going towards the #1 thing which is beach safety.

Comments raised included;

- This is not the way Government works
- Media attention is deflecting the real needs, need to change culture
- This National Park needs more resources which they currently do not have.
- We want to help with CoastSmart, but also want to rally for Surf Guard support

All the capital projects currently occurring in the national park are coming from other pots of funding, Capital projects come from a different pot of money then funding we use from operations. The Government needed to address aging PCA infrastructure across Canada and the projects you see happening are part of that program. We need stats and facts in order for us to know what is needed for Visitor safety and where we can go for funding.

What we don't want is for stats to be used to close beaches to surfers. Stats will lead to a bigger discussion about lifesaving that we can have to help shape a plan moving forward. Industry has concerns with the number of people they continue to interact with while they are doing lessons. Approx. 100-200 people per year (which includes approx. 3-4 assists). Surf Guards saved lives in the past. Yes, you have signage and you have Bear Aware but you still have staff who need to enforce what is on those signs. Also, a lot of people don't follow rules or read signs

Areas we are concerned with are the 2 main areas (Long Beach and Wick) we are not concerned with across all locations. We feel there is the need to have flags to identify currents and show safe places to recreate (no hazards) with the focus on water safety only. Just 2 days after the latest fatality we were doing instructions and conditions were even worse and once again visitors were going into the unsafe areas and we had to stop them.

We have a regional issue, and this needs to be a regional initiative. CoastSmart if used effectively should reduce the number of incidents and help educate visitors before they arrive. We need to be able to give people correct info, consistent information and do it prior to their arrival so that when they go into the surf shops they have this information and it will help you in delivering the message.

You can see examples of CoastSmart signs and symbols at <http://coastsmart.ca/hazards/>

Incidents happen with not just “in water” users, but “near water” users. Together with businesses we can educate staff and direct visitors to signs. PCA have added a new visitor centre in the Long Beach parking lot (an oTENTik) and had a successful ambassador program last year. We will continue to look at ways to get more staff out on the beaches and trails.

Industries do try to educate when we rent items however, people don't always listen as they just want the equipment and to leave for the beach. We still need a safe secure spot to send these people, CoastSmart won't solve all of our problems.

No, it may not solve all the problems but we can make a difference with CoastSmart. We can share key messages and possible training with surf schools to help with visitors who are not interested and just want to get out in the ocean. PCA has great techniques to get key messages to visitors so they stay interested. We can work together to help with delivering difficult messages

We all want to be CoastSmart ambassadors but not sure if CoastSmart is enough? How can we all work together? By the time people are in the parking lot they are in "go" mode. We have to get to them before they are engaged.

Tourism Ucluelet's role is to educate people before they arrive. The PRVC is the 2nd busiest Visitor Centre on Vancouver Island and we have a captive audience. What we need is a more balanced approach with CoastSmart and we need more Ucluelet businesses as CoastSmart Ambassadors.

We still need booties on the ground. There will always be a % of "cowboys" that will do whatever they want to do. CoastSmart can hit 90% but we are missing the 10%. Can Parks Canada give a little more? These 10% are the tough sell and need a different approach.

Opening up smaller lessons in previously restricted areas for lessons can help promote surf lessons – which is a good thing for everyone. Restricted areas in business licenses for industries delivery lessons will be further investigated. Dave will lead this process and a message will be given out in the net 2-3 weeks.

Can we put stickers on rental surfboards with a list of our top issues to educate people? Or common symbols?

The new incident form that will be developed will help in gathering stats, Government works on stats and facts and we need valid stats. We can work together to report on implementing CoastSmart, communicating better, report on stats, have visitor safety on staff, supplies at the Resource Conservation building. The group will look at an incident tracking system, Randy will be the lead to work on a common incident reporting system.

Key Point #3 – Surf School Standards and an Association

There was discussion on standards for surfing. Standards are led and developed by the industry. Such as the kayak industry, where the standards have been created and developed by the industry and then Parks Canada reviews and approves these standards for implementation in the business licensing process.

Surf Schools are the industry that can lead the development of these standards.

PCA does not have any specific standards to follow so once these standards are approved, they will be more enforceable and will allow for better follow-up and enforced when the standards are not being met. The standards needs to be credible and official. During the business licence application process, each company needs to prove they meet the agreed upon standards.

Is there an option to create a Surf School association?

Work with districts on their business licencing processes for surf rental shops. After Leviathan, Tofino has focused on what we can reasonably do to improve safety but not increase liability and burden. Can help with how Districts display info/messaging, with less of a policing feel. Our clients have at least 15 minutes to get from Ucluelet to the beach so we have a bit of a captive audience.

A tool that would help is if we can we have maps with specific key places (regardless of conditions) – such as Green, Blue, Black Diamond, etc. it can be a map that is available in all shops and / or in an app.

The Long Beach map that PRNPR has doesn't have Lovekin Rock or SUP islands on its maps so it is effective to show visitors. The Ucluelet Adventure Map has these locations shown, can we use this map as a template for the creation of a new beach map? We all agree that there is a need a regional surf map, one that will be mandatory to hand out to all rentals and will allow visitors to flow so freely across boundaries

Key Point #4 – Emergency Huts/Caches

Surf companies all need to have basic equipment **as well** PRNPR has all equipment in a central location

What is the equipment or list that is being requested? It is basic safety equipment, AED, radio etc. What we are asking is if we can build a hut for a shared use by industry – managed by industry and filled by industry on Parks Canada lands? We would have a sign out list for this hut and equipment.

Consideration should be thought of as vandalism could be an issue.

Randy will work with the industries on locations, what it is needed etc.

Key Point #5 – Teaching Areas and Restrictions

Concerns were raised that the business licenses used for surf schools push them to unsafe areas. As of June 1, cannot teach between Incinerator and Lovekin Rock, we prefer that to outside areas.

Incinerator parking lot closure has impacted us and has caused us to move locations. Instructors should be able to choose the safest locations as we do also get people that are on the beach watching us.

Flo Bay is restricted for surf schools as well. Parking is the main concern and issue so this area would need further discussions.

Dave will review the business licensing process and requirements

Key Point #6 – Parking Issues

Parking is a concern for the industry when delivering lessons. Incinerator is the safest spot in PRNPR for surf lessons and currently we cannot just drop off gear and guests in the incinerator roundabout without PCA staff getting mad at us. The general public takes parking spots and occupy them all day from dawn to dusk, we are just looking at a few hours at a time, we need to promote taking lessons and are requesting 2 designated parking spots for surf schools (1 parking spot at Long Beach and 1 at Incinerator). We will invite people to listen in on surf and safety instruction only but cannot solicit lessons in the national park.

PCA will look into this and get back to you by end of next week, if things need to be revisited in Business Licences or policy we can look at that, Dave will be the lead on behalf of the national park.

Other items for discussion:

Dave will be sending email about CoastSmart to all Business Licence holders who promote coastal activities stating that CoastSmart is recommended in 2018 and will be mandatory in 2019

- Still to be decided what mandatory will look like
- CoastSmart Ambassadors is on the website <http://coastsmart.ca/network/ambassadors/>
- PRNPR will be printing off pamphlets to hand out to National Park Reserve visitors about CoastSmart. Dave will share the printer company we use and the costs/prices

Could there be 1 lead from the Surf School industry for Parks Canada to contact? Yes, we will select 1 or 2 people

When will common incident form be ready? A few months will be the goal, in the meantime please send Randy the detailed info on every event in email format.

Would Parks Canada allow us to operate lifeguard stations in the National Park? We have been seeking insurance quotes as a non-profit society and are looking for funding sources. This could be a temporary fix.

Things to consider are you can work with the Lifesaving society, local fire chiefs and WISAR

We can educate but we can't prevent general accidents. Incidents rates around the World hover around 1%.

Randy will provide information to the industry on possible requirements. Further research needs to be done on a community based lifeguard society.

To wrap up, overall Prevention/Education and Emergency Responses as a region are our 2 priorities. The following is what is captured for action items from the meeting.

Action items came from the meeting included;

1. Share contact information so people know who to contact for specific issues
2. Develop a common incident reporting form so that we can gather data on how many incidents and where
3. Create a group that would meet annually and discuss issues of the season and solutions as a region
4. Signage for CoastSmart will be going up within the next 2-3 weeks for the national park and further timeline will come for the Region
5. Parks Canada to look at providing some training on interpretation messaging/visitor messages
6. Standards for surfing schools - the industry has been working on this and will present a draft to PCA by October 31st for review and approval into the business licensing process
7. Creation of a regional beach map that highlights areas that are safe, moderate or hazardous
8. Parks Canada will review the business licensing process and requirements



Incident Report

Please Print Clearly

Pacific Rim Incident Data Project

Date: ___ / ___ / ___

GPS Location: _____ / _____

Page 1

Report prepared by:	
Address:	
Primary Phone:	E-mail:

Briefly describe your involvement in the Incident:

Activity Involved: Please ✓all that apply

- Surfing
 Kit-Surfing
 Body Boarding
 Stand-up Paddle Boarding
 Windsurfing
 Sailing
 Canoe/Kayak
 Swimming
 Walking/ Hiking

<input type="checkbox"/> Power Boat Describe:
<input type="checkbox"/> Other :

Your activity prior to the incident:

Other activities In the Area of the Accident:

Nature of the Incident: Please ✓all that apply

- Public/Safety Education provided
 Assistance Provided
 Minor Injury First Aid
 Major Injury First Aid
 In-Water Recue
 In- Water search
 Accident Victim Recovery

First Aid assistance at the scene: Please all that apply

- None Provided
 Oxygen
 Manual CPR
 AED Applied
 Medical Condition
 Spinal Injury
 Fractures Leg/Arm
 Head Injury
 Hypo- Therma

# Victims	0-9 yrs.	10-14 yrs.	15-19 yrs.	20-29 yrs.	30-39 yrs.	40-49 yrs.	50-59 yrs.	60+ yrs.	Un known
# Female									
# Males									

Contributing factors to the accident: Please all that apply

- Equipment Failure Inappropriate Equipment Misuse of Equipment
- Lack of experience Hired equipment Personal Equipment
- Caused by another person Not sober

Other Factors Describe:

Location Name & Description:

Factors contributing to the Incident: Please all that apply

- Rip current Undertow Strong Winds
- Rocks Sandbar Dumping Waves

Describe:

At time of incident: Please all that apply

Weather	Wind	Tide	Wave
<input type="checkbox"/> Warm	<input type="checkbox"/> Calm	<input type="checkbox"/> High	<input type="checkbox"/> Calm
<input type="checkbox"/> Sunny	<input type="checkbox"/> Light Breeze	<input type="checkbox"/> Low	<input type="checkbox"/> Slight Chop
<input type="checkbox"/> Hot	<input type="checkbox"/> Strong Breeze	<input type="checkbox"/> Mid	Swell Height: _____
<input type="checkbox"/> Cold	<input type="checkbox"/> Strong Winds		<input type="checkbox"/> <2ft <input type="checkbox"/> 2-3ft <input type="checkbox"/> >3.5ft
<input type="checkbox"/> Rain	<input type="checkbox"/> Stormy		Swell Direction: _____
<input type="checkbox"/> Overcast	<input type="checkbox"/> Wind Speed:		Swell Period: _____
<input type="checkbox"/> Fog/Mist			

Describe the Incident:



October 25, 2018

Mayor Mayco Noel
Box 999
Ucluelet, BC
V0R 3A0

Dear Mayor Noel,

On behalf of the member companies of the BC Council of Forest Industries and the BC Lumber Trade Council, I would like to congratulate you on your election as Mayor. As you begin this important role providing leadership for your community, we look forward to working with you on issues regarding the B.C. forest sector, including support for the workers and families that depend on our industry.

As you likely know, the forest sector is a primary employer in many communities throughout the province with 140 communities and one in 17 jobs in B.C. dependent on the industry. We all share a commitment to a future based on sustainable forestry and manufacturing practices, innovative product development, and employee safety.

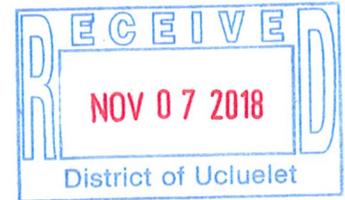
B.C. is a global leader in sustainable forestry, and our high-quality wood products and building systems are being shipped to markets around the world, from communities – large and small – across the province. More and more, our customers are recognizing the importance of wood as a green building product that can help meet carbon reduction commitments. We see opportunities to grow, expand our reach and continue to serve new markets but we also face challenges ahead. These challenges include addressing difficult wildfire seasons, the softwood lumber trade dispute, accessing markets in the U.S. and around the globe, and maintaining a competitive industry. These issues will continue to require close collaboration between workers, our industry, and governments at all levels, including municipal leaders like you and your colleagues across BC.

We would be pleased to provide an industry briefing to you and your incoming council colleagues at your convenience. Please feel free to contact us directly – Diamond Isinger at isinger@cofi.org – to arrange this or to answer any questions you may have, as you begin your new term as Mayor. We also encourage you to save the date for COFI's Annual Convention (www.cofi.org/convention/2019-convention), April 3-5, 2019 in Vancouver, as we hope you can join us at the event.

Again, congratulations. We look forward to working with you and your council to address these issues and ensure that we sustain a vibrant forest sector in your community for decades to come.

Yours truly,

— Susan Yurkovich —
President and CEO, BC Council of Forest Industries
President, BC Lumber Trade Council



November 1, 2018

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

Dear Mayor and Councillors,

Congratulations on your election to serve your community as mayor and members of municipal council.

We are writing to you on behalf of the affordable housing providers across the province, both non-profit organizations and co-operatives, to ask that you make housing a central focus during your term in office.

As you likely heard on the doorsteps during the campaign, housing affordability and homelessness were by far the top issues for voters everywhere. Because housing affordability is an issue that impacts nearly every household in some way, and will take more than one term in office to solve, we believe there is an opportunity for partnership between all levels of government and the community housing sector. We want to actively support local government in making the most of this opportunity.

We hope that you had a chance during the campaign to review our *Make Housing Central* resources, launched in September to help candidates better understand the housing affordability landscape in their municipalities, and how municipalities can take a strong leadership role in addressing those issues. Our campaign, in its entirety, can be reviewed at www.housingcentral.ca

During the campaign we asked candidates to show their support for affordable housing by pledging, once elected, to implement actions to support affordable housing in their communities including: the contribution of public lands, protection of existing affordable housing, zoning for rental-only development, streamlining of permitting processes, and pursuit of partnerships to create new affordable housing developments. Candidates from across the province took the pledge. You can see the list at www.housingcentral.ca

As an ongoing initiative to support local government leaders in their efforts to deliver affordable housing in their communities, we are developing a series of free educational opportunities for your participation:

- A webinar introducing the community housing sector and a discussion of the tools available to municipalities to support affordable housing in their communities (*available December*)
- A half-day interactive forum for elected officials, non-profits and co-ops to exchange learnings about how to work collaboratively to create new affordable housing (*four workshops to be held throughout the province beginning spring 2019*)

Additionally, we are providing your municipal council with two complimentary registrations to our *Housing Central Conference*, the largest affordable housing event in the country, with up to 1,500 delegates. This conference is being held from Sunday, November 18th to Tuesday, November 20th at the Sheraton Vancouver Wall Centre. To claim your registrations, please contact our Government Relations Manager, Diana Dilworth at diana@bcnpha.ca or at 778-945-2170, who will assist in securing those registrations. Details of the conference can be found at www.housingcentral.ca

Congratulations again, and best wishes. We look forward to working with you on the issues of housing affordability and homelessness, and hope that we will see you in attendance at our events. We will remain in touch throughout your term in office and hope that with your support, we can ensure that every resident in BC has access to safe, affordable and stable housing.

Sincerely,



Jill Atkey,
Chief Executive Officer
BC Non-Profit Housing Association
www.bcnpha.ca



Thom Armstrong
Executive Director
Co-operative Housing Federation of BC
www.chf.bc.ca

About Housing Central: *Housing Central brings together the BC Non-Profit Housing Association (BCNPHA), Co-op Housing Federation of BC (CHF BC) Co-op Housing Federation of Canada (CHF Canada), Encasa Financial, Community Land Trust and COHO Management Services Society. Housing Central collaborates on cross-sector partnerships that help impact public, policy, media awareness and deliver world-class education and events to support its vision of a safe, affordable home for everyone. www.housingcentral.ca*

About BCNPHA: *Formed 25 years ago, BC Non-Profit Housing Association (BCNPHA) is the provincial umbrella organization for the non-profit housing sector comprised of nearly 600 members, including non-profit housing societies, businesses, individuals, partners and stakeholders. Together non-profit housing societies manage more than 100,000 units of long-term, affordable housing in over 2500+ buildings across the province.*

About CHFBC: *The Co-operative Housing Federation of BC (CHF BC) is the voice of housing co-ops in British Columbia. Made up of member housing co-ops and related stakeholders, the organization focuses on meeting the needs and supporting the opportunities for those living in co-op housing. The 250 co-op housing members in our province provide housing for approximately 15,000 families.*

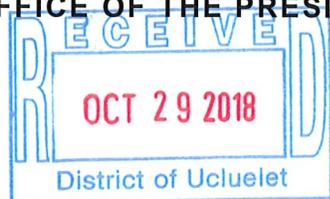


BCNPHA





OFFICE OF THE PRESIDENT



October 26, 2018

Mayor and Council
District of Ucluelet
PO Box 999
Ucluelet, BC
V0R 3A0

Dear Mayor Noel and Council:

On behalf of North Island College (NIC), I extend our warm congratulations on your elections as mayor and council.

Thank you for your commitment to serving the citizens of your community.

We look forward to building on our positive working relationship between NIC and the District of Ucluelet in 2019 and for years to come.

Best wishes for great success in your new term of office.

Sincerely,

A handwritten signature in blue ink, appearing to read "John Bowman".

John Bowman
President

BC Assessment
102-3350 Douglas Street
Victoria, BC V8Z 7X9



BC ASSESSMENT

November 6, 2018

Attn: Mayco J Noel
District of Ucluelet
PO Box 999
Ucluelet, BC V0R 3A0

Dear Mayor Mayco J Noel and Councillors,

Congratulations on behalf of BC Assessment and the Vancouver Island Region, regarding your recent success in the 2018 local government general elections. My name is Tina Ireland and I am the Assessor for the Vancouver Island Region. My Deputy Assessor team includes Maurice Primeau and Chris Whyte.

BC Assessment is the Crown Corporation responsible for producing independent and equitable annual property assessments and trusted assessment information. The products and services that we offer support development of strong and vibrant communities in British Columbia. Please visit bcassessment.ca to learn more.

BC Assessment holds ourselves accountable to local governments. We are committed to providing transparent, fair, timely, and respectful communications and assessment services. In addition to our regional team, our Local Government Department strives to serve local governments with continuous improvement to ensure our products and services effectively meet your needs. Contact our Local Government Department at 1-866-valueBC (825-8322) local 00498 or localgovernment@bcassessment.ca.

Congratulations once again, and we look forward to opportunities to meet at your civic offices and local government conferences in order to grow the relationship between BC Assessment and your Council. We are also available to present to your Council upon request to share more details about our mandate and relationships with local governments.

Sincerely,

Tina Ireland, Assessor
Vancouver Island region

WC Seniors Hub – 2018 Fall Forum – October 1st, 2018

Event Summary & Recommendations

Overview

The WC Seniors Hub – Fall Forum took place on Oct 1st, at the Ucluelet Community Centre from 11am til 3pm. This was where west coast seniors and their supporters came together to celebrate ‘International Day of the Older Person’. The WC Seniors Hub planning team consulted with the Seniors Advisory Group and engaged seniors to participate in the planning and promoting activities as well as attending the registration tables. Lunch was catered by the Ucluelet Co-op. Myles Morrison played his guitar during breaks and lunch period and certified instructor, Maureen Therrien-McKinnon, hosted a free Chair Yoga session at the end of the event. District of Tofino, Parks & Rec, provided free transportation to/from the event for Tofino and area seniors with Kaela Tompkins attending as driver.

Event Sponsors

WC Community Resources Society; District of Ucluelet Parks & Rec; Alberni Valley Employment Centre (Island Work Transitions Inc.); ACRD – Events Grant; District of Tofino (grant & 12 passenger van with driver); Tofino Co-op; Ucluelet Co-op

Marketing/Promotion

Posters, Admail - Survey/Questionnaire, Westerly News Advert 3x, Facebook, word of mouth, presentations, Forest Glen luncheons, WC Seniors Hub website – <https://www.westcoastseniorshub.org>

Forum Attendance (total 78)

- Participants – 59
- Exhibitors – 10
- Volunteers – 9



Photo – Keynote Speaker, Isobel Mackenzie, BC Seniors Advocate spoke to west coast seniors and senior supporters at the WC Seniors Hub – 2018 Fall Forum, held on Oct.1st in Ucluelet, BC.

Traditional Welcome & First Nation Perspectives

Yuułu?it?ath Senior, Bob Mundy, lead the opening prayer, speaking in his traditional language. Larry Baird, provided the assembly with his perspectives as a senior as well as elected member of the Yuułu?it?ath government. He spoke of hosting the next Seniors Forum in Hitacu and the value an event like this would bring to their community.

Submitted by: Ursula Banke, West Coast Resource Centre Advisor / Community Liaison

Alberni Valley Employment Centre (ubanke@avemployment.ca)

Date: Oct 22/18

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WC Seniors Hub – 2018 Fall Forum – October 1st, 2018

Event Summary & Recommendations

Municipal Representatives & Their Perspectives

Josie Osborne, Mayor of Tofino, and Mayco Noel, Deputy Mayor of Ucluelet, provided supporting words for the WC Seniors Hub, and spoke about their challenges and their perspectives of what a community can do to support seniors aging in rural communities. Mayor Osborne spoke of hosting the next Seniors Forum in Tofino.

Coordinator's Update - WC Seniors Hub

Ursula Banke, working as AVEC's WC Community Liaison and acting as Interim Volunteer Coordinator, provided a review & update on WC Seniors Hub activities which included establishing the website with updated information, writing the 2019 work plan/budget of \$75,111 and submitting grant applications to the following agencies; New Horizons Seniors Program (Federal \$24,976). Focus on Age-Friendly – Engagement & Participation and BC Rural Dividend Fund (Provincial \$33,101). Focus - Age-Friendly – Civic Participation and Employment.

The main goal of the funding application is to create a new Age-Friendly employment opportunity for someone 55 years or older. The Interim WC Seniors Hub Coordinator is currently a Volunteer position but, subject to funding, this will become a paid position in 2019. The work will include an inventory of those active seniors who wish to be employed a paid or volunteer worker and to identify barriers. It will also include working with Parks & Programming staff to develop an Age-Friendly drop in centre with programs and activities. The WC Seniors Hub Coordinator will network with other community organizations to review & prioritize key issues and challenges specific to creating Age-Friendly communities and facilitate a regional conversation that will help to address the issues and challenges of seniors who wish to age in their rural communities.

Keynote Speaker - BC Seniors Advocate. Isobel Mackenzie

Isobel Mackenzie has over 20 years' experience working with seniors in home care, licensed care, community services and volunteer services. The Office of the Seniors Advocate, established in 2013, monitors and analyzes seniors' services and issues in B.C., and makes recommendations to government and service providers to address systemic issues. Isobel came to the Seniors Forum and gave a presentation on what the BC Seniors Advocate's Office does to help seniors address the priority issues and challenges specific to rural communities, supporting seniors who wish to age in their community.

Question & Answer Period (fielded by Isobel Mackenzie)

CSIL (Supports for Independent Living)

- What is CSIL (Supports for Independent Living) and how does it work?
- Is CSIL support only available for low income?
- Is it possible to be on CSIL and also collect more home care hours if you come out of the hospital?
- Would you discount the amount of time you were in hospital?

HOME SUPPORT

- VIHA offers Home Support (statement not a question)

HOUSING

- Is there funding for Senior appropriate affordable housing?

Submitted by: Ursula Banke, West Coast Resource Centre Advisor / Community Liaison
Alberni Valley Employment Centre (ubanke@avemployment.ca)

Date: Oct 22/18

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WC Seniors Hub – 2018 Fall Forum – October 1st, 2018

Event Summary & Recommendations

Question & Answer Period (fielded by Isobel Mackenzie)

- Is there funding available for putting in ramps and lifts? (Keep receipts for tax rebate)

LEGAL HELP

- Are there support programs to help seniors to use legal systems?

FOREST GLEN SENIOR CENTRE

- How do we know who we're trying to serve if we don't know who the seniors are?

GLOBAL SENIOR ISSUES

- Has anyone looked at how seniors are treated in other countries?
- Is there some magical answers to what should be in place here?

CAREGIVER SUPPORT

- What about caregivers - their obstacles/limitations (free time - to get out of the house etc.)?
- How do we implement the change to support a system that offers support for caregivers?
- Can we write letters? (Lobby politicians)



NORA O'MALLEY PHOTO

SENIORS FALL FORUM: West Coast residents Bev Garcia and Bill Appleyard joined over 55 seniors and seniors supporters on Monday at the UCC for a half-day of networking, presentations, and discussing issues. The forum featured exhibits from the Pacific Rim Hospice Society, the West Coast Multiplex Society, the Westcoast Community Resources Society, Forest Glen, and more. Enhancing health care options was one of the issues that garnered the most stickers.

Submitted by: Ursula Banke, West Coast Resource Centre Advisor / Community Liaison

Alberni Valley Employment Centre (ubanke@avemployment.ca)

Date: Oct 22/18

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WC Seniors Hub – 2018 Fall Forum – October 1st, 2018

Event Summary & Recommendations

Dot- Mocracy – A ‘Priorities’ Exercise for Survey/Questionnaire

QUESTION #	SETTING PRIORITIES (DOT- MOCRACY)	# of dots
1	Improving financial security	5
2	Facilitating transitions to retirement	2
3	Promoting active living	20
4	Enhancing health care options	30
5	Improving caregiving options	11
6	Increasing availability of adapted housing	22
7	Expanding affordable transportation services	14
8	Learning a new skill	2
9	Transitioning into Age-Friendly employment	4
10	Socializing & Recreation	16
11	Nutrition & Self Care	6
12	Understanding legal issues (wills, power of attorney)	5

PRIORITY RANKING (hi =1 ... low=10)		# of dots
1	Enhancing health care options	30
2	Increasing availability of adapted housing	22
3	Promoting active living	20
4	Socializing & Recreation	16
5	Expanding affordable transportation services	14
6	Improving caregiving options	11
7	Nutrition & Self Care	6
8	Understanding legal issues (wills, power of attorney)	5
9	Improving financial security	5
10	Transitioning into Age-Friendly employment	4
11	Facilitating transitions to retirement	2
12	Learning a new skill	2

Objectives - Survey/Questionnaire

- Prioritize needs according to importance & adapt 2019 workplan
- Determine interest in older worker employment program – for active seniors (volunteer or paid)

Results - Survey/Questionnaire

- 71 surveys were completed and returned.
- Not all respondents were able to attend Forum but were eligible for draw prize)
- Survey distribution – admail - 1137 mail boxes in Ucluelet courtesy of Dist of Ucluelet

Submitted by: Ursula Banke, West Coast Resource Centre Advisor / Community Liaison
Alberni Valley Employment Centre (ubanke@avemployment.ca)

Date: Oct 22/18

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WC Seniors Hub – 2018 Fall Forum – October 1st, 2018 Event Summary & Recommendations

Summary & Value Ratings - Survey/Questionnaire

QUESTION #	SETTING PRIORITIES (SURVEY/QUESTIONNAIRE)	SCORE	PRIORITY RANKING
a	Interest in Volunteer Training	10	
b	Interest in Employment Training	5	
c	Attending Oct 1st Forum	43	
d	Aged 55+	58	
1	Improving financial security	244	9
2	Facilitating transitions to retirement	218	11
3	Promoting active living	301	2
4	Enhancing health care options	314	1
5	Improving caregiving options	282	5
6	Increasing availability of adapted housing	281	6
7	Expanding affordable transportation services	287	4
8	Learning a new skill	241	10
9	Transitioning into Age-Friendly employment	197	12
10	Socializing & Recreation	293	3
11	Nutrition & Self Care	268	7
12	Understanding legal issues (wills, PoA, etc)	267	8

Recommendations – Next Seniors Forum

1. Next forum location – 2 options for 2019 – in Tofino or Hitacu
2. For hearing impaired – note to facilitator
 - Write down questions & answers on a flip chart page
 - Tape pages of questions & answers onto wall space
 - Allow time for people to review & discuss outcomes
 - Document Q & A – for a term of reference
 - Arrange another time/place if discussion wants to continue
 - Capture any action items that arise from discussions
3. Improve lighting for digital presentations
4. Develop a 'Seniors Speakers Program' and invite people with relevant knowledge and experience to speak on the following topics;
 - CSIL, Home Support, Caregiver Support, Senior Housing Options, Transportation Options, VIHA support, Legal Support, Understanding National & Global Senior Issues
5. If possible, follow up on 'needs expressed' by connecting that person to the right agency.
6. Engage those who have expressed interested in training for paid and unpaid employment

Submitted by: Ursula Banke, West Coast Resource Centre Advisor / Community Liaison

Alberni Valley Employment Centre (ubanke@avemployment.ca)

Date: Oct 22/18

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WC Seniors Hub – 2018 Fall Forum – October 1st, 2018 Event Summary & Recommendations

Additional Comments to Survey/Questions #1 - #12

#1 Improving Financial Security

- This is valid topic whatever one's age
- Not a priority for me - but for some
- Budget, budget, budget
- What about a 'retirement package' for seniors
- Always good
- Include help with income taxes
- Need more scam protection

#2 Facilitating Transitions to Retirement

- As seniors, most of us will be past this point
- Not for me
- Done! Just retired last week after 6 month trial
- Could become a part of the 'retirement package'
- Yes - so many changes to keep up with
- Not well known

#3 Promoting Active Living

- A valid topic insofar as it impinges on health
- Accessible recreation/activities
- Medical issues affect ability
- Would like someone to beach walk
- To keep moving
- Arts/rec - more multi-generational convergence

#4 Enhancing Health Care Options

- Foot care, including nail cutting
- Expanded blood test hub
- Specialists - use teleconference methods
- Specialists - to accept lab tests from the west coast
- Need emergent care clinic in Ucluelet
- age in place - have hospice beds & assisted living
- VIHA staff increases - consistent schedule
- A primary concern to every senior
- Senior discount for certain therapies
- There are more issues as we age
- I try to stay away from Doctors as much as possible
- Retirement could be tailored to needs
- Always important to know what we have

Submitted by: Ursula Banke, West Coast Resource Centre Advisor / Community Liaison

Alberni Valley Employment Centre (ubanke@avemployment.ca)

Date: Oct 22/18

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WC Seniors Hub – 2018 Fall Forum – October 1st, 2018 Event Summary & Recommendations

Additional Comments to Survey/Questions #1 - #12 (cont'd)

#5 **Improving Caregiving Options**

- Better at Home - home care
- A primary concern to every senior
- Funds to adapt/equip houses for mobility issues
- Affordable housing
- Definitely need more options
- I sometimes need help with heavy awkward chores
- Many caregivers are on their own
- Yes - aging population
- We need full care facility (residential care)

#6 **Increasing Availability of Adapted Housing**

- Especially important as our senior community grows
- Not sure of... necessary at times
- My house is already single storey accessible
- Needs to be affordable
- Yes - an aging society
- Seniors need more full care options to stay in community
- Affordable equipment in the home

#7 **Expanding Affordable Transportation Services**

- More affordable options
- Especially with respect to accessing health care
- In-community regular safe shuttles
- For out of town
- We need access to options - Ucluelet and Hitacu
- Still driving my truck
- For medical appointments
- Need to review what exists now
- Especially to Tofino
- Transportation to Tofino for health reasons - bus?
- No aging-out for special needs

#8 **Learning a New Skill**

- Valid to some- I have the skills I need
- Follow-ups to workshops
- Need help with nutritional cooking
- Need new skills for employment
- Drawing class-cancelled due to lack of enrollment
- Always a good option
- To become aware of what's out there
- Most seniors don't want to learn new skills

Submitted by: Ursula Banke, West Coast Resource Centre Advisor / Community Liaison

Alberni Valley Employment Centre (ubanke@avemployment.ca)

Date: Oct 22/18

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WC Seniors Hub – 2018 Fall Forum – October 1st, 2018 Event Summary & Recommendations

Additional Comments to Survey/Questions #1 - #12 (cont'd)

#9 **Transitioning into Age-Friendly Employment**

- Still working
- As seniors, most of us are past this point
- Definite need in our area
- This would be an asset
- Very important
- Most seniors want to retire, not work

#10 **Socializing & Recreation**

- Important for both physical and mental health
- Must be offered at accessible sites.
- Many seniors do not drive at night
- Not able to participate - Age 91
- Needed for sure
- I am not that mobile
- Good job being done now. More can't hurt
- For myself a low priority - but for others a high priority
- Always good - so many changes to keep up with
- Pet programs

#11 **Nutrition & Self Care**

- Valid topic whatever one's age
- Cooking for one on limited budget
- Do not have enough knowledge in this area
- Cooking for one, beginner level
- Especially if living alone - difficult to cook for one
- Healthy food
- Ensuring seniors have good nutrition to lead healthy lives

#12 **Understanding Legal Issues (Wills, Power of Attorney, etc.)**

- Valid topic whatever one's age
- We need one-one teaching us of this
- Got to make a will
- Include advance care planning
- Most seniors have thought about or have these in place

Reminder - Next Seniors Forum

Next forum location – 2 options for 2019 – in Tofino or Hitacu – to be announced.

Submitted by: Ursula Banke, West Coast Resource Centre Advisor / Community Liaison

Alberni Valley Employment Centre (ubanke@avemployment.ca)

Date: Oct 22/18

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Westcoast Community Resources Society

Annual Report



2018

Tuesday October 30th, 2018

7pm

Held at Welcome Bay Second Stage Housing,
1800 Bay St. Ucluelet

WESTCOAST COMMUNITY RESOURCES SOCIETY
ANNUAL GENERAL MEETING

October 4, 2017

7:00 pm George Fraser Room Ucluelet Community Center

DIRECTORS PRESENT:

Co Chairperson Judy Gray
Director Dianne St Jacques
Director Marcel Zobel

GUESTS PRESENT:

Michael Jewell
Myles Morrison
Councilor Sally Mole
Louise Jewell

Regrets:

Director Alan Anderson
Director Janet Busby
Director Jenny Touchie
Director Clodagh O'Connell

STAFF PRESENT

Margaret Morrison
Sheena Charnell
Holly McPhail
Vickie Ackerman
Robin Tagles
Paulette Bellavance

CALL TO ORDER

Co Chairperson Judy Gray called the meeting to order at 7:00 p.m.

ADOPTION OF AGENDA

Motioned by Director Marcel Zobel and seconded by Director Dianne St Jacques to adopt the agenda.

ADOPTION OF THE 2016 AGM MINUTES

Motioned by Director Marcel Zobel and seconded by Director Dianne St Jacques to adopt the 2016 AGM minutes.

CARRIED

ANNUAL REPORTS

Co Chair Judy read a board report-attached

Chairperson Report- attached

Executive Director Report – attached

Auditors Report – attached Holly McPhail reported that the audit was all clear.
Program Reports -attached

Moved by Director Marcel Zobel and seconded by Director Judy Gay to accept the Annual Reports.

CARRIED

APPOINTMENT OF AUDITOR

Moved by Director Marcel Zobel and seconded by Director Diane St Jacques to appoint McIntosh Williams Norton for the 2017-2018 fiscal year.

All in favour

CARRIED

ELECTION OF BOARD MEMBERS

All the current directors wished to continue for 2017-2018 term; all were acclaimed.

CARRIED

ADJOURNMENT

Co Chairperson Judy Gray called to adjourn the meeting at 7:12 pm. Dianne St Jacques motioned Marcel Zobel seconded

CARRIED

The next Board of Directors meeting is Thursday, November 9th at the office in Tofino, beginning at 6:00pm.

Report from the Chair of the Board of Directors 2018

Welcome one and all to our facility of second stage housing that we offer to support those experiencing a transition time in their lives to host our 2018 AGM. We had a busy and productive 2018 in all of our programs with personnel changes adding to the fabric of our society's tapestry . We say a massive thank you to Tamara Nelson who has steadied our financial ship with her book keeping skills while Holly McPhail has been on maternity leave. Holly McPhail has re-joined our team.

I am so proud that 2018 was the year that our dream for 2nd Stage Housing at the 1800 Bay Street location came true. With all that had to be done our goal was a distant light, but that was then and that distant light is now the noon day sun. We are in business! We owe a great debt of gratitude to M'akola Development Services for their valued and much appreciated support in helping us navigate this housing maze. Orderly finances, applications, letters of support, local government public readings and Federal Government approvals have contributed to where we are today. We have already had occupancy so it is serving its purpose. A big cheer to so many for so long and for such a needed facility. Vision has moved us where we are today with our community and our local government's support all along the way.

Though the times in which we find ourselves push and pull at our resources to serve our community members, I am proud of the professional and the heart felt service that the Westcoast Community Resources Society management and staff render to those most in need in our west coast communities. They fulfill the Westcoast Community Resources Society's Mission Statement in spirit and in deed.

In closing, a heart felt, "Thank You" to Dianne St. Jacques and Clodagh O'Connell for their years of dedicated, involved and caring service as members of the Board of Directors, they will be missed.

Sincerely,

Alan M. Anderson, Board Chair

Executive Director's Report to the Annual General Meeting
October 30th, 2018
Suite A, 1800 Bay Street "Welcome Bay"

To our valued members, directors, assembled guests and our staff, welcome to the Westcoast Community Resources Society annual general meeting. We are gathered here this evening in Suite A of Welcome Bay, our Second Stage Housing project. We are pleased to welcome you and to share some of the reports and stories of our activities of the past year.

Our Society's management team underwent some changes in 2018. The unexpected vacancy of the Program and Personnel Manager position last August gave the Society the opportunity to evaluate the best way forward. As reported at last AGM, with the help and guidance of consultant Michael Jewell a review and recruitment process resulted in a very successful hire for our new Manager of Operations position. We welcomed Carrie Ho to the team on January 31st. Carrie has a strong Human Resources background and had worked in both Tofino and Ucluelet branches of CIBC. We appreciate her smile, humour and enthusiasm!

Tamara Nelson also joined us in October last year to cover Holly McPhail's mat leave. Tamara kept us well supported with her knowledge and financial insights. She had high praise for Holly's work and all the orderly preparation she'd left for her. We thank Tamara for the year she gave us and wish her the very best in her future adventures. Holly has returned to us as of mid-October and we are thrilled to have her back.

Another significant event occurred on April 12th when the Resource Society held a Special General Meeting to pass a resolution to change our constitution and bylaws, in accordance with the new Societies Act. We adjusted the constitution and amended bylaws to not only comply with the new Act, but also to comply with requests from BC Housing. BCH wanted an addition to our constitution purposes to include Second Stage Housing and amended bylaws to ensure certain provisions are unalterable. Raincoast Law assisted with the filing and the final filings should be completed by end of this month. The new Societies Act comes into full effect on November 28th, 2018. Raincoast Law office is our official society address and they hold our Minute Book.

Welcome Bay Second Stage Housing welcomed its first tenant in July of this year. We went through the application and interview process and our tenant and two children moved into Suite B. The family was so gracious as our guinea pigs as we went through everything for the first time. Their long range plans worked out so that they were only with us for three months before moving on to permanent housing. We wish them well and thank them for all the lessons we learned to make our process smoother. Welcome Bay has two units of rental housing designed to accommodate women and children who are working toward independent living and becoming successful tenants in market rental housing. WB is a program and guidelines include expectations of participation as well as rules that ensure safety for all. The program is outside the Residential Tenancy Act and through the interview process we try to make sure the program and the applicant are a good "fit". Program Participation Agreements are six months

long and can be renewed three times for a maximum stay of 24 months. We are working on establishing an on-going Operating Agreement with BC Housing for Welcome Bay and going forward we are property tax exempt.

As a charitable non-profit, WCRS has the ability to partner, collaborate or support other groups who may be seeking grant funding. We were approached by a group wishing to apply for a Clayoquot Biosphere Trust Vital Grant earlier this year and we assisted with the application and are hosting their funds when they were successful in securing \$20,000. Kliith Pi-taaq Men's Group is proposing to promote well-being and resilience through cultural activities. "Kliith Pi-taaq" is the act of stomping on the ground before building a house in order to create a strong foundation. The Men's Group is based in Tla-o-qui-aht communities and welcomes all men so that they can support each other together to create firm foundations to stand on as individuals. This is a significant grant and opportunity to expand the Society's activities in accordance with our mission and vision statements.

Our Society, with deep grassroots origins, is growing and branching out in some ways. We assisted the District of Ucluelet to complete the activities for a New Horizons grant received to support their Age Friendly project last year. We continued some of the activities after the grant's final report was submitted. WCRS supported monthly Seniors Social Luncheons held at Forest Glen, co-sponsored the Seniors Fall Forum and submitted two major grant applications to New Horizons and Rural Dividend Fund to carry on. The Fall Forum featured Isobel Mackenzie, BC's Seniors Advocate as our keynote speaker on the status of seniors in the province. We do not hear until February 2019 if we are successful for either or both of our grants. But in all likelihood we would continue to support the monthly luncheons and semi-annual forums regardless, as a way to contribute to the health and wellbeing of seniors on the coast.

We are bidding adieu to two valued directors this month. Dianne St. Jacques has been an enormous support to the Resource Society for more than a decade and we cannot express how much she will be missed. Clodagh O'Connell is also stepping down from the board although we wish she could leave us her clone while she pursues other adventures.

It is my sad duty to share the news that our beautiful faithful blooming cactus has passed away. This cactus was a fixture in the Women's Centre since the late '90s and came with us to the Hub when we took up office space here in 2010. It gave us soft pink blossoms each Easter and Thanksgiving. Sadly, the cactus began to droop in the last year and despite everyone's best efforts, could not be revived. We are hoping that we can adopt a new flowering plant for the Hub to take us into the next quarter century of service.

Respectfully submitted,


Margaret Morrison,
Executive Director

Child and Youth Special Needs

Annual Report October 2017 – September 2018

The Child and Youth Special Needs Family Support Program is provided through the Ministry of Children and Family Development (MCFD). It is a closed support program: children and youth ages 0 to 18 diagnosed with Autism Spectrum Disorder (ASD), Intellectual Disability or Severe disability, must meet eligibility requirements in order to be referred for services to the CYSN Family Support Worker.

Program Description

- Thirty-five hours per week: 60% client support, 40% travel and admin
- There are currently seven children and youth, and their families in Ty-Histanis, Tofino and Ucluelet who have access and are being served by the Program.
- Services are child-centred and individualized to their needs.
- Scope of services includes outreach, linking and/or brokerage, mentoring, training and education.

Activities

With therapies developed by partnering professionals, CYSN worker determines activities that are individual and family goal oriented, then instructs, models and clarifies skills within these activities.

These include physical activities such as swimming, gymnastics, weight training, to social activities such as participating in community events, bus riding, outings to restaurants, to skills development such as practicing time management, self-regulation, and exploring transition into adulthood. A weekly group activity called PEERS allows clients to practice with social skills, peer interaction and social behaviour.

Meetings and Inter-Agency Liaisons

- Quarterly Meetings with MCFD Social Worker to review program and referrals
- Semi-annual meetings with Youth Workers Coalition Group and Early Years Coalition Group
- Monthly meetings with Coastal Family Resource Coalition
- Individualized Education Plan meetings for each client who is enrolled in SD70

Program Changes

A staffing change occurred during this reporting period. Kourtney Yeske left the CYSN Program to work for SD70 as an Education Assistant. Kathleen Stuart began working in this position September 4th, 2018.

Goals

Through WCRS's Support the CYSN worker assists in strengthening stability in the home for parents/caregivers, informs them of community resources, and advocates for both children/youth and parents/caregivers for full inclusion within the communities of the West Coast region.

Community Living B.C.
Annual Board Report October 2017 to September 2018
Carrie Ho

Program Description

Community Living B.C.'s mandate is to support adults with developmental disabilities in their communities. WCRS currently has three client contracts with their own support workers, two are for community inclusion with an average of 11-12 hours a week per client and one is for support coordination twice a month. Activities include paper shredding at the Hub, grocery shopping, doing puzzles, going for tea, attending community events, accompanying to medical appointments, running errands, going for a walk or a drive, etc. These outings provide opportunities for clients to engage with other community members outside of their homes in a supportive setting.

Highlights

There has been changeover in support workers and it usually takes time for workers to develop a trusting relationship with clients. Once a relationship is established, their weekly meetings can be mutually rewarding! They learn from each other and attend social activities together which always result in fun and laughter!

Concerns

These contracts are client led and therefore hours are not guaranteed. On occasions if clients are sick or otherwise miss their meeting, workers may show up to clients' homes to find out there would be no meeting. Finding a suitable worker who is willing to work casual hours and is a good fit with the client can be a challenge.

Goals

Community Living B.C.'s clients are usually former youth clients with special needs from Ministry of Children and Family Development which we also support. Through them WCRS is made aware of potential new clients in the near future. There is another support avenue for individuals who have a diagnosis of Autism Spectrum Disorder (ASD) or Fetal Alcohol Spectrum Disorder (FASD) that we're also made aware of. We will investigate if we can bring this to WCRS!

Community Outreach Annual Board Report 2018

Tanya Nestoruk

Mandate

This position is currently operating at 20 hours per week with additional support of several essential, amazing volunteers. This program plans, implements and coordinates the socio-education activities to promote WCRS and its services to the west coast communities. On average 28 clients are served per week.

Activities:

- setting up/planning, shopping, cooking, serving and networking weekly community lunch in Ucluelet;
- attending, networking, sharing info of services at weekly Fish and Loaves community Lunch in Tofino;
- co-facilitating weekly Write About Life free workshop with Women's Counsellor;
- planning, cooking and serving monthly seniors lunch at Forest Glen;
- planning, cooking and serving monthly men's lunch in Tofino in partnership with the Community Paramedic;
- assisting in navigating government forms such as Old Age Pension, Guaranteed Income Supplement, Employment Insurance;
- coordinating Community Volunteer Income Tax Program with Service Canada and Canada Revenue Agency during drop in and office hours (3 hours weekly in Tofino and 3 hours weekly in Ucluelet).

Highlights

- Hosted end of summer/new community lunch season kickoff BBQ with help from RCMP & Fire Brigade volunteers and donations from Creative Salmon for 25 lbs of fish and Ucluelet Co-op and Food Bank for hot dogs, buns, salads and desserts. A total of 75 people were served!
- Attended training sessions with CRA and Service Canada for variety of government application processes such as Income Tax, OAP, GIS, etc.
- Attended Aboriginal Wills and Estate Planning training with Women's Outreach Worker
- Advertised on social media to call out for community lunch volunteers and gained 3 new fantastic volunteers. They bring such love, next level cooking and baking skills, and are such an asset to successful growth of weekly community lunches.

Goals

- Continuation of weekly community lunches in Tofino and Ucluelet, monthly seniors' lunches at Forest Glen and monthly men's lunches in Tofino. Further networking in town with local businesses for donations of day olds produce to be used/shared.
- Continued partnership with other programs of WCRS to expand services to more clients.
- Recruiting volunteers for Community Volunteer Income Tax Program for which we have received two additional laptops from CRA.
- Planning and preparing for annual Christmas Lunch.
- Collecting letters of support and applying for Gaming Grant for continued funding.

Community Youth Worker Program AGM Report Oct 2017 - Sept 2018

Program Description

- The Community Youth Worker Program is a 35 hour a week program funded by the MCFD.
- The Community Youth Worker provides assessment, creates support plans and implements service for clients of the program who are children and youth (18 and under) and/or families in the West Coast Area.

Activities: Oct 2017 – Sept 2018

Individual & Group Counselling

- As of Sept 2018 providing weekly individual counselling for 11 child/youth/parents and 4 youth groups.
- Referral sources: Discovery/Community Outreach/NTC/CYMH/MCFD/Transition House/SD70/Victims Services.

In School Counselling Services

- Provide drop in hours and client appointments at the three schools in the community (Wickannish Elementary School, Ucluelet Elementary School and Ucluelet Secondary School).

Programs and Community Support

- **YFN/TFN Warriors Young Men's Leadership Group and Hitacu Youth Programs**
The CYW facilitated a weekly teen group in Hitacu throughout the school year. Building on the relationships formed, the CYW supported 3 day trips to YFN and TFN Traditional Territory with youth, parents and elders. The retreats are focused on Life Promotion through land based activities which allow opportunity for sharing traditional cultural learning with the young men, parents and elders.
- **USS QSA Group (Queer/Straight Alliance)**
Facilitated QSA group to raise awareness in school and community of its gay, lesbian, bi-sexual, transgender, 2spirited and questioning population (Queer). 8 - 10 youth regularly attend group.
- **Tribal Canoe Journeys**
Supported youth and families during their participation in the Canoe Journeys which included individual counselling, family support and role modeling.
- **Tofino Youth Night**
Inter-agency collaboration of a weekly youth drop-in at the Tofino Hall. Transportation with the Tofino Parks and Rec van is provided to the youth of Tyhistanis and Esowista.
- **Mount Washington Youth Snowboard Trip**
Trip facilitated in partnership with Tofino Parks and Rec. 2 high risk clients who needed additional support participated in trip through sponsorship from the Tofino Kids Access Fund.
- **Wickaninnish Elementary Hiking Group (weekly sessions 6 total)**
Provided grade 5/6 students who gravitate towards physical activities an opportunity to prepare for transition into adolescents. Guided talks and activities provided a forum for the participants to gain knowledge and skills to help manage stress, anger, depression and learn assertive communication.

Meetings and Inter-agency Liaison

- Semi-annual Youth Worker meetings
- Bi-monthly Child Youth Mental Health Local Action Team meetings for west coast child/youth service providers
- Monthly Counselling Supervision meetings

Trends, Issues & Program Goals

- Towards the end of the year the CYW has shifted to providing more support in the outlying Indigenous communities due to increased need. The newly built Government Building in Hitacu and Tyhistanis Health Center are ideal locations to see multiple clients with outreach opportunities, while continually advocated for the need of more Family services to leadership in the communities.
- Less support in the Elementary Schools of Tofino and Ucluelet due to a new School Counselor being hired and more need in other communities in comparison.
- Transportation costs have increased due to increased support requests in the communities of Tofino, Tyhistanis and Hitacu.

PEACE Program 2018 Annual Board Report

Program Information

The PEACE (Prevention, Education, Advocacy, Counselling, Empowerment) Program for Children & Youth Experiencing Violence, is an intervention/prevention program providing therapeutic and psycho-educational individual and group counselling to children (ages 3-18) who have witnessed or been subjected to trauma or violence. Counselling is also provided to non-offending parents, guardians and family members

The program helps children/youth to:

- Identify their feelings and express them in a healthy way
- Recognize their strengths and increase their self-confidence
- Overcome the short and long-term effects of trauma.
- Understand what abuse is and that they are not responsible
- Identify support networks and develop a safety plan
- Develop conflict resolution skills

Referrals come from various sources including; SD70, parent/guardians, RCMP, VIHA, MCFD, WCCRS programs and self-referrals.

Activities

- In the past year the PEACE program has provide individual weekly counselling to 28 children, run 1 weekly group counselling session, and provided parenting support to 15 parents.
- Sexual Health education classes were provided for preteens and teens to help reduce exploitation, STI transmission, unplanned pregnancy, and improve overall health.
- Attended and advocated for students (clients) at Individualized Education Plan meetings.
- Facilitated the Grade 7 Transition Program at Wickaninnish School.
- Assisted and advised a group of mothers responding to self-harming among their daughters.
- Helped separated parents negotiate co-parenting agreements and re-locating to another community.
- Participated in Coastal Family Resource Coalition meetings and Local Action Team meetings to promote and co-ordinate Child and Youth mental health services on the coast.
- Worked with School and RCMP to respond to disclosure of a child witnessing a crime.
- Ran a therapeutic play group for children experiencing trauma and loss.

STV Annual Board Report September 2017 – August 2018

submitted by Robin Tagles

Mandate

Stopping the Violence (STV) Counselling Program offers counselling and support for Women and mature girls who have experienced violence/abuse in relationships, sexual assault, or childhood abuse. Educational events are also offered.

Statistics (not including Enhancement Grant)

- Compared to last year (September 2016 – August 2017) the number of delivered counselling sessions increased by 40 sessions or 20%, while supportive interactions with clients decreased by 15 interactions or 8%.
- No shows remained almost constant. 51 this recent year and 56 the prior year.
- The majority of women seeking service and find out about STV Counselling through posters, internet searches, and friends. Additionally, WOR and other WCRS programs refer a significant number of women to STV Counselling.

Highlights

- **The VS/VAW Program Enhancement Grant** enabled STV to deliver women's counselling to Ahousaht. 27 counselling sessions were offered in April, May and June. This service will continue through March 2019 and perhaps longer.
- **Working in conjunction with Women's Outreach Worker**, I collaborated on various events and groups, such as Movie Nights, an eight-week Women's Empowerment Group, and a Meditation Morning Group that began this summer.
- **I attended the EVA Conference** in November 2017. It was a good, but it would be great if the politicians' speeches were brief and there were more training sessions designed to deepen counselling skills, knowledge and wisdom.
- **Continue developing "Empowerment through Core Value Recognition"** handouts and activities in order to help clients identify and use their values therapeutically.

Plans

- Find more ways to connect with women in Tofino and Ucluelet to evaluate what they would find helpful while informing them about the services we offer.
- Look through workshop outlines and materials I have offered in order to design and facilitate a series of workshops on topics relating to anti-violence, wellness, and related topics.
- Edit handouts and organize materials I have written and designed for clients on a variety of topics, including co-dependency (a term that is often misused), cognitive behavioural therapy, core values, problem-solving, and therapeutic writing activities.

WESTCOAST TRANSITION HOUSE

Annual Board Report October 2017 to September 2018

Carrie Ho

Program Description

The Westcoast Transition House is a safe and confidential home run by women, for women and children who have experienced or at risk for violence. Our warm staff gives women and children the opportunity to be safe, to be heard, to be understood and respected. In addition to a safe emergency shelter, we also operate a 24 hour line to provide information and referrals to other resources both within the Society and outside the Society. Meals, transportation, emergency clothing and personal items can be provided to non residents.

Quarterly Stats

	Oct – Dec	Jan – Mar	Apr – Jun	Jul – Sep
# bed stays – women	10	40	28	63
# bed stays – children	7	2	7	7
# of support calls to non residents	11	16	2	54
# of on site support to non residents	0	8	0	34

Most of the referrals come from current or former clients of the transition house or other WCRS programs with the rest from other service agencies such as RCMP, victim services, hospital, NTC, first nations bands, and other transition houses. The primary reason for referral is abuse although we are seeing an increasing trend of homelessness.

Highlights

The Transition House has been undergoing renovations for over a year. Upgrades include a new back deck, pet friendly area, accessible bathroom, light fixtures and generator. Staff are now looking forward to reorganizing the office space and storage room. As you may have seen in the newspaper, Ucluelet Co-op has graciously donated an electric lawn mower. We have also upgraded our alarm system as a result of Telus acquiring Alarm Force who had been our security provider for over 20 years.

Concerns

Homelessness has always been a concern and is only getting worse not only in our communities but also across the island and beyond. With the limited resources in rural area, we find ourselves supporting women who are experiencing homelessness or awaiting addictions treatment. We have established a supported bed recovery program to assist women who are going into or coming out of addictions treatment facilities but we're unable to support those who are waiting to be accepted into a facility.

In recent months we have two tenured employees, one full time one casual, moved out of town and therefore resigned from their positions. Recruiting has been an ongoing theme for the past year and will likely continue in the near future.

Goals

Connecting and working with other service providers continue to be a main focus especially in our area where resources are limited. Staff take opportunities to attend community events in Ahousaht, Tofino, Tyhistanis, Hitacu, and Ucluelet. We are also fortunate to have a few training opportunities this year, from Trauma and Self Care, Conflict Resolution, Vulnerability Assessment Tools, BC Society of Transition House conference, and Ending Violence conference. The challenge is to make the best use of our small training and travel budget to attend the most beneficial training and take advantage of free or low cost training!

Women's Outreach Annual Report: 2018

Program Mandate:

Women's Outreach responds to the needs of adult women and their dependent children who have experienced or are at risk of violence. Women's Outreach provides short term counselling, support, referrals, service navigation, advocacy, and community education.

Monthly Stats Averages:

36 women and 6 children served, 12 hours providing community education & 21 hours networking with community supports. The number of women served has risen by 44% over last year.

Training:

Sex & Gender Politics with Leah Shumka PHD (8 hours); Trauma, The Brain & Body with Bessel van der Kolk (40 hours); ASSIST Suicide Intervention Training (20 hours) & UCLA Mindfulness Awareness Program: Cultivating Positive Emotions & Dealing with Difficult Emotions (40 hours).

Highlights:

International Women's Day Celebration: Resilience in Women. This inspirational daylong workshop & luncheon was facilitated by Chastity Davis. Chastity presented Canadian history through an Indigenous Women's lens with a focus on the strength and resilience in women. The workshop was held at the Ty-Histanis Tiic-Mis?Aq'kin Health Centre where Chastity held a safe space for women to share their stories. A mix of service providers and community members totaled approximately 32 attendees.

WCRS docs: A series of 6 free film events celebrated resilience in women and increased awareness of issues that affect women. One thought provoking documentary was shown each month in Tofino & Ucluelet, with an invitation to not only sit back and enjoy the show, but to think more deeply & raise thought provoking questions that lead to change. The average attendance was 15 per month.

Concerns:

There are many barriers to accessing service. Many clients with mental health and addictions issues face poverty, homelessness and discrimination. I would like to see more supportive housing options and treatment options on the coast to meet the diverse needs of the women and children on the west coast.

Upcoming Events:

International Women's Day celebration & luncheon, March 8, 2019: Sex & Gender Politics workshops with Leah Shumka PHD (Ucluelet Community Centre)

WCRS docs: monthly though provoking documentaries & discussions celebrating women's resilience to raise awareness of women's issues (Tofino Botanical Gardens & Ucluelet Community Theatre)

Mindfulness Monday's: Free 30 minute guided mindfulness meditations each week (WCRS Tofino Space)

Program Coordinator: Vickie Ackerman

Youth and Family Addictions Counselling 2018 Annual Board Report Submitted by Marnie Helliwell

The Youth and Family Addictions Counsellor provides services for youth ages 13 to 19 who are experiencing difficulties related to their own or someone else's alcohol or drug use. Services include assessment, treatment, individual and family counselling, education, advocacy, early intervention and prevention initiatives, and referral to supported residential services, withdrawal management services, and other community resources. Clients can be self referred or referred by families, school, health practitioners, and Ministry of Child & Family Development.

This program started in July 2017 and is a part time position at 20 hours per week. The need for service has quickly grown. I currently have 19 youth on my caseload, 13 of whom I see weekly and 6 of whom I see bi-weekly or monthly. Any new referrals will have to be put on a wait list. Because of the large caseload, I am implementing a new system that involves the youth and/or families committing to 6 sessions, and upon completion of the sessions, we will re-evaluate the need for service. I have been shifting my focus to work with youth and their families as opposed to working with youth in isolation.

The regional break down of client population is as follows:

- 3 Hitacu
- 1 Opitsaht
- 5 Tyhistanis
- 1 Long Beach
- 1 Tofino
- 8 Ahousaht

This program is funded through Island Health.

Welcome to Welcome Bay

Report for the Annual General Meeting 2018

The desire to provide second stage housing was on the fringes of the WCRS radar for many years, since 2005 at least. We were fortunate to get funding to do a Need and Demand Study in 2014 that supported our belief that this service and resource was needed on the coast.

For Welcome Bay it all began with an e-mail from a government department, alerting WCRS to the availability of a couple of addresses in Ucluelet that were part of the Surplus Federal Real Property for Homelessness Initiative (SFRPHI, or “surfy”). We were one of three organizations that indicated interest and WCRS sent out an invitation to collaborate or partner to achieve the goal of supportive housing for women and children leaving abuse or violent situations. We made a positive connection with M’akola Development Services and began the long process of applying to have the property at 1800 Bay Street transferred to WCRS.

From the beginning it was understood that our partner MDS would assist with paperwork and preparing the extensive application; that is their forte. WCRS would take on the title and operation of the program. I have immense respect and appreciation for all of the MDS staff that I worked with over the two years bringing this project to fruition. Once we had secured title and rezoning we set about finding a contractor who would take on our project. Tom Walker of WildEdge Contracting is to be commended for taking a chance on us, working on a shoestring budget and bringing us in on time and on target.

Drawing on the wisdom from other Second Stage Housing programs elsewhere in rural BC, we set up our program guidelines and drew up a number of interview questions. In introducing Second Stage Housing, it is always best to lead with the message that this is not a normal rental situation, we are not under the Residential Tenancy Act. An interview is held with four to five panel members sitting with the applicant and scoring criteria helps guide decisions around urgency and suitability. Our program seeks to provide housing for women and children who might already have a connection to the coast, which we believe will contribute to the successful transition into independent housing. Other scoring factors include children, safety concerns, suitability and urgency. The first tenants were welcomed to the program in July 2018. They were patient and understanding as we muddled through our process step by step.

When we shared the news that the program was operating, we got a congratulatory call from MP Gord Johns who had had the opportunity to visit the site while we were still renovating. Other acknowledgements need to be made to Tamara Nelson, who can tell you how difficult it can be to paint a wall white; to Water’s Edge for sharing furniture; to the Habitat for Humanity ReStore for a lot of good stuff; Food Bank on the Edge for housewares; Sheena Charnell who put things in cupboards and staged Suite B for visitors.

There are many others who have contributed to getting Welcome Bay “on line”; we thank them for their donations, time and knowledge. This goes double for our directors who walked with me through this incredible journey.

~Margaret



EMIL ANDERSON CONSTRUCTION (EAC) INC.

November 8, 2018

**Re: Hwy 4 Kennedy Hill Safety Improvements
Traffic Interruptions Update**

Dear Highway 4 travelers,

Attached is a copy of the November 23, 2018 to January 2, 2019 closure schedule. You can find a copy of the schedule on our *EAC Hwy 4 Kennedy Hill Project Updates* Facebook page at www.facebook.com/eac.bc.ca.kennedy.hill/

There is also a traffic advisory hotline which will provide detailed and up-to-date information to help plan your trip. The number is: **1 855 451-7152**.

Information will also be posted on electronic message boards at either ends of the project and along the Hwy 4 corridor between the west coast and Hwy 19 as well as information posted to **DriveBC.ca**. For your own safety, it is imperative you respect all construction signage, and stay well clear of any equipment.

We apologize for any inconveniences as a result of this project, but hope you understand that we are working towards a safer highway for all of us.

Further project information is available on the Ministry's project website at www.gov.bc.ca/highway4kennedyhill. Should you have any questions or concerns, you can leave a message on the traffic advisory hotline at 1 855 451-7152.

Sincerely,

EMIL ANDERSON CONSTRUCTION (EAC) INC.

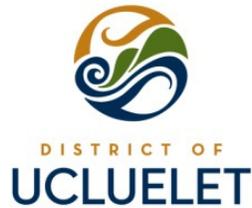
Erin Pomeroy
EAC Project Coordinator



Date		Road Status
23-Nov	Friday	NO CLOSURES. Single-lane traffic.
24-Nov	Saturday	
25-Nov	Sunday	
26-Nov	Monday	
27-Nov	Tuesday	Road Closed between the following times: -1AM to 4AM -5AM to 7AM -12PM to 1PM -4PM to 5PM -10PM to 12AM except on Fridays Expect up to 30-minute delays at all other times, day and night. ** Tuesday – No 12PM to 1PM and 4PM to 5PM closure <div style="text-align: center;">  Find us on Facebook @eac.bc.ca.kennedy.hill </div>
28-Nov	Wednesday	
29-Nov	Thursday	
1-Dec	Friday	
2-Dec	Saturday	
3-Dec	Sunday	
4-Dec	Monday	
5-Dec	Tuesday	
6-Dec	Wednesday	
7-Dec	Thursday	
8-Dec	Friday	
9-Dec	Saturday	
10-Dec	Sunday	
11-Dec	Monday	
12-Dec	Tuesday **	

There will be **NO CLOSURES** between the following dates:

 7:00am **Tuesday, December 12th, 2018** until 12:00pm **January 2nd, 2019**



STAFF REPORT TO COUNCIL

Council Meeting: NOVEMBER 13, 2018
500 Matterson Drive, Ucluelet, BC V0R 3A0

FROM: MARK BOYSEN, CHIEF ADMINISTRATIVE OFFICER

FILE NO: 0640-30

SUBJECT: QUARTERLY PROJECTS UPDATE – 3RD QUARTER 2018

REPORT NO: 18-105

ATTACHMENT(S): APPENDIX A – 2018 QUARTERLY PROJECT STATUS REPORT TABLE

RECOMMENDATION(S):

1. **THAT** Council receives this 2018 Q3 update on the progress of budgeted Staff projects.

PURPOSE:

The purpose of this report is to provide a quarterly update to Council on the progress of key projects that were approved in the 2018 District of Ucluelet Budget.

BACKGROUND:

Staff are pleased to provide this third quarterly update on the status of departmental projects for 2018 (**Appendix A**).

Table 1 below provides a summary of the 2018 projects that have been Scheduled, are In-Progress, and Completed.



Table 1: 3rd Quarter 2018 Status of Departmental Actions.

Department	Planning	Parks and Recreation	Public Works	Admin/ Finance	Fire-Emerg Services	Totals
Scheduled	1	0	1	1	1	4
In-Progress	5	9	13	4	5	36
Completed	0	1	1	0	1	3

FINANCIAL IMPACTS:

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

Respectfully submitted:

Mark Boysen, Chief Administrative Officer



STAFF REPORT TO COUNCIL

Council Meeting: NOVEMBER 13TH, 2018

2018 Departmental Priorities Workplan – Q3 Update

Planning				
Project	Budget	Actuals	Completion Status	Comments
Cedar Road Tourism Hub – Design & Engineering	\$7,500	\$2,711	60%	Preliminary design and cost estimates complete and under review.
Cedar Road Survey & Design (Bay to Main)	\$8,000	\$4,009	70%	Consultant engaged, currently coordinating design work for Main Street improvements w/ MoTI.
Official Community Plan Update	\$39,910	\$26,800	90%	Preparation of draft OCP document and mapping is underway.
Development Cost Charges Bylaw Update	\$21,500	\$2,000	15%	Consultant work initiated on background, options and strategy. DCC portion on hold pending further analysis of growth projections and infrastructure - underway, to be completed 2019.
Subdivision and Development Servicing Bylaw Updates	\$25,000	\$0	0%	2019
Affordable Housing Needs Assessment	\$20,000	\$0	0%	Terms of reference being defined, inviting consultant proposals.

APPENDIX "A"

Parks and Recreation				
Project	Budget	Actuals	Completion Status	Comments
Amphitrite House and Lands Feasibility Study	\$10,000	\$4,485	60%	Contractor hired for overall concept design of the entire location including the house. Open House – end of November or first week of December. \$60k RMI funds to be determined for 2019.
Wild Pacific Trail - Spring Cove	\$75,000	\$53,750	75%	Signed MOU with WPTS. Work in final stages. Signage to be determined.
Big Beach Accessibility Project	\$40,000	\$0	20%	Developing plan and design. On hold until fall for design.
Age Friendly Resource Hub	\$18,030	\$14,000	100%	Completed.
St. Jacques Park	\$63,750	\$32,510	30%	In progress with contractor. To be completed September 30, 2018.
UCC Energy Upgrades	\$20,000	\$0	0%	2019
Chamber Office Public Washroom	\$7,000	\$0	20%	Doors for project. Contractor to complete early 2019. Chamber is leading project.
Banner Program	\$10,000	\$6,800	60%	Banner poles to be scheduled to be installed as per original layout approved by Council.
Youth Program	\$9,300	\$1,270	80%	Programming begun - ongoing.
Alder Road Waterfront Project	\$4,600	\$0	95%	Phase 1 of project has been completed. Grass seed has gone in. Full park to be installed in the spring.

APPENDIX "A"

Public Works				
Project	Budget	Actuals	Completion Status	Comments
Marine Drive WPT Connector	\$180,000	\$37,000	15%	Alder removal/ cleared and filled Marine Dr. section carry to 2019
Cedar Road Tourism Hub – Construction	\$150,000	\$6,700	5%	Design complete / survey work complete. Site work late 2018 and into 2019.
Storm Drain Upgrade (Cedar and Bay)	\$50,000	\$0	0%	Not started/ this work will be part of the community hub parking lot and carried to 2019
WATER				
Kennedy Lake Water Supply Design	\$220,000	\$184,000	85%	Report complete/grant application submitted/ Project will carry to 2019
Matterson Reservoir Upgrade	\$130,000	\$4000	15%	Contract awarded / November start/ timing with reservoir shut down early 2019 for completion
Well Upgrade (ST-4)	\$80,000	\$14,600	20%	VFD controls on site/Electrical work underway
SCADA – Water System	\$35,000	\$8,300	25%	Programming and control strategy underway
Highway Water Reservoir Check Valve	\$35,000	\$0	0%	Move to 2019/ requires reservoir shut down/timing
Matterson Reservoir Interconnection	\$15,000	\$6,100	100%	Complete
Water Conservation Program	\$10,000	\$1000	25%	Launched low-flow toilet promotion w/ Co-op.
SEWER				
Lagoon Rebuild Completion	\$350,000	\$46,000	15%	Currently underway: VFD controls, flow meter, electrical. Carry to early 2019 for completion
Bay Street Lift Station Upgrade	\$310,000	\$26,000	15%	Kiosk electrical underway/on site November
Sewer Master Plan	\$40,000	\$0	0%	Starting November 2018.
Peninsula Road Manhole Install	\$40,000	\$3000	10%	Engineer work complete carry to 2019
SCADA – Sewer System	\$32,000	\$2000	10%	Design work underway /fall implementation.

APPENDIX "A"

Administration and Finance				
Project	Budget	Actuals	Completion Status	Comments
Asset Management Implementation	\$59,450	\$50,785	80%	Software implemented, data upload and staff training underway. Staff starting to use "calls for service" function.
Records Management System	\$29,000	\$0	0%	Contractor or temporary position under development.
Health Care Building Feasibility	\$30,000	\$0	10%	Propose engaging with consultant to develop preliminary design options for funding application.
Budget Software Implementation	\$30,000	\$25	80%	Budget software selected. Implementation has started. (actuals will show next quarter)
IT/Computer/Office Upgrades	\$16,800	\$5,012	80%	Computer replacements have been initiated by IT contactor.

APPENDIX "A"

Fire and Emergency Services				
Project	Budget	Actuals	Completion Status	Comments
Tsunami Kiosk Stations	\$63,600	\$10,000	90%	Pilot kiosk structure built and concrete pad in place. Components under development with contractors.
Emergency Operations Centre Kits and Training	\$30,000	\$17,885	60%	Training dates secured for November and January. Kits have been delivered.
Emergency Social Services Kits and Training	\$20,300	\$10,684	50%	Training dates secured for November and December. Kits will be delivered in November.
Volunteer Fire Department Turnout Gear	\$9,600	\$0	80%	Fire Chief reviewed and ordered two sets of turnout gear.
New Fire Truck Equipment	\$5,500	\$0	80%	Fire Chief has ordered hose and product starting to arrive.
Recovery Plan	\$2,000	\$0	0%	Will be integrated into the update of the Emergency Plan.
Electric Vehicle DC Fast-Charging Station	No Cost	No Cost	100%	DC Fast Charging Station installed and operational. Finalizing media communications with BC Hydro.



STAFF REPORT TO COUNCIL

Council Meeting: NOVEMBER 13, 2018
500 Matterson Drive, Ucluelet, BC V0R 3A0

FROM: MARLENE LAGOA, DEPUTY MUNICIPAL CLERK

FILE NO: 1630-01

SUBJECT: CHEQUE LISTING – OCTOBER 2018

REPORT NO: 18-106

ATTACHMENT(S): APPENDIX A – OCTOBER 2018 CHEQUE LISTING

RECOMMENDATION(S):

1. **THAT** Council receive the District of Ucluelet's October 2018 Cheque Listing for information.

PURPOSE:

The purpose of this report is to provide Council with a monthly listing of all cheques disbursed.

BACKGROUND:

Finance staff have provided a detailed list of the cheque run for October 2018 (Appendix A).

POLICY OR LEGISLATIVE IMPACTS:

The cheque listing has been reviewed to ensure compliance with the *Freedom of Information and Protection of Privacy Act*. The names of individual's shown on the cheque listing are either employed with the District or contracted for the delivery of goods and services.

OPTIONS REVIEW:

1. **THAT** Council receive the District of Ucluelet's October 2018 Cheque Listing for information.
(Recommended)
2. **THAT** Council provide alternative direction to staff.

Respectfully submitted:

Marlene Lagoa, Deputy Municipal Clerk
Mark Boysen, Chief Administrative Officer

APPENDIX A

District of Ucluelet
Cheque Listing
October 2018

Cheque #	Pay Date	Vendor Name	Invoice #	Description	Invoice Amount	Paid Amount
027688	2018-10-01	CONNECT ROCKET COMMUNICATIONS INC.	2517	AUG/18 SUBSCRIPTION	212.83	212.83
027689	2018-10-01	ANDERSON, ALAN	122441	EMRGY SERVICES-WALL CALENDAR	69.35	69.35
027690	2018-10-01	ASSOCIATED ENGINEERING (B.C.) (LTD)	268763	KENNEDY LK PROJ#2017-2163	36835.19	36835.19
027691	2018-10-01	ALLES HOLDINGS INC	122437	ANDERSON CONTRACT SERVICES SEP 10-21	1008	1008
027692	2018-10-01	ANDREW PLOWRIGHT	2	OCP-GIS SLOPE ANALYSIS	140	140
027693	2018-10-01	ACME SUPPLIES	812520	UCC CLEANING SUPPLIES	208.67	208.67
027694	2018-10-01	BEAVER ELECTRICAL MACHINERY	2323 2322	LAGOON ELECTRIC MOTORS REPAIR LAGOON ELECTRIC MOTOR REPAIRS	6596.8 4905.6	11502.4
027695	2018-10-01	CORPORATE EXPRESS CANADA INC	48314718 48428839 48434758	ADMIN OFFICE SUPPLIES ACCORDION FILE POCKETS PLAYSCHOOL EQUIP/CALENDARS UCC	176.85 48.31 129.79	354.95
027696	2018-10-01	KASSLYN CONTRACTING	D638 D637	D638 D637	1961.7 3885.54	5847.24
027697	2018-10-01	CUPE LOCAL #118	09/18	CUPE DUES-SEP/18	1330.64	1330.64
027698	2018-10-01	DUMAS FREIGHT COMPANY	56931	BEAVER ELECTRIC	156.35	156.35
027699	2018-10-01	ERIK LARSEN DIESEL CO. LTD.	716297	#5 CVI INSPECTION	271.38	271.38
027700	2018-10-01	ENGINEERED PUMP SYSTEMS LTD.	60819	SEWER KIOSK HOUR-METERS	739.2	739.2
027701	2018-10-01	FORTUNE, MARK	122440	FORTUNE-UVFB RESCUE 1 UPGRADES	713.06	713.06
027702	2018-10-01	GALLOWAY PAUL ROBERT	122422	UVFB POLARIS SERVICING	332.71	332.71
027703	2018-10-01	GALLOWAY ELECTRIC	1108 1107	UVFB BAY 2 EXTENSION CORD INSTALL UVFB BAY 1 BREAKER REPLACEMENT	141.7 95.42	237.12
027704	2018-10-01	GREATPACIFIC CONSULTING LTD	741	PROJECT REM2018 1005-006	3238.95	3238.95
027705	2018-10-01	HUB FIRE ENGINES & EQUIPMENT LTD.	IN00035058	UVFB RESCUE 1 CAFS REPAIR	1067.96	1067.96
027706	2018-10-01	INNER HARMONY HOMECARE & HOUSEKEEPING	4859	AUG/18 MONTHLY CLEANING CONTRACT	3255	3255
027707	2018-10-01	JAMES R. CRAVEN AND ASSOCIATES LTD	45	CFO RECRUITMENT CONSULTANT/ADVERTISING	11103.75	11103.75
027708	2018-10-01	KOERS & ASSOCIATES ENGINEERING LTD.	1643-021 1763-005 1762-010 9601-151 1756-009	1643 SEWAGE LAGOON REVIEW 1763 MATTERSON ALTITUDE VALVE CHAMBER 1762 BAY ST SIMPLEX P/S REPLACEMENT 9601 MISC: 175 MARINE DR WALKWAY 1756 KENNEDY LK WATER SUPPLY	2797.6 1515.94 1882.52 226.01 818.61	7240.68
027709	2018-10-01	LANG, STEVE	122439	LANG-EOCP CONFERENCE TRAVEL EXPENSE	654.6	654.6
027710	2018-10-01	LB WOODCHOPPERS LTD.	306769	HONDA GENERATOR (PW)	1416.8	1416.8
027711	2018-10-01	LAGOA MARLENE	122436	LAGOA-UBCM TRAVEL EXPENSES	549.2	549.2
027712	2018-10-01	YOUNG ANDERSON	109180 109181 109182 109183 109184 109185 109179	1190080 1190134 1190145 1190153 1190157 1190159 11190040	414.75 204.63 439.26 55.22 611.36 507.45 434.95	2667.62
027713	2018-10-01	MCDIARMID JOHN	65373A	MCDIARMID BOOT ALLOWANCE	241.5	241.5
027714	2018-10-01	MOLE SALLY	122430	MOLE-UBCM TRAVEL EXPENSES	614.6	614.6
027715	2018-10-01	McEWEN MARILYN	122435	MCEWEN-UBCM TRAVEL EXPENSES	153	153
027716	2018-10-01	MAXXAM ANALYTICS	VA1178450	WATER TESTING B878511	252	252
027717	2018-10-01	McELHANNEY ASSOCIATES LAND SURVEYING LTD	2231 094639	PROJ: DOU-SPRING COVE SITE PLAN	3333.75	3333.75

APPENDIX A

District of Ucluelet
Cheque Listing
October 2018

Cheque #	Pay Date	Vendor Name	Invoice #	Description	Invoice Amount	Paid Amount
027718	2018-10-01		BP18-06	BP18-06 DMG DEP RETURN	1000	1000
027719	2018-10-01		BP18-31	BP18-31 DMG DEP REFUND	1000	1000
027720	2018-10-01	REVENUE SERVICES OF BC	10/18	OCT/18	1537.5	1537.5
027721	2018-10-01	NOEL MAYCO	122431	NOEL-UBCM TRAVEL EXPENSES	938.3	938.3
027722	2018-10-01	OLIWA RANDY	122434	OLIWA-UBCM TRAVEL EXPENSES	634.9	634.9
027723	2018-10-01	PBX ENGINEERING LTD	5272 5273	SCADA PROJECT 16331-01 SCADA PROJECT 16331-02	836.85 1093.58	1930.43
027724	2018-10-01	PUROLATOR INC	439164797 439228342	MAXXAM MAXXAM	80.56 199.09	279.65
027725	2018-10-01	PACIFIC READY MIX CO. LTD.	8960	PENINSULA RD SIDEWALKS	1258.13	1258.13
027726	2018-10-01	SMITH ROAD MARKING LTD	1041	2018 ROAD MARKINGS/SUPPLY & INSTALL	29120.86	29120.86
027727	2018-10-01	SOLIDARITY SNACKS	82 81	OCP STAFF DINNER OCP OPEN HOUSE SNACKS	115.5 170.1	285.6
027728	2018-10-01	SUN LIFE ASSURANCE COMPANY OF CANADA	46755	EAP PROGRAM-SUN LIFE	95.55	95.55
027729	2018-10-01	UCLUELET MEDICAL CENTER	5777	INDUSTRIAL MEDICAL-UVFB APPLICANT	50	50
027730	2018-10-01	UCLUELET PETRO-CANADA	2337 2302	#24 OIL CHANGE BYLAW RANGER-BRAKES/WHEEL BEARINGS	128.09 720.06	848.15
027731	2018-10-01	UCLUELET RENT-IT CENTER LTD	31186	TRIMMER REPAIR	98.4	98.4
027732	2018-10-01	UCLUELET VOLUNTEER FIRE BRIGADE	Q3/18	Q3/18	2100	2100
027733	2018-10-01	VALON TECHNOLOGIES	3297	UVFB-MANAGEMENT SOFTWARE	840	840
027734	2018-10-03	MONTEITH DONNA	2018-01	MONTEITH REIMBURSEMENT	505.64	505.64
027735	2018-10-16	CONNECT ROCKET COMMUNICATIONS INC.	2580 2518	OCT/18 MONTHLY SUBSCRIPTION SEP/18 SUBSCRIPTION	213.19 213.19	426.38
027736	2018-10-16	ANDERSON, ALAN	122444	ANDERSON-EOC TRAINING TOFINO	44.28	44.28
027737	2018-10-16	ALBERNI COMMUNICATIONS & ELECTRONICS LTD	26223 26224 26225 26226 26086	UVFB-PAGERS/RADIO REPAIR UVFB-PAGER/RADIO REPAIR UVFB-PAGER/RADIO REPAIR UVFB-PAGER/RADIO REPAIR UVFB-PAGER/RADIO REPAIR	54.74 49.28 49.28 163.52 79.38	396.2
027738	2018-10-16	ASSOCIATED ENGINEERING (B.C.) (LTD)	269070	KENNEDY LK PROJ#2017-2163	15145.71	15145.71
027739	2018-10-16	AGS BUSINESS SYSTEMS INC	43742	08/29/18-09/28/18	1118.47	1118.47
027740	2018-10-16	ALLES HOLDINGS INC	122449	ANDERSON CONTRACT SERVICES SEP24-OCT5	1008	1008
027741	2018-10-16	ANDREW SHERET LIMITED	03085300	SEWAGE PIPE/MANHOLE HOOKS	441.73	441.73
027742	2018-10-16	ASPLUNDH	1837-1732	CUTTING/PRUNING SIDE STREETS	2100	2100
027743	2018-10-16	ALBERNI VALLEY REFRIGERATION LTD	20184865 20184838	UCC-FRIDGE/FREEZER/DISHWSHR REPAIR GAS RANGE REPAIR	1519 1135.75	2654.75
027744	2018-10-16	BOWERMAN EXCAVATING LTD	12678	ST.JACQUES PARK SITE WORK	21577.5	21577.5
027745	2018-10-16	BOUVIER DARCEY	122445	BOUVIER-ASSET MGMT CONF RICHMOND BC	120	120
027746	2018-10-16	BLACK PRESS GROUP LTD.	33532037	SEP/18 ADS	1426.79	1426.79
027747	2018-10-16	CORPORATE EXPRESS CANADA INC	48436119 48547179	LEGAL ACCORDION FILES PERMANENT MARKERS-PLAYSCHOOL	77.94 6.91	84.85
027748	2018-10-16	CGIS CENTRE	43376	GISTECH SERVICE-OCP SCHEDULES	8528.63	8528.63
027749	2018-10-16	KASSLYN CONTRACTING	D639	D639	3047.3	3047.3

APPENDIX A

District of Ucluelet
Cheque Listing
October 2018

Cheque #	Pay Date	Vendor Name	Invoice #	Description	Invoice Amount	Paid Amount
027750	2018-10-16	COLYNS NURSERY & GARDEN CENTRE	22547	FALL FLOWERS-PARKS & REC	321.95	321.95
027751	2018-10-16	CLEARTECH INDUSTRIES INC	178019SJC 764488	CONTAINER RETURN SODIUM HYPOCHLORITE	-273 836.3	563.3
027752	2018-10-16	DOLAN'S CONCRETE LTD.	UP81602	= ("3/4" ROAD MULCH")	242.06	242.06
027753	2018-10-16	DUMAS FREIGHT COMPANY	61579 56517 43090 42114	EXPRESS CUSTOM MFG CLEARTECH GREGG DISTRIBUTORS CLEARTECH	43.96 110.25 94.24 473.69	722.14
027754	2018-10-16	E.B. HORSMAN & SON	11708633	HOUR METERS	131.89	131.89
027755	2018-10-16	EDWARDS DAVID	1310	TREE CLEARING/FALLING-WILD PACIFIC TRAIL	819	819
027756	2018-10-16	ENLIGHTENING ENTERPRISES LTD	122447 122448	BOOT ROOM-SOCCER COACH CLINIC EZRA SOCCER CAMP/18	173.25 3423	3596.25
027757	2018-10-16	EARTH LAND & SEA COMPOST CORP	1256	SOIL-ST.JACQUES PARK	1338.75	1338.75
027758	2018-10-16	FOUR STAR COMMUNICATIONS INC	47722	SEP/18	149.95	149.95
027759	2018-10-16	GREGG DISTRIBUTORS LTD	011-683212	SEWER JETTER W/ HOSE REEL	10410.74	10410.74
027760	2018-10-16	GRAPHICS FACTORY	25739 25735	ELECTION BALLOTS/BOOKS ELECTION BALLOTS	168 284.48	452.48
027761	2018-10-16	GLOBAL INDUSTRIAL CANADA	339722	MOBILE PODIUM-UCC	210.67	210.67
027762	2018-10-16	GREATPACIFIC CONSULTING LTD	765	PROJECT REM2018 1005-006	3095.69	3095.69
027763	2018-10-16	HUB FIRE ENGINES & EQUIPMENT LTD.	IN00035117	WINDSHIELD DEDUCTIBLE-	233.6	233.6
027764	2018-10-16	HETHERINGTON INDUSTRIES	E-75885	WASTE ABSORBANTS SCH	173.25	173.25
027765	2018-10-16	HOLISTIC EMERGENCY PREPAREDNESS	1108	EOC KIT/ORIENTATION	1958.78	1958.78
027766	2018-10-16	ISLAND BUSINESS PRINT GROUP LTD	167336	UTILITY BILLS (QTY 6000)	698.88	698.88
027767	2018-10-16	INFOSAT COMMUNICATIONS	360829	OCT/18	65.12	65.12
027768	2018-10-16	INNER HARMONY HOMECARE & HOUSEKEEPING	4877	SEP/18 MONTHLY CLEANING CONTRACT	330.75	330.75
027769	2018-10-16	ISLAND CONCRETE PUMPING LTD.	14003	LINE PUMP-ST.JACQUES BLVD	1536.15	1536.15
027770	2018-10-16	J. ROBBINS CONSTRUCTION LTD	3241	ROAD MULCH - BAY ST	553.49	553.49
027771	2018-10-16	J.ROBBINS SAND & GRAVEL LTD.	684	ASHPHALT-LAGOON PROJECT	375	375
027772	2018-10-16	KPMG LLP	8002233404	2017 AUDIT	25908.75	25908.75
027773	2018-10-16	LB WOODCHOPPERS LTD.	307474	RYAN AERATOR	290.08	290.08
027774	2018-10-16	[REDACTED]	BP18-66	BP FEE OVERCHARGE RETURN	6.06	6.06
027775	2018-10-16	YOUNG ANDERSON	109690 109691 109688 109689 109692 109693 109694 109695	1190134 1190145 1190040 1190080 1190153 1190157 1190160 1190161	779.36 1006.94 3350.77 1032.88 392.73 144.87 494.84 95.99	7298.38
027776	2018-10-16	MCDIARMID JOHN	PP21MJ	PP21/2018	152.11	152.11
027777	2018-10-16	MAXXAM ANALYTICS	VA1185192 VA1179224 VA1184184 VA1182910 VA1180108	SEWER TESTING B886626 WATER TESTING B878504 WATER TESTING B886542 WATER TESTING B883828 WATER TESTING B881257	319.2 1428 252 252 252	2503.2
027778	2018-10-16	PACIFIC RIM MARINE SEARCH & RESCUE SOC	SRF08/18 SRF09/18	AUG/18-PR SAR DONATIONS SEP/18-PR SAR DONATIONS	1363.08 528.27	1891.35

APPENDIX A

District of Ucluelet
Cheque Listing
October 2018

Cheque #	Pay Date	Vendor Name	Invoice #	Description	Invoice Amount	Paid Amount
027779	2018-10-16	PITNEYWORKS	100418	OCT/18 POSTAGE	1065	1065
027780	2018-10-16	RIVERA, LYVIER	122450	RIVERA-TEMPLE CONFERENCE/18	355.5	355.5
027781	2018-10-16	ACRD	7252	CONSTRUCTION DEBRIS DISPOSAL	121.6	121.6
027782	2018-10-16	ST JACQUES DIANNE	122446	ST.JACQUES-UBCM VANCOUVER	422.4	422.4
027783	2018-10-16	SONBIRD REFUSE & RECYCLING LTD.	33517	SEP/18 GARBAGE WHISKEY DOCK	407.8	3605.54
			33518	SEP/18 GARBAGE PW	908.19	
			33516	SEP/18 GARBAGE 52 STEPS	376.93	
			33515	SEP/18 GARBAGE SCH	1551.02	
			33514	SEP/18 RECYCLING TRANSFER FEE LYCHE	40.95	
			33520	SEP/18 GARBAGE UVFB & UAC	45.15	
			33519	SEP/18 GARBAGE UCC	275.5	
027784	2018-10-16	SHARE CANADA	14772	NATRAKLENE DEGREASER	2186.1	2186.1
027785	2018-10-16	S & J SERVICES	277225	SEP/18 LYCHE	1386	2805.6
			277226	SEP/18 FIREHALL	138.6	
			277227	SEP/18 PW	315	
			277228	SEP/18 UAC	315	
			277229	SEP/18 AQUA	651	
027786	2018-10-16	SYNERGY ENTERPRISES	1297	BLDG SUSTAINABILITY ASSMNTS-REC HALL/UAC	1312.5	1312.5
027787	2018-10-16	TARON BRENT	PP21TB	PP21/18	276.68	276.68
027788	2018-10-16	TECH ELECTRICAL CONTRACTING LTD.	150	SEWER LAGOON ELECTRICAL SWITCHBOARD	3087	3087
027789	2018-10-16	TRANSPARENT SOLUTIONS CORP	9977	CLEARMAIL NOV/18	20.95	20.95
027790	2018-10-16	TOURISM UCLUELET	07/18	JUL/18 MRDT	69444.83	69444.83
027791	2018-10-16	UCLUELET CONSUMER'S CO-OPERATIVE ASSN	5584	SEP/18 CARDLOCK	1127.63	2246.08
			71106132	#23	72.58	
			71107734	#2	92.07	
			71109296	#1	144.65	
			71109370	BYLAW	62.81	
			71109806	#4	166.06	
			71110348	#23	82.45	
			71110417	#24	175.68	
			C01089482	CASTER INSERT PART RETURN	-3.23	
			71112437	#3	156.04	
			71114995	#10	169.34	
027792	2018-10-16	UCLUELET CONSUMER'S CO-OPERATIVE ASSN	71116893	#18 BYLAW	10.03	572.76
			71118336	#2	92.36	
			71117195	#1	120	
			C01043804	YOUTH PROGRAM SNACKS	42.28	
			71110939	#13	15.01	
			71111019	#12	98.57	
			71111317	#13	18.74	
			C01089483	DEADBOLTS-UCC	12.97	
			71114034	#2	75.69	
			71114194	BYLAW WHITE RANGER	54.5	
			C01084241	AFTERSCHOOL PROGRAM SNACKS	32.61	
027793	2018-10-16	UCLUELET CONSUMER'S CO-OPERATIVE ASSN	C01098935	CASTERS FOR PODIUM-UCC	10.5	89.63
			C01099524	MILK/CREAM/SNACKS-UCC	41.72	
			C01090458	SNACKS-UCC	32.33	
			C01091516	MILK/CREAM-LYCHE	5.08	
027794	2018-10-16	UKEE INFO TECH	10782	IT SUPPORT SEP/18	2824.45	2824.45
027795	2018-10-16	UKEE AUTO SERVICE	92798	#3 DOOR REPAIR	438.38	438.38
027796	2018-10-16	UCLUELET PETRO-CANADA	2425	REC HALL KEY COPYING	20.16	453.73
			2568	#4 TOWING FEE	99.23	
			2564	#10 DOOR LOCK REPLACEMENT	334.34	
027797	2018-10-16	UCLUELET RENT-IT CENTER LTD	31070	SEP/18 PORTABLES-SKATE PARK	421.12	2722.72
			31329	PUMP OUT FOR POWER OUTAGE	756	
			31069	SEP/18 PORTABLES	1545.6	

APPENDIX A

District of Ucluelet
Cheque Listing
October 2018

Cheque #	Pay Date	Vendor Name	Invoice #	Description	Invoice Amount	Paid Amount
027798	2018-10-16	VANCOUVER ISLAND ECONOMIC ALLIANCE	1061	MEMBERSHIP RENEWAL JUL/18-JUN/19	525	525
027799	2018-10-16	WINDSOR PLYWOOD - UCLUELET DIV.	65886A 65965A 64047A 65546A 64270A 64928A 65057A 65109A 65383A 66065A	ELECTRICAL TAPE-PW HANGING BASKET SUPPLIES-PARKS GLOVES/ZAP STRAPS LUMBER-ART ROOM SHELVING LAG BOLTS FOR DRAGGER CONSTRUCTION BLOCKS LUMBER FOR SIDE BOARDS ON VEHICLE TOILET REPLACEMENT PARTS SCH PAINT FOR ROAD MARKING GREENHOUSE/NURSERY HARDWARE	7.43 48.95 30.07 98.15 44.27 22.36 34.98 16.59 134.55 47.62	484.97
027800	2018-10-16	XPLORNET COMMUNICATIONS INC	INV23885282	OCT/18	55.99	55.99
027801	2018-10-16	KASSLYN CONTRACTING	D640	D640	474.11	474.11
027802	2018-10-26	BLOCK, JACQUELYN	122466	BLOCK-ZUMBA-SEP/18	66.77	66.77
027803	2018-10-26	BROCHU, CATHERINE	122459	BROCHU-CHANTING-SEP/18	57.6	57.6
027804	2018-10-26	DRAESEKE JAN	122460	CHI GONG-SEP/18	60.76	60.76
027805	2018-10-26	HUBER CHANTAL	122462	YOGA-SEP/18	133.14	133.14
027806	2018-10-26	HOGAN, SARAH	122463	DANCE FIT-SEP/18	107.69	107.69
027807	2018-10-26	L'HOMME SOPHIE	122456	CHOIR-FALL/18	1344	1344
027808	2018-10-26	NEWANS CYNTHIA	122464	DIRTY PAINTING-AUG/18	168	168
027809	2018-10-26	RIVERA LYVIER	122461	DANCE CARDIO-SEP/18	236.64	236.64
027810	2018-10-26	RELIC SURF SHOP INC	122454 122457	SPRING/SUMMER SURF CLUB RELIC CAMPS-FALL	3359.7 2736	6095.7
027811	2018-10-26	SHU IAN	122455	PURPLE DRAGON SESSION A PYMT 1	1518.4	1518.4
027812	2018-10-26	STRICKLAND KARLA	122465	STRICKLAND-CERAMICS FALL/18	1419	1419
027813	2018-10-29	ACE COURIER SERVICES	20273171 14235820 14235526	CSE LIMITED ANDREW SHERET LB WOODCHOPPER/YOUNG ANDERSON/FASKEN	30.88 145.51 92.59	268.98
027814	2018-10-29	ALLES HOLDINGS INC	10	ANDERSON CONTRACT SERVICES OCT 8-19	1008	1008
027815	2018-10-29	ADVANCE PRESSURE WASHING LTD	6959	EXHAUST CLEANING-UCC KITCHEN	573.25	573.25
027816	2018-10-29	BONNER ALLIE	122476	BONNER-ELECTION OFFICER OCT20	375	375
027817	2018-10-29	BUIRS BRITTANY	122458	BUIRS DANCE-FALL/18	844.8	844.8
027818	2018-10-29		73076	TAX REFUND	275	275
027819	2018-10-29	CORPORATE EXPRESS CANADA INC	48729912 48690163 48740723 48690194	OFFICE SUPPLIES-PW OFFICE SUPPLIES-LYCHE WHITEBOARD-EMERGENCY OFFICE CLIPBOARDS-PW	61.3 145.28 459.19 103.9	769.67
027820	2018-10-29	KASSLYN CONTRACTING	D641 D642	D641 D642	1957.34 2088.27	4045.61
027821	2018-10-29	DOLAN'S CONCRETE LTD.	UK45684 UP82368	CONCRETE-COAST GUARD KIOSK GRAVEL-PW	520.47 485.25	1005.72
027822	2018-10-29	DESSERUD PETER	122475	DESSERUD-ELECTION OFFICER OCT20	375	375
027823	2018-10-29	FREUNDLICH CONSULTING, CPA	9130 9129 9128	CONTRACT CFO SEP 9-21 M360 PROJECT AUG 3-SEP 13 CONTRACT CFO AUG 16-SEP 6	3402 4620 3988.95	12010.95
027824	2018-10-29	FOUR STAR WATERWORKS LTD.	53398	LANDSCAPE CLOTH-WPT/PW	1054.23	1054.23
027825	2018-10-29	FAR WEST DISTRIBUTORS LTD	322337	TOILET PAPER-UCC	48.51	182.3

APPENDIX A

District of Ucluelet
Cheque Listing
October 2018

Cheque #	Pay Date	Vendor Name	Invoice #	Description	Invoice Amount	Paid Amount
			322329	HAND SOAP/TP/SPRAY BOTTLE-UCC	133.79	
027826	2018-10-29	GREGG DISTRIBUTORS LTD	011-686127 011-686499 011-685167	FILTERS/BULBS/BATTERY PACK SNOW FENCING SNOW FENCING	138.93 236.34 235.17	610.44
027827	2018-10-29	GREY WHALE DELICATESSEN	992654 992655 992656	FOOD FOR UEN MEETING-JUN20 SNACKS FOR ESS TRAINING-AUG22 SNACKS FOR UEN MEETING-SEP 19	100.75 52.5 90.25	243.5
027828	2018-10-29	ISLAND BUSINESS PRINT GROUP LTD	167598	#10 WINDOWED ENVELOPES (QTY 2500)	156.8	156.8
027829	2018-10-29	J & D WEAVER HOLDINGS LTD	648091	SHOP TOOLS-PW	549.9	549.9
027830	2018-10-29	KOERS & ASSOCIATES ENGINEERING LTD.	9601-152 1764-009 1762-011 1763-006 1643-022	9601 MISC: 175 MARINE DR WALKWAY 1764 WELLFIELD VFD UPGRADES 1762 BAY ST SIMPLEX P/S REPLACEMENT 1763 MATTERSON ALTITUDE VALVE CHAMBER 1643 SEWAGE LAGOON REVIEW	374.85 629.09 3059.33 1587.6 477.48	6128.35
027831	2018-10-29	UCLUELET CONSUMERS CO-OPERATIVE ASSN	10/18 11/18	OCT/18 LEASE NOV/18 LEASE	250 250	500
027832	2018-10-29	MCDIARMID JOHN	122478	MCDIARMID-WWC LEVEL 2 CHILLIWACK	869.18	869.18
027833	2018-10-29	MAXXAM ANALYTICS	VA1185785 VA1187984	WATER TESTING B888675 WATER TESTING B891137	252 252	504
027834	2018-10-29	McELHANNEY ASSOCIATES LAND SURVEYING LTD	2231 092505	PROJ: DOU PEDESTRIAN RIGHTS OF WAY	10500	10500
027835	2018-10-29	MCGILLIVRAY, ERIN	122477	ART CLASSES	1204	1204
027836	2018-10-29	4IMPACT MARKETING INC.	115107	4IMPACT MARKETING-RECLASSFCTN 115107	3079.54	3079.54
027837	2018-10-29	BOUTIN, LOUISE	122470	BOUTIN-ELECTIONS OFFICER OCT10&20	750	750
027838	2018-10-29	ARENSEN, DIANE	122471	ARENSEN-ELECTION OFFICER OCT10&20	750	750
027839	2018-10-29	HASSE, SUE	122473	HASSE-ELECTION OFFICER OCT20	375	375
027840	2018-10-29	SHACK VENTURES	73012	SHACK VENTURES-RECLASSIFICATION 73012	4848.48	4848.48
027841	2018-10-29	MCQUAID JILL	122472	MCQUAID-ELECTION COUNTER OCT20	60	60
027842	2018-10-29	ORCA HEALTH & SAFETY CONSULTING INC.	4362	CONFINED SPACE TRAINING CHAMBERS	2520	2520
027843	2018-10-29	PIN-GEL STEEL FABRICATORS LTD	8736	HEMLOCK LIFT STATION-RAILING	168	168
027844	2018-10-29	PUROLATOR INC	439368475 439298141 439490652 439429929	MAXXAM/TRANSIGN MAXXAM/ENGINEERED PUMP SYSTEM MAXXAM/GREGG MAXXAM/GREGG	161.7 84.25 325.65 154.64	726.24
027845	2018-10-29	PAYNE SUE	122474	PAYNE-ELECTION OFFICER OCT20	375	375
027846	2018-10-29	SBC INSURANCE AGENCIES LTD.	6492	2018/19 INSURANCE-SPORTS PROGRAMS	1122	1122
027847	2018-10-29	SCHRAMM DESIGN	2920	EMILY CARR INTERP SIGN	2996	2996
027848	2018-10-29	SUPERIOR PROPANE	21647743	PROPANE-REC HALL	425.01	425.01
027849	2018-10-29	SOLIDARITY SNACKS	87	ALL STAFF MEETING-SNACKS	77.18	77.18
027850	2018-10-29	SUN LIFE ASSURANCE COMPANY OF CANADA	48296 49647	EAP PROGRAM-SUN LIFE EAP PROGRAM-SUN LIFE	95.55 95.55	191.1
027851	2018-10-29	TOURISM UCLUELET	06/18 REM	JUN/18 MRDT (GST FOR INV 06/18)	1853.36	1853.36
027852	2018-10-29	UCLUELET CHAMBER OF COMMERCE	122469	UKEE DAYS PLAQUE CONTRIBUTION	24.64	24.64
027853	2018-10-29	UKEE AUTO SERVICE	98376 98385 98390	#4 BRAKE LIGHTS/STEERING COLUMN #10 WINDSHIELD WASHER PUMP REPAIR #1 WATER PUMP/DOOR REPAIR	1182.72 107.52 904.96	2195.2
027854	2018-10-29	UCLUELET RENT-IT CENTER LTD	30486	WEEDEATER REPAIR	132.43	518.26

APPENDIX A

District of Ucluelet
 Cheque Listing
 October 2018

Cheque #	Pay Date	Vendor Name	Invoice #	Description	Invoice Amount	Paid Amount
			31067	GREASE GUN-PLAYGROUND	18.02	
			31418	HEMLOCK LIFT STN PUMP-OUT	173.6	
			31546	MACHINE OIL-PARKS	106.85	
			31556	CORING RING RENTAL	87.36	
027855	2018-10-29	VANCOUVER ISLAND REGIONAL LIBRARY	Q4-18	Q4/18	26111	26111
027856	2018-10-29	MCBRINE WALTER	122467	LAGOON AERATOR LIFT	110	110
027857	2018-10-29	ZOE'S BAKERY AND CAFE	161	STAFF CELEBRATION CAKE	105	289.8
			167	ELECTIONS STAFF-LUNCH	184.8	



STAFF REPORT TO COUNCIL

Council Meeting: NOVEMBER 13, 2018
500 Matterson Drive, Ucluelet, BC V0R 3A0

FROM: MARLENE LAGOA, DEPUTY MUNICIPAL CLERK/CHIEF ELECTION OFFICER

FILE NO: 4200-20

SUBJECT: 2018 ELECTION REPORT

REPORT NO: 18-107

ATTACHMENT(S): APPENDIX A – DECLARATION OF OFFICIAL ELECTION RESULTS
APPENDIX B – DETERMINATION OF OFFICIAL ELECTION RESULTS
APPENDIX C – BALLOT ACCOUNT – GENERAL VOTING
APPENDIX D – BALLOT ACCOUNT – ADVANCE VOTING

RECOMMENDATION(S):

1. **THAT** Council receive the 2018 Election Report for information.

PURPOSE:

The purpose is to report on the 2018 election results.

BACKGROUND:

Section 158 of the *Local Government Act (LGA)* requires that the Chief Election Officer submit a report of the election results to the local government.

Section 149 of the *LGA* requires that the names of the elected officials must be submitted to the BC Gazette for publication. Staff confirms that the required information has been submitted.

ELECTION RESULTS:

There was an increase in voter turnout with 796 ballots cast in 2018 (60% voter turnout) compared to 603 ballots in 2014 (50% voter turnout).

The election results can be found attached to this report as follows:

- Appendix A – Declaration of Official Election Results
- Appendix B – Determination of Official Election Results
- Appendix C – Ballot Account – General Voting
- Appendix D – Ballot Account – Advance Voting

OPTIONS REVIEW:

1. THAT Council receive the 2018 Election Report for information. **(Recommended)**
2. THAT Council provide alternative direction to staff.

Respectfully submitted: Marlene Lagoa, Deputy Municipal Clerk
Mark Boysen, Chief Administrative Officer



DISTRICT OF UCLUELET

DECLARATION OF OFFICIAL ELECTION RESULTS**GENERAL LOCAL ELECTION – 2018**

I, Marlene Lagoa, Chief Election Officer, do hereby declare elected the following candidates, who received the highest number of valid votes for the office of:

MAYOR

Mayco Noel

COUNCILLOR

Rachelle Cole

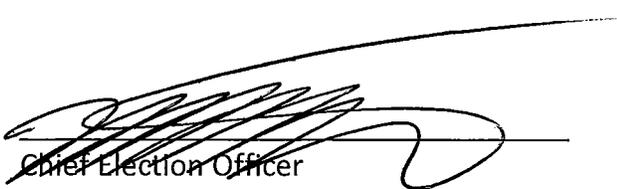
Jennifer Hoar

Lara Kemp

Marilyn McEwen

Dated at Ucluelet, BC

this 22nd day of October, 2018.



Chief Election Officer

DISTRICT OF UCLUELET

DETERMINATION OF OFFICIAL ELECTION RESULTS

GENERAL LOCAL ELECTION – 2018

	Advance Voting Opportunity: October 10, 2018 Ucluelet Community Centre	Voting Day: October 20, 2018 Ucluelet Community Centre	TOTAL NUMBER OF VALID VOTES CAST
MAYOR			
CORTES, Kevin	28	56	84
IRVING, Bill	48	94	142
NOEL, Mayco	124	232	356
OLIWA, Randy	73	137	210
COUNCILLOR			
ANDERSON, Jeff	49	107	156
BAILEY, Ted	14	32	46
COLE, Rachelle	164	288	452
HOAR, Jennifer	117	213	330
HORNE, Andy	67	142	209
JOHNSON, Courtney	70	162	232
KEMPS, Lara	196	331	527
McEWEN, Marilyn	147	256	403
MORRISON, Myles	56	117	173
WILTS, Jesse	34	56	90

The determination of the official election results was made by the Chief Election Officer on October 22, 2018 at 2:00 PM and is based on ballot accounts as amended or prepared by the Chief Election Officer.



Chief Election Officer



BALLOT ACCOUNT

General Voting - OCTOBER 20, 2018
Ucluelet Community Centre, 500 Matterson Drive, Ucluelet, BC

MAYOR

COUNCILLOR

Number of valid votes cast:

Number of valid votes cast:

CORTES, Kevin

56

ANDERSON, Jeff

107

IRVING, Bill

94

BAILEY, Ted

32

NOEL, Mayco

232

COLE, Rachelle

288

OLIWA, Randy

137

HOAR, Jennifer

213

HORNE, Andy

142

JOHNSON, Courtney

162

KEMPS, Lara

331

McEWEN, Marilyn

256

MORRISON, Myles

117

WILTS, Jesse

56

(1) Number of ballots received for use (see Note 1)		<u>1,100</u>
(2) Ballots without objection	<u>527</u> ^{act} 519	
(3) Ballots accepted subject to objection under LGA s.140 (VC s.102)		
(4) Ballots rejected without objection	<u>6</u>	
(5) Ballots rejected subject to objection under LGA s.140 (VC s.102)		
(6) Spoiled ballots that were replaced under LGA s.128 (VC s.90)	<u>2</u> ^{act}	
(7) Number of ballots given to the electors (2+3+4+5+6)		<u>527</u>
(8) Unused ballots (see Note 2)		<u>573</u>
(9) Number of ballots not accounted for		
(10) TOTAL (7+8+9) No. 1 & No. 10 must agree		<u>1,100</u>


Chief Election Officer

THIS FORM MUST BE COMPLETED IN DUPLICATE.
Place one copy in the ballot box and return one copy to the Chief Election Officer.



BALLOT ACCOUNT

Advance Voting - OCTOBER 10, 2018
Ucluelet Community Centre, 500 Matterson Drive, Ucluelet, BC

MAYOR

COUNCILLOR

Number of valid votes cast:

Number of valid votes cast:

CORTES, Kevin

28

ANDERSON, Jeff

49

IRVING, Bill

48

BAILEY, Ted

14

NOEL, Mayco

124

COLE, Rachelle

164

OLIWA, Randy

73

HOAR, Jennifer

117

HORNE, Andy

67

JOHNSON, Courtney

70

KEMPS, Lara

116

McEWEN, Marilyn

147

MORRISON, Myles

56

WILTS, Jesse

34

(1) Number of ballots received for use (see Note 1)		<u>300</u>
(2) Ballots without objection	<u>275</u>	
(3) Ballots accepted subject to objection under LGA s.140 (VC s.102)	<u> </u>	
(4) Ballots rejected without objection	<u>1</u>	
(5) Ballots rejected subject to objection under LGA s.140 (VC s.102)	<u> </u>	
(6) Spoiled ballots that were replaced under LGA s.128 (VC s.90)	<u> </u>	
(7) Number of ballots given to the electors (2+3+4+5+6)		<u>276</u>
(8) Unused ballots (see Note 2)		<u>24</u>
(9) Number of ballots not accounted for		<u> </u>
(10) TOTAL (7+8+9) No. 1 & No. 10 must agree		<u>300</u>

Chief Election Officer

THIS FORM MUST BE COMPLETED IN DUPLICATE.

Place one copy in the ballot box and return one copy to the Chief Election Officer.



STAFF REPORT TO COUNCIL

Council Meeting: November 13, 2018
500 Matterson Drive, Ucluelet, BC V0R 3A0

FROM: MARK BOYSEN, CHIEF ADMINISTRATIVE OFFICER

FILE NO: 1855-03 CWWF

SUBJECT: KENNEDY LAKE CLEAN WATER AND WASTE FUND APPLICATION

REPORT NO: 18-108

(GREEN INFRASTRUCTURE ENVIRONMENTAL QUALITY PROGRAM)

ATTACHMENT(S): KENNEDY LAKE WATER TREATMENT PLANT FEASIBILITY STUDY AND CONCEPTUAL DESIGN

RECOMMENDATION(S):

1. **THAT** Council receive the Kennedy Lake Water Treatment Plant Feasibility Study and Conceptual Design report from Associated Engineering.
2. **THAT** Council request staff bring forward a report to consider a loan authorization for 2019 that would provide future funding for a Kennedy Lake Water Treatment System.

PURPOSE/DESIRED OUTCOME:

The primary purpose of this report is to publicly share the August 2018 funding submission by the District for a potential new water supply source at Kennedy Lake for Ucluelet and surrounding communities. Council approved submission of the funding application on August 21st, 2018 in an in-camera meeting.

The secondary purpose of this report is for Council to consider requesting staff to bring forward a report to consider a loan authorization for 2019 that would provide future funding for a Kennedy Lake Water Treatment System. This is intended to be a preliminary support in principle of the project by Council and further discussions will be required in 2019 before final approval is requested. The loan authorization would also require a public referendum in the Fall of 2019.

SUMMARY:

In July 2018 the Ministry of Municipal Affairs and Housing, Infrastructure & Finance Branch announced a Green Infrastructure Environmental Quality Program which provides funding of up to 73.33% of the total eligible project costs. Forty percent (40%) is contributed by the Government of Canada and three-three percent (33.33%) by the Province of British Columbia. The remaining eligible project costs are the responsibility of the applicant. The proposed Kennedy Lake water supply project meets the eligibility requirements of this funding.

The preliminary estimated cost of the project is \$55 million (Table 1 below). If the 73.33% funding is approved, the District will be responsible for an estimated cost of \$15 million.

BACKGROUND:

The current water supply system for the District of Ucluelet is primarily provided by a

A Kennedy Lake water supply system has been discussed as a potential water source for the community for over 25 years and has been identified in many reports as the only source that could supply the anticipated future demands for Ucluelet and neighboring communities.

This is a priority project for Ucluelet for the following reasons:

1. Age and maintenance costs of the existing water system.
2. Population and tourism growth estimates (Note: Project cost estimates considers full development of Wyndensea lands).
3. Increasing drought conditions in a changing climate.

Historical reports that support the Kennedy Lake Water Supply project are as follows:

- 1992 Village of Ucluelet Water Supply and Sanitary Sewer Review Report by Duncan & Associates Engineering Ltd.
- 1994 Village of Ucluelet Water Supply & Sewage Disposal Study Koers & Associates Engineering Ltd.
- 2007 District of Ucluelet Municipal Infrastructure Review DL 281 & 282 and Former Forest Land Reserve Koers & Associates Engineering Ltd.
- 2016 District of Ucluelet Development Cost Charge Bylaw No. 738, 1996, & Amendment Bylaw 1056, 2007 Update Technical Report Koers & Associates Engineering Ltd.
- 2017 District of Ucluelet Water Master Plan Koers & Associates Engineering Ltd.

In late 2017, the District of Ucluelet started the process of investigating the Kennedy Lake water supply through bench-scale water testing and pilot-scale water testing conducted by Associated Engineering.

The Kennedy Lake Water Treatment Plant Feasibility Study and Conceptual Design (Appendix A) provided the District with future treatment options suitable for the Kennedy Lake water source. The Report concluded under section 7.1 Treatment Recommendations: *“Kennedy Lake is a high-quality source for potential future use by the District of Ucluelet and nearby communities. Based on the pilot study results, Kennedy Lake source water can be effectively treated using coagulation and flocculation, followed by membrane filtration.”* The report conclusion recommends a membrane filtration treatment plant.

GRANT APPLICATION:

The development of the Kennedy Lake water supply is initially estimated (Class D) to cost \$55 million, which includes a 50% contingency. Provincial/Federal funding provides up to 73.33% (\$40 million) of the total eligible project costs.

On August 21st, 2018, Council adopted the following motion:

THAT Council approve the submission of a grant application under the Clean Water and Waste Fund (Green Infrastructure Environmental Quality Program) for the Kennedy Lake water supply project pending letters of support in-principle from Tla-o-qui-aht First Nation (traditional territory holders) and Ucluelet First Nation.

The grant application was submitted under the Clean Water and Waste Fund (Green infrastructure Environmental Quality Program) by the August 28th deadline. It required a Class D Cost Estimate and a Council Resolution to apply.

Although there are several stakeholder discussions needed before final design approval, including the full endorsement of traditional territory holders Tla-o-qui-aht First Nation (TFN), the District of Ucluelet is seeking support in principle from all west coast communities and Parks Canada for this grant application. The development of this new water source can provide many benefits and partnership among the communities along the West Coast. Safe reliable drinking water has always been a priority among the communities and governing bodies of the West Coast.

If the grant application is successful, the District would have a 2-year start date for construction from the date of approval and the project would require a completion date of 2027.

If preliminary funding approval is received, the District's portion is estimated at \$15 million. The Province is seeking a commitment from the District of Ucluelet for the municipal portion of the project costs for the application to proceed. Currently the Province is requesting that Council provide up to three readings of a loan authorization bylaw that supports the District's borrowing of \$15 million dollars to meet the full requirements of the application.

FINANCIAL IMPACTS:

An Engineered Class D estimate was produced by Koers & Associates Engineering Ltd. which includes construction of 1) water intake infrastructure, 2) the watermain line and 3) a treatment facility. A breakdown of the cost estimate is provided in Table 1 below.

Table 1: Kennedy Lake Water Supply & Treatment Plant (WTP) – Class D Cost Estimate

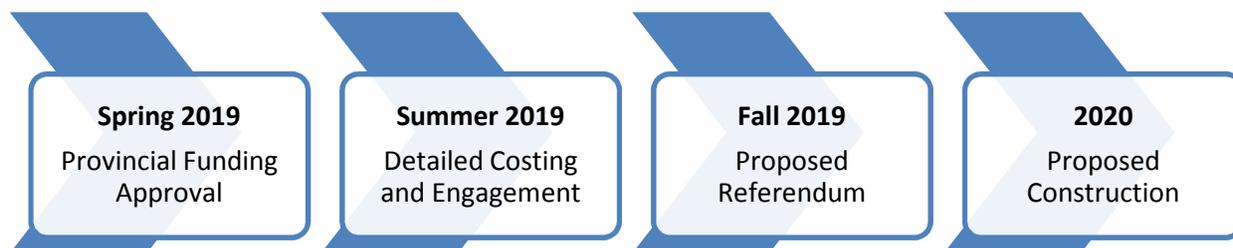
Item and Description	Total Estimated Price
Intake & Wetwell at Kennedy Lake	\$6,500,000
Raw Water Supply Main Lake to WTP	\$7,500,000
15ML/day WTP (Expandable to 30ML/day)	\$22,000,000
Service to Parks Canada	\$500,000
Permits	\$200,000
Contingency (50%)	\$18,350,000
TOTAL	\$55,050,000

If preliminary funding approval is received, it is proposed that the municipal portion (\$15 million) would be financed through a loan authorization from the Municipal Finance Authority (MFA) and would be paid over a 30-year period through a combination of community partner contributions, development cost charges (DCC's), water fees, and taxation increases. An initial review of debt servicing shows that the District is well within the municipal debt servicing limits defined in the BC Community Charter – Municipal Liabilities Regulation.

Staff recommends that a separate staff report be put before Council on November 27th to consider this funding commitment that would require a public referendum in late 2019. Staff also recommends to Council that the final adoption (4th Reading) of the referendum not be approved until the following is completed:

- Grant approval has been provided by the Province.
- Class B cost estimates for the project are developed.
- Ucluelet residents have been provided the opportunity to comment on the project.
- Commitments to the project have been secured by neighbouring communities.

A proposed potential timeline, pending Provincial funding approval, is provided below:



TIME REQUIREMENTS – STAFF & ELECTED OFFICIALS:

The application was completed by Associated Engineering in consultation with staff.

Future staff time requirements will include time needed to:

- a) Engage with neighbouring First Nations, communities, and the public;
- b) Support the refinement of cost estimates and project funding for the municipal portion (development cost changes, water pricing, etc.);
- c) Apply for approvals with Provincial and Federal authorities.
- d) Organize referendum (assent voting) to approve long-term capital borrowing.

POLICY OR LEGISLATIVE IMPACTS:

The Grant application required a Council resolution, committing the District to contribute its share of the eligible project costs and all ineligible costs. This was approved on August 21st, 2018.

The development of a new water supply for the District will require a review of the following District policies:

- Fees and Charges Bylaw No. 1186, 2016
- Water Parcel Tax Bylaw No.1141, 2011
- Waterworks Regulations & Charges Bylaw No. 1136, 2011
- Development Cost Charges Bylaw No. 738, 1996

Provincial and Federal approvals will also be required before construction can begin.

COMMUNITY ENGAGEMENT AND PARTNERSHIPS:

Community engagement and partnerships are a key component to this project. Preliminary communication been established with TFN (traditional territory holders), Yuułuꞵiꞵatꞵ First Nation, Parks Canada, BC Parks, ACRD and Tofino regarding this project from its initial stages. TFN has supported the research of the water quality and Parks Canada provided a staging area to conduct the work.

If a preliminary funding approval is received from the Province for this project, it would trigger a stakeholder and community engagement process. Staff would provide the public and stakeholders with information regarding the project design and complete cost estimates leading up to a referendum.

OPTIONS REVIEW:

1. **THAT** Council receive the Kennedy Lake Water Treatment Plant Feasibility Study and Conceptual Design report from Associated Engineering. **(Recommended)**
2. **THAT** Council request staff bring forward a report to consider a loan authorization for 2019 that would provide future funding for a Kennedy Lake Water Treatment System. **(Recommended)**

Respectfully submitted:

Mark Boysen, Chief Administrative Officer

Warren Cannon, Superintendent of Public Works



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REPORT

District of Ucluelet

Kennedy Lake Water Treatment Plant
Feasibility Study and
Conceptual Design

August 2018



ASSOCIATED ENGINEERING	
QUALITY MANAGEMENT SIGN-OFF	
Signature	<i>[Signature]</i> #16-18-087
Date	Aug. 28 / 2018

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REPORT

Executive Summary

The District of Ucluelet (the District) retained Associated Engineering (AE) to conduct a feasibility analysis and concept design of a new water treatment plant for the treatment of Kennedy Lake water as a new water source for their potable water system. AE conducted bench-scale and pilot-scale testing to determine treatability of the raw water and develop initial design criteria for a conceptual design of the Kennedy Lake Water Treatment Plant (WTP), to be located at the existing Lost Shoe Creek Wellfield.

The Kennedy Lake WTP is to be designed to meet the Guidelines for Drinking Water Quality in Canada (Health Canada, 2017) and Island Health's standards for potable water. Variability in raw water quality, local community needs with respect to current and future water demands, and potential impacts from climate change have all been considered in developing the design criteria for the WTP.

The Kennedy Lake WTP will serve several neighbouring communities in addition to the District of Ucluelet. In sizing the WTP, two design flows have been identified: the initial demand (initial design flow) and the ultimate demand (ultimate design flow). These correspond to potable water demands for the communities/users that have been identified for connection at the project outset (initial), and those that will be connected in the longer term (ultimate), as well as accounting for increased demands resulting from growth at the 25-year horizon (initial), and the 50-year horizon (ultimate).

The conceptual design is planned for an initial design treated water capacity of 15 ML/d. The proposed building and select provisions (i.e. site infrastructure) are sized to accommodate an expansion to the treated water capacity for an ultimate design flow of 30 ML/d. The treatment process consists of primary membrane filtration as well as secondary membrane filtration to treat reject from the primary membrane system; combined treated water is then disinfected.

A full life-cycle Class D cost estimate was developed for the proposed WTP. Estimates include costs for the new WTP and related site works only (i.e. within the site boundaries). Budget quotes were obtained from major equipment suppliers for key process equipment in addition to actual costs from recent relevant projects. The total capital cost for the WTP was estimated to be \$22,729,000. Total life-cycle cost, which include the net-present value of annual O&M costs over a 25-year period, was estimated to be \$39,769,000.

The proposed Kennedy Lake WTP, including the future expansion anticipated to meet 50-year demands for the local communities and users that this plant will serve, can be accommodated in available space at the existing Lost Shoe Creek Wellfield site. It is recommended that design criteria for process systems be refined during preliminary and detailed design stages through further sampling and water quality analysis. Further pilot-scale testing would allow for optimization of the process design and improved characterization and quantification of the anticipated residuals (waste) streams. Other key aspects of the overall project include a new raw water intake in Kennedy Lake and new distribution system infrastructure, but these are considered to be a separate project phase.



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Certification Page

Appendix A – Kennedy Lake Treatability Study Treatability Test at Pilot-Scale



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REPORT

1 Introduction

1.1 BACKGROUND

The District of Ucluelet (District) water system currently draws water from two sources: a groundwater source (Lost Shoe Creek Well Field), which is chlorinated, and a surface water source (Mercantile Creek), which is screened, then treated by UV disinfection and chlorinated.

The District engaged Associated Engineering (AE) to investigate Kennedy Lake as an alternative water source sought to address increasing water demands, improve overall water quality and improve system resiliency due to climate change impacts (Appendix A, Kennedy Lake Treatability Study at Pilot-Scale). As part of this investigation, bench-scale tests were conducted at Kennedy Lake in November 2017 to assess the effectiveness of chemical pre-treatment, to provide a comparison of pre-treatment chemicals, and to make recommendations for pilot-scale testing. Pilot-scale testing was subsequently conducted in April to May 2018, to test various operating parameters and evaluate the treatment performance of direct media filtration and direct membrane filtration.

The Kennedy Lake Treatability Study confirmed that Kennedy Lake is a high-quality source, suitable for potential future use by the District of Ucluelet and nearby communities, and that Kennedy Lake source water can be effectively treated using coagulation, flocculation, followed by membrane filtration (i.e. direct membrane filtration). This level of treatment was shown to effectively reduce turbidity, and colour to meet drinking water standards.

The District retained AE to conduct a feasibility analysis and concept design of a membrane filtration plant, presented herein, based on the Treatability Study findings.

1.2 KEY CONCERNS

The current groundwater source and supplemental surface water source used during summer months are not adequate to meet growing demands of the District of Ucluelet. The feasibility of using Kennedy Lake surface water is being evaluated with respect to treatment requirements, tie-ins to existing water distribution systems, a raw water intake and conveyance systems, and operational factors. Kennedy Lake could potentially supply not only Ucluelet, but also a local BC Parks' site, nearby First Nations communities, and the District of Tofino, both at current and future demands. Supplying water from Kennedy Lake would require a new water treatment plant (WTP) to meet provincial and federal drinking water standards.

The District retained AE to assist in future planning efforts by identifying candidate treatment process options that will meet current treatment objectives, as well as potential future regulations that likely are more stringent, and developing life-cycle costs for the options. This report describes the options, costs and recommendations.



1.3 SCOPE OF WORK

The scope of work includes the following:

- Review of Kennedy Lake water quality data.
- Identify candidate treatment processes.
- Review of treatment process options tested at pilot-scale and key findings from the Kennedy Lake Treatability Study.
- Establish design flows.
- Comment on societal impacts.
- Develop conceptual (Class D) cost estimates for capital expenditures.
- Establish annual operating costs and lifecycle expenditures.
- Discuss environmental considerations and climate change impacts of the proposed concept.

REPORT

2 Raw Water Quality and Pilot-Scale Implications

The Kennedy Lake Treatability Study was conducted from November 2017 to May 2018 to collect data on the raw water quality and treatability of Kennedy Lake. The data collected during this study was used to recommend the treatment process scheme and develop the concept design presented in this memo. This section provides a review of the Kennedy Lake raw water quality data and treatment technologies tested at pilot-scale. Further details can be found in the Kennedy Lake Treatability Study at Pilot-Scale Report provided in Appendix A.

2.1 REVIEW OF KENNEDY LAKE RAW WATER QUALITY

A summary of the Kennedy Lake raw water quality results, compared against the Guidelines for the Canadian Drinking Water Quality (GCDWQ) published by Health Canada (2017), is provided below in Table 2-1. Table 2-1 suggests that the following raw water parameters exceeded limits specified in the GCDWQ and therefore would require treatment:

- Turbidity: 0.4 to 1.5 NTU (versus limits of 0.1 NTU for membrane filtration or 0.3 NTU for conventional dual media filtration).
- True colour: 15 to 40 TCU (versus aesthetic objective of ≤ 15 TCU).
- As a surface water source, the BC Drinking Water Protection Act will require that treatment involve at least two processes, preferably filtration and disinfection, and produce a chlorine residual after treatment for secondary disinfection.

**Table 2-1
Kennedy Lake Raw Water Quality**

Parameter	GCDWQ (Health Canada, 2017)	Kennedy Lake Raw Water ¹
Turbidity	≤ 0.1 NTU ²	0.4 – 2.0 NTU
UV Transmittance (UVT)	NA	49% – 85%
Apparent Colour	NA	20 – 125 ACU
True Colour	≤ 15 TCU ³	7 – 40 TCU
pH	7.0 – 10.5 ⁴	6.5 – 7.5
Total Dissolved Solids (TDS)	≤ 500 mg/L ³	15 – 20 mg/L
Dissolved Organic Carbon (DOC)	NA	1.9 – 2.7 mg/L ⁵
Total Organic Carbon (TOC)	NA	1.9 – 2.9 mg/L ⁵
Alkalinity	NA	< 15 mg/L as CaCO ₃
Chloride	≤ 250 mg/L ³	2.15 mg/L
<i>Escherichia coli</i> (<i>E. coli</i>)	0 MPN/100 mL	< 10 MPN/100 mL
Total coliforms	0 MPN/100 mL	25 – 140 MPN/100 mL

District of Ucluelet

Parameter	GCDWQ (Health Canada, 2017)	Kennedy Lake Raw Water ¹
Aluminum	< 0.2 mg/L ⁶	0.06 – 0.07 mg/L
Calcium	NA	3.66 – 4.09 mg/L
Iron	≤ 0.3 mg/L ³	0.02 – 0.05 mg/L
Magnesium	NA	0.34 – 0.38 mg/L
Phosphorus	NA	< 0.05 mg/L
Potassium	NA	0.05 – 0.14 mg/L
Silicon	NA	0.76 – 0.85 mg/L
Sodium	≤ 200 mg/L ³	1.27 – 1.57 mg/L
Sulphur	NA	< 0.7 mg/L

1 Represents data collected from November 2017, April 2018 and May 2018. Note that sampling location in November 2017 was mid-lake at a depth of 12 m, all other samples were collected from intake at a depth of 2 m and distance of 350 m from the shore at Parks Canada's Kennedy Lake site due to operational and equipment constraints associated with the pilot set-up. Refer to Kennedy Lake Treatability Study at Pilot-Scale Report (Appendix A) for full dissolved metal analysis. All other metals measured less than 0.1 mg/L in concentration.

2 Treatment limits for membrane filtration.

3 Treatment limits for true colour, TDS, chloride, iron and sodium are aesthetic objective only.

4 The control of pH is a guideline to maximize treatment effectiveness, control corrosion and reduce leaching from distribution system and plumbing components.

5 Potential analytical error in DOC and TOC measurements, as DOC was reported higher than TOC for one sample (whereas DOC would be equal to or less than TOC).

6 The treatment limit for aluminum is an Operational Guideline provided in the GCDWQ.

2.2 REVIEW OF EMERGING TECHNOLOGIES TESTED AT PILOT-SCALE

This section provides an overview of the technologies tested during the Kennedy Lake Treatability Study at Pilot-Scale Report (Appendix A).

While drinking water systems have traditionally involved pre-treatment using sedimentation, following by media filtration (known as conventional filtration); early stages of the Kennedy Lake Treatability Study confirmed that the sedimentation process would not be effective for Kennedy Lake water. Therefore, the sedimentation process (i.e. conventional filtration) was not considered further and instead the focus was on the evaluation of direct filtration. Eliminating the sedimentation step provides the benefit of a smaller footprint and reduced operation and maintenance (O&M) requirements, both resulting in lower costs.

The Kennedy Lake Treatability Study evaluated two types of direct filtration processes, concurrently: direct media filtration and direct membrane filtration. The direct media filtration system consisted of two parallel columns, with each filter column in dual-media configuration (one layer of coarse anthracite, then one layer of fine sand). This system is highly dependent on the formation of adequately-sized flocs to ensure effective removal of particulate matter.

2-2

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2 - Raw Water Quality and Pilot-Scale Implications

The membrane filtration system used for testing was a Suez ZeeWeed® 1000 Ultrafiltration Pilot System; a module consisting of horizontally oriented hollow fiber membranes. Membrane technology is considered an emerging technology, compared to media filtration process, and there are different proprietary systems available. The small (0.02 µm) pores of the ultrafiltration membranes ensures that particulate matter is consistently removed and allows the membrane system to be very robust compared to the media filtration system.

Pilot study results indicated that Kennedy Lake source water was effectively treated using direct membrane filtration, whereas the direct media filtration system was unable to consistently meet treatment objectives throughout the pilot study. The membrane filtration system also resulted in lower waste volumes compared to the media filtration system, which could be further reduced at full-scale with the addition of secondary membranes (see Section 4.4). Based on the results of the pilot study, the District is no longer considering media filtration and has decided to proceed with conceptual design development based on an membrane filtration system. A review of the pilot-scale membrane system performance along with full-scale implications is provided in Sections 2.3 and 2.4 below.

2.3 REVIEW OF MEMBRANE SYSTEM PERFORMANCE AT PILOT-SCALE

The ultrafiltration membrane pilot was effective in reduce turbidity and colour to meet the drinking water objectives. Membrane filtration followed by chlorine disinfection would meet the surface water microbiological treatment requirements (for viruses and protozoa). Key findings from the pilot-scale membrane tests are outlined below.

- Coagulation worked effectively at a dose of 10.0 mg/L aluminum chlorohydrate (ACH) as well as 11.4 mg/L alum, without concerns of elevated residual aluminum levels (as ACH and alum are aluminum-based coagulants).
- Coagulation with ACH is recommended for the full-scale WTP, as pH adjustment process would not be required; providing the advantage of requiring less equipment at full-scale and reduced operation and maintenance (O&M) requirements.
- Membrane treatment process in combination with chemical pre-treatment was able to reduce turbidity and true colour below GCDWQ limits (Health Canada, 2017); and reduce other key parameters, such as apparent colour and ultraviolet transmittance (UVT).
- Disinfection by-products (DBP) Formation Potential Test results suggested that membrane treatment in combination with chemical pre-treatment was effective in reducing precursors to DBPs (largely organics). Due to maximum sample holding time exceedances due to shipment delays, these results should be confirmed through further testing and analysis.

As the Kennedy Lake pilot study duration was relatively short, information on the seasonal impacts was not collected. To account for seasonal impacts, the design criteria has allowed for variations in temperature and raw water quality based on historic data on Kennedy Lake (see Section 3.1 for further details).

2.4 IMPLICATIONS FOR FULL-SCALE

Based on the water quality review and pilot-scale membrane tests, the following conclusions can be made:

- Recommended coagulant is ACH dose of 10.0 mg/L. A design dose should be selected to account for seasonal variance in water quality.
- The following water quality parameters should be closely monitored: turbidity, true colour, organics, UVT, disinfection by-products.

This information was used to inform the design basis described in Sections 3 and 4 below.

REPORT

3 Design Criteria

3.1 WATER TREATMENT OBJECTIVES

AE has confirmed the guidelines and standards to inform the treatment process selection. As well, key parameters that the District deems important from an operational perspective and to meet consumer expectations with respect to water aesthetics were confirmed. Further design stages will confirm that the WTP is able to meet potential future regulations with increased water quality stringency.

3.1.1 Effluent Quality Guidelines and Standards

The District of Ucluelet will operate the new WTP in accordance with Island Health's (IH) stance that water from a surface water source requires filtration and disinfection. According to Island Health, surface water system must meet the 4-3-2-1-0 drinking water objective as outlined below:

- 4: 4-log inactivation of viruses
- 3: 3-log removal or inactivation of *Giardia lamblia* and *Cryptosporidium*
- 2: Two treatment barriers [at minimum] for all surface drinking water systems,
- 1: Turbidity less than 1 NTU
- 0: 0 total and fecal coliforms and *E. Coli*

The concept design for a new Kennedy Lake WTP was developed to meet the 4-3-2-1-0 drinking water objective. In addition, IH requires that treated surface water supplied through piped distribution systems be subjected to secondary disinfection (chlorination) to achieve minimum of 0.2 mg/L free chlorine residual at all points in the distribution system.

The finished water shall not exceed the latest revision of the *Guidelines for Canadian Drinking Water Quality* (GCDWQ) published by Health Canada (last updated February 2017). This includes maximum acceptable concentrations (MAC) for any chemical or physical parameters, including disinfection by-products (DBPs). The finished water shall generally meet the GCDWQ aesthetic objectives (AO), which include suitable ranges for temperature, colour, and other water quality parameters, as well as operational guidelines (OG), such as the suitable range for pH.

3.1.2 Energy Efficiency Standards

The new WTP will include both administrative areas (primarily human-occupied spaces, such as the control room, lunch room, washrooms and offices) and equipment areas (generally considered to be unoccupied spaces, designated for process and electrical equipment).

Administrative areas will be heated to 20°C (typical room temperature for human occupancy) and will be designed to exceed the energy requirements under the National Energy Code for Buildings (NECB) by at least 25%. This may be achieved through sufficient building envelope insulation, airtightness and ventilation energy recovery to minimize heat loss.



Equipment areas will be maintained at ambient conditions during the summer and will be heated to 10°C in the winter to avoid near-freezing conditions and ensure equipment operation.

Further development during preliminary and detailed design stages will target the BC Energy Step Code for Administrative areas. The Step Code is a voluntary provincial standard for new buildings aiming for performance above code-minimum; it requires airtightness testing during construction. Energy efficiency opportunities in both the administrative and equipment areas may be explored using energy modelling tools and Step Code measures for guidance.

3.1.3 Climate Change Mitigation and Adaptation

The development of the concept design includes discussions on climate change adaptation (Section 3.3). Further development during preliminary and detailed design stages will incorporate the Envision framework (developed by the Institute for Sustainable Infrastructure) for guidance on sustainable best practices. Post-disaster infrastructure design criteria (typically applied to water treatment supply infrastructure) will also be used to mitigate plant shutdown following a disaster event, such as an earthquake.

3.1.4 Temperature Criteria

The proposed intake from Kennedy Lake would be at a point at a depth of at least 3 m from the surface where temperature is historically consistent throughout the year. As reported in the District of Tofino Kennedy Lake Water Quality (Gartner Lee Ltd., 2001). Raw water temperature was found to be between 8 – 12°C during bench-scale and pilot-scale testing as well as in the Kennedy Lake Water Quality Report (Gartner Lee Ltd., 2001). A conservative design temperature of 7°C is assumed. Freezing is not an anticipated concern in this region of Vancouver Island. Buried piping will be installed below the frost level to minimize the descent in temperature as raw water routes to the WTP.

3.1.5 Seasonal Impacts

The period of Kennedy Lake Treatability Study (November 2017 to May 2018) included storm events, winter, and spring water quality. However, since limited recent water quality data is available from all seasons, conservative design parameters were selected based on historical water quality data and the results from pilot-scale testing. Seasonal impacts on water quality and treatment processes should be investigated further during preliminary design.

3.1.6 Alkalinity

Stabilization of alkalinity is a key factor for controlling water corrosivity and pipe scaling within the distribution system. Kennedy Lake raw water has an alkalinity that is considered low (<15 mg/L as CaCO₃) with a tendency of being corrosive.

Increased alkalinity improves effectiveness of coagulation chemical downstream. Membranes may also require alkalinity increase to a minimum level to guarantee membrane performance. It is assumed that soda ash addition is required as a pre-treatment; this can be confirmed during detailed design. (e.g. during a membrane procurement process). Overall, alkalinity of finished water will be improved with upstream soda ash addition.

3.2 DESIGN FLOWS

The average day demands (ADD) and maximum day demands (MDD) are outlined in Table 3-1 below.

As the Kennedy Lake WTP will provide benefits to several neighbouring communities (see Section 3.2.1), the demands are broken down by individual community demands and overall demand (the sum total). For each community, both the projected 25-year demand and 50-year demand were calculated. In sizing the WTP, two design flows have been identified: the initial demand (initial design flow) and the ultimate demand (ultimate design flow). These correspond to potable water demands for the communities/users that have been identified for connection at the project outset (initial), and those that will be connected in the longer term (ultimate), as well as accounting for increased demands resulting from growth at the 25-year horizon (initial), and the 50-year horizon (ultimate). The water treatment plant building is sized to accommodate the ultimate design flow, with space provisions for additional process equipment. The process equipment included in the concept design reflects the initial design flow only.

The following assumptions were used to estimate demands:

- The average per capita consumption for Ucluelet/ Yuulu-it-ath First Nation (Ittatsoo 1) and Tofino is 1,535 L and 1,008 L per day per person respectively, as estimated in the District's Water Master Plan (Koers & Associates Engineering Ltd., 2017). The average per capita consumption for all other groups is conservatively assumed to be the same as Tofino (1,008 L per day).
- The ADD was calculated based on average per capita consumption and 2016 Census populations, if available: Ucluelet, Yuulu-it-ath First Nation, Alberni-Clayoquot Regional District (ACRD) Area C, Tla-o-qui-aht First Nations (Esowista 3), and Tofino. In cases where 2016 Census data was not available (Parks Canada sites, Tofino/Long Beach Airport and Long Beach Golf Course), the ADD was sourced externally or estimated. The ADD for Parks Canada (184 m³/day) was reported in the Parks Canada Water Supply Draft Pre-Design Report (ISL Engineering and Land Services, 2015). The ADD for the airport and golf course was estimated (200 m³/day and 100 m³/day respectively).
- The project growth rate was conservatively estimated as 2%, as suggested in the District's 2014 Water Conservation Study.
- The MDD was estimated as 2x the ADD, as suggested in the District's 2014 Water Conservation Study.



District of Ucluelet

Table 3-1
Water Demand Projections and Design Flows

	25-year Horizon	50-year Horizon
Average Day Demand (ML/d) ¹		
Average Day Demand, By Community		
District of Ucluelet	4.72	6.52
Yuulu-it-ath First Nation (Ittatsoo 1)	0.75	1.04
ACRD Area C	1.22	1.69
Tla-o-qui-aht First Nation (Esowista 3)	0.17	0.23
Parks Canada Sites ²	0.24	0.26
Tofino/Long Beach Airport	0.26	0.29
Long Beach Golf Course & Camp Ground	0.13	0.14
District of Tofino ³	-	4.82
Average Day Demand, Overall	7.50	15.00
Maximum Day Demand (ML/d) ¹		
Maximum Day Demand, By Community		
District of Ucluelet	9.44	13.05
Yuulu-it-ath First Nation (Ittatsoo 1)	1.51	2.08
ACRD Area C	2.44	3.38
Tla-o-qui-aht First Nation (Esowista 3)	0.34	0.47
Parks Canada Sites ²	0.49	0.52
Tofino/Long Beach Airport	0.53	0.57
Long Beach Golf Course & Camp Ground	0.26	0.29
District of Tofino ³	-	9.64
Overall Maximum Day Demand (ML/d)	15.00	30.00

¹All demands correspond to treated water flows in megalitres per day (ML/d).

²Parks Canada Sites includes the Incinerator Rock and Long Beach day use area, administration office site, Green Point Camp Ground sites and the Kwisis Visitor Centre.

³For purposes of estimating demands, it was assumed that the District of Tofino would not be immediately connected to the Kennedy Lake source; refer to Section 3.2.1 for further details.

3.2.1 Societal Impacts

The District's Municipal Infrastructure Review (Koers & Associates Engineering Ltd., 2007) identified Kennedy Lake as the only source of water that can meet the long term needs of the District of Ucluelet and the West Coast region (including the District of Tofino, the Regional District of Alberni-Clayoquot, the Pacific Rim National Park, and several First Nations communities). The District's Water Master Plan (Koers & Associates Engineering Ltd., 2017) reiterated this finding, and recommended proceeding with the development of Kennedy Lake to ensure a reliable long-term water supply.

The design flows for the Kennedy Lake WTP have therefore been carefully selected to ensure the long term needs of these neighbouring communities can be met. The 25-year MDD design flow of 15 ML/d is based on the long-term anticipated potable water needs for the following:

- District of Ucluelet
- Yuulu-it-ath First Nation (Ittatsoo 1)
- ACRD Area C (includes the Tofino/Long Beach Airport and Long Beach Golf Course & Camp Ground)
- Tla-o-qui-aht First Nation (Esowista 3)
- Parks Canada sites (includes the Incinerator Rock day use area, Long Beach day use area, administration office site, Green Point Camp Ground, Kwisisit Visitor Centre and Wickaninnish day use area)
- District of Tofino

The initial design flow could also accommodate the current potable water demands for the District of Tofino, subject to confirmation of the current demands of all the users noted above. The ultimate design flow of 30 ML/d is selected to accommodate all potential users', including the District of Tofino's, long-term potable water needs (Table 3-1). Expansion of the WTP from the initial design flow to the ultimate design flow would be based on the actual demands and served populations of the Kennedy Lake WTP. Although we have referred to 25-year and 50-year horizons, the actual timing for the expansion (i.e. adding process equipment capacity) will depend on several factors: the timing of distribution system infrastructure expansion, implementation of new connections, improvements in the existing system (i.e. leakage reduction), water conservation measures, and actual population growth. These factors are to be examined and discussed further by the various stakeholders and as part of a separate phase of the overall project.

Figure 3-1 identifies where the above-mentioned groups are located in relation to the proposed WTP. Further details regarding the project phasing is provided in Section 4.1.

3.3 CLIMATE CHANGE ADAPTATION

When planning for new long-term drinking water infrastructure, not only should future water demands and changes to regulations be considered, but also future weather conditions and extreme events. Extreme weather events are expected to occur with greater frequency and intensity due to climate change. Ucluelet



District of Ucluelet

is currently characterized by relatively wet winters and dry summers. Overall annual precipitation is projected to increase in the coming decades. However, this overall increase is expected to be dominated by an increase in winter rain and interior snow that will likely be offset by a decrease in summer precipitation. Decreases in summer precipitation will coincide with increases in summer temperatures. Thus, the likelihood of both summer droughts and winter floods in and around Ucluelet will increase.

To account for these changes in the climate, the new WTP will include robust, flexible treatment to ensure adequate treatment if the source water quality is impacted either from a short-term event (e.g. high turbidity events caused by precipitation), or due to long-term changes to the climate (e.g. high average temperatures leading to increased algae).

The Kennedy Lake Watershed Plan (Clayoquot Sound Technical Planning Committee, 2006) reserves a total of 9,720 ha from harvesting, representing 33% of the Kennedy Lake watershed. The limitation of logging practices around Kennedy Lake will reduce the severity of impact due to turbidity events, as the surrounding forested areas protect the source water from increased run-off and erosion.

The new WTP will include capabilities for remote operation of the plant, and the electrical equipment will be elevated within the plant, should access to the WTP be compromised following events such as floods or other extreme weather events. These features will be revisited during preliminary and detailed design stages to confirm feasibility.

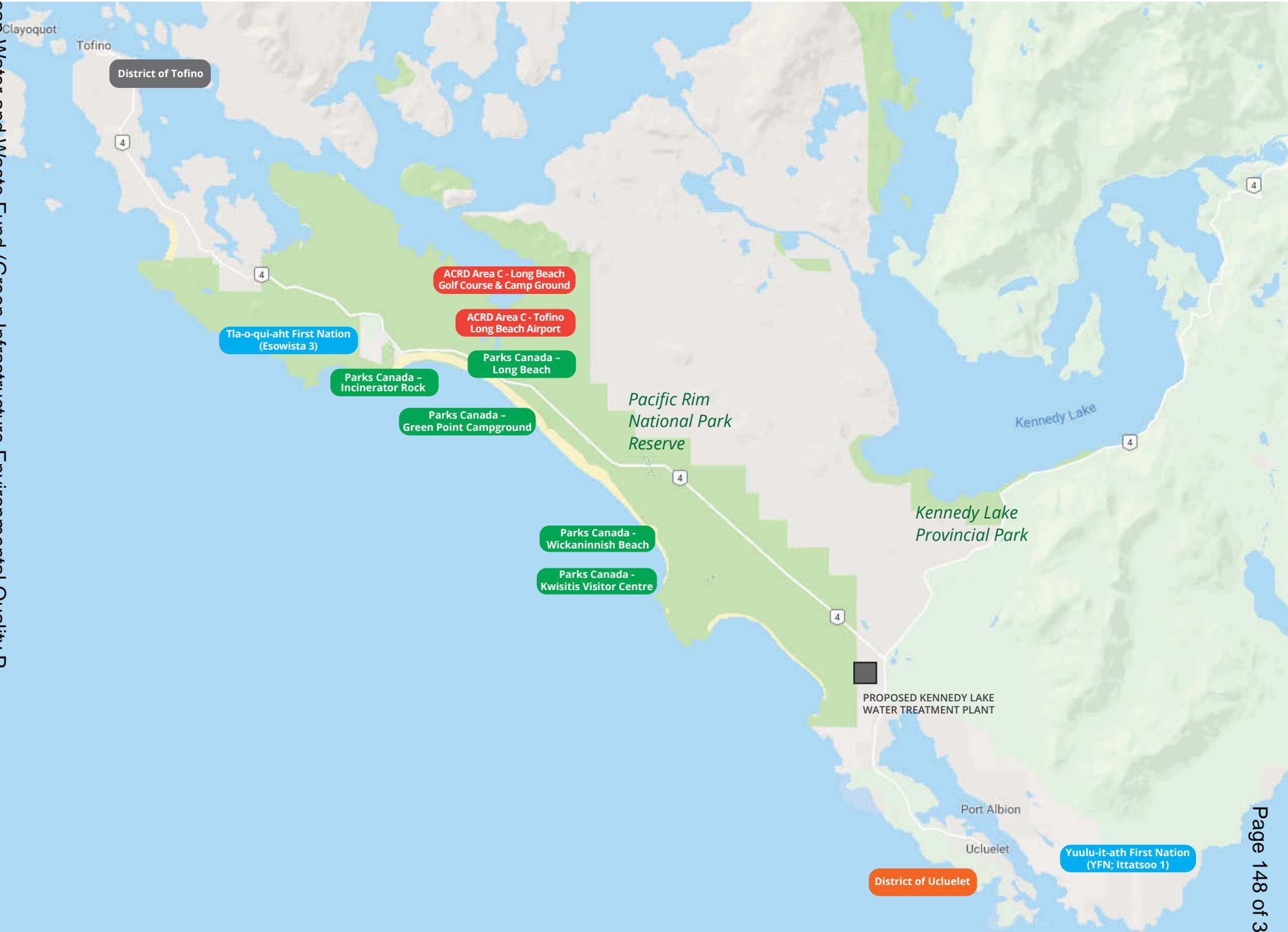


Figure 3-1: Map of Groups to be served by Kennedy Lake Water Treatment Plant

REPORT

4 Water Treatment Plant Concept Design

This section provides a breakdown of design parameters for conceptual design of the WTP. Membrane filtration with permeate disinfection are proposed for the conceptual design. This concept includes chemical pre-treatment upstream of membranes. Coarse and fine screening will also be provided upstream of the flocculation tanks to remove any debris and large particles in the raw water, mitigating potential damage to the membranes. Treated water is diverted to a clear well to provide adequate disinfectant contact time before being diverted to the distribution system. The process flow diagram for this conceptual plant design is presented in Figure 4-1. The WTP layout for this conceptual design is presented in Figure 4-2.

The process conceptual design is planned for an initial design treated water capacity of 15 ML/d. The treatment capacity for initial design flow, which is the influent raw water flow required to accommodate losses through treatment processes, is 15.1 ML/d. The proposed building is sized to accommodate an expansion to the treated water capacity for ultimate design flow of 30 ML/d. The treatment capacity for ultimate design flow, which is the influent raw water flow required to accommodate losses through treatment processes, is 30.2 ML/d. Table 4-1 summarizes the phasing of construction to meet the current design and the ultimate design capacity.

**Table 4-1
Proposed Phasing of WTP Infrastructure**

Infrastructure	Description of Phasing
Buried Pipe	Buried process piping sized for 30 ML/d, supply main to be sized for 30.2 ML/d and distribution main to be sized for 30 ML/d.
Process Pipe within WTP	Sized for 15 ML/d. Allow for space for future replacement/twinning to meet 30 ML/d expansion.
Building Structure	Size to house 30 ML/d infrastructure.
Chemical Dosing Systems	Sized for 15 ML/d. Allow for space for future replacement and upsizing to meet 30 ML/d.
Mixing and Flocculation Tanks	Install tanks to meet 15 ML/d. Allow for space to add tanks for 30 ML/d.
Membrane Filtration	Install modules to meet 15 ML/d. Allow for space for additional modules and trains to meet 30 ML/d.
Buffer Tank	Sized for 15 ML/d. Allow space for future expansion for 30 ML/d.
Primary Reject Equalization Tank	Sized for 30 ML/d.
Clearwell	Sized for 15 ML/d. Add second clear well to meet 30 ML/d storage.
Overflow Pond	Sized for 30 ML/d.
Process Waste Settling Pond	Sized for 30 ML/d.



District of Ucluelet

For this conceptual design development and Class D cost estimate, major process equipment suppliers were engaged to provide preliminary costing and process details, as well as the anticipated upgrades (additional equipment) to meet the ultimate design flows.

4.1 WATER TREATMENT PLANT SITE

The new WTP will be located at the existing Lost Shoe Creek Wellfield, at the intersection of Highway 4 and Pacific Rim Highway (Tofino-Ucluelet Highway). The existing groundwater treatment system will be decommissioned once the new plant is fully commissioned and brought online. The WTP site is on land owned and managed by the District. Figure 4-3 demonstrates the proposed plant location and associated works relative to the existing site.

4.1.1 Raw Water Intake and Main

Kennedy Lake is located approximately 10 km northeast of the WTP site. The concept for the raw water intake and underground routing from Kennedy Lake to the WTP site will be developed separately and is not included in this current scope.

4.1.2 Permitting

The Lost Shoe Creek Wellfield is an existing water treatment site that consists of pumping and chlorination of groundwater. As the proposed site has previously been developed (for the well field and existing treatment facility), extensive permitting efforts are not anticipated for construction of the new WTP. An environmental assessment (EA), as well as additional environmental permits may be required as part of preliminary design stage to confirm the low environmental impact of construction at this site. The permits required will likely include a construction permit (from Island Health) and a building permit. Permitting and approval requirements will be confirmed during the preliminary design stage.

4.1.3 Tie-in to Existing Distribution System

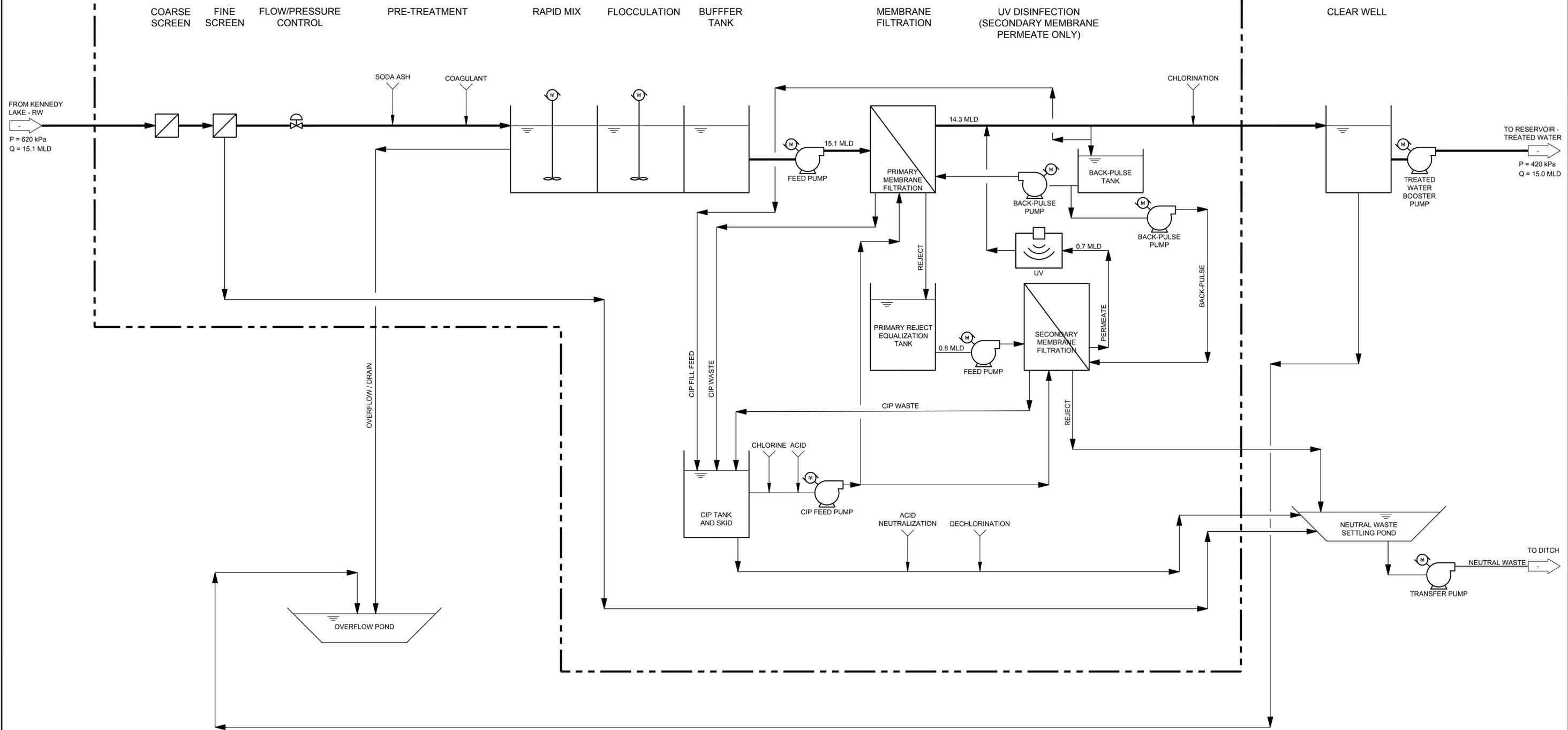
The District's current distribution system consists of the Highway Reservoir, located approximately 5 km southeast of the WTP site. The tie-in to the Highway Reservoir is not included in this concept design; it will be developed as part of a separate design. The existing distribution system serves the District of Ucluelet and the UFN.

The concept design includes a clear well on site to allow for adequate chlorine contact time to achieve 4-log virus inactivation and booster pumps to transfer treated water to the Highway Reservoir. The clear well is sized to provide adequate chlorine contact time for initial design flow (15 ML/d). The chlorine contact time required is 16 minutes, assuming a baffling factor (factor applied for chlorine contact since no mixing occurs in clear well) of 10%, a water temperature of 7°C, and a free chlorine concentration of 0.5 mg/L to achieve a CT of 8 mg-min/L. Centrifugal booster pumps (one duty, one standby) are assumed for this concept design.

4-2

IF NOT 25 mm ADJUST SCALES
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WATER TREATMENT PLANT



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APPROVED	R.T.
DATE	2018AUG10
REV	A
DESCRIPTION	CONCEPT DESIGN

FIGURE 4-1
DISTRICT OF UCLUELET
PROCESS MECHANICAL
P&ID
PROCESS FLOW DIAGRAM

DRAFT

IF NOT 25 mm ADJUST SCALES
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SCALE(S) SHOWN ARE INTENDED FOR TABLOID (11X17) SIZE DRAWINGS UNLESS NOTED OTHERWISE



PLAN
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APPROVED	R.T.
DATE	2018AUG10
REV	A
DESCRIPTION	CONCEPT DESIGN

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FIGURE 4-2
DISTRICT OF UCLUELET
PROCESS MECHANICAL
PLANT LAYOUT
WATER TREATMENT PLANT

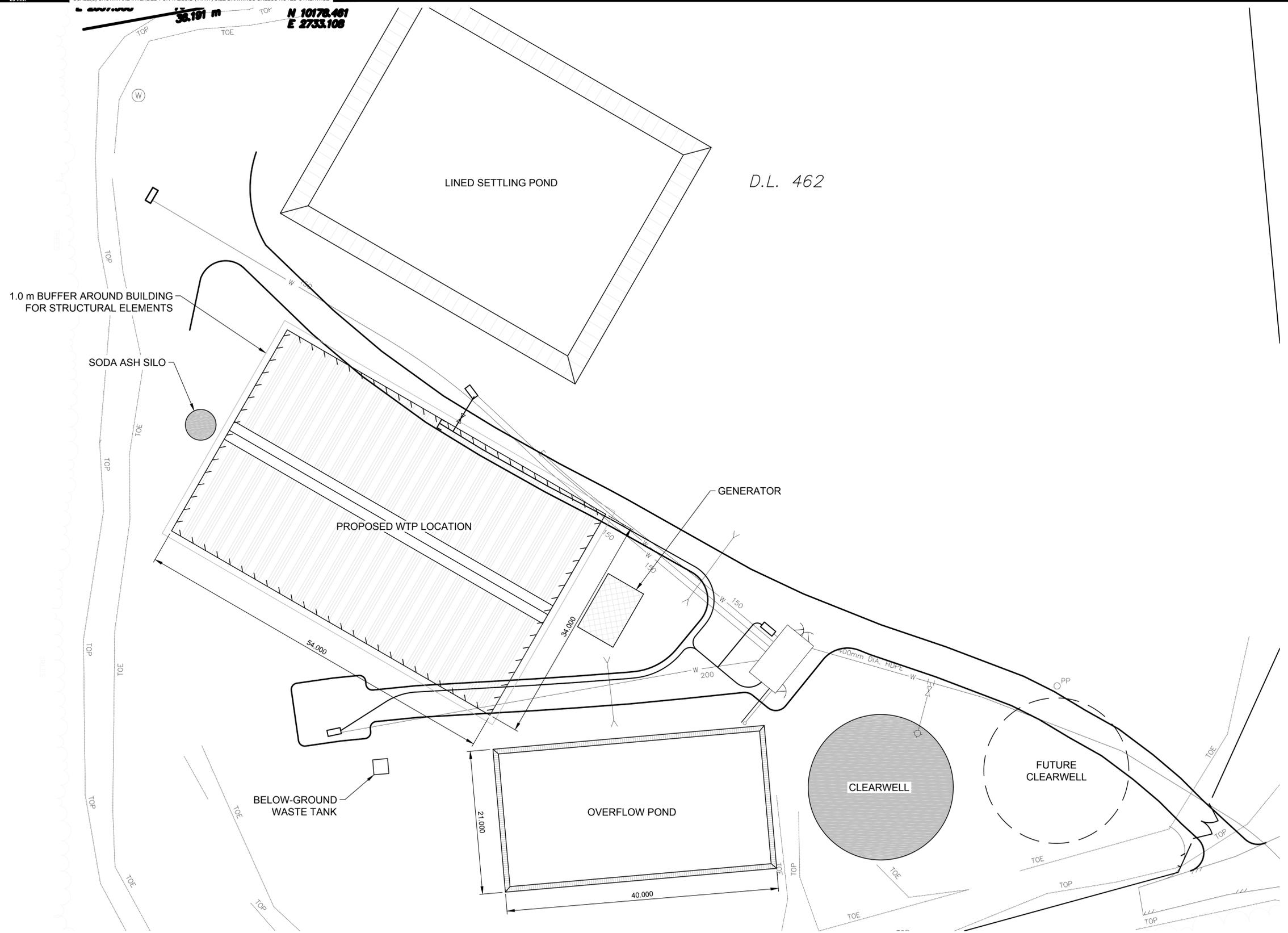
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- NOTES:
- EXISTING ACCESS ROADS, CULVERTS AND PIPING TO BE MODIFIED FOR PROPOSED SITEWORKS. TO BE CONSIDERED DURING PRELIMINARY DESIGN



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DATE	2018AUG10
REV	A
DESCRIPTION	CONCEPT DESIGN

FIGURE 4-3
DISTRICT OF UCLUELET
CIVIL
SITE PLAN

DRAFT

4.2 STRAINERS

At the head of the WTP, strainers are used to mitigate performance issues of process equipment due to debris and fines entering the system. Coarse strainers are assumed to protect valves and instruments from clogging. Two coarse screens (one duty, one standby) with baskets are assumed with a 6 mm screen. Fine strainers are required to protect membranes from fine materials. Three fine screens (two duty, one standby) with 0.5 mm screens are assumed. The fine screens would employ an internal backwash system for self-cleaning. Membrane trains are also equipped with fine strainers to protect membrane modules; size to be determined in preliminary and detailed design stages.

4.3 CHEMICAL PRE-TREATMENT

Chemical pre-treatment consists of alkalinity addition as well as coagulation and flocculation prior to membrane filtration. Chemical pre-treatment is not always required for membrane filtration as the absolute pore size of the membranes is the barrier that removes microbiological and particulate contaminants. However, chemical pre-treatment has been shown to be beneficial for the Kennedy Lake water during pilot testing, and this will likely hold true at full-scale, particularly during periods with elevated dissolved organics and colour in the raw water. It is assumed that pre-treatment with coagulation and flocculation will be required most of the time. For this conceptual design, chemical metering pumps for dosing (one duty, one standby) and adequate space for 30-day chemical storage are assumed.

With soda ash being added to improve alkalinity, alum or ACH would both perform adequately as part of pre-treatment. At this stage, relying on the pilot testing done to-date, it is assumed that ACH would be used as the coagulant at full-scale. Piloting indicated that a dose of 10.0 ppm of ACH could be expected for typical conditions. A conservative dose of 20 mg/L (double the effective dose at piloting) is assumed for sizing chemical dosing systems for this conceptual design to account for potential variance in raw water quality that may warrant a higher chemical dose (i.e. extreme weather events).

Bench testing during the treatability study indicated that a soda ash dose of 10 mg/L achieved an alkalinity of 45 mg/L as CaCO_3 in the presence of ACH dosed between 5 – 20 mg/L. For this conceptual design, the chemical dosing equipment is sized to accommodate a soda ash dose up to 20 mg/L at 15 ML/d. Refined chemical pre-treatment chemicals and doses will be investigated during preliminary design stage through raw water quality monitoring and further pilot-scale testing.

Flocculation in the presence of coagulant occurs in a two-stage process consisting of rapid mix and flocculation. Rapid mixing tanks are sized to meet an assumed hydraulic retention time (HRT) of thirty seconds. Flocculation tanks are sized to meet a HRT of 16.5 minutes, which was proved to be effective during the pilot-scale study using ACH as a chemical pre-treatment.

Soda ash is delivered as bulk powder which can be stored in a silo with sufficient capacity for 30-day storage. As such, the soda ash vendor recommends a storage silo to be located outside which would house major equipment for soda ash dosing. The soda ash powder is dispensed into a mixing tank and combined with plant service water which is dosed in-line, upstream of the membranes. ACH solution is stored in



drums or totes within a coagulant chemical room and is dosed inline upstream of membranes using metering pumps.

4.4 MEMBRANE FILTRATION

Ultrafiltration membranes are made up of hundreds of small hollow fibres in multiple cartridge units, with each fibre having many 0.1 µm pores or smaller that filter the water. The raw water is either pumped or pulled via vacuum through the membrane resulting in clean water (filter permeate) with the larger particles retained in the reject water stream (retentate). As the membranes filter water, the pores of the membranes can become clogged or fouled by particulate material and organic matter. The membranes require cleaning to remove this material. The degree of fouling is indicated by an increasing pressure drop measured across the membranes. When sufficient fouling has occurred, the membranes require hydraulic cleaning and chemical cleaning as means to remove fouling materials and assure membrane performance.

Pressurized membrane quotes were received from three vendors: Suez, Pall, and Evoqua. The Suez membrane system has the largest footprint of the three which is used in this conceptual design (to be conservative). The primary membrane system consists of three trains (two duty, one standby) with the installation of two additional trains for future expansion. The highest membrane price (Pall) is used for the cost estimate, again, to be conservative.

4.4.1 Membrane Hydraulic Cleans

A typical membrane system includes a regular back-pulse and cleaning cycle during operation (e.g. every 30 minutes). The system incorporates a periodic blowdown of the retentate, typically 5% of the influent flow (95% recovery), which was confirmed during pilot testing. To minimize waste residuals to be treated off-site, the waste flow produced from hydraulic cleaning can be managed on-site. One option is to recycle this waste by sending supernatant to plant headworks. The other option is to treat waste with a secondary membrane system, which will reduce the waste stream flows.

4.4.2 Membrane Chemical Cleans and Service Life

Periodically (e.g. every three to six months), the membrane fibres will require a more extensive chemical cleaning using sodium hypochlorite and/or citric acid to fully remove fouling contaminants and prolong the life of the membranes. It is estimated that a membrane filtration skid would be offline for 6 to 12 hours for the Clean-in-Place (CIP) chemical cleaning. In addition, a lower intensity chemical lean is commonly used to further prolong the life of the membranes. This intermediate clean is typically 60 minutes in duration and is activated on a near-daily basis. Given the source water quality and the proposed cleaning schedule, a membrane service life of 10 years is projected for this source water.

4 - Water Treatment Plant Concept Design

4.4.3 Finished Water Turbidity

As an absolute barrier, membranes are easily turned off/on or ramped up/down to meet changing plant flow demands and will consistently produce water of less than 0.1 NTU. The GCDWQ limit for membrane filtration is that the filtered water turbidity be less than or equal to 0.1 NTU.

4.4.4 Membrane Filtration Package and Auxiliary Systems

The pre-packaged membrane treatment plant systems currently available are highly automated and are designed to require little day-to-day operator intervention. Automation includes timing and sequencing of back-pulsing and regular (e.g. daily) pressure testing of the membranes for early detection of any membrane failures. If one membrane fibre fails, it may be plugged or blocked off with negligible impact on the overall plant capacity.

A complete membrane filtration system includes membranes, back-pulse pump, air compressor, blower, back-pulse supply tank, and system instrumentation, such as outlet turbidity meter and flow measurement. These are typically supplied as an equipment package from the membrane supplier. A CIP tank, neutralization tank and skid along with individual chemical dosing skids are provided for chemical cleans. Food grade citric acid, for periodic chemical cleaning of the membranes, and a chlorination chemical would be needed. This high-strength chemical would need to be neutralized before discharge to the residuals management system. (Often the cleaning equipment is included in the supply package.)

4.4.5 Secondary Membranes

It is assumed that 5% of influent flows are lost due to backpulse membranes. For this conceptual design, the hydraulic clean waste from the primary system is collected in an equalization tank and fed into a secondary membrane filtration system to minimize the waste produced from hydraulic cleans of the primary membrane system. The blowdown of the retentate for the secondary system is expected to be 10% of the influent flow (90% recovery), reject containing concentrated residuals. The Suez secondary system used for this conceptual design consists of two trains (one duty, one standby) with an additional train required for the future expansion.

It is anticipated that ultraviolet (UV) disinfection is required (in addition to post-treated water chlorine disinfection) to ensure that permeate from the secondary membranes has provided sufficient removal and inactivation of *Cryptosporidium* and *Giardia lamblia* to meet drinking water guidelines. After UV disinfection, the permeate from the secondary membrane system combines with the permeate from the primary membrane system; the combined post-treated water streams are disinfected with hypochlorite. The combination of primary and secondary membranes results in an overall system recovery of influent flow of 99.5%. To meet the initial design flow of 15 ML/d, an influent flow of raw water into the WTP of 15.1 ML/d is required to account for losses due to hydraulic cleans for membranes. Process equipment upstream of membranes (i.e. strainers, flocculation tanks, and membranes) is sized to accommodate the incoming flow.



4.4.6 Buffer and Equalization Tanks

The primary and secondary membranes run at variable flow to account for intermittent system downtime during hydraulic and chemical cleans when a train is offline for maintenance or repairs. This variable flow warrants the use of a buffer tank upstream of the primary membranes and an equalization tank upstream of the secondary membranes from which membranes will draw water. The buffer tank holds enough capacity to keep membranes running during a chemical clean (30-minute duration) at initial design treatment capacity (15.1 ML/d). The equalization tank provides capacity to hold one hour of storage at the ultimate design treatment capacity (30.2 ML/d).

4.5 DISINFECTION

Most ultrafiltration membranes in the market have undergone challenge testing and are thus given at least a 3-log protozoa (i.e. *Cryptosporidium* and *Giardia*) reduction credit for effluent turbidity below 0.1 NTU. The 4-log virus disinfection credits would then be achieved through contact with free chlorine for a sufficient period of time (dependent on chlorine concentration).

4.5.1 Chlorine Disinfection

A dose of 2 mg/L for permeate chlorine addition is assumed to achieve minimum of 0.2 mg/L free chlorine residual within the distribution system (0.5 mg/L coming out of plant). During bench-scale testing, raw water chlorine demand was determined to be 1.5 mg/L, which is a conservative demand assumed for treated water. The current method of delivery for chlorine disinfection used for the Lost Shoe Creek Wellfield in the District of Ucluelet is 12% sodium hypochlorite solution.

It is assumed that the new WTP will use an on-site generation (OSG) system for sodium hypochlorite as part of the disinfection system. On-site generation produces sodium hypochlorite at a strength of 0.8% using brine, which is safer for operators to handle. It is also simpler and lower risk to ship salt (needed to form the brine solution on site) compared to chlorine gas or sodium hypochlorite solution. For this concept design, storage tanks sized to hold four days of hypochlorite storage and peristaltic dosing pumps (one duty, one standby) are assumed.

Disinfected treated water from the WTP is stored in a clear well to ensure adequate chlorine contact time. In order to meet 4-log inactivation of viruses (8 mg-min/L required), adequate chlorine contact time must be achieved to meet for the free chlorine residual leaving the plant (assumed to be 0.5 mg/L, in a water temperature of 7°C). The clear well is sized to provide 16-minute contact time assuming a baffling factor of 10%.

4.6 RESIDUALS MANAGEMENT

Process waste, general refuse, and service refuse (i.e. floor drains) must be properly managed, either on or off site. The process residuals generated from the WTP will include overflow from headwater screen reject,

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membrane reject, membrane hydraulic cleans, and membrane chemical cleans. Wastewater generated from the WTP will include general refuse, floor drains, safety showers and eye wash waste, and lab wastes.

4.6.1 Overflow Pond

For this conceptual design, an overflow pond is planned as an emergency measure. In case of plant failure, open tanks (i.e. flocculation tanks and clear well) may overflow out of the plant, with these flows being directed to an overflow pond to mitigate flooding of other process systems within the building. The overflow pond is designed to hold adequate volume to allow for staff response in the event of an emergency. A response time of one hour is assumed for this conceptual design and the pond is sized to accommodate the volume that would result from one hour of flow at the ultimate design flow.

4.6.2 Waste Residuals

Wastewater (washroom and floor drain waste) generated from the WTP is expected to be 3 m³ per month; this will need to be managed off-site. This concept includes on-site holding tank from which sewage would be pumped out and trucked to the District of Ucluelet wastewater treatment lagoon.

There are multiple options for management of the remaining process waste residuals, expected to be 5,700 m³ per month of operation at the ultimate design flow (30 ML/d). One option would be to transfer these flows to the District's existing wastewater lagoon. This option would require a 5 km force main and pump station to divert to the nearest existing wastewater collection pipe. This option would warrant further review to assess whether biological treatment at the lagoon will be disrupted by the addition of mostly inorganic process wastes. The capacity of the current wastewater lagoon should also be reviewed to confirm that it could handle the additional waste flows. There may be additional permitting requirements associated with this option; this should be considered further along with the evaluation of the lagoon's capacity to receive these flows.

The alternative option, assumed for this concept design, is the installation of an on-site lined settling pond. The purpose of this pond is to settle out solids and pump out/discharge supernatant toward a drainage ditch. For this concept, end suction pumps are assumed (one duty, one standby). The settling pond reduces the quantity of waste destined for the District wastewater lagoon. The pond is suitable for process waste containing naturally-occurring solids, concentrated coagulant from hydraulic cleans, and neutralized waste from chemical cleans. The civil works required for the settling pond (i.e. excavation, grading, additional berms, liner materials) are included in this concept design and cost estimate. An environmental assessment is likely required (subject to BC regulators' input) for this approach and discharge conditions, to confirm that no harmful constituents would be carried to a downstream fish-bearing water body. Further site investigations, environmental permits, and water quality testing are assumed necessary and estimates for these services are included in the cost estimate for the project.



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5 Cost Estimate

A full life-cycle Class D cost estimate was developed for the proposed treatment WTP. Estimates include costs for the new WTP, but do not include supply or distribution mains or other off-site work that may be required. Budget quotes were obtained from major equipment suppliers for key process equipment and used actual costs from recent relevant projects (e.g. bid prices) where appropriate for the cost estimate development. Cost estimates were developed for the initial design flow of 15 ML/d, with select provisions for future expansion to ultimate design flow of 30 ML/d (refer to Section 3.2 and Table 4-1 in Section 4 for further details).

5.1 SUMMARY OF CAPITAL COST ESTIMATES

Capital cost estimate assumptions are described in the sections below. Table 5-1 summarizes the capital costs of the proposed plant. Capital cost estimates are reported in 2018 dollars and are subject to escalation. A 15% factor is assumed for engineering and consulting fees for design and construction of the WTP. A 35% contingency factor is applied to capital construction and material costs as summarized below.

**Table 5-1
Capital Costs**

Category	Description	Capital Costs
Construction / Materials	Construction Mobilization/Demobilization	\$2,300,000
	Civil Site Works	\$1,738,000
	Architectural and Structural	\$2,637,000
	Building Mechanical	\$420,000
	Process Mechanical	\$4,900,000
	Primary Membrane Supply	\$3,384,000
	Secondary Membrane Supply	\$1,380,000
	EI&C	\$2,000,000
	Utility Allowances	\$250,000
		WTP Construction Subtotal
Design / Engineering	Engineering - Construction Services (15%)	\$2,851,350
Contingency	Class D Contingency (35%)	\$6,654,000
Project Planning	Environmental Permitting and Assessment (Allowance)	\$30,000
	Total Capital Cost	\$28,514,350



District of Ucluelet

5.1.1 Process Systems

The capital costs for process systems are based on fundamental components of the WTP as described in Section 4. Process mechanical cost estimates are based on a combination of budget quotes from equipment suppliers, equipment supply contracts for recent projects, and, if neither of those were available, allowances based on other recent experience. Key process equipment assumed for concept design are listed below and described in Section 4 in further detail:

- Coarse and fine screens.
- Flocculation tanks and mixers.
- Primary membrane filtration systems.
- Secondary membrane filtration systems.
- Chlorine Disinfection equipment.
- UV disinfection reactors.

Redundancy (i.e. duty and standby components) was included for all process equipment to ensure that initial design flow (15 ML/d) can be met in the event of equipment downtime for maintenance or repair.

5.1.2 Civil

It is assumed that the new WTP will tie-in to the existing treated water supply mains to the Ucluelet Highway Reservoir in a future phase. The intake and raw water inlet main from Kennedy Lake will be included in a separate phase. The civil costs account for site preparation, excavation, roads, and civil piping within the project site only. These costs are based on the proposed site works for on-site residuals management, building, overflow pond, and associated drainage considerations.

5.1.3 Structural & Architectural

The building structural and architectural costs were estimated based on the building footprint of the conceptual layout. The costs are based on a one-storey building with concrete sub-structure, pre-engineered steel building. Allowance for a 1-ton bridge crane is included as well as the costs of concrete substructures for tanks equipment and tanks external to the building.

5.1.4 Building Mechanical

An allowance is included for building mechanical costs based on the building footprint. Electrical heating is assumed for this concept. Building mechanical requirements include heaters, fans, and louvers; this is reflected in the estimates.

5.1.5 Electrical, Instrumentation & Controls (EI&C)

Allowances are included for EI&C based on these costs for WTPs of similar size, a review of major equipment electrical loads and anticipated power consumption. A provision for a backup generator at the

5-2

exterior of the WTP is included in conceptual design. Instrumentation and controls costs are included in the membrane supply package cost, as well as other major equipment (that include controls) supply package costs.

5.1.6 Utility Allowances

A utility allowance is included in cost estimates to account for providing a power connection to the new WTP. Existing power services at the proposed site are deemed inadequate for the requirements of the WTP. The costs associated for the installation and supply of a suitable power service are included in the estimates. If power service upgrades or an extension (i.e. new poles and lines) are required, these would be additional costs not accounted for in this estimate.

5.1.7 Permitting Allowances

A permitting allowance is included in cost estimates to account for environmental services related to investigations and documentation to support the permitting process for the WTP, the process overflow pond and residuals management facilities and potential discharge of treated waste streams to the environment.

5.2 LIFE CYCLE COST ESTIMATES

A 25-year life-cycle cost assessment was completed for the Kennedy Lake WTP conceptual design. The life cycle cost assessment (in 2018 dollars) considered the capital cost and annual operating and maintenance (O&M) costs of the WTP. It is assumed that the Kennedy Lake WTP will be operational starting in 2022. A summary of the capital costs is presented in Section 5.1.

Annual operating cost estimates include utility costs (i.e. power consumption, building heating, communications and BC Electric demand charges), chemical consumption (pre-treatment, post-treatment, and chemical cleaning for membranes), labour, and maintenance and equipment parts replacement. The annual costs were discounted using a 5% discount rate for the 25-year life cycle; an escalation factor of 3.5% was used to account for inflation. The annual O&M costs are presented in Table 5-2.

Below are some key assumptions made in developing the annual O&M cost estimates:

5.2.1 Utility Costs

- Electrical loads to meet ADD expected to use 55% power of connected loads, that is, the total electric power-consuming rating of all devices.
- Lighting estimated to be 7.5W per square metre (based on ASHRAE standard), during operating hours only.
- Heating assumed to be 40% of connected loads within building.
- BC Hydro Large General Service rate (for customers using more than 150 kW) applies. This warrants a daily Basic Charge of \$0.2502, a monthly Demand Charge for the maximum peak



District of Ucluelet

connected load (assumed to be 70% of all connected loads) of \$11.55 per kW, and an Energy Charge of \$0.0567 per kWh.

5.2.2 Chemical Consumption

- Coagulant dose of 10 mg/L ACH at ADD.
- Alkalinity addition of 20 mg/L soda ash at ADD.
- Chlorine disinfection of 2 mg/L hypochlorite solution at ADD.
- Shipping costs assumed to be \$1.50/kg (typical unit cost between Lower Mainland and Ucluelet).

5.2.3 Labour

One full-time operations staff and one full-time maintenance staff are assumed at an hourly rate of \$60.

5.2.4 Maintenance and Equipment Repair

- Membrane modules must be replaced on the order of once every 10 years; replacement cost annualized.
- OSG hypochlorite system to be replaced on the order of once every 7 years; replacement cost annualized.
- Annual UV repair and replacement cost provided.
- Maintenance and repair costs estimated to be 0.5% of remaining process and building mechanical capital costs
- Building and grounds maintenance costs estimated to be 0.2% of structural and architectural capital costs.

**Table 5-2
O&M Costs at 15 MLD**

Description	Annual O&M Costs
Labour	\$250,000
Utilities	\$236,000
Chemicals	\$309,000
Maintenance and Repair	\$60,000
Total	\$855,000

The life cycle cost assessment is presented in Table 5-3, below. This analysis is sensitive to a number of assumptions, including the discount rate, escalation rate, the amount and quality of water that is treated, and long-term trends in the cost of labour, parts, and energy.

Table 5-3
Total Life Cycle Costs

	Life Cycle Cost
Total Capital	\$22,729,000
NPV O+M	\$17,040,000
Total Life Cycle Cost	\$39,769,000



REPORT

6 Conclusions & Recommendations

6.1 KEY FINDINGS

The concept developed indicates that the proposed WTP can be accommodated at the existing Lost Shoe Creek Wellfield. The conceptual design of the WTP meets an initial design flow of 15 ML/d that will serve not only Ucluelet, but other key stakeholders in the region including First Nations communities and Parks. The proposed WTP footprint will also accommodate future expansion to an ultimate design flow of 30 ML/d that will include District of Tofino demands in addition to the initial served population, up to a 50-year design horizon.

A Class D cost estimate and life-cycle cost analysis were developed for the conceptual design phase to quantify the costs to be allocated for the design, construction, and commissioning of a WTP in the District of Ucluelet for Kennedy Lake as an alternative water source.

6.2 FUTURE CONSIDERATION

In developing this report, several items are recommended for additional or future consideration. These items are outlined below:

- Additional piloting would be required to assess seasonal impacts on membrane treatment performance, fouling rates, cleaning frequencies and backwash waste characteristics (to confirm if residuals can be managed on-site). This information would be useful for design, as well as to inform life-cycle costing (i.e. to better estimate operational and maintenance costs).
- Further analysis of raw water is recommended to evaluate seasonal impacts on water quality, including storm events. A full-suite of water quality parameters should be tested for samples collected at the proposed intake point of Kennedy Lake, and should include an analysis of DBP formation potential.
- During preliminary design, optimization of chemical pre-treatment (coagulant and soda ash addition) could be further investigated through additional pilot-scale testing. The benefit of additional piloting would allow for testing to account for seasonal variance in water quality, including any temperature variation, and would allow for greater confidence in the chemical dosing requirements, thereby allowing for a more refined design of full-scale operation. Treated water chlorine demand should be monitored to confirm effects of seasonal variance.
- During preliminary design, environmental-related permitting requirements should be confirmed through site investigations.
- During preliminary and detail design stages, residuals management should be investigated further to characterize and quantify residuals, confirm assumptions made during concept design, and effectively minimize waste to be managed off site.



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Associated
Engineering

GLOBAL PERSPECTIVE.
LOCAL FOCUS.

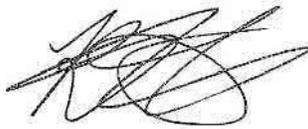
REPORT

Certification Page

This report presents our findings regarding the District of Ucluelet, Kennedy Lake Water Treatment Plant Feasibility Study and Conceptual Design.

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Appendix A – Kennedy Lake Treatability Study Treatability Test at Pilot-Scale



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District of Ucluelet

Kennedy Lake Treatability Study
Treatability Test at Pilot-Scale

August 2018



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1 Introduction

The District of Ucluelet (District) water system currently draws water from two sources: a groundwater source (Lost Shoe Creek Well Field), which is chlorinated, and a surface water source (Mercantile Creek), which is screened, then treated by UV disinfection and chlorinated. The District has engaged Associated Engineering to investigate Kennedy Lake as an alternative water source sought to address increasing water demands, improve overall water quality and improve system resiliency due to climate change impacts.

Bench-scale tests were conducted at Kennedy Lake in November 2017 to assess the effectiveness of chemical pre-treatment, to provide a comparison of pre-treatment chemicals, and to make recommendations for pilot-scale testing.

Pilot-scale testing was subsequently conducted in April to May 2018 (over a five-week period), to test various operating parameters and evaluate the treatment performance of direct media filtration and direct membrane filtration (Figure 1-1).

The objective of this memorandum is to summarize the findings of the pilot study and provide recommendations for the District regarding potential future treatment options suitable for the Kennedy Lake source water.

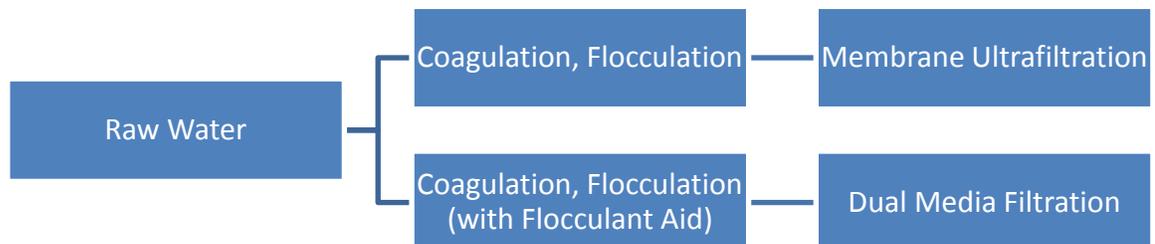


Figure 1-1
Overview of Pilot Process Trains

2 Kennedy Lake Raw Water Quality

Prior to the treatability assessment, limited information on Kennedy Lake water quality was available. Raw water samples were collected during this study and analyzed by an external laboratory (ALS). The full laboratory reports for various raw water samples can be found in the appendices, as follows:

- Appendix A, Bench-Scale Report - Appendix A (November 2017)
- Appendix B, ALS Lab Report (April 2018)
- Appendix D, Suez Lab Report - Appendix A (May 2018)

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A summary of these raw water quality results, compared against the Guidelines for Canadian Drinking Water Quality (GCDWQ) published by Health Canada (2017), is provided below in Table 2-1. The following raw water parameters exceed limits specified in the GCDWQ:

- Turbidity: 0.4 to 1.5 NTU (versus limits of 0.3 and 0.1 NTU for direct filtration and membrane filtration, respectively).
- True colour: 15 to 40 TCU (versus aesthetic objective of ≤ 15 TCU).

**Table 2-1
Kennedy Lake Raw Water Quality**

Parameter	GCDWQ (Health Canada, 2017)	Kennedy Lake Raw Water ¹
Turbidity	≤ 0.3 NTU for direct (media) filtration; ≤ 0.1 NTU for membrane filtration ²	0.4 – 2.0 NTU
UV Transmittance (UVT)	NA	49% – 85%
Apparent Colour	NA	20 – 125 ACU
True Colour	≤ 15 TCU ³	7 – 40 TCU
pH	7.0 – 10.5 ⁴	6.5 – 7.5
Total Dissolved Solids (TDS)	≤ 500 mg/L ³	15 – 20 mg/L
Dissolved Organic Carbon (DOC)	NA	1.9 – 2.7 mg/L ⁵
Total Organic Carbon (TOC)	NA	1.9 – 2.9 mg/L ⁵
Alkalinity	NA	< 15 mg/L as CaCO ₃
Chloride	≤ 250 mg/L ³	2.15 mg/L
<i>Escherichia coli</i> (<i>E.coli</i>)	0 MPN/100 mL	< 10 MPN/100 mL
Total coliforms	0 MPN/100 mL	25 – 140 MPN/100 mL
Aluminum	< 0.2 mg/L ⁶	0.06 – 0.07 mg/L
Calcium	NA	3.66 – 4.09 mg/L
Iron	≤ 0.3 mg/L ³	0.02 – 0.05 mg/L
Magnesium	NA	0.34 – 0.38 mg/L
Phosphorus	NA	< 0.05 mg/L
Potassium	NA	0.05 – 0.14 mg/L
Silicon	NA	0.76 – 0.85 mg/L
Sodium	≤ 200 mg/L ³	1.27 – 1.57 mg/L
Sulphur	NA	< 0.7 mg/L

¹ Represents data collected from November 2017, April 2018 and May 2018. Note that sampling location in November 2017 was mid-lake at a depth of 12 m, all other samples were collected from intake at a depth of 2 m and distance of

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350 m from the shore at Parks Canada's Kennedy Lake site due to operational and equipment constraints associated with the pilot set-up. Refer to appendices listed in Section 2 for full dissolved metal analysis. All other metals measured less than 0.1 mg/L in concentration.

² Treatment limits for direct filtration and membrane filtration is ≤ 0.3 NTU and ≤ 0.1 NTU respectively.

³ Treatment limits for true colour, TDS, chloride, iron and sodium are aesthetic objective only.

⁴ The control of pH is a guideline to maximize treatment effectiveness, control corrosion and reduce leaching from distribution system and plumbing components.

⁵ Potential analytical error in DOC and TOC measurements, as DOC was reported higher than TOC for one sample (whereas DOC would be equal to or less than TOC).

⁶ Treatment limit for aluminum is an Operational Guideline provided in the GCDWQ.

3 Summary of Bench-Scale Tests

Bench-scale testing was conducted in November 2017 to identify water quality parameters of concern, confirm drinking water treatment requirements and provide preliminary indication of pre-treatment conditions to be tested at pilot-scale. Key findings and recommendations from bench-scale tests are summarized below. Further details can be found in the report provided in Appendix A, Bench-Scale Report.

- Coagulation with alum and polyaluminum chloride (ClearPAC 180), with flocculant aid polymer (ClearFloc AP1065), was successful, and should be tested with media filtration system at pilot-scale.
- Coagulation with polyaluminum chloride (ClearPAC) and aluminum chlorohydrate (CTI 4900) was successful and should be tested with membrane system at pilot-scale.
- Settling was very poor (due to pin-floc formation, or no floc visually observed), therefore direct media filtration and direct membrane filtration should be implemented (rather than conventional filtration, which includes a settling step and relies on floc being formed of adequate size to settle by gravity).

Additional bench-scale testing was conducted throughout the course of the pilot study to inform pre-treatment parameters adjustments and verify pilot operations, as needed. A summary of these tests and conclusions is provided in Table 3-1.

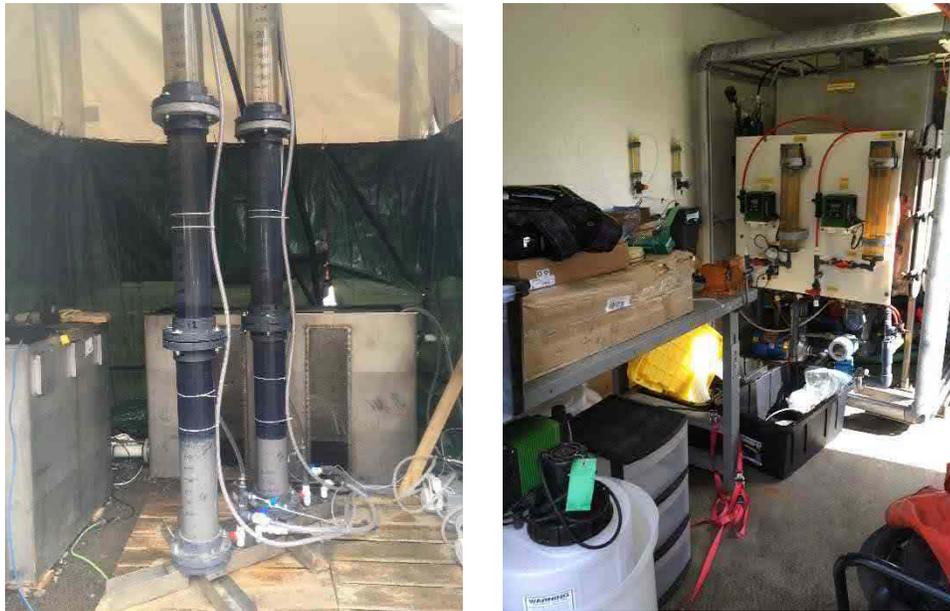
**Table 3-1
Additional Bench-Scale Tests Conducted During Pilot Study**

Date	Purpose ¹	Chemical Dose [mg/L]									Conclusions ¹
		Coagulant				pH	Flocculant Aid (Polymer)				
		Alum	ACH	ClearPAC	ClearPAC180	Soda Ash	ClearFloc AP1065	CTI CL5832	ClearFloc CE4050	ClearFloc CE8057	
31-Mar	Confirm Nov. 2017 bench-scale findings.	40	-	30	-	10-30	0.5-1	0.3-0.5	-	-	Successful verification. ¹
1-Apr	Confirm Nov. 2017 bench-scale findings.	20-50	10-20	5-40	-	0-30	0.5-1	0.5-1	-	-	Successful verification. ¹
2-Apr	Confirm filter polymer selection.	50	-	-	-	10	0.1-1.2	0.5-7	0.1-1	0.1-1	Recommend AP1065. ¹
17-Apr	Optimize membrane ClearPAC dose.	-	-	5-30	-	-	-	-	-	-	Improvements with 10-20 ppm ClearPAC.
19-Apr	Compare ClearPAC vs. ClearPAC180.	-	-	15	1-10	-	-	-	-	-	Improvements with 5-10 ppm ClearPAC180.
25-Apr	Compare neat vs. dilute coagulant solutions.	-	10-20	-	-	-	-	-	-	-	Similar results for neat/diluted solutions.
8-May	Optimize filter polymer dose.	15	-	-	-	20	0.2-5	-	-	-	Improvements with 5 ppm AP1065.
8-May	Optimize filter polymer dose.	15	-	-	-	20	3-10	-	-	-	Improvements with 3-10 ppm AP1065.
8-May	Optimize coagulant dose for filter system.	5-20	-	-	-	20	5	-	-	-	Unable to improve UVT.
9-May	Compare membrane coagulants.	11.4	17	3.6	6.4	-	-	-	-	-	Recommend ACH or Alum.

¹Table summarizes bench-scale tests conducted during the pilot study duration (Spring 2018). See Appendix A, Bench-Scale Report for bench-scale findings from November 2017. Test conclusions are based on on-site measurements of UVT, colour and turbidity. Test integrity may have been compromised during March 31 to April 2 2018, as these jar tests were conducted with beakers/stir rods before jar testing apparatus arrived at site.

4 Pilot Study Design

Pilot tests evaluated two types of direct filtration processes, concurrently: direct media filtration and direct membrane filtration (Figure 4-1).



**Figure 4-1
Filtration Pilot System and Membrane Pilot System**

In both methods, raw water was dosed with pre-treatment chemicals for coagulation and flocculation. The raw water was subject to mixing, to allow pre-treatment chemicals to be uniformly dispersed in solution and allow particulates to aggregate together and form larger groups called flocs. Flocs were then physically removed from the water via filtration, using filter media columns or membrane filter cartridges. This set-up was aimed at mimicking what would be used at full-scale; however, at a full-scale facility, one or more disinfection steps would also be included after filtration (as discussed in Section 5.3).

A brief overview of both pilot systems and performance indicators is provided below. Further operational information is provided in Appendix C, Pilot Study Data Collection, to outline daily logging parameters, and water quality parameters evaluated on-site, as well as off-site (by external labs).



4.1 MEMBRANE PILOT SYSTEM

4.1.1 System Description

The membrane pilot system used for testing was a Suez ZeeWeed 1000 Ultrafiltration Pilot System; a module consisting of horizontally oriented hollow fibers mounted between two vertical plastic headers (Figure 4-2, left and right images, respectively). An overview of how the system works is provided here; further information can be found in Appendix D, Suez Pilot Report, Section 3.



Figure 4-2
Ultrafiltration Pilot Skid and Membrane Module

The membrane pilot system is set up such that pre-treatment chemicals are dosed directly into the flocculation tank for rapid mixing (see Section 4.1.2). Concurrently, pre-treated water is permeating through the membrane hollow fibers (outside-in direction) via small pores (0.02 μm in diameter) to filter out all flocs and particulate matter.

The water produced by the membrane system is known as the membrane permeate or membrane effluent water. The pressure gradient required to push raw water through the membrane and produce permeate is known as the transmembrane pressure (TMP) and is expected to increase through the course of a membrane run. The TMP is recovered (i.e. lowered) using chemical cleans, described in Section 4.1.2 below.

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4.1.2 Cleaning Procedures

Filtration and backwash modes alternate in sequence. Backwash is used as a method of cleaning, in which, every 20-60 minutes, flow is automatically reversed through the membrane (backpulsed), pushing clean water from the inside of the hollow fibres to the outside (inside-out direction). The contents of the membrane tank are completely drained to eliminate accumulated solids, and the waste flow (reject water) is sent to waste.

Two types of chemical cleans (maintenance cleans and recovery cleans) are also required for the membrane system, and therefore contribute to waste production. Maintenance cleans are typically performed at frequencies ranging from once per day to once per week and involve the addition of chemicals such as sodium hypochlorite or citric acid. Recovery cleans are performed less frequently and involve the same chemicals at higher concentrations. Further discussion on chemical cleaning frequencies and recommendations is provided in Section 5.1.5.

4.1.3 Operational Parameters and Configuration Details

Three coagulants were tested with the membrane pilot system and were selected based on the November 2017 bench study results, consultation with the membrane supplier, and AE's recent pilot-studies on Vancouver Island:

- Polyaluminum chloride (ClearPAC)
- Aluminum chlorohydrate (ACH; CTI 4900)
- Aluminum sulphate (alum)

Table 4-1
Membrane System, Operational Parameters and Configuration Details

Parameter	Min	Max	Units
Pre-treatment Parameters			
Polyaluminum chloride (ClearPAC) dose tested ¹	-	330	mg/L
ACH dosing range tested	10	17.2	mg/L
Alum dosing range tested	6.6	11.4	mg/L
Membrane Parameters			
Flux	34	42.5	Lmh
Permeate Flow	0.39	0.50	L/s

¹Dosing pump issues resulted in overdosing of ClearPAC at 330 mg/L when the intended dose was 33 mg/L; this caused rapid fouling of the membrane. Due to limited time to conduct pilot tests, experiments with ClearPAC were not repeated.

4.1.4 Membrane Pilot Study Objectives

Performance of the above system was evaluated based on effluent water quality, TMP trends, and the anticipated operation and maintenance (O&M) requirements. The specific objectives were as follows.

- Effluent water quality must meet GCDWQ (Health Canada, 2017; see Table 2-1).
- The system should demonstrate low sensitivity to changes in raw water quality or pre-treatment chemical changes, maintaining the desired treated water quality.
- Transmembrane pressure (TMP) should be relatively stable or only increase gradually over multi-day membrane trials. Cleaning regimes should be successful in recovering TMP.

4.2 MEDIA FILTRATION PILOT SYSTEM

4.2.1 System Description

The direct filtration pilot system consisted of a chemical pre-treatment module and two parallel filter columns (see Figure 4-3).

Pre-treatment was achieved by dosing raw water with pre-treatment chemicals (see Section 4.2.2), and then allowing the water to flow into a rapid mix basin, followed by two flocculation basins (with slow mixing) in series. Each stage included a variable speed mixer, with mixing speeds decreasing stage-by-stage to provide conditions that promote floc formation. Ideally, large flocs were to be formed, which could be easily removed by media filtration (as opposed to pin-floc formation, which are small dispersed floc that typically exhibit poor settling and can be challenging to remove by media filtration).

Flocculated water entered the filter feed tank and was pumped into two filter columns in parallel. Each filter column was in a dual-media configuration (pre-treated water flows downwards through one layer of coarse anthracite, then one layer of fine sand) to filter out all flocs and particulate matter. As two columns were tested in parallel, the sand depth was greater in one column to evaluate a deeper bed configuration. The treated water produced by the filtration system is known as filtrate or filter effluent water.

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Figure 4-3
Filter Pilot System

¹The filter feed tank would typically serve as a settling stage and include settling plates and/or a baffling system to allow large flocs to settle out of solution. Since pin-floc formation and poor settling was observed during bench-scale testing, settling was not recommended for the pilot study; therefore, the settling plates and baffling systems were removed from the basin to effectively bypass settling, and the system was considered to effectively be direct media filtration (as opposed to conventional filtration).

4.2.2 Cleaning Procedures

Similar to the membrane system, filtration and backwash modes alternated in sequence. A filtration run would normally be expected to last between 36 and 72 hours, before manual termination and subsequent backwashing is required. For this pilot study, the filter run duration was typically less than 24 hours, as detailed in later sections.

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A backwash was initiated when any the following trigger conditions were observed:

- 275 cm water level in filter column.
- 0.35 NTU effluent turbidity.
- 72 hours of pilot column operation.

Backwashing involved reversing the filter flow (water flowed upwards through sand then anthracite) for 10 minutes, while backwash waste is ejected through overflow ports at the top of each column and collected in a waste tank. Collected filtrate is used to conduct a backwash, and no chemical cleans are required (as opposed to membrane filtration).

Following backwash, the start of a new filter run should include a short ripening period (<30 minutes), where high turbidity is observed and filter-to-waste is required, before turbidity improvements are observed. For this pilot study, the high turbidity period was extensive beyond 30 minutes, as detailed in later sections.

4.2.3 Operational Parameters and Configuration Details

Based on bench-scale results described above, the following coagulants were selected for testing with the media filtration pilot system:

- Polyaluminum chloride (ClearPAC 180), with flocculant aid (ClearFloc AP1065).
- Aluminum sulphate (alum), with flocculant aid (ClearFloc AP1065), and pH adjustment (via soda ash; to ensure the pH level was within the preferred range for coagulation).

A summary of the filtration system operating parameters is summarized in Table 4-2 below.

Table 4-2
Filter System, Operational Parameters and Configuration Details

Parameter	Min	Max	Units
Pre-treatment Parameters			
Soda ash dosing range	1	20	mg/L
Alum dosing range	5.0	40.0	mg/L
AP1065 dosing range	0.0	0.2	mg/L
Rapid mix speed ¹	0.0	60.0	rpm
Floc stage 1 speed	33	40	rpm
Floc stage 2 speed	20	28	rpm
Filter Parameters			
Sand depth	0.35	0.45	m
Sand effective size	-	0.35	mm

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Parameter	Min	Max	Units
Anthracite depth	-	0.45	m
Anthracite effective size	1.07	1.25	mm
Filter influent flow	1.8	5.7	L/min
Filtration rate	5.9	18.7	m/hr

¹The rapid mix stage was unable to function after April 9, 2018, due to motor failure. Filter runs after this date did not include rapid mixing.

4.2.4 Filtration Pilot Study Objectives

Performance of the above system was evaluated based on effluent water quality, filter run time, headloss trends, and the anticipated operation and maintenance (O&M) requirements. The specific objectives were as follows:

- Effluent water quality must meet GCDWQ (Health Canada, 2017; see Table 2-1).
- System should demonstrate low sensitivity to changes in raw water quality or pre-treatment chemical changes, maintaining the desired treated water quality.
- Filter run time should last between 36 to 72 hours, with maximum filter ripening time of 30 minutes.
- Head loss development across media bed should gradually increase and then stabilize.

5 Results and Discussion

Results for the filtration and membrane pilot tests are presented in the subsequent sections. Some challenges were encountered during commissioning and operation of the pilot equipment, which resulted in delays and frequent restarts. (Challenges included as achieving adequate intake line placement and support, intake pump failure and replacement, on-site power supply interruption, equipment repairs and verifications as needed.) While the integrity of the pilot results was not compromised, because the pilot study testing duration was constrained to a 5-week period (excluding set-up, commissioning, decommissioning and tear-down) these site challenges reduced the number and duration of tests that could be run, and fewer results were achieved than planned.

5.1 MEMBRANE RESULTS

Detailed results for six phases of membrane testing can be found in Appendix D (Suez Pilot Report, Section 5). Each phase ranged from one to nine days in duration, with the average duration being five days.

5.1.1 Turbidity, Colour and UVT Results

The most reliable data was collected between May 3 to 10 2018, when there was no disruption to raw water feed, power loss, or equipment malfunction. During this time, the membrane system met the pilot study objectives (Section 4.1.4). A summary of these membrane trials is provided in Table 5-1.

**Table 5-1
Pilot Results – Most Successful Membrane Trials**

Phase ¹	Start	End	Dose (ppm)		True Colour (TCU)		Apparent Colour (ACU)		UVT (%)		Turbidity (NTU)		Result
			ACH	Alum	Raw	Perm.	Raw	Perm.	Raw	Perm.	Raw	Perm.	
3	3-May	7-May	17.2	-	18	3	27	4	84	98	0.5	0.01	Pass
4	8-May	10-May	10	-	21	2	23	6	84	97	0.5	0.01	Pass
5A	10-May	10-May	-	11.4	24	6	30	4	84	96	0.6	0.01	Pass
5B	10-May	10-May	-	6.6	27	24	35	21	84	95	0.5	0.01	Fail

¹There were 6 membrane testing phases in total; each phase ranged from 1-9 days in duration, with the average duration being 5 days.

²Phase 5 was unsuccessful due to high colour in the treated effluent. Detailed results for the membrane testing are provided in Appendix D (Suez Pilot Report, Section 5).

Based on these results, the following observations can be made:

- Trials with 17.2 and 10.0 mg/L ACH (Phase 3-4) met GCDWQ limits (Health Canada, 2017) for turbidity (≤ 0.3 NTU) and true colour (≤ 15 TCU), and showed significant improvements UVT and apparent colour.
- Trials with 11.4 mg/L alum (Phase 5A) demonstrated similar improvements in water quality.
- Trials with 6.6 mg/L alum (Phase 5B) demonstrated similar improvements in turbidity and UVT, however, the results for true and apparent colour were poor.

Note that the addition of alum reduces the pH level. For the membrane trials with 11.4 and 6.6 mg/L alum (Phase 5A and 5B respectively), the pH level of the membrane permeate was approximately 6, whereas the GCDWQ (Health Canada, 2017) stipulates a final pH level of 7 to 10.5, to maximize treatment effectiveness, control corrosion and reduce leaching from distribution system and plumbing components. Therefore, the use of alum for coagulation would likely require soda ash addition to ensure a resultant pH level of minimum 7, which would increase O&M requirements.

5.1.2 Metals Analysis

Permeate water from the 17 mg/L ACH Trial (Phase 3) was analyzed off-site to evaluate total metals concentrations and confirm concentrations were within the limits in the GCDWQ (Health Canada, 2017). (The ALS lab report is included in Appendix D, Suez Report - Appendix A, Table A2).

In terms of raw water quality, metals were typically not an issue for Kennedy Lake raw water (see Section 2, Table 2-1). However, as ACH and alum are aluminum-based coagulants, the residual aluminum must also be evaluated to confirm resultant concentrations are below the operational guideline of 0.2 mg/L (Health Canada, 2017). In analyzing the 17 mg/L ACH permeate sample, lab results confirmed residual aluminum was less than 0.02 mg/L, which is an order of magnitude lower than the operational limit of 0.2 mg/L (Health Canada, 2017).

Since the equivalent aluminum concentration added through coagulant dosing (i.e. contributed by the coagulant) for the 17.2 mg/L ACH permeate sample (Phase 3) is greater than or equal to the aluminum concentration added in the remaining membrane trials (Phase 4-5), it is reasonable to assume that the lower coagulant additions would also have resultant aluminum concentrations below the acceptable limit. (i.e., 17.2 mg/L ACH contributes a higher concentration of aluminum, compared to 10.0 mg/L ACH, or 11.4 mg/L alum, or 6.6 mg/L alum). This suggests that the coagulant doses that would be suitable for treating Kennedy Lake water, as a pre-treatment for membrane filtration, would not result in unacceptable residual aluminum concentrations in the treated water.

5.1.3 Disinfection Byproduct (DBP) Analysis

Samples of raw water and permeate water (from the 10 mg/L ACH Trial No. 2) were subject to off-site disinfection byproduct (DBP) analysis for both the bench-testing and pilot testing, in November 2017 and May 2018, respectively. The purpose of the DBP Formation Potential Test is to simulate the worst-case

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scenario from chlorine addition and estimate the formation of trihalomethanes (THMs) and haloacetic acids (HAAs), which are disinfection byproducts for which limits exist in the GCDWQ (Health Canada, 2017). The results of the Formation Potential Test are considered worst case due to the high chlorine dose and long contact time used in the test, as opposed to the Simulated Distribution System test, which is aimed at mimicking actual full-scale conditions. Results for these tests are highlighted below; detailed lab reports for the DBP analysis performed on raw water and permeate water can be found in Appendix A, Bench-Scale Report - Appendix A, and Appendix E, ALS Lab Report respectively.

- Raw water treated with 3 mg/L chlorine had 0.12 mg/L THM and 0.14 mg/L HAA.
- Permeate treated with 3 mg/L chlorine had 0.07 mg/L THM and 0.07 mg/L HAA.

The chlorinated permeate water had reduced THM and HAA levels, in comparison to the chlorinated raw water, suggesting that the membrane treatment is effective in reducing precursors to disinfection byproducts (largely organics). The THM and HAA levels for the chlorinated permeate water were also below the GCDWQ of limits (0.10 and 0.08 mg/L, respectively; Health Canada, 2017).

Note that the integrity of the permeate DBP analysis done during pilot testing may have been compromised, as the recommended holding time was inadvertently exceeded due to transport delays (during shipping to the lab). It is expected that the resulting concentrations of THM and HAA in the permeate sample would have been higher, had these delays not occurred. Therefore, the values for raw and treated water are useful when considered relative to each other (i.e. useful in demonstrating the efficacy of treatment), but are not considered to accurately present the formation potential of the Kennedy Lake water.

Further DBP analysis is required to confirm these conclusions. However, these results do indicate that the membrane filtration successfully removed DBP precursor compounds.

5.1.4 Transmembrane Pressure Trends

Transmembrane Pressure (TMP) data is presented in Appendix D, Suez Report - Section 5. The increase in TMP observed during the above membrane trials (Phases 3-5) was within acceptable ranges and was not considered a concern. A recovery clean performed at the end of the pilot study was successful in recovering the TMP (refer to Appendix D, Suez Report - Section 6 for further details).

5.1.5 Fouling Rates and Recommended Cleaning Frequencies

Membrane fouling rates and recovery cleaning frequencies (Section 4.1.2) can be estimated based on TMP trends observed during the pilot study. Data collected from Phase 3 (17.2 mg/L ACH) suggests a fouling rate of 0.96 kPa/day, which implies that a recovery clean would be required every 60 days (refer to Appendix D, Suez Report - Section 5.8 for further details). However, to ensure membrane permeability is sustained over the life of the membranes the equipment supplier (Suez) recommends performing:

- One recovery clean per month with 500 mg/L sodium hypochlorite and 2,000 mg/L of citric acid.

With respect to maintenance cleans (Section 4.1.2), Suez recommends performing:

- Six maintenance cleans per week with 100 mg/L sodium hypochlorite, and,
- One maintenance clean per week with 500 mg/L citric acid.

5.2 FILTER RESULTS

Detailed results for 28 filter runs are presented in Appendix F, Filtration System Results. Improvements in true colour and UV Transmittance (UVT) were observed for several filter runs; however, the filter effluent turbidity was typically higher than raw water turbidity for both column configurations and was the most common trigger for ending a filter run throughout the duration of the pilot study.

5.2.1 Turbidity Results

As shown in Appendix F, the filter runs often demonstrated poor turbidity removal. The following observations can be made:

- Results from 16 of 28 filter runs did not meet GCDWQ objective for turbidity (≤ 0.3 NTU; Health Canada, 2017).
- Results from 4 of 28 filter runs (No. 16, 17, 19, 28) were able to meet turbidity objectives; however, these runs were deemed unsuccessful due either to poor colour and UVT results, or to short filter run durations (<24 hours). Further details on these runs are provided in Table 5-2.
- Results from the remaining 8 of 28 filter runs failed due other operational or equipment related issues. Further information can be found in Appendix F, Filtration System Results.

The poor results for turbidity (i.e. a higher turbidity in the filtered water than in the raw water) suggest that the pre-treatment process (coagulation and flocculation) was unable to produce floc large enough to be physically removed by filter media. These results were consistent with observations from bench-scale tests, during which only pin-floc formation was visually observed.

Alternatively, the type of media and media depths used for the filter pilot study may not have been optimal for this application (Table 4-2). Both were selected based on supplier recommendation for this project, however, alternative media may have resulted in better adsorption of floc to media, and deeper filter beds may have resulted in improved filtration and turbidity removal.

While the pre-treatment process led to pin-floc formation and challenges with turbidity removal, improvements in true colour and UVT were observed and are discussed in Section 5.2.2 below.

**Table 5-2
Pilot Results – Runs with Effective Turbidity Removal**

No.	Start/End ¹	Dose (ppm)			Turbidity (NTU)			UVT (%)			True Col. (TCU)			App. Col. (ACU)			Result ²
		Raw	F1	F2	Raw	F1	F2	Raw	F1	F2	Raw	F1	F2	Raw	F1	F2	
16	19-Apr	1	11	0.02	0.5	0.3	0.3	81	82	81	28	33	33	38	37	36	Fail
17	20-Apr	1	15	0.02	0.5	0.2	0.2	84	75	83	21	25	8	25	31	31	Fail
19	24-Apr	2	18	0.02	0.5	0.3	0.2	82	95	94	18	0	0	24	8	9	Fail
28	9-May	20	15	0.20	0.5	0.2	0.2	85	86	85	23	19	20	14	30	22	Fail

¹Filter runs was typically less than 24 hours (due to turbidity breakthrough), whereas a successful run should last 36 to 72 hours in duration.

²Trials 16, 17 and 28 were unsuccessful due to poor UVT and colour results. Trial 19 was unsuccessful due to short run time (<15 hrs). Detailed results for 28 filter runs are presented in Appendix F, Filtration System Results.

5.2.2 Colour and UVT Results

Figures 5-1 and 5-2 illustrate the relationship between coagulant dose and true colour removal and coagulant dose and UV Transmittance (UVT) improvement.

A strong correlation between true colour removal and UVT improvements was observed. The removal of colour is predominantly a chemical reaction (i.e. highly dependent on the pre-treatment processes of coagulation and flocculation) and is expected to enhance the transmittance of UV rays through water (i.e. result in a higher UVT measurement).

Improvements in true colour and UVT were observed at alum doses greater than 11 mg/L:

- True colour of filter effluent ranged from 0 to 20 TCU (vs. 7 to 28 TCU for raw water).
- UVT of the filter effluent ranged from 77 to 97% (vs. 74 to 85% for raw water).

Note that improvements in UVT were observed regardless of challenges with turbidity. Typically, turbid water inhibits transmittance of UV rays through the water (i.e. causes a lower UVT measurement). Therefore, UVT results for Kennedy Lake water would be expected to improve further if effective turbidity removal was achieved.

The trends in UVT and colour improvements for the filtration system (for alum at doses greater than 11 mg/L) are consistent with the results observed in the membrane system, where the 11.4 mg/L alum trial (Phase 5A) was effective in improving true colour and UVT (see Table 3-4 above).

Because UVT is the measure of the transmittance of UV rays through the water column, it is the key parameter used for selecting/designing a UV disinfection process for a given water. UV disinfection is generally considered to be cost effective when UVT is 85% or higher. For these filtration runs, the UVT results were 77 to 97%, suggesting UV disinfection could be a cost-effective candidate for full-scale disinfection of this water.

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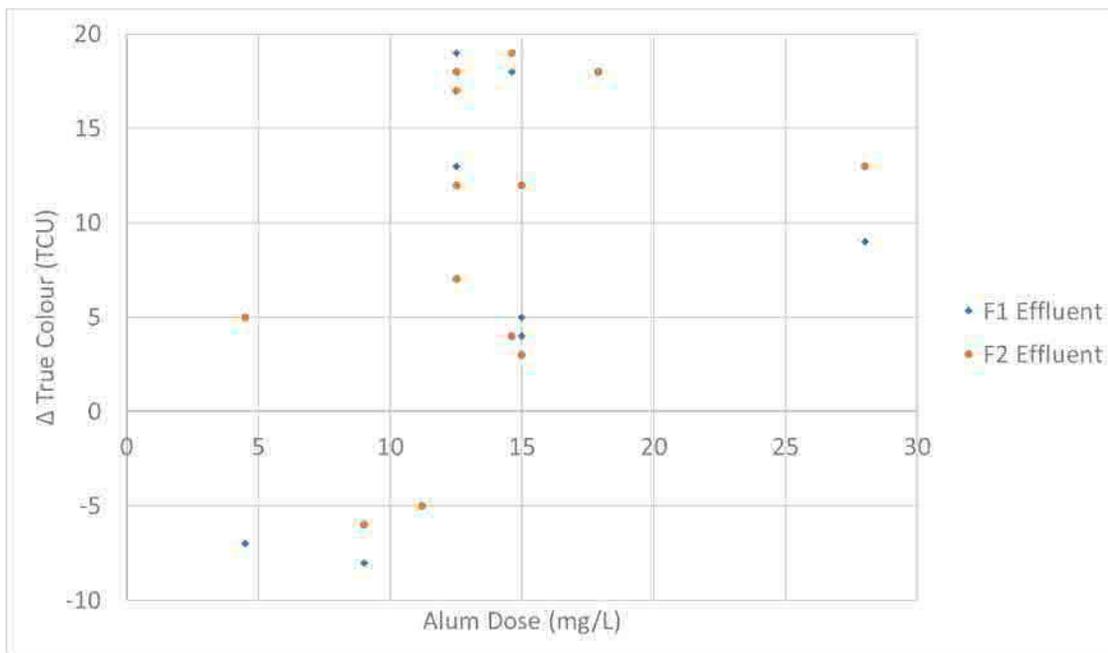


Figure 5-1
Coagulant Dose vs. True Colour Removal

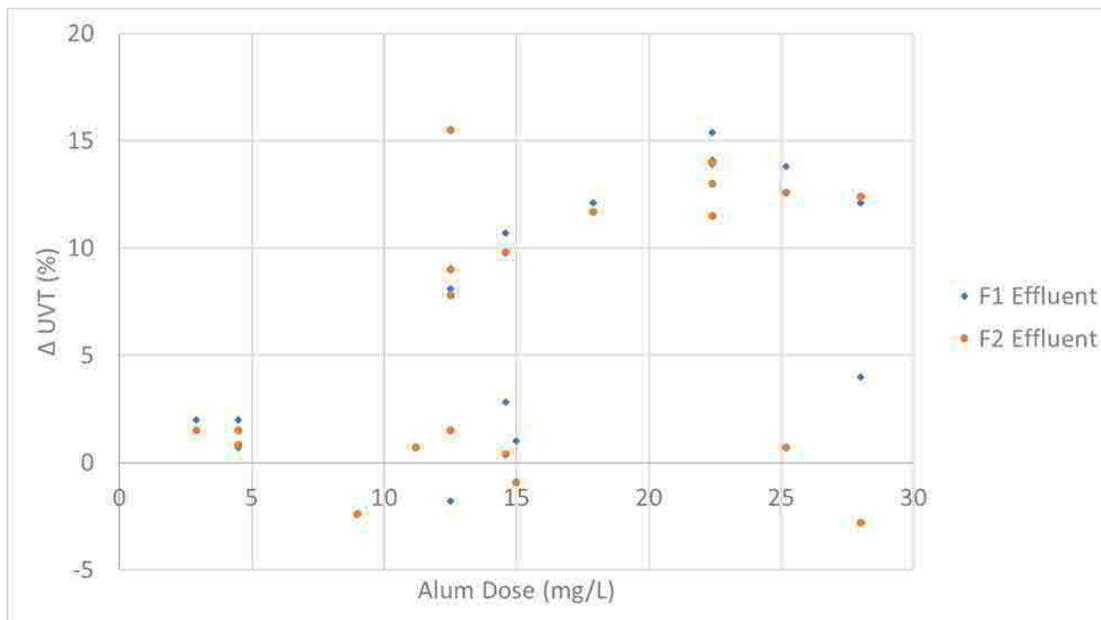


Figure 5-2
Coagulant Dose vs. UVT Improvement

5.2.3 Other Trends

Generally, the filter pilot study demonstrated a high sensitivity to changes in pre-treatment chemicals and raw water quality. Furthermore, short run durations (typically <24 hours, rather than 36 to 72 hours) were observed – suggesting that the equivalent full-scale system may require frequent backwash, resulting in high volumes of waste production, and high-power consumption for backwash pumps.

As the filtration system did not meet objectives described in Section 4.2.4, off-site analyses to evaluate DBP formation or metal concentrations were not performed.

5.3 COMPARISON TO OTHER VANCOUVER ISLAND PILOTS

It may be worthwhile to consider the findings of this pilot study in comparison to other similar studies. Table 5-3 presents such a comparison, showing the Kennedy Lake pilot study results along side the results from other Vancouver Island pilot studies, conducted between 2010 and 2015 by Associated Engineering. Raw water quality is also presented in this table to demonstrate similar water quality between all four sites, in terms of turbidity, alkalinity, pH and TOC.

The total pilot study duration for Kennedy Lake (<two months) was significantly shorter than these other pilot studies (three to six months), due to time constraints associated with site permitting and availability, as well as the initial budget allocation. Despite the differences in pilot study durations, similarities in pilot study results can be observed:

- All sites had success with membrane filtration at pilot-scale. Kennedy Lake and two other pilots met water quality objectives using direct membrane filtration, whereas one system required dissolved air flotation (DAF) pre-treatment upstream of the membrane filtration.
- All sites had limited success with media filtration, due to challenges producing large floc that could be removed by settling and/or filtering.

Following completion of the pilot studies, the other Vancouver Island municipalities all proceeded with design and construction of a full-scale membrane filtration facility. Note that while pilot testing for all sites did not involve disinfection, full-scale facilities also require one or more disinfection steps to ensure all treatment requirements are met (i.e. to achieve 3-log removal of protozoa and 4-log virus inactivation). The other Vancouver Island treatment plants employ chlorination and/or UV disinfection, as shown below.

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**Table 5-3
Comparison of Vancouver Island Pilot Studies**

Parameter	Kennedy Lake	Site A	Site B	Site C
RAW WATER QUALITY				
Source	Lake	Lake	River	Rivers
Turbidity (typical)	<1.5	<1	<1	<1
Turbidity (event)	2	30	50	15
Alkalinity (mg/L CaCO ₃)	<15	<10	<24	<14
pH	6.5 – 7.5	6.4 – 6.6	6.6 – 7.9	6.8 – 7.5
TOC (mg/L)	2 – 3	1 – 4	<1 – 7	<1 – 5
PILOT COMPARISON				
Study Duration	<2 months (Mar-May 2018)	6 months (Aug-Sep 2010, Nov 2009-Mar 2010)	3.5 months (Nov 2011-Feb 2012)	4 months (Mar-June 2015)
Membrane Filtration ¹	Success	Success	Success	Success, with DAF pre-treatment.
Media Filtration ²	Poor	Poor	Poor	Poor
FULL-SCALE FACILITY				
Status	-	In operation since 2015.	Currently under construction.	Construction to begin in 2018.
Process	-	Membrane filtration	Membrane filtration	DAF pre-treatment, membrane filtration
Disinfection	-	Chlorine	Chlorine & UV	Chlorine (gas)

¹All sites investigated direct membrane filtration.

²Kennedy Lake investigated direct media filtration, whereas other Vancouver Island sites investigated conventional media filtration. Conventional pre-treatment involves coagulation, flocculation and settling; whereas direct filtration does not use settling.

6 Conclusions

Filtration and membrane processes were piloted to evaluate potential treatment options for Kennedy Lake source water.

The direct filtration process was unable to consistently meet water treatment objectives throughout the duration of the pilot study. The process was highly sensitive to changes in pre-treatment and raw water

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quality, requiring a high-level of operator attention. While improvements in colour and UVT were observed, filter effluent turbidity was unable to consistently meet objectives. Furthermore, filter runs were short in duration (<24 hours), requiring high frequency of backwash cleans, and producing large waste volumes. Overall the filtration pilot tests were deemed unsuccessful at the conditions tested, primarily due to turbidity breakthrough. Further testing would be required to optimize treatment parameters for direct filtration.

The membrane system met pilot study objectives and demonstrated consistent results for the final seven days of piloting. Coagulation worked best with 17.2 and 10.0 mg/L ACH, and 11.4 mg/L alum. Since coagulation with alum required soda ash addition, it could be concluded that ACH would have the advantage of requiring less equipment at full-scale (i.e. no need for a pH adjustment process) and reduced operation and maintenance (O&M) requirements. In terms of waste production, the membrane system results suggest that full-scale use would result in a lower volume of residuals compared to media filtration (due to less frequent backwashing), however, cleaning of membranes requires chemical addition for cleaning and subsequent neutralization prior to disposal. These are both separate challenges related to residuals management, which should be considered further (additional pilot data would aid with residuals characterization and quantity estimation).

The overall success with membrane piloting and challenges with media filtration are consistent with trends observed in other Vancouver Island pilot sites.

Note that while pilot testing for all sites did not involve disinfection, full-scale facilities require disinfection to ensure 3-log removal of protozoa, 4-log virus inactivation is met with a multibarrier approach to treatment.

7 Recommendations

7.1 TREATMENT RECOMMENDATIONS

Kennedy Lake is a high-quality source for potential future use by the District of Ucluelet and nearby communities. Based on the pilot study results, Kennedy Lake source water can be effectively treated using coagulation and flocculation, followed by membrane filtration. This level of treatment is shown to reduce turbidity and colour, without significantly raising residual aluminum levels.

7.2 NEXT STEPS

The Kennedy Lake pilot study duration was relatively short and further limited by equipment issues and other challenges on site. To assess seasonal impacts on treatment performance, fouling rates, cleaning frequencies and backwash waste characteristics (to confirm if residuals can be managed on-site), additional pilot testing would be required. This information would be useful for design as well as to inform life-cycle costing (i.e. to better estimate operational and maintenance costs).

Based on the results of this pilot study and AE's experience with similar pilots on Vancouver Island, direct media filtration is not considered a suitable treatment for Kennedy Lake water. Compared to membrane filtration, media filtration tested in this pilot study was unable to meet the treatment requirements throughout



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the operating conditions tested. Furthermore, media filtration is more sensitive to pre-treatment changes and raw water quality, requiring more operator attention and continuous optimization. If the District decides to pursue media filtration further through additional piloting, a longer duration pilot study with a wider range of pre-treatment conditions, media types and media configurations would be recommended to better assess this process or treatment of Kennedy Lake source water.

REPORT

Certification Page

This report presents our findings regarding the District of Ucluelet, Kennedy Lake Treatability Study Treatability Test at Pilot-Scale.

Respectfully submitted,

Prepared by:

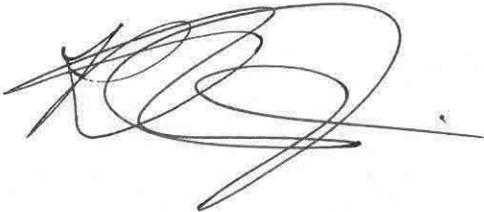
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Appendix A – Bench Scale Report



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REPORT

District of Ucluelet

Kennedy Lake Treatability Study Treatability Test at Bench-Scale

January 2018



ASSOCIATED ENGINEERING	
QUALITY MANAGEMENT SIGN-OFF	
Signature	<i>[Handwritten Signature]</i> 19-2018-01
Date	Jan 18/18

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REPORT

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REPORT

District of Ucuelet Kennedy Lake Treatability Study

Treatability Test at Bench-Scale

Issued: January 18, 2018

Previous Issue: None

1 Background

The District of Ucluelet (District) uses two existing water sources, the Lost Shoe Creek Well Field (groundwater) and Mercantile Creek (surface water) for their municipal water system. To meet increasing water demands, improving overall water quality, and improving system resiliency due to climate change impacts, the District is considering a new water source at Kennedy Lake. The purpose of this study is to assess the treatability of Kennedy Lake water.

A treatability assessment of Kennedy Lake water is being carried out through several steps; this first step involves water quality sampling and analysis to characterize raw water quality and treatability testing at bench-scale to assess candidate treatment processes and identify a plan for pilot testing. Findings and recommendations derived from pilot-scale testing will be presented to the District for further investigation of a full-scale regional water treatment plant.

2 Objectives

Specific objectives of the bench-scale testing are to:

- Establish raw water quality for Kennedy Lake, identify parameters of concern, and confirm treatment requirements.
- Establish pre-treatment conditions for the pilot program, including assessment of the following:
 - Optimum coagulant dose.
 - Effect of alkalinity addition.
 - Effect of alternate coagulant.
 - Effect of polymer addition.
- Identify pre-treatment implications:
 - Best reduction in turbidity and colour, best increase in UVT.
 - Amount of chemical used (as an estimate of anticipated chemical in waste).
 - Suitability to different piloting methods.



3 Results

This section describes key observations from the bench-scale tests conducted November 22, 2017 and November 23, 2017. Detailed water quality test results from an analytical laboratory are appended to this memo. The local regulatory body, Island Health (IH) refers to the Health Canada Guidelines for Canadian Drinking Water Quality (GCDWQ) for setting drinking water objectives. Water quality parameters for Kennedy Lake raw water (collected on November 21, 2017) and pre-treated water are reported herein against GCDWQ to demonstrate the effectiveness of coagulation in improving Kennedy Lake water quality.

It is noted that there was a jet fuel spill in the lake June 2017 from an overturned tanker truck and pup trailer on Highway 4 adjacent to Kennedy Lake. According to the incident report information provided by Emergency Management BC, 3000L of Jet A fuel spilled, most of which was confined to the highway by a right-of-way barrier. A sample at a depth of 12 m was collected in November 2017 to quantify the minerals and oils present in the water and the amount present in Kennedy Lake was below the detectable limit, although this result may not be representative of the presence of oils in the entire lake. An environmental consultant hired by the spiller continues to monitor a boom in the lake at the incident site. The pre-treatment process of coagulation can reduce the presence of oils and synthetic materials in water. Should these compounds be detected at low levels in the lake, it would be expected that conventional pre-treatment would remove them to levels below any guideline value, but this should be confirmed through continued monitoring.

3.1 RAW WATER QUALITY

Key raw water quality parameters that are considered to influence the coagulation process along with the Health Canada GCDWQ limits are reported in Table 3-1 below (measured at temperature of 12 – 13°C).

**Table 3-1
Raw Water Quality Parameters**

Parameter	GCDWQ (Health Canada)	Raw Water
Turbidity	≤ 1.0 NTU	0.3 – 1.5 NTU
pH ¹	7.0 to 10.5	6.74 – 7.19
Total Alkalinity	NA	10.8 mg/L as CaCO ₃
UVT (dissolved)	NA	82% ³ – 84 %
Apparent Colour	NA	24 TCU
True Colour ¹	≤ 15 TCU ²	24 TCU
Dissolved Aluminum ³	≤ 0.2 mg/L ⁴	0.036
Total Organic Carbon ³	NA	2.91 mg/L
Dissolved Organic Carbon ³	NA	2.70 mg/L
E.coli ³	0 MPN/100mL	1 – 10 MPN/100mL

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Parameter	GCDWQ (Health Canada)	Raw Water
Total coliforms ³	0 MPN/100mL	109 – 140 MPN/100mL
Mineral Oil & Grease ³	NA	< 5 mg/L
Total Dissolved Solids (TDS) ³	500 mg/L ²	18.8 mg/L

¹ Analytical lab result not reported as this measurement is most accurate in field, at time of sample collection.

² Aesthetic objective only.

³ Result provided by professional analytical laboratory.

⁴ Operational guideline only.

The low turbidity of the water indicates that there is a relatively minimal presence of particles (including organic matter, clays, silts) in the water. There is potential for some parameters such as turbidity to spike during a storm event, either due to increased run-off or increased turbulence (mixing) within the lake, or both; however, such impacts might be mitigated by the sheer size and depth of the lake. The ultraviolet transmittance (UVT) and true colour are often used as surrogate parameters to quantify the presence of organics in water, while apparent colour is a parameter used to quantify colloidal solids and inorganic materials in water; these parameters were tested on raw and pre-treated water. The raw water quality of Kennedy Lake does not currently meet GCDWQ (Health Canada) for turbidity, *E.coli*, and total coliforms, but bench-testing indicated the ability to pre-treat water to achieve desirable results, as seen in Table 3-1. The efficacy of treatment processes to reduce turbidity in the lake water will be further assessed during pilot testing.

The Langelier index (LI) is an approximate measure of saturated calcium carbonate in water, determined through the pH, alkalinity, TDS, and calcium concentration in water. The LI indicates corrosivity of water, which is important for treated water in a distribution system as unsaturated water has a tendency to remove existing calcium carbonate in protective coatings for pipes and other equipment. The LI for Kennedy Lake raw water was found to be -3, which indicates that the raw water is corrosive and requires corrosion control.

3.2 JAR TESTING RESULTS

Water quality testing reports completed by the laboratory are appended to this memo for the two optimum coagulants: alum with pH adjustment and flocculant aid; and ClearPAC 180 with flocculant aid. Test observation sheets are appended to this memo along with analytical laboratory results. Table 3-2 highlights water quality parameters for water pre-treated with optimum coagulants compared against GCDWQ limits.

Table 3-2
Pre-treated Water Quality Results for Optimum Coagulants

Parameter	GCDWQ (Health Canada)	Optimum Coagulant 1 Soda Ash, Alum, ClearFloc AP1065	Optimum Coagulant 2 ClearPAC 180, ClearFloc AP1065
Filtered Turbidity ¹	≤1.0 NTU	0.1 NTU	0.1 NTU
pH ²	7.0 to 10.5	6.39	6.86
Total Alkalinity ²	NA	16.6 mg/L as CaCO ₃	6.6 mg/L as CaCO ₃
UVT (dissolved) ¹	NA	97.0%	96.5%
Apparent Colour	NA	16 – 20	22 – 24
True Colour ¹	≤ 15 TCU ⁴	11 TCU	8 TCU
Dissolved Aluminum ^{1,3}	≤ 0.2 mg/L ⁵	0.0298 mg/L	0.0274 mg/L
Dissolved Organic Carbon ³	NA	1.04 mg/L	1.06 mg/L

¹ Using coagulated water after settling, filtered through 0.45 µm filter

² Analytical lab result not reported as this measurement is most accurate in field, at time of sample collection.

³ Result provided by professional analytical laboratory.

⁴ Aesthetic objective only.

⁵ Operational guideline only.

3.2.1 Jar Testing of Various Coagulants

Four types of coagulants were tested using the jar testing method: aluminum sulphate (alum), two poly-aluminum chlorides (PACL): ClearPAC and ClearPAC 180 (proprietary coagulants) and CTI 4900 aluminium chlorohydrate (ACH). For each of these, a range of coagulant doses was tested using four jars at a time. Based on the aluminum content of the coagulants, for PACL, with high aluminium concentration, a range of 1 – 40 mg/L was tested, while for alum, a range of 10-50 mg/L was tested. Initial results for colour and UVT can be seen in Figure 3-1 and Figure 3-2, respectively. The UVT and apparent colour may correlate with the removal of organics and inorganic material from the raw water. The UVT also provides indication for reactor sizing for UV disinfection.

The optimum dose for each of the coagulants was determined to be the dose which minimized the apparent colour and maximized the UVT. Once an optimum dose was established, it was tested again with the addition of an anionic polymer, ClearFloc AP1065, as a flocculation aid. From this, the only coagulants that produced visible floc (pin floc) were alum and ClearPAC 180. Effects of these coagulants are discussed further in section 3.2.2 and 3.2.3.

Since the addition of polymer to CTI 4900 demonstrated in jar tests was not as effective as that for alum and PACL, the alternate ACHs (CTI 4910 and CTI 4912), which contain a flocculant aid were not tested.

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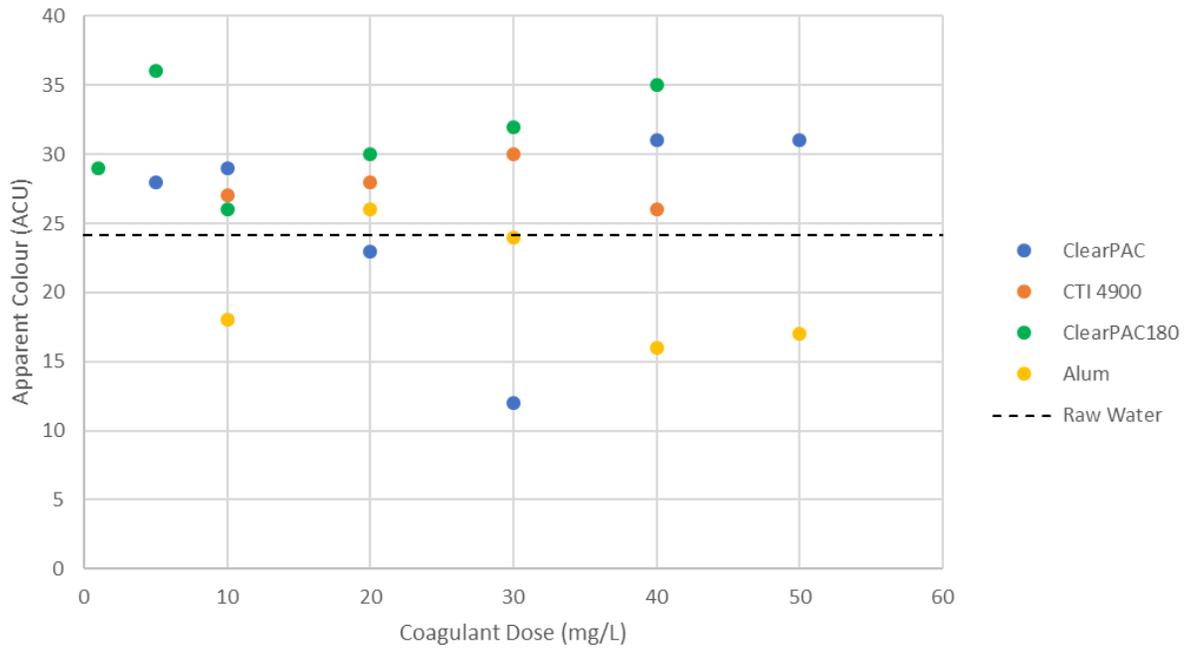


Figure 3-1
Apparent Colour for Various Coagulants

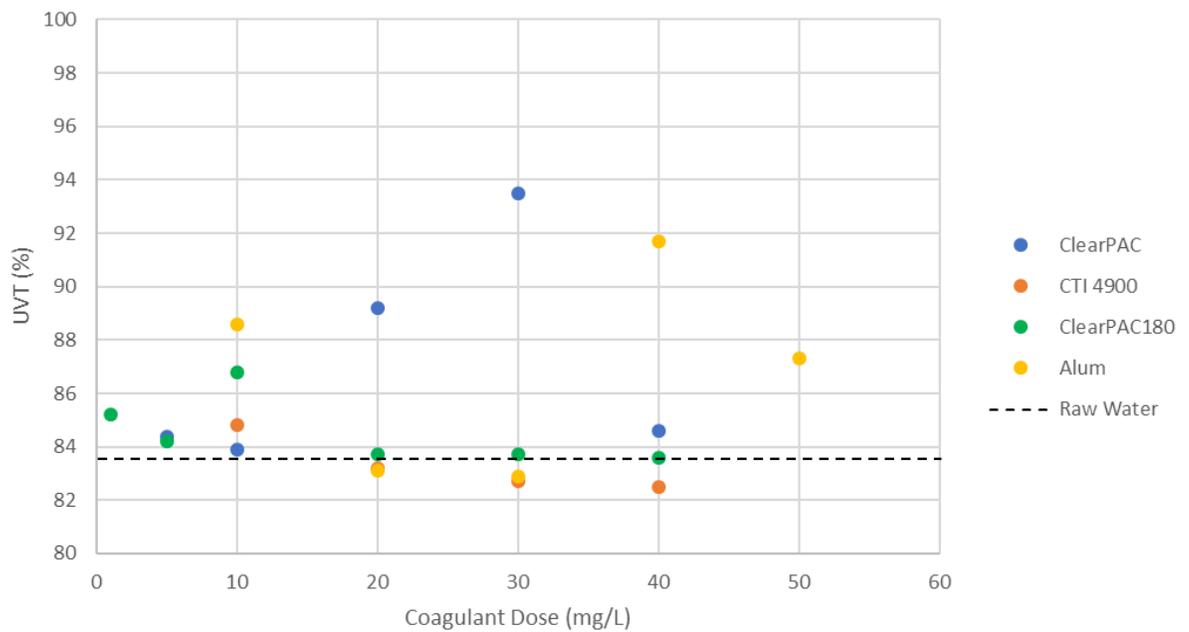


Figure 3-2
UVT for Various Coagulants

3.2.2 Alum Optimization

Alum performs best within a pH range of 6.3 to 6.5. The addition of soda ash to the raw water prior to the addition of alum allowed for the optimum pH range to be achieved by adding alkalinity to the raw water. Health Canada recommends a finished water pH of 7.0 to 10.5. This is an operational guideline related to water treatment to limit corrosion in distribution systems. To meet this operational guideline, pH will need to be adjusted to at least 7 (Health Canada); which may require post-treatment addition of soda ash or other pH adjustment to treated water.

Within the doses tested (10 mg/L to 50 mg/L), 40 mg/L of alum was determined to be the optimum dose with respect to UVT and colour. Soda ash (20 mg/L) was added to all alum doses, except for 10 mg/L to achieve the optimum pH range for alum coagulation by adding alkalinity. The addition of polymer and soda ash to the optimum alum coagulant dose improved flocculation. The flocs were visible only with the addition of 1 mg/L of an anionic polymer to the optimum dose of 40 mg/L of alum. The floc formed was approximately 1 mm in size and was difficult to settle; 20% of floc present settled after 20 minutes by visual observation. Figure 3-3 demonstrates the UVT and colour for all tested alum doses, as well as those tested with the addition of polymer. Jar testing charts appended to this memo depict key water quality indicators at various alum doses.

Aluminum is a key factor with respect to downstream membrane fouling of membrane plants. Total and dissolved aluminum will be considered during piloting of membranes to assess membrane fouling. The pre-treated sample with optimum alum dose was filtered with a 0.45 µm filter to simulate effluent parameters of potential downstream treatment (i.e. membrane or granular media filtration): dissolved UVT, true colour, and dissolved aluminum were measured. The dissolved aluminum of the optimum alum dose (40 mg/L) with soda ash and 1 mg/L of polymer was 0.0298 mg/L. The filtered turbidity of the optimum dose with polymer addition was 0.1 NTU, filtered UVT was 97.0% and true colour was 11 TCU.

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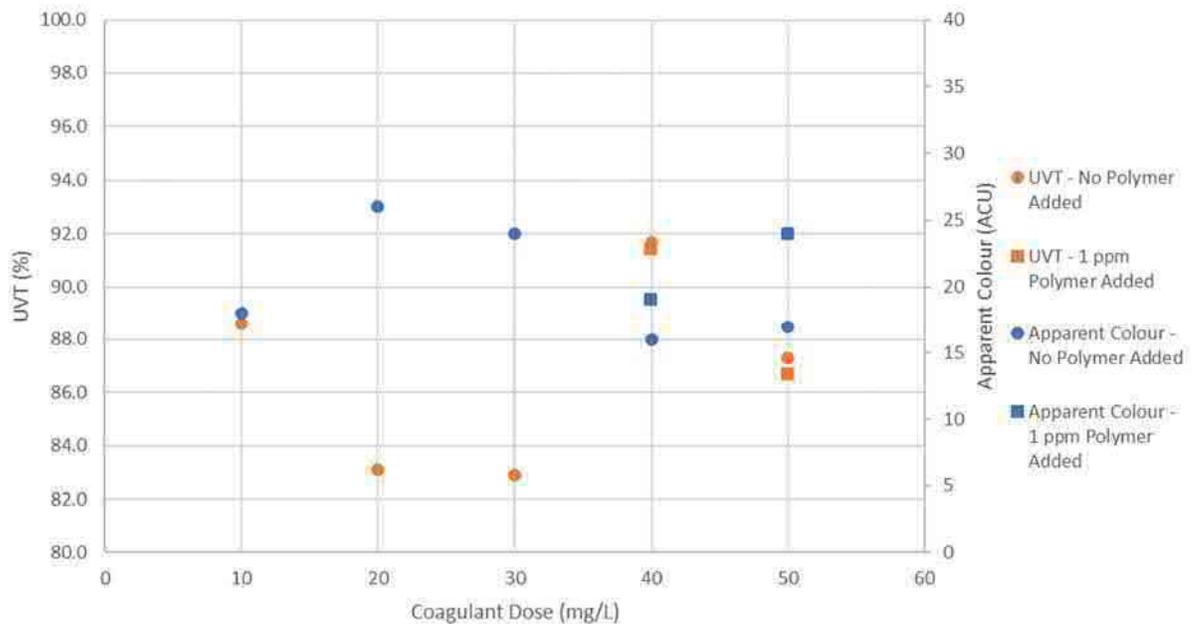


Figure 3-3
Alum Optimization

3.2.3 Polyaluminum Chloride Optimization

ClearPAC 180 coagulant solution is a higher strength PACL than ClearPAC. Within the doses tested (1 mg/L to 40 mg/L), 10 mg/L of ClearPAC 180 was determined to be the optimum dose with respect to UVT and colour. The addition of polymer to the optimum ClearPAC 180 coagulant dose of 10 mg/L improved flocculation. Visible flocculation (pin floc) occurred with the addition of 1 mg/L of an anionic polymer to the optimum dose. The floc formed was less than 1 mm in size and was difficult to settle; 90% of floc present settled after 20 minutes through visual observation. Figure 3-4 demonstrates the UVT and colour for all tested ClearPAC 180 doses including those tested with the addition of polymer. Jar testing charts appended to this memo depict key water quality indicators at various ClearPAC 180 doses.

The pre-treated sample with optimum alum dose was filtered with a 0.45 µm filter to simulate effluent parameters of potential downstream treatment: dissolved UVT, true colour, and dissolved aluminum were measured. The dissolved aluminum of the optimum aluminium chloride dose of 10 mg/L with 1 mg/L of polymer was 0.0274 mg/L. The filtered turbidity of the optimum dose with polymer addition was 0.1 NTU, filtered UVT was 96.5% and true colour was 8 TCU.

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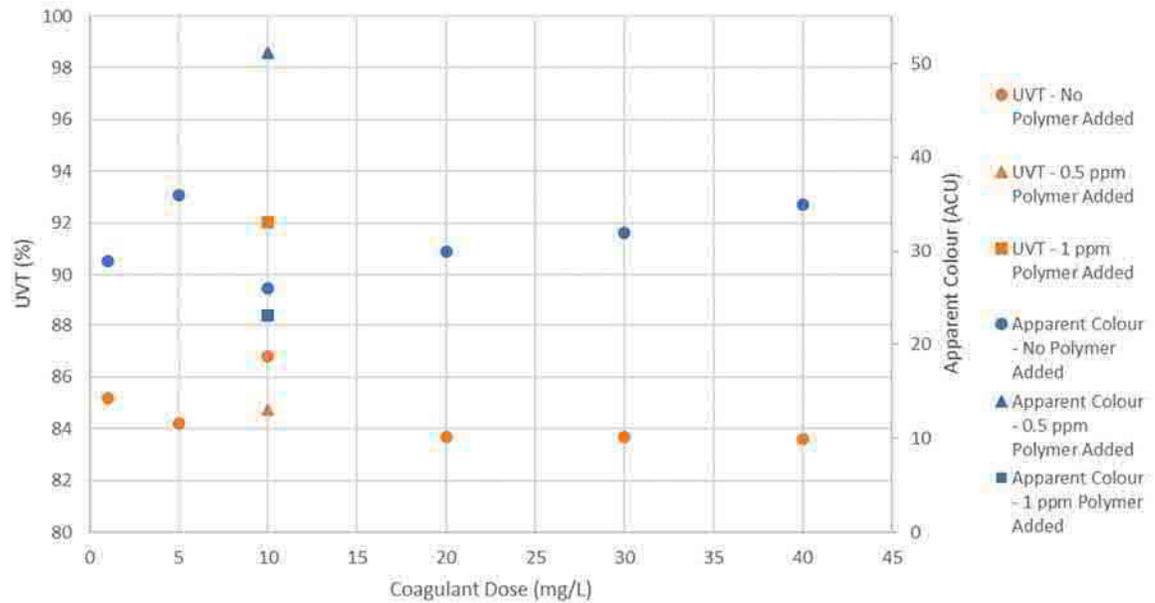


Figure 3-4
Polyaluminum Chloride Optimization

3.2.4 Effect of Flocculant Aid

When ClearFloc AP 1065 anionic polymer was added to coagulants, the water clarity seemed to decrease as flocculation and settling did not occur and the UVT and apparent colour results were less desirable than that of no polymer addition. The turbidity also increased in samples with added polymer. The addition of this flocculant aid was capped at a maximum of 1 mg/L since the high viscosity of the substance can increase fouling on downstream treatment and so this is the practical limit typically preferred at full-scale.

When flocculant aid was added to the optimum alum and ClearPAC 180 doses, the turbidity, UVT, and apparent colour improved slightly. As flocs were present, once samples were filtered through a 0.45 µm filter, the filtered turbidity, UVT and true colour were improved significantly, indicating the removal of organic and inorganic particles from the raw water and overall improvement in treatment efficiency

3.3 DISINFECTION BYPRODUCTS

From Associated's experience, it is notable that Vancouver Island surface water generally appears to have low organic carbon, but has an atypically high tendency for the formation of disinfection byproducts (DBPs), such as total trihalomethane (THM) and haloacetic acid (HAA). The addition of chlorine to treated water is standard practice for the control of microbial contaminants in the drinking water system. Depending on organics present in a source or treated water, there can be a potential for formation of DBPs in the distribution system. As such, a raw water sample was chlorinated with a chlorine dose of 5 mg/L, a typical

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upper-bound value for treated water dosing, and the THM and HAA concentrations were measured at the end of seven days. This measurement is used to determine the baseline formation potential of the raw water. Chlorine residual concentrations can be seen in Figure 3-5 below, demonstrating the expected decay of chlorine over time. The THM and HAA levels are reported in Table 3-3 below, indicating that the untreated Kennedy Lake water has the potential to form undesirable DBPs that exceeded GCDWQ (Health Canada) limits. It would be expected that treatment would mitigate this formation potential, resulting in levels below the guidelines. This will be examined further during the pilot testing.

During chemical pre-treatment, dissolved organic carbon was reduced from 2.7 mg/L to 1.0 mg/L. With the level of organics reduction demonstrated by the jar tests, treated water DBP formation is anticipated to be lower than the raw water DBP formation.

The DBP simulated tests on raw water suggests that pre-treatment is necessary to minimize DBP formation. This provides indication of the baseline formation potential; it is recommended that the formation potential of DBPs is analyzed on treated water samples during piloting.

Table 3-3
DBPs – THM and HAA in Raw Water Dosed with Chlorine (5 mg/L)

Parameter	GCDWQ (Health Canada)	Kennedy Lake Raw Water Ash, Alum, ClearFloc AP1065
THMs ¹	≤ 0.1 mg/L	0.115 mg/L
HAAs ¹	≤ 0.08 mg/L	0.136 mg/L

¹ Result provided by professional analytical laboratory.



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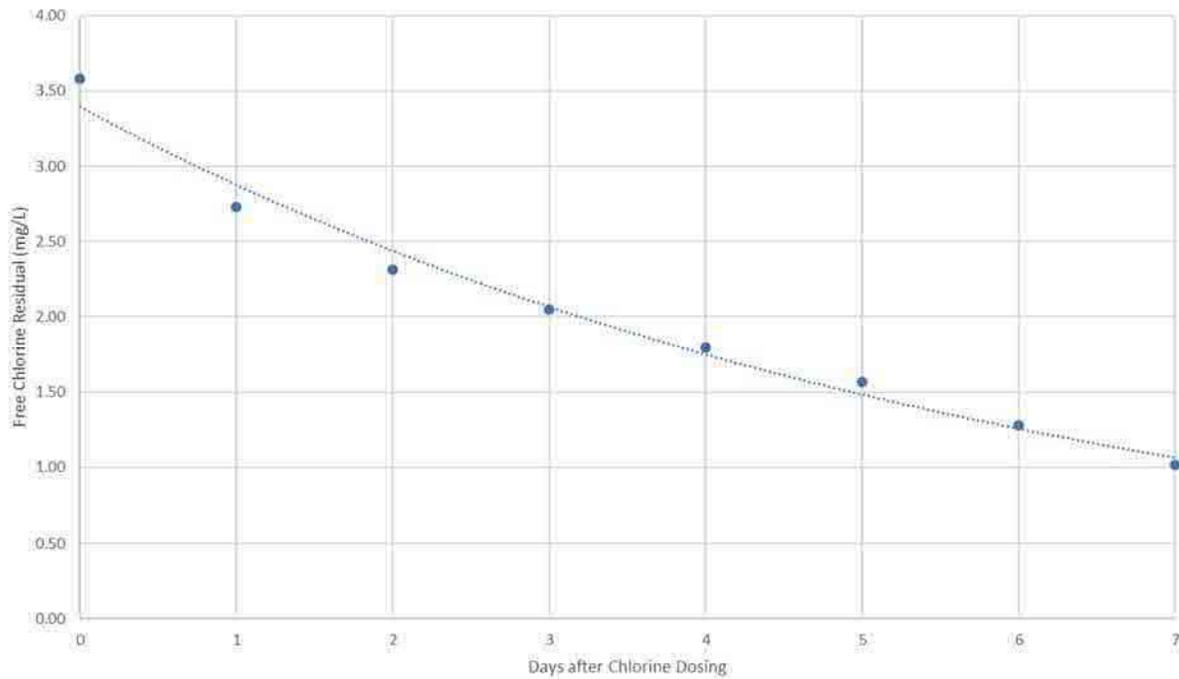


Figure 3-5
Chlorine Residuals Over 7-day Period (5 mg/L of Cl)

During pilot-scale testing, a simulated distribution test for DBP formation potential will be conducted on pilot-treated samples with the addition of a standard chlorine dose. This test will include chlorine residual, THM, and HAA measurements at multiple intervals over a seven-day timeframe.

4 Summary

- Limited data gathered on Kennedy Lake raw water suggested the ranges for UVT of 82-84%, true/apparent colour of 24 TCU, and turbidity of 0.3-1.5 NTU. The optimum alum pre-treatment dose was 40 mg/L with the addition of 20 mg/L of soda ash and 1 mg/L of ClearFloc AP 1065. With this pre-treatment combination, the filtered UVT improved to 97%, true colour at 11 TCU, and filtered turbidity at 0.1 NTU.
- The optimum PACL pre-treatment dose remained at 10 mg/L of ClearPAC 180 with the addition of 1 mg/L of ClearFloc AP 1065. At such dose, the filtered UVT improved to 96.5%, true colour at 8 TCU, and filtered turbidity at 0.1 NTU.
- The baseline DBP formation potential was assessed on Kennedy Lake raw water, which determined that total THM was 0.115 mg/L and total HAA was 0.136 mg/L, exceeding GCDWQ limits (Health Canada). With the organics reduction by pre-treatment (from 2.7 mg/L DOC to 1 mg/L DOC) it is anticipated that treated water with organics removal could meet guidelines; this will be examined further during pilot testing.

5 Recommendations

As the results presented herein represent only one sampling event, conducted in the fall, seasonal changes to the water chemistry of Kennedy Lake needs to be identified. At minimum, turbidity, total dissolved solids and organics should be monitored regularly. Sampling events should aim to capture a range of conditions, including significant storm events, that may impact water quality (e.g. cause turbidity spikes). Regular monitoring will aid in determining whether the turbidity of Kennedy Lake is relatively stable or experiences fluctuation, along with other key parameters.

5.1 PILOT TESTING RECOMMENDATIONS

- Based on the bench testing results, two types of treatment methods are recommended for pilot testing: membrane filtration and media filtration.
- For membrane filtration, submerged ultrafiltration (UF) membrane treatment is recommended; the results of which can be extrapolated for both pressurized and submerged membrane technologies.
- For media filtration, flocculants appeared to have poor settling properties during jar testing; this indicates that direct filtration, which consists of chemical pre-treatment flocculation and media filtration without clarification, is recommended.
- Chemical pre-treatment is recommended for pilot testing to examine the reduction in DBP formation potential.
- Post-treatment requirements such as pH control for water stability, chlorine demand, chlorine stability and DBP formation of pilot-treated water are recommended; these could be evaluated at bench-scale using pilot plant effluent.
- Corrosivity of post-treated water should be determined through LI principles.



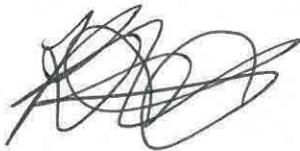
REPORT

Certification Page

This report presents our findings regarding the District of Ucluelet, Kennedy Lake Treatability Study
Treatability Test at Bench-Scale.

Respectfully submitted,

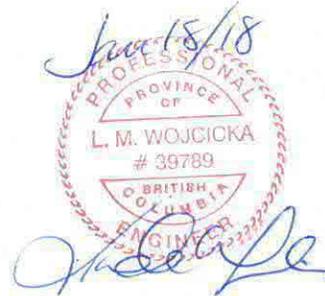
Prepared by:



Rachel Trower, EIT
Water Process Engineer

RT/LW/lp

Reviewed by:



Linda Wojcicka, M.A.Sc., P.Eng., ENV SP
Water Process Engineer



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Appendix A - Analytical Laboratory Results



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Date Received: 23-NOV-17
Report Date: 14-DEC-17 16:27 (MT)
Version: FINAL

Client Phone: 604-293-1411

Certificate of Analysis

Lab Work Order #: L2026216
Project P.O. #: FURRY CREEK
Job Reference: ASS050-DOU100-VA
C of C Numbers:
Legal Site Desc:

Heather McKenzie
Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID		L2026216-1				
Description		Water				
Sampled Date		21-NOV-17				
Sampled Time		15:30				
Client ID		KENNEDY LAKE RAW WATER A				
Grouping	Analyte					
MISC.						
Radiological Parameters	Gross Alpha (Bq/L)	<0.090				
	Gross Beta (Bq/L)	<0.10				

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L2026216-1 Water 21-NOV-17 15:30 KENNEDY LAKE RAW WATER A	L2026216-2 Water 21-NOV-17 15:30 KENNEDY LAKE RAW WATER B	L2026216-3 Water 21-NOV-17 15:30 KENNEDY LAKE RAW WATER C		
Grouping	Analyte					
WATER						
Physical Tests	UV Absorbance (254 nm) (Abs/cm)	0.0840				
	Colour, True (CU)	12.2				
	Conductivity (uS/cm)	30.8				
	Hardness (as CaCO3) (mg/L)	11.2				
	pH (pH)	7.19				
	ORP (mV)	279				
	TDS (Calculated) (mg/L)	18.8				
	Turbidity (NTU)	1.38				
Anions and Nutrients	Alkalinity, Bicarbonate (as CaCO3) (mg/L)	10.8				
	Alkalinity, Carbonate (as CaCO3) (mg/L)	<1.0				
	Alkalinity, Hydroxide (as CaCO3) (mg/L)	<1.0				
	Alkalinity, Phenolphthalein (as CaCO3) (mg/L)	<2.0				
	Alkalinity, Total (as CaCO3) (mg/L)	10.8				
	Ammonia, Total (as N) (mg/L)	<0.0050				
	Chloride (Cl) (mg/L)	2.15				
	Nitrate and Nitrite (as N) (mg/L)	0.0457				
	Nitrate (as N) (mg/L)	0.0457				
	Nitrite (as N) (mg/L)	<0.0010				
	Sulfate (SO4) (mg/L)	1.01				
	Anion Sum (meq/L)	0.30				
	Cation Sum (meq/L)	0.30				
	Cation - Anion Balance (%)	-0.1				
Organic / Inorganic Carbon	Dissolved Inorganic Carbon (mg/L)	2.93				
	Dissolved Organic Carbon (mg/L)	2.70				
	Total Organic Carbon (mg/L)	2.91				
Bacteriological Tests	E. coli (MPN/100mL)	1 ^{PEHR}	4 ^{PEHR}	10 ^{PEHR}		
	Coliform Bacteria - Total (MPN/100mL)	115 ^{PEHR}	109 ^{PEHR}	140 ^{PEHR}		
Taxonomy	Total cyanobacterial cell count (cells/mL)	<1				
Total Metals	Aluminum (Al)-Total (mg/L)	0.0666				
	Antimony (Sb)-Total (mg/L)	<0.00010				
	Arsenic (As)-Total (mg/L)	0.00014				
	Barium (Ba)-Total (mg/L)	0.00256				
	Beryllium (Be)-Total (mg/L)	<0.00010				
	Bismuth (Bi)-Total (mg/L)	<0.000050				
	Boron (B)-Total (mg/L)	<0.010				

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L2026216-1 Water 21-NOV-17 15:30 KENNEDY LAKE RAW WATER A	L2026216-2 Water 21-NOV-17 15:30 KENNEDY LAKE RAW WATER B	L2026216-3 Water 21-NOV-17 15:30 KENNEDY LAKE RAW WATER C	
Grouping	Analyte				
WATER					
Total Metals	Cadmium (Cd)-Total (mg/L)	0.0000765			
	Calcium (Ca)-Total (mg/L)	4.09			
	Cesium (Cs)-Total (mg/L)	<0.000010			
	Chromium (Cr)-Total (mg/L)	0.00047			
	Cobalt (Co)-Total (mg/L)	<0.00010			
	Copper (Cu)-Total (mg/L)	0.00262			
	Iron (Fe)-Total (mg/L)	0.045			
	Lead (Pb)-Total (mg/L)	0.00129			
	Lithium (Li)-Total (mg/L)	<0.0010			
	Magnesium (Mg)-Total (mg/L)	0.377			
	Manganese (Mn)-Total (mg/L)	0.00442			
	Mercury (Hg)-Total (mg/L)	<0.0000050			
	Molybdenum (Mo)-Total (mg/L)	0.000095			
	Nickel (Ni)-Total (mg/L)	0.00051			
	Phosphorus (P)-Total (mg/L)	<0.050			
	Potassium (K)-Total (mg/L)	0.139			
	Rubidium (Rb)-Total (mg/L)	<0.00020			
	Selenium (Se)-Total (mg/L)	<0.000050			
	Silicon (Si)-Total (mg/L)	0.85			
	Silver (Ag)-Total (mg/L)	<0.000010			
	Sodium (Na)-Total (mg/L)	1.57			
	Strontium (Sr)-Total (mg/L)	0.00704			
	Sulfur (S)-Total (mg/L)	<0.50			
	Tellurium (Te)-Total (mg/L)	<0.00020			
	Thallium (Tl)-Total (mg/L)	<0.000010			
	Thorium (Th)-Total (mg/L)	<0.00010			
	Tin (Sn)-Total (mg/L)	<0.00010			
	Titanium (Ti)-Total (mg/L)	0.00115			
	Tungsten (W)-Total (mg/L)	<0.00010			
	Uranium (U)-Total (mg/L)	0.000023			
	Vanadium (V)-Total (mg/L)	<0.00050			
	Zinc (Zn)-Total (mg/L)	0.0104			
	Zirconium (Zr)-Total (mg/L)	<0.000060			
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD			
	Dissolved Metals Filtration Location	LAB			
	Aluminum (Al)-Dissolved (mg/L)	0.0363			
	Antimony (Sb)-Dissolved (mg/L)	<0.00010			

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	Description	Sampled Date	Sampled Time	Client ID			
L2026216-1	Water	21-NOV-17	15:30	KENNEDY LAKE RAW WATER A			
L2026216-2	Water	21-NOV-17	15:30	KENNEDY LAKE RAW WATER B			
L2026216-3	Water	21-NOV-17	15:30	KENNEDY LAKE RAW WATER C			
Grouping	Analyte						
WATER							
Dissolved Metals	Arsenic (As)-Dissolved (mg/L)		0.00017				
	Barium (Ba)-Dissolved (mg/L)		0.00247				
	Beryllium (Be)-Dissolved (mg/L)		<0.00010				
	Bismuth (Bi)-Dissolved (mg/L)		<0.000050				
	Boron (B)-Dissolved (mg/L)		<0.010				
	Cadmium (Cd)-Dissolved (mg/L)		0.0000512				
	Calcium (Ca)-Dissolved (mg/L)		3.90				
	Cesium (Cs)-Dissolved (mg/L)		<0.000010				
	Chromium (Cr)-Dissolved (mg/L)		<0.00010				
	Cobalt (Co)-Dissolved (mg/L)		<0.00010				
	Copper (Cu)-Dissolved (mg/L)		0.00184				
	Iron (Fe)-Dissolved (mg/L)		0.010				
	Lead (Pb)-Dissolved (mg/L)		0.000663				
	Lithium (Li)-Dissolved (mg/L)		<0.0010				
	Magnesium (Mg)-Dissolved (mg/L)		0.358				
	Manganese (Mn)-Dissolved (mg/L)		0.00160				
	Mercury (Hg)-Dissolved (mg/L)		<0.0000050				
	Molybdenum (Mo)-Dissolved (mg/L)		0.000059				
	Nickel (Ni)-Dissolved (mg/L)		<0.00050				
	Phosphorus (P)-Dissolved (mg/L)		<0.050				
	Potassium (K)-Dissolved (mg/L)		0.155				
	Rubidium (Rb)-Dissolved (mg/L)		<0.00020				
	Selenium (Se)-Dissolved (mg/L)		<0.000050				
	Silicon (Si)-Dissolved (mg/L)		0.757				
	Silver (Ag)-Dissolved (mg/L)		<0.000010				
	Sodium (Na)-Dissolved (mg/L)		1.55				
	Strontium (Sr)-Dissolved (mg/L)		0.00660				
	Sulfur (S)-Dissolved (mg/L)		<0.50				
	Tellurium (Te)-Dissolved (mg/L)		<0.00020				
	Thallium (Tl)-Dissolved (mg/L)		<0.000010				
	Thorium (Th)-Dissolved (mg/L)		<0.00010				
	Tin (Sn)-Dissolved (mg/L)		<0.00010				
	Titanium (Ti)-Dissolved (mg/L)		0.00037				
	Tungsten (W)-Dissolved (mg/L)		<0.00010				
	Uranium (U)-Dissolved (mg/L)		0.000023				
	Vanadium (V)-Dissolved (mg/L)		<0.00050				
	Zinc (Zn)-Dissolved (mg/L)		0.0076				

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L2026216-1 Water 21-NOV-17 15:30 KENNEDY LAKE RAW WATER A	L2026216-2 Water 21-NOV-17 15:30 KENNEDY LAKE RAW WATER B	L2026216-3 Water 21-NOV-17 15:30 KENNEDY LAKE RAW WATER C
Grouping	Analyte			
WATER				
Dissolved Metals	Zirconium (Zr)-Dissolved (mg/L)	<0.000060		
Aggregate Organics	Mineral Oil & Grease (mg/L)	<5.0		
Phenolics	4-Chloro-3-methylphenol (mg/L)	<0.00050		
	2-Chlorophenol (mg/L)	<0.000050		
	3-Chlorophenol (mg/L)	<0.000050		
	4-Chlorophenol (mg/L)	<0.000050		
	2,3-Dichlorophenol (mg/L)	<0.000050		
	2,4 & 2,5-Dichlorophenol (mg/L)	<0.000050		
	2,6-Dichlorophenol (mg/L)	<0.000050		
	3,4-Dichlorophenol (mg/L)	<0.000050		
	3,5-Dichlorophenol (mg/L)	<0.000050		
	2,4-Dimethylphenol (mg/L)	<0.00050		
	o-Cresol (mg/L)	<0.00050		
	m-Cresol (mg/L)	<0.00050		
	p-Cresol (mg/L)	<0.00050		
	Pentachlorophenol (mg/L)	<0.00010		
	Phenol (mg/L)	<0.0010		
	2,3,4,5-Tetrachlorophenol (mg/L)	<0.00020		
	2,3,4,6-Tetrachlorophenol (mg/L)	<0.00010		
	2,3,5,6-Tetrachlorophenol (mg/L)	<0.00020		
	2,3,4-Trichlorophenol (mg/L)	<0.00010		
	2,3,5-Trichlorophenol (mg/L)	<0.00010		
	2,3,6-Trichlorophenol (mg/L)	<0.00010		
	2,4,5-Trichlorophenol (mg/L)	<0.00010		
	2,4,6-Trichlorophenol (mg/L)	<0.00010		
	3,4,5-Trichlorophenol (mg/L)	<0.00010		
Herbicides	Bromoxynil (mg/L)	<0.00010		
	Clopyralid (mg/L)	<0.00015 ^{DLQ}		
	2,4-D (mg/L)	<0.00010		
	Dicamba (mg/L)	<0.00010		
	2,4-DB (mg/L)	<0.00010		
	2,4-DP (Dichlorprop) (mg/L)	<0.00010		
	Dinoseb (mg/L)	<0.00010 ^{HTP}		
	MCPA (mg/L)	<0.00010		
	MCPB (mg/L)	<0.00010		
	Mecoprop (mg/L)	<0.00010		
	Picloram (mg/L)	<0.00010		

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L2026216-1 Water 21-NOV-17 15:30 KENNEDY LAKE RAW WATER A	L2026216-2 Water 21-NOV-17 15:30 KENNEDY LAKE RAW WATER B	L2026216-3 Water 21-NOV-17 15:30 KENNEDY LAKE RAW WATER C	
Grouping	Analyte				
WATER					
Herbicides	2,4,5-T (mg/L)	<0.00010			
	2,4,5-TP (mg/L)	<0.00010			
	Triclopyr (mg/L)	<0.00010			
	Surrogate: 2,4-Dichlorophenylacetic Acid (%)	92.5			
Pesticides	Alachlor (ug/L)	<0.10			
	Ametryn (ug/L)	<0.10			
	Atrazine (ug/L)	<0.10			
	Atrazine+N-Dealkylated Metabolites (ug/L)	<0.20			
	Azinphos-methyl (ug/L)	<0.10			
	Bendiocarb (ug/L)	<0.50			
	Benzo(a)pyrene (ug/L)	<0.010			
	Carbaryl (ug/L)	<0.50			
	Carbofuran (ug/L)	<0.50			
	Chlorpyrifos (ug/L)	<0.10			
	Cyanazine (ug/L)	<0.10			
	Diazinon (ug/L)	<0.10			
	Dimethoate (ug/L)	<0.10			
	Atrazine Desethyl (ug/L)	<0.10			
	Parathion (ug/L)	<0.10			
	Malathion (ug/L)	<0.10			
	Diclofop-methyl (ug/L)	<0.10			
	Methyl Parathion (ug/L)	<0.10			
	Metolachlor (ug/L)	<0.10			
	Metribuzin (ug/L)	<1.0			
	Phorate (ug/L)	<0.10			
	Prometon (ug/L)	<0.10			
	Prometryne (ug/L)	<0.10			
	Propazine (ug/L)	<0.10			
	Simazine (ug/L)	<0.10			
	Temephos (ug/L)	<1.0			
	Terbufos (ug/L)	<0.10			
	Terbutryn (ug/L)	<0.10			
	Triallate (ug/L)	<0.10			
	Trifluralin (ug/L)	<0.10			
	Surrogate: 2-Fluorobiphenyl (%)	61.3			
	Surrogate: d14-Terphenyl (%)	62.0			



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Date Received: 24-NOV-17
Report Date: 28-DEC-17 14:11 (MT)
Version: FINAL

Client Phone: 604-293-1411

Certificate of Analysis

Lab Work Order #: L2027141
Project P.O. #: FURRY CREEK
Job Reference: ASS050-DOU100-VA
C of C Numbers:
Legal Site Desc:

Comments: Sample was chlorinated by client prior to submission to lab for THM and HAA testing. Sub-sample taken at lab.

Heather McKenzie
Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L2027141-1 Water 22-NOV-17 10:00 KENNEDY LAKE RW (SURFACE, MID LAKE & CLAYOQUOT MID PT)	L2027141-2 Water 23-NOV-17 22:30 JAR TEST SAMPLE 1-(20 PPM SODA ASH+40PPM ALUM+1PPM POLY)	L2027141-3 Water 23-NOV-17 22:30 JAR TEST SAMPLE 2-(10 PPM LEARPAC 180+1PPM POLYMER)	L2027141-4 Water 24-NOV-17 12:45 RW+5MG/L SODIUM HYPOCHLORITE	L2027141-5 Water 24-NOV-17 12:45 KENNEDY LAKE RW+5MG/L OF SODIUM HYPOCHLORITE
Grouping	Analyte					
WATER						
Physical Tests	UV Absorbance (254 nm) (Abs/cm)		0.0110	0.0120		
	Hardness (as CaCO3) (mg/L)		11.1	10.8		
	pH (pH)		7.43	6.99		
	TDS (Calculated) (mg/L)		45.5	15.1		
Anions and Nutrients	Alkalinity, Bicarbonate (as CaCO3) (mg/L)		16.6	6.6		
	Alkalinity, Carbonate (as CaCO3) (mg/L)		<1.0	<1.0		
	Alkalinity, Hydroxide (as CaCO3) (mg/L)		<1.0	<1.0		
	Alkalinity, Phenolphthalein (as CaCO3) (mg/L)		<2.0	<2.0		
	Alkalinity, Total (as CaCO3) (mg/L)		16.6	6.6		
	Bromide (Br) (mg/L)		<0.050	<0.050		
	Chloride (Cl) (mg/L)		2.02	4.45		
	Fluoride (F) (mg/L)		<0.020	<0.020		
	Nitrate (as N) (mg/L)		0.0377	0.0384		
	Nitrite (as N) (mg/L)		<0.0010	<0.0010		
	Sulfate (SO4) (mg/L)		16.2	0.86		
	Anion Sum (meq/L)		0.73	0.28		
	Cation Sum (meq/L)		0.78	0.28		
	Cation - Anion Balance (%)		3.5	1.2		
Organic / Inorganic Carbon	Dissolved Organic Carbon (mg/L)		1.04	1.06		
Inorganic Parameters	Chlorine, Free (mg/L)				2.18	
	Chlorine, Total (mg/L)				2.42	
Dissolved Metals	Dissolved Mercury Filtration Location		FIELD	FIELD		
	Dissolved Metals Filtration Location		FIELD	FIELD		
	Aluminum (Al)-Dissolved (mg/L)		0.0298	0.0274		
	Antimony (Sb)-Dissolved (mg/L)		<0.00010	<0.00010		
	Arsenic (As)-Dissolved (mg/L)		<0.00010	<0.00010		
	Barium (Ba)-Dissolved (mg/L)		0.00208	0.00205		
	Beryllium (Be)-Dissolved (mg/L)		<0.00010	<0.00010		
	Bismuth (Bi)-Dissolved (mg/L)		<0.000050	<0.000050		
	Boron (B)-Dissolved (mg/L)		<0.010	<0.010		
	Cadmium (Cd)-Dissolved (mg/L)		0.0000059	<0.0000050		
	Calcium (Ca)-Dissolved (mg/L)		3.91	3.77		
	Cesium (Cs)-Dissolved (mg/L)		<0.000010	<0.000010		
	Chromium (Cr)-Dissolved (mg/L)		<0.00010	<0.00010		
	Cobalt (Co)-Dissolved (mg/L)		<0.00010	<0.00010		

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	Description	Sampled Date	Sampled Time	Client ID	L2027141-1	L2027141-2	L2027141-3	L2027141-4	L2027141-5
					L2027141-1 Water 22-NOV-17 10:00 KENNEDY LAKE RW (SURFACE, MID LAKE & CLAYOQUOT MID PT)	L2027141-2 Water 23-NOV-17 22:30 JAR TEST SAMPLE 1-(20 PPM SODA ASH+40PPM ALUM+1PPM POLY)	L2027141-3 Water 23-NOV-17 22:30 JAR TEST SAMPLE 2-(10 PPM LEARPAC 180+1PPM POLYMER)	L2027141-4 Water 24-NOV-17 12:45 RW+5MG/L SODIUM HYPOCHLORITE	L2027141-5 Water 24-NOV-17 12:45 KENNEDY LAKE RW+5MG/L OF SODIUM HYPOCHLORITE
Grouping	Analyte								
WATER									
Dissolved Metals	Copper (Cu)-Dissolved (mg/L)					<0.00030 ^{DLB}	0.00060		
	Iron (Fe)-Dissolved (mg/L)					<0.010	<0.010		
	Lead (Pb)-Dissolved (mg/L)					<0.000050	<0.000050		
	Lithium (Li)-Dissolved (mg/L)					<0.0010	<0.0010		
	Magnesium (Mg)-Dissolved (mg/L)					0.337	0.344		
	Manganese (Mn)-Dissolved (mg/L)					0.00113	0.00078		
	Mercury (Hg)-Dissolved (mg/L)					<0.0000050	<0.0000050		
	Molybdenum (Mo)-Dissolved (mg/L)					0.000057	<0.000050		
	Nickel (Ni)-Dissolved (mg/L)					<0.00050	<0.00050		
	Phosphorus (P)-Dissolved (mg/L)					<0.050	<0.050		
	Potassium (K)-Dissolved (mg/L)					0.053	0.083		
	Rubidium (Rb)-Dissolved (mg/L)					<0.00020	<0.00020		
	Selenium (Se)-Dissolved (mg/L)					<0.000050	<0.000050		
	Silicon (Si)-Dissolved (mg/L)					0.697	0.771		
	Silver (Ag)-Dissolved (mg/L)					<0.000010	<0.000010		
	Sodium (Na)-Dissolved (mg/L)					12.8	1.44		
	Strontium (Sr)-Dissolved (mg/L)					0.00640	0.00628		
	Sulfur (S)-Dissolved (mg/L)					5.61	<0.50		
	Tellurium (Te)-Dissolved (mg/L)					<0.00020	<0.00020		
	Thallium (Tl)-Dissolved (mg/L)					<0.000010	<0.000010		
	Thorium (Th)-Dissolved (mg/L)					<0.00010	<0.00010		
	Tin (Sn)-Dissolved (mg/L)					<0.00010	<0.00010		
	Titanium (Ti)-Dissolved (mg/L)					<0.00030	<0.00030		
	Tungsten (W)-Dissolved (mg/L)					<0.00010	<0.00010		
	Uranium (U)-Dissolved (mg/L)					<0.000010	<0.000010		
	Vanadium (V)-Dissolved (mg/L)					<0.00050	<0.00050		
	Zinc (Zn)-Dissolved (mg/L)					0.0020	0.0043		
	Zirconium (Zr)-Dissolved (mg/L)					<0.000060	<0.000060		
Volatile Organic Compounds	Benzene (mg/L)				<0.00050				
	Bromodichloromethane (mg/L)				<0.0010				0.00350
	Bromoform (mg/L)				<0.0010				<0.00050
	Carbon Tetrachloride (mg/L)				<0.00050				
	Chlorobenzene (mg/L)				<0.0010				
	Dibromochloromethane (mg/L)				<0.0010				<0.00050
	Chloroethane (mg/L)				<0.0010				
	Chloroform (mg/L)				<0.0010				0.112
	Chloromethane (mg/L)				<0.0050				

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L2027141-1 Water 22-NOV-17 10:00 KENNEDY LAKE RW (SURFACE, MID LAKE & CLAYOQUOT MID PT)	L2027141-2 Water 23-NOV-17 22:30 JAR TEST SAMPLE 1-(20 PPM SODA ASH+40PPM ALUM+1PPM POLY)	L2027141-3 Water 23-NOV-17 22:30 JAR TEST SAMPLE 2-(10 PPM LEARPAC 180+1PPM POLYMER)	L2027141-4 Water 24-NOV-17 12:45 RW+5MG/L SODIUM HYPOCHLORITE	L2027141-5 Water 24-NOV-17 12:45 KENNEDY LAKE RW+5MG/L OF SODIUM HYPOCHLORITE
Grouping	Analyte					
WATER						
Volatile Organic Compounds	1,2-Dichlorobenzene (mg/L)	<0.00050				
	1,3-Dichlorobenzene (mg/L)	<0.0010				
	1,4-Dichlorobenzene (mg/L)	<0.0010				
	1,1-Dichloroethane (mg/L)	<0.0010				
	1,2-Dichloroethane (mg/L)	<0.0010				
	1,1-Dichloroethylene (mg/L)	<0.0010				
	cis-1,2-Dichloroethylene (mg/L)	<0.0010				
	trans-1,2-Dichloroethylene (mg/L)	<0.0010				
	Dichloromethane (mg/L)	<0.0050				
	1,2-Dichloropropane (mg/L)	<0.0010				
	cis-1,3-Dichloropropylene (mg/L)	<0.00050				
	trans-1,3-Dichloropropylene (mg/L)	<0.00050				
	1,3-Dichloropropene (cis & trans) (mg/L)	<0.0010				
	Ethylbenzene (mg/L)	<0.00050				
	Methyl t-butyl ether (MTBE) (mg/L)	<0.00050				
	Styrene (mg/L)	<0.00050				
	1,1,1,2-Tetrachloroethane (mg/L)	<0.0010				
	1,1,2,2-Tetrachloroethane (mg/L)	<0.00020				
	Tetrachloroethylene (mg/L)	<0.0010				
	Toluene (mg/L)	<0.00045				
	1,1,1-Trichloroethane (mg/L)	<0.0010				
	1,1,2-Trichloroethane (mg/L)	<0.00050				
	Trichloroethylene (mg/L)	<0.0010				
	Trichlorofluoromethane (mg/L)	<0.0010				
	Vinyl Chloride (mg/L)	<0.00040				
	ortho-Xylene (mg/L)	<0.00050				
	meta- & para-Xylene (mg/L)	<0.00050				
	Xylenes (mg/L)	<0.00075				
	Total BTEX (mg/L)	<0.0011				
	Surrogate: 4-Bromofluorobenzene (SS) (%)	97.4				97.0
	Surrogate: 1,4-Difluorobenzene (SS) (%)	100.1				100.5
Trihalomethanes	Total THMs (mg/L)					0.115
Haloacetic Acids	Bromochloroacetic Acid (mg/L)					0.0024
	Dibromoacetic Acid (mg/L)					<0.0010
	Dichloroacetic Acid (mg/L)					0.0416
	Total Haloacetic Acids 5 (mg/L)					0.136
	Monobromoacetic Acid (mg/L)					<0.0010

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	Description	Sampled Date	Sampled Time	Client ID	L2027141-1	L2027141-2	L2027141-3	L2027141-4	L2027141-5
					Water	Water	Water	Water	Water
					22-NOV-17	23-NOV-17	23-NOV-17	24-NOV-17	24-NOV-17
					10:00	22:30	22:30	12:45	12:45
					KENNEDY LAKE RW (SURFACE, MID LAKE & CLAYOQUOT MID PT)	JAR TEST SAMPLE 1-(20 PPM SODA ASH+40PPM ALUM+1PPM POLY)	JAR TEST SAMPLE 2-(10 PPM LEARPAC 180+1PPM POLYMER)	RW+5MG/L SODIUM HYPOCHLORITE	KENNEDY LAKE RW+5MG/L OF SODIUM HYPOCHLORITE
Grouping	Analyte								
WATER									
Haloacetic Acids	Monochloroacetic Acid (mg/L)								<0.0050
	Trichloroacetic Acid (mg/L)								0.0947 ^{DLHC}
	Surrogate: 2,3-Dibromopropionic Acid (SS) (%)								85.5

REPORT

Appendix B - Jar Test Observation Sheets



Associated
Engineering

GLOBAL PERSPECTIVE.
LOCAL FOCUS.

REPORT

Appendix B – ALS Lab Report, Raw Water Quality Analysis



Associated
Engineering

GLOBAL PERSPECTIVE.
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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID		L2075607-1				
Description		influent				
Sampled Date		03-APR-18				
Sampled Time		11:00				
Client ID		KENNEDY LAKE RAW WATER(RW)- PARKSCAN INTAKE POINT				
Grouping	Analyte					
MISC.						
Radiological Parameters	Gross Alpha (Bq/L)	<0.10				
	Gross Beta (Bq/L)	<0.12				

ALS ENVIRONMENTAL ANALYTICAL REPORT

Grouping	Analyte	Sample ID Description Sampled Date Sampled Time Client ID				
		L2075607-1 influent 03-APR-18 11:00 KENNEDY LAKE RAW WATER(RW)- PARKSCAN INTAKE POINT				
WATER						
Physical Tests	UV Absorbance (254 nm) (Abs/cm)		0.0760			
	Colour, True (CU)		12.6			
	Conductivity (uS/cm)		26.8			
	Hardness (as CaCO3) (mg/L)		10.6			
	pH (pH)		7.17			
	ORP (mV)		301			
	TDS (Calculated) (mg/L)		16.4			
	Turbidity (NTU)		0.38			
Anions and Nutrients	Alkalinity, Bicarbonate (as CaCO3) (mg/L)		9.2			
	Alkalinity, Carbonate (as CaCO3) (mg/L)		<1.0			
	Alkalinity, Hydroxide (as CaCO3) (mg/L)		<1.0			
	Alkalinity, Phenolphthalein (as CaCO3) (mg/L)		<2.0			
	Alkalinity, Total (as CaCO3) (mg/L)		9.2			
	Ammonia, Total (as N) (mg/L)		<0.0050			
	Bromide (Br) (mg/L)		<0.050			
	Chloride (Cl) (mg/L)		2.14			
	Fluoride (F) (mg/L)		<0.020			
	Nitrate and Nitrite (as N) (mg/L)		0.0360			
	Nitrate (as N) (mg/L)		0.0360			
	Nitrite (as N) (mg/L)		<0.0010			
	Sulfate (SO4) (mg/L)		0.89			
	Anion Sum (meq/L)		0.27			
	Cation Sum (meq/L)		0.28			
	Cation - Anion Balance (%)		2.4			
Organic / Inorganic Carbon	Dissolved Inorganic Carbon (mg/L)		2.52			
	Dissolved Organic Carbon (mg/L)		2.06 ^{HTP}			
	Total Organic Carbon (mg/L)		2.23			
Bacteriological Tests	E. coli (MPN/100mL)		<1			
	Coliform Bacteria - Total (MPN/100mL)		27			
Taxonomy	Total cyanobacterial cell count (cells/mL)		25			
	Pseudanabaena (Cyanophyceae) (cells/mL)		25			
Total Metals	Aluminum (Al)-Total (mg/L)		0.0637			
	Antimony (Sb)-Total (mg/L)		<0.00010			
	Arsenic (As)-Total (mg/L)		0.00014			
	Barium (Ba)-Total (mg/L)		0.00189			

ALS ENVIRONMENTAL ANALYTICAL REPORT

Grouping	Analyte	Sample ID Description Sampled Date Sampled Time Client ID				
		L2075607-1 influent 03-APR-18 11:00 KENNEDY LAKE RAW WATER(RW)- PARKSCAN INTAKE POINT				
WATER						
Total Metals	Beryllium (Be)-Total (mg/L)		<0.00010			
	Bismuth (Bi)-Total (mg/L)		<0.000050			
	Boron (B)-Total (mg/L)		<0.010			
	Cadmium (Cd)-Total (mg/L)		0.0000069			
	Calcium (Ca)-Total (mg/L)		3.76			
	Cesium (Cs)-Total (mg/L)		<0.000010			
	Chromium (Cr)-Total (mg/L)		0.00012			
	Cobalt (Co)-Total (mg/L)		<0.00010			
	Copper (Cu)-Total (mg/L)		<0.0020 ^{DLB}			
	Iron (Fe)-Total (mg/L)		0.031			
	Lead (Pb)-Total (mg/L)		0.000352			
	Lithium (Li)-Total (mg/L)		<0.0010			
	Magnesium (Mg)-Total (mg/L)		0.353			
	Manganese (Mn)-Total (mg/L)		0.00264			
	Mercury (Hg)-Total (mg/L)		<0.0000050			
	Molybdenum (Mo)-Total (mg/L)		0.000063			
	Nickel (Ni)-Total (mg/L)		<0.00050			
	Phosphorus (P)-Total (mg/L)		<0.050			
	Potassium (K)-Total (mg/L)		0.051			
	Rubidium (Rb)-Total (mg/L)		<0.00020			
	Selenium (Se)-Total (mg/L)		<0.000050			
	Silicon (Si)-Total (mg/L)		0.76			
	Silver (Ag)-Total (mg/L)		<0.000010			
	Sodium (Na)-Total (mg/L)		1.27			
	Strontium (Sr)-Total (mg/L)		0.00602			
	Sulfur (S)-Total (mg/L)		0.70			
	Tellurium (Te)-Total (mg/L)		<0.00020			
	Thallium (Tl)-Total (mg/L)		<0.000010			
	Thorium (Th)-Total (mg/L)		<0.00010			
	Tin (Sn)-Total (mg/L)		<0.00010			
	Titanium (Ti)-Total (mg/L)		0.00072			
	Tungsten (W)-Total (mg/L)		<0.00010			
	Uranium (U)-Total (mg/L)		0.000020			
	Vanadium (V)-Total (mg/L)		<0.00050			
	Zinc (Zn)-Total (mg/L)		<0.0030			
	Zirconium (Zr)-Total (mg/L)		<0.000060			
Dissolved Metals	Dissolved Mercury Filtration Location		FIELD			

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID			
	L2075607-1 influent 03-APR-18 11:00 KENNEDY LAKE RAW WATER(RW)- PARKSCAN INTAKE POINT			
Grouping	Analyte			
WATER				
Dissolved Metals	Dissolved Metals Filtration Location	FIELD		
	Aluminum (Al)-Dissolved (mg/L)	0.0632		
	Antimony (Sb)-Dissolved (mg/L)	<0.00010		
	Arsenic (As)-Dissolved (mg/L)	<0.00010		
	Barium (Ba)-Dissolved (mg/L)	0.00179		
	Beryllium (Be)-Dissolved (mg/L)	<0.00010		
	Bismuth (Bi)-Dissolved (mg/L)	<0.000050		
	Boron (B)-Dissolved (mg/L)	<0.010		
	Cadmium (Cd)-Dissolved (mg/L)	<0.0000050		
	Calcium (Ca)-Dissolved (mg/L)	3.70		
	Cesium (Cs)-Dissolved (mg/L)	<0.000010		
	Chromium (Cr)-Dissolved (mg/L)	<0.00010		
	Cobalt (Co)-Dissolved (mg/L)	<0.00010		
	Copper (Cu)-Dissolved (mg/L)	0.00100		
	Iron (Fe)-Dissolved (mg/L)	0.029		
	Lead (Pb)-Dissolved (mg/L)	0.000352		
	Lithium (Li)-Dissolved (mg/L)	<0.0010		
	Magnesium (Mg)-Dissolved (mg/L)	0.320		
	Manganese (Mn)-Dissolved (mg/L)	0.00243		
	Mercury (Hg)-Dissolved (mg/L)	<0.0000050		
	Molybdenum (Mo)-Dissolved (mg/L)	0.000050		
	Nickel (Ni)-Dissolved (mg/L)	<0.00050		
	Phosphorus (P)-Dissolved (mg/L)	<0.050		
	Potassium (K)-Dissolved (mg/L)	0.071		
	Rubidium (Rb)-Dissolved (mg/L)	<0.00020		
	Selenium (Se)-Dissolved (mg/L)	<0.000050		
	Silicon (Si)-Dissolved (mg/L)	0.754		
	Silver (Ag)-Dissolved (mg/L)	<0.000010		
	Sodium (Na)-Dissolved (mg/L)	1.30		
	Strontium (Sr)-Dissolved (mg/L)	0.00618		
	Sulfur (S)-Dissolved (mg/L)	<0.50		
	Tellurium (Te)-Dissolved (mg/L)	<0.00020		
	Thallium (Tl)-Dissolved (mg/L)	<0.000010		
	Thorium (Th)-Dissolved (mg/L)	<0.00010		
	Tin (Sn)-Dissolved (mg/L)	<0.00010		
	Titanium (Ti)-Dissolved (mg/L)	0.00050		
	Tungsten (W)-Dissolved (mg/L)	<0.00010		

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L2075607-1 influent 03-APR-18 11:00 KENNEDY LAKE RAW WATER(RW)- PARKSCAN INTAKE POINT			
Grouping	Analyte				
WATER					
Dissolved Metals	Uranium (U)-Dissolved (mg/L)	0.000019			
	Vanadium (V)-Dissolved (mg/L)	<0.00050			
	Zinc (Zn)-Dissolved (mg/L)	<0.0010			
	Zirconium (Zr)-Dissolved (mg/L)	<0.000060			
Volatile Organic Compounds	Benzene (mg/L)	<0.00050			
	Bromodichloromethane (mg/L)	<0.0010			
	Bromoform (mg/L)	<0.0010			
	Carbon Tetrachloride (mg/L)	<0.00050			
	Chlorobenzene (mg/L)	<0.0010			
	Dibromochloromethane (mg/L)	<0.0010			
	Chloroethane (mg/L)	<0.0010			
	Chloroform (mg/L)	<0.0010			
	Chloromethane (mg/L)	<0.0050			
	1,2-Dichlorobenzene (mg/L)	<0.00050			
	1,3-Dichlorobenzene (mg/L)	<0.0010			
	1,4-Dichlorobenzene (mg/L)	<0.0010			
	1,1-Dichloroethane (mg/L)	<0.0010			
	1,2-Dichloroethane (mg/L)	<0.0010			
	1,1-Dichloroethylene (mg/L)	<0.0010			
	cis-1,2-Dichloroethylene (mg/L)	<0.0010			
	trans-1,2-Dichloroethylene (mg/L)	<0.0010			
	Dichloromethane (mg/L)	<0.0050			
	1,2-Dichloropropane (mg/L)	<0.0010			
	cis-1,3-Dichloropropylene (mg/L)	<0.00050			
	trans-1,3-Dichloropropylene (mg/L)	<0.00050			
	1,3-Dichloropropene (cis & trans) (mg/L)	<0.0010			
	Ethylbenzene (mg/L)	<0.00050			
	Methyl t-butyl ether (MTBE) (mg/L)	<0.00050			
	Styrene (mg/L)	<0.00050			
	1,1,1,2-Tetrachloroethane (mg/L)	<0.0010			
	1,1,2,2-Tetrachloroethane (mg/L)	<0.00020			
	Tetrachloroethylene (mg/L)	<0.0010			
	Toluene (mg/L)	<0.00045			
	1,1,1-Trichloroethane (mg/L)	<0.0010			
	1,1,2-Trichloroethane (mg/L)	<0.00050			
	Trichloroethylene (mg/L)	<0.0010			
	Trichlorofluoromethane (mg/L)	<0.0010			

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID				
	L2075607-1 influent 03-APR-18 11:00 KENNEDY LAKE RAW WATER(RW)- PARKSCAN INTAKE POINT				
Grouping	Analyte				
WATER					
Volatile Organic Compounds	Vinyl Chloride (mg/L)	<0.00040			
	ortho-Xylene (mg/L)	<0.00050			
	meta- & para-Xylene (mg/L)	<0.00050			
	Xylenes (mg/L)	<0.00075			
	Surrogate: 4-Bromofluorobenzene (SS) (%)	98.0			
	Surrogate: 1,4-Difluorobenzene (SS) (%)	98.6			
Phenolics	4-Chloro-3-methylphenol (mg/L)	<0.00050			
	2-Chlorophenol (mg/L)	<0.00050			
	3-Chlorophenol (mg/L)	<0.00050			
	4-Chlorophenol (mg/L)	<0.00050			
	2,3-Dichlorophenol (mg/L)	<0.00050			
	2,4 & 2,5-Dichlorophenol (mg/L)	<0.00050			
	2,6-Dichlorophenol (mg/L)	<0.00050			
	3,4-Dichlorophenol (mg/L)	<0.00050			
	3,5-Dichlorophenol (mg/L)	<0.00050			
	2,4-Dimethylphenol (mg/L)	<0.00050			
	o-Cresol (mg/L)	<0.00050			
	m-Cresol (mg/L)	<0.00050			
	p-Cresol (mg/L)	<0.00050			
	Pentachlorophenol (mg/L)	<0.00010			
	Phenol (mg/L)	<0.0010			
	2,3,4,5-Tetrachlorophenol (mg/L)	<0.00020			
	2,3,4,6-Tetrachlorophenol (mg/L)	<0.00010			
	2,3,5,6-Tetrachlorophenol (mg/L)	<0.00020			
	2,3,4-Trichlorophenol (mg/L)	<0.00010			
	2,3,5-Trichlorophenol (mg/L)	<0.00010			
	2,3,6-Trichlorophenol (mg/L)	<0.00010			
	2,4,5-Trichlorophenol (mg/L)	<0.00010			
	2,4,6-Trichlorophenol (mg/L)	<0.00010			
	3,4,5-Trichlorophenol (mg/L)	<0.00010			
	Surrogate: 2-Chlorophenol-d4 (%)	93.7			
	Surrogate: 2,4-Dichlorophenol-d3 (%)	89.3			
	Surrogate: 2,4,6-Tribromophenol (%)	98.1			
Herbicides	Bromoxynil (mg/L)	<0.00010			
	Clopyralid (mg/L)	<0.00010			
	2,4-D (mg/L)	<0.00010			
	Dicamba (mg/L)	<0.00010			

ALS ENVIRONMENTAL ANALYTICAL REPORT

Grouping	Analyte	Sample ID Description Sampled Date Sampled Time Client ID				
		L2075607-1 influent 03-APR-18 11:00 KENNEDY LAKE RAW WATER(RW)- PARKSCAN INTAKE POINT				
WATER						
Herbicides	2,4-DB (mg/L)		<0.00010			
	2,4-DP (Dichlorprop) (mg/L)		<0.00010			
	Dinoseb (mg/L)		<0.00010			
	MCPA (mg/L)		<0.00010			
	MCPB (mg/L)		<0.00010			
	Mecoprop (mg/L)		<0.00010			
	Picloram (mg/L)		<0.00010			
	2,4,5-T (mg/L)		<0.00010			
	2,4,5-TP (mg/L)		<0.00010			
	Triclopyr (mg/L)		<0.00010			
	Surrogate: 2,4-Dichlorophenylacetic Acid (%)		105.3			
Pesticides	Alachlor (ug/L)		<0.10			
	Ametryn (ug/L)		<0.10			
	Atrazine (ug/L)		<0.10			
	Atrazine+N-Dealkylated Metabolites (ug/L)		<0.20			
	Azinphos-methyl (ug/L)		<0.10			
	Bendiocarb (ug/L)		<0.50			
	Benzo(a)pyrene (ug/L)		<0.010			
	Carbaryl (ug/L)		<0.50			
	Carbofuran (ug/L)		<0.50			
	Chlorpyrifos (ug/L)		<0.10			
	Cyanazine (ug/L)		<0.10			
	Diazinon (ug/L)		<0.10			
	Dimethoate (ug/L)		<0.10			
	Atrazine Desethyl (ug/L)		<0.10			
	Parathion (ug/L)		<0.10			
	Malathion (ug/L)		<0.10			
	Diclofop-methyl (ug/L)		<0.10			
	Methyl Parathion (ug/L)		<0.10			
	Metolachlor (ug/L)		<0.10			
	Metribuzin (ug/L)		<1.0			
	Phorate (ug/L)		<0.10			
	Prometon (ug/L)		<0.10			
	Prometryne (ug/L)		<0.10			
	Propazine (ug/L)		<0.10			
	Simazine (ug/L)		<0.10			
	Temephos (ug/L)		<1.0			

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID		L2075607-1				
Description		influent				
Sampled Date		03-APR-18				
Sampled Time		11:00				
Client ID		KENNEDY LAKE RAW WATER(RW)- PARKSCAN INTAKE POINT				
Grouping	Analyte					
WATER						
Pesticides	Terbufos (ug/L)	<0.10				
	Terbutryn (ug/L)	<0.10				
	Triallate (ug/L)	<0.10				
	Trifluralin (ug/L)	<0.10				
	Surrogate: 2-Fluorobiphenyl (%)	71.4				
	Surrogate: d14-Terphenyl (%)	78.9				

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Method Blank	Copper (Cu)-Total	MB-LOR	L2075607-1
Matrix Spike	Dissolved Organic Carbon	MS-B	L2075607-1
Matrix Spike	Total Organic Carbon	MS-B	L2075607-1
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L2075607-1
Matrix Spike	Boron (B)-Dissolved	MS-B	L2075607-1
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L2075607-1
Matrix Spike	Magnesium (Mg)-Dissolved	MS-B	L2075607-1
Matrix Spike	Manganese (Mn)-Dissolved	MS-B	L2075607-1
Matrix Spike	Potassium (K)-Dissolved	MS-B	L2075607-1
Matrix Spike	Silicon (Si)-Dissolved	MS-B	L2075607-1
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L2075607-1
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L2075607-1
Matrix Spike	Sulfur (S)-Dissolved	MS-B	L2075607-1
Matrix Spike	Uranium (U)-Dissolved	MS-B	L2075607-1
Matrix Spike	Barium (Ba)-Total	MS-B	L2075607-1
Matrix Spike	Calcium (Ca)-Total	MS-B	L2075607-1
Matrix Spike	Magnesium (Mg)-Total	MS-B	L2075607-1
Matrix Spike	Manganese (Mn)-Total	MS-B	L2075607-1
Matrix Spike	Sodium (Na)-Total	MS-B	L2075607-1
Matrix Spike	Strontium (Sr)-Total	MS-B	L2075607-1
Matrix Spike	Sulfur (S)-Total	MS-B	L2075607-1
Matrix Spike	Ammonia, Total (as N)	MS-B	L2075607-1

Qualifiers for Individual Parameters Listed:

Qualifier	Description
DLB	Detection Limit Raised. Analyte detected at comparable level in Method Blank.
HTP	Sample preparation or preservation hold time was exceeded.
MB-LOR	Method Blank exceeds ALS DQO. Limits of Reporting have been adjusted for samples with positive hits below 5x blank level.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALGAE-CYANO-BACT-WP	Water	Enumeration of blue green algae cells	APHA 10200 C & F
Samples are prepared by sedimentation/settling and examined using a compound phase contrast inverted microscope. Cyanobacteria (also known as blue-green algae) are identified to genus and the cells are enumerated. The total cyanobacteria count is also reported.			
ALK-TITR-VA	Water	Alkalinity Species by Titration	APHA 2320 Alkalinity
This analysis is carried out using procedures adapted from APHA Method 2320 "Alkalinity". Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.			
ANIONS-N+N-CALC-VA	Water	Nitrite & Nitrate in Water (Calculation)	EPA 300.0
Nitrate and Nitrite (as N) is a calculated parameter. Nitrate and Nitrite (as N) = Nitrite (as N) + Nitrate (as N).			
BR-L-IC-N-VA	Water	Bromide in Water by IC (Low Level)	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
CARBONS-DIC-VA	Water	Dissolved inorganic carbon by CO2 purge	APHA 5310B TOTAL ORGANIC CARBON (TOC)
This analysis is carried out using procedures adapted from APHA Method 5310 "Total Organic Carbon (TOC)". Dissolved inorganic carbon (DIC) fractions are determined by filtering the sample through a 0.45 micron membrane filter prior to analysis.			
CARBONS-DOC-VA	Water	Dissolved organic carbon by combustion	APHA 5310B TOTAL ORGANIC CARBON (TOC)
This analysis is carried out using procedures adapted from APHA Method 5310 "Total Organic Carbon (TOC)". Dissolved carbon (DOC) fractions are determined by filtering the sample through a 0.45 micron membrane filter prior to analysis.			
CARBONS-TOC-VA	Water	Total organic carbon by combustion	APHA 5310B TOTAL ORGANIC CARBON (TOC)
This analysis is carried out using procedures adapted from APHA Method 5310 "Total Organic Carbon (TOC)".			

Reference Information

CL-IC-N-VA	Water	Chloride in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
COLOUR-TRUE-VA	Water	Colour (True) by Spectrometer	BCMOE Colour Single Wavelength
This analysis is carried out using procedures adapted from British Columbia Environmental Manual "Colour- Single Wavelength." Colour (True Colour) is determined by filtering a sample through a 0.45 micron membrane filter followed by analysis of the filtrate using the platinum-cobalt colourimetric method.			
Colour measurements can be highly pH dependent, and apply to the pH of the sample as received (at time of testing), without pH adjustment. Concurrent measurement of sample pH is recommended.			
EC-PCT-VA	Water	Conductivity (Automated)	APHA 2510 Auto. Conduc.
This analysis is carried out using procedures adapted from APHA Method 2510 "Conductivity". Conductivity is determined using a conductivity electrode.			
EC-SCREEN-VA	Water	Conductivity Screen (Internal Use Only)	APHA 2510
Qualitative analysis of conductivity where required during preparation of other tests - e.g. TDS, metals, etc.			
ECOLI-COLI-ENV-VA	Water	E.coli by Colilert	APHA METHOD 9223
This analysis is carried out using procedures adapted from APHA Method 9223 "Enzyme Substrate Coliform Test". E. coli and Total Coliform are determined simultaneously. The sample is mixed with a mixture hydrolyzable substrates and then sealed in a multi-well packet. The packet is incubated for 18 or 24 hours and then the number of wells exhibiting a positive response are counted. The final result is obtained by comparing the positive responses to a probability table.			
F-IC-N-VA	Water	Fluoride in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
GROSS-ALPHA+BETA-FC	Misc.	Gross Alpha & Beta by Gas Flow Prop.	EPA 900.0
HARDNESS-CALC-VA	Water	Hardness	APHA 2340B
Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.			
HERBSCR-WT	Water	Herbicides in water	SW846 8270
Herbicides are extracted from an aqueous sample using separate aliquots of solvent, extracts are concentrated down to a certain volume and analyzed on the GC/MSD.			
HG-D-CVAA-VA	Water	Diss. Mercury in Water by CVAAS or CVAFS	APHA 3030B/EPA 1631E (mod)
Water samples are filtered (0.45 um), preserved with hydrochloric acid, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS or CVAFS.			
HG-T-CVAA-VA	Water	Total Mercury in Water by CVAAS or CVAFS	EPA 1631E (mod)
Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS or CVAFS.			
IONBALANCE-VA	Water	Ion Balance Calculation	APHA 1030E
Cation Sum, Anion Sum, and Ion Balance (as % difference) are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Because all aqueous solutions are electrically neutral, the calculated ion balance (% difference of cations minus anions) should be near-zero.			
Cation and Anion Sums are the total meq/L concentration of major cations and anions. Dissolved species are used where available. Minor ions are included where data is present. Ion Balance is calculated as:			
Ion Balance (%) = [Cation Sum-Anion Sum] / [Cation Sum+Anion Sum]			
MET-D-CCMS-VA	Water	Dissolved Metals in Water by CRC ICPMS	APHA 3030B/6020A (mod)
Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by CRC ICPMS.			
Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.			
MET-T-CCMS-VA	Water	Total Metals in Water by CRC ICPMS	EPA 200.2/6020A (mod)
Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.			
Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.			
NH3-F-VA	Water	Ammonia in Water by Fluorescence	J. ENVIRON. MONIT., 2005, 7, 37-42, RSC
This analysis is carried out, on sulfuric acid preserved samples, using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Waston et al.			
NO2-L-IC-N-VA	Water	Nitrite in Water by IC (Low Level)	EPA 300.1 (mod)

Reference Information

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

NO3-L-IC-N-VA Water Nitrate in Water by IC (Low Level) EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

ORP-VA Water Oxidation reduction potential by Elect. ASTM D1498-14

This analysis is carried out in accordance with the procedure described in the "ASTM" method D1498-14 "Oxidation-Reduction Potential of Water" published by the American Society for Testing and Materials (ASTM), 2014. Results are reported as observed oxidation-reduction potential of the platinum metal-reference electrode employed, in mV.

It is recommended that this analysis be conducted in the field.

PEST-MISC-WT Water Miscellaneous Pesticides SW846 8270

Pesticides are extracted from an aqueous sample using separate aliquots of solvent, extracts are concentrated down to a certain volume and analyzed on the GC/MSD.

PH-PCT-VA Water pH by Meter (Automated) APHA 4500-H pH Value

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

PHEN-SF-MS-VA Water Phenolics in Water by GCMS BC Env. Lab Manual (Phenols in water)

This analysis is carried out in accordance with the British Columbia Ministry of Environment, Lands and Parks (BCMELP) Analytical Method for Contaminated Sites "Chlorinated and Non-Chlorinated Phenols in Water by GC/MS - PBM" (Oct 2013). An entire water sample is acidified and extracted using dichloromethane. The extract is solvent exchanged and derivatized with acetic anhydride and trimethylamine (TMA). The final extract is analysed by capillary column gas chromatography with mass spectrometric detection (GC/MS). The precision and accuracy Data Quality Objectives for the parameter 2,4-dimethylphenol have broader acceptance criteria than for most other phenolic compounds, reflecting difficulties commonly encountered during extraction and analysis.

SO4-IC-N-VA Water Sulfate in Water by IC EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

TCOLI-COLI-ENV-VA Water Total coliform by Colilert APHA METHOD 9223

This analysis is carried out using procedures adapted from APHA Method 9223 "Enzyme Substrate Coliform Test". E. coli and Total Coliform are determined simultaneously. The sample is mixed with a mixture hydrolyzable substrates and then sealed in a multi-well packet. The packet is incubated for 18 or 24 hours and then the number of wells exhibiting a positive response are counted. The final result is quantified by a statistical estimation of bacteria density (most probable number).

TDS-CALC-VA Water TDS (Calculated) APHA 1030E (20TH EDITION)

This analysis is carried out using procedures adapted from APHA 1030E "Checking Correctness of Analyses". The Total Dissolved Solids result is calculated from measured concentrations of anions and cations in the sample.

TURBIDITY-VA Water Turbidity by Meter APHA 2130 Turbidity

This analysis is carried out using procedures adapted from APHA Method 2130 "Turbidity". Turbidity is determined by the nephelometric method.

UV-ABS-VA Water UV Absorbance (Spectrometry) APHA 5910B UV ABSORPTION METHOD

Test method is adapted from APHA Method 5910B. A sample is filtered through a 0.45 um filter and it's UV Absorbance is measured in a quartz cell at 254 nm and reported as UV Absorbance per cm. The analysis is carried out without pH adjustment.

VOC-HSMS-VA Water VOCs in water by Headspace GCMS EPA 5021A/8260C

The water sample, with added reagents, is heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. Target compound concentrations are measured using mass spectrometry detection.

VOC7-HSMS-VA Water BTEX/MTBE/Styrene by Headspace GCMS EPA 5021A/8260C

The water sample, with added reagents, is heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. Target compound concentrations are measured using mass spectrometry detection.

VOC7/VOC-SURR-MS-VA Water VOC7 and/or VOC Surrogates for Waters EPA 5035A/5021A/8260C

XYLENES-CALC-VA Water Sum of Xylene Isomer Concentrations CALCULATION

Calculation of Total Xylenes

Total Xylenes is the sum of the concentrations of the ortho, meta, and para Xylene isomers. Results below detection limit (DL) are treated as zero. The DL for Total Xylenes is set to a value no less than the square root of the sum of the squares of the DLs of the individual Xylenes.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code Laboratory Location
 Clean Water and Waste Fund (Green Infrastructure Environmental Quality P...

Reference Information

WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA
FC	ALS ENVIRONMENTAL - FORT COLLINS, COLORADO, USA
WP	ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

mg/kg - milligrams per kilogram based on dry weight of sample.

mg/kg wwt - milligrams per kilogram based on wet weight of sample.

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.

mg/L - milligrams per litre.

< - Less than.

D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



Ft. Collins, Colorado

LIMS Version: 6.862

Page 1 of 1

Friday, April 20, 2018

Heather McKenzie
ALS Environmental
8081 Lougheed Hwy, Suite 100
Burnaby, BC V5A 1W9

Re: ALS Workorder: 1804078
Project Name:
Project Number: L2075607

Dear Ms. McKenzie:

One water sample was received from ALS Environmental, on 4/5/2018. The sample was scheduled for the following analysis:

Gross Alpha/Beta

The results for these analyses are contained in the enclosed reports.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Thank you for your confidence in ALS Environmental. Should you have any questions, please call.

Sincerely,

ALS Environmental

For Katie M. O'Brien
Project Manager

ALS Environmental – Fort Collins is accredited by the following accreditation bodies for various testing scopes in accordance with requirements of each accreditation body. All testing is performed under the laboratory management system, which is maintained to meet these requirement and regulations. Please contact the laboratory or accreditation body for the current scope testing parameters.

ALS Environmental – Fort Collins	
Accreditation Body	License or Certification Number
AIHA	214884
Alaska (AK)	UST-086
Alaska (AK)	CO01099
Arizona (AZ)	AZ0742
California (CA)	06251CA
Colorado (CO)	CO01099
Connecticut (CT)	PH-0232
Florida (FL)	E87914
Idaho (ID)	CO01099
Kansas (KS)	E-10381
Kentucky (KY)	90137
L-A-B (DoD ELAP/ISO 170250)	L2257
Louisiana (LA)	05057
Maryland (MD)	285
Missouri (MO)	175
Nebraska(NE)	NE-OS-24-13
Nevada (NV)	CO000782008A
New York (NY)	12036
North Dakota (ND)	R-057
Oklahoma (OK)	1301
Pennsylvania (PA)	68-03116
Tennessee (TN)	2976
Texas (TX)	T104704241
Utah (UT)	CO01099
Washington (WA)	C1280



1804078

Gross Alpha/Beta:

The sample was analyzed for gross alpha and beta activity by gas flow proportional counting according to the current revision of SOP 724. Gross alpha results are referenced to ^{241}Am . Gross beta results are referenced to $^{90}\text{Sr/Y}$.

All acceptance criteria were met.

ALS -- Fort Collins

Sample Number(s) Cross-Reference Table

OrderNum: 1804078

Client Name: ALS Environmental

Client Project Name:

Client Project Number: L2075607

Client PO Number: L2075607

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
L2075607-1	1804078-1		WATER	03-Apr-18	



1804078

Subcontract Request Form

Subcontract To:

ALS ENVIRONMENTAL - FORT COLLINS, COLORADO, USA
225 COMMERCE DRIVE
FORT COLLINS, CO 80524

NOTES: Please reference on final report and invoice: PO# L2075607
ALS requires QC data to be provided with your final results.

Please see enclosed 1 sample(s) in 1 Container(s)

SAMPLE NUMBER	ANALYTICAL REQUIRED	DATE SAMPLED DUE DATE	Priority Flag
L2075607-1 KENNEDY LAKE RAW WATER(RW)-PARKSCAN INTAKE POINT	Gross Alpha & Beta by Gas Flow Prop. (GROSS-ALPHA +BETA-FC 14)	4/3/2018 4/27/2018	

Subcontract Info Contact: Walter Lin (604) 253-4188
 Analysis and reporting info contact: Heather McKenzie
 8081 LOUGHEED HWY
 SUITE 100
 BURNABY, BC V5A 1W9
 Phone: (604) 253-4188 Email: Heather.McKenzie@alsglobal.com

***NEW* Reporting Contacts:**
 1.Account Manager Listed Below
 2.ALSEVDataSublet@ALSGlobal.com (PDF / EXCEL)
 3.ALSE.CASDG@ALSGlobal.com (EDD/Database Formats)

Please email confirmation of receipt to: **Heather.McKenzie@alsglobal.com**

Shipped By: _____ Date Shipped: _____
 Received By: Kaylee Pier Date Received: 4/5/18 1010
 Verified By: _____ Date Verified: _____
 Temperature: _____

Sample Integrity Issues: _____



ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: Vancouver
Project Manager: Kate

Workorder No: 1804078
Initials: KP Date: 4/5/18

1. Does this project require any special handling in addition to standard ALS procedures?		YES	<input checked="" type="radio"/> NO
2. Are custody seals on shipping containers intact?	<input checked="" type="radio"/> NONE	YES	NO
3. Are Custody seals on sample containers intact?	<input checked="" type="radio"/> NONE	YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		<input checked="" type="radio"/> YES	NO
5. Are the COC and bottle labels complete and legible?		<input checked="" type="radio"/> YES	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		<input checked="" type="radio"/> YES	NO
7. Were airbills / shipping documents present and/or removable?	DROP OFF:	<input checked="" type="radio"/> YES	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles) *	N/A	YES	<input checked="" type="radio"/> NO
9. Are all aqueous non-preserved samples pH 4-9?	<input checked="" type="radio"/> N/A	YES	NO
10. Is there sufficient sample for the requested analyses?		<input checked="" type="radio"/> YES	NO
11. Were all samples placed in the proper containers for the requested analyses?		<input checked="" type="radio"/> YES	NO
12. Are all samples within holding times for the requested analyses?		<input checked="" type="radio"/> YES	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		<input checked="" type="radio"/> YES	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: ___ < green pea ___ > green pea	<input checked="" type="radio"/> N/A	YES	NO
15. Do any water samples contain sediment? Amount of sediment: ___ dusting ___ moderate ___ heavy	Amount: N/A	YES	<input checked="" type="radio"/> NO
16. Were the samples shipped on ice?		YES	<input checked="" type="radio"/> NO
17. Were cooler temperatures measured at 0.1-6.0°C?	IR gun used*: #1 #3 #4	<input checked="" type="radio"/> RAD ONLY	YES NO
Cooler #: <u>1</u>			
Temperature (°C): <u>Amb</u>			
No. of custody seals on cooler: <u>0</u>			
External µR/hr reading: <u>9</u>			
Background µR/hr reading: <u>10</u>			
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? <input checked="" type="radio"/> YES <input type="radio"/> NO / NA (If no, see Form 008.)			

Additional Information: PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXCEPT #1 AND #16.

* Sample not preserved correctly pH of 5. NO HNO₃ added ^{hmc} 4/6/18
KP 4/5/18
Added 2ml 20% HNO₃

If applicable, was the client contacted? YES / NO / NA Contact: _____ Date/Time: _____

Project Manager Signature / Date: [Signature] 4/6/18

1804078

SHIP DATE: 04APR18
ACTIVITY: 5.00 LE MAN
CAD: 03474191CAFES311

ORIGIN ID: YBYA (604) 253-4188
HARJIT SILL
ALS ENVIRONMENTAL LAB GROUP
LOUGHEED HIGHWAY
BURNABY, BC V5A1W9
CANADA CA

BILL SENDER

TO SAMPLE RECEIVING
ALS ENVIRONMENTAL
225 COMMERCE DRIVE

9-0

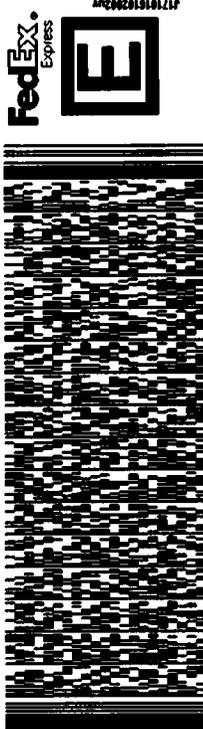
FORT COLLINS CO 80524
(970) 490-1511

(US)

Amb

REF. SUBLETS

DEPT. SUBLET



10:30A

INTL PRIORITY

TRK# 7012 5069 6568

0430

XH FTCA
80524
CO-US
DEN



After printing this label:
1. Fold the printed page along the horizontal line.
2. Place label in shipping pouch and affix it to your shipment.

DEFINITIONS: On the Air Waybill, "You," "us," and "Federal" refer to Federal Express Corporation, its subsidiaries and branches and their respective employees, agents and independent contractors. "Your" and "your" refer to the shipper, its employees, purchasers and agents. If your shipment originates outside the United States, your contract of carriage is with the Federal Express subsidiary, branch or independent contractor who originates the shipment from you. "Package" means any container or envelope that is accepted by us for delivery, including any such items tendered by you without our endorsement. "Shipment" means all packages, which are tendered to and accepted by us on a single Air Waybill. "Agreement to Terms" By giving us your shipment, you agree, regardless of whether you sign the front of this Air Waybill, for yourself and as agent for and on behalf of any other person having an interest in this shipment, to all terms on the NON-NEGOTIABLE Air Waybill in any applicable law, and in our current Service Guide or Standard Conditions of Carriage, copies of which are available upon request. If there is a conflict between the Air Waybill and either the tariff, Service Guide or Standard Conditions then in effect, the tariff and the terms of any customer automation agreement between the shipper and Federal Express will control (the Service Guide or Standard Conditions have secondary priority). No one is authorized to alter or modify the terms of our agreement. This Air Waybill shall be binding on us when the shipment is accepted. RESPONSIBILITY: You warrant that each article in the shipment is properly described on the Air Waybill and is acceptable for transport by us, and that the shipment is properly marked, addressed (including postal codes) and packaged to ensure safe transportation with ordinary care in handling. NOTICE CONCERNING LIMITATIONS OF LIABILITY: Air Carriage Notice: If the carriage of your shipment by air involves an ultimate destination or stop in a country other than the country of departure, the Warsaw Convention, an international treaty relating to international carriage by air, may be applicable, which treaty would then govern and in most cases limit our liability for loss or damage to your shipment in the U.S. The Warsaw Convention limits our liability to U.S. \$20.38 per kilogram. If you declare a higher value for carriage as described below, the interpretation of the Warsaw Convention liability limits may vary in other countries. There are no stopping places which are agreed at the time of tender of the shipment and we reserve the right to route shipments in any way deemed appropriate. Road Transport Notice: Shipments transported partly or solely by road are subject to the Convention on the Contract for the International Carriage of Goods by Road (the "CMR") and are subject to the terms and conditions of the CMR, notwithstanding any other provisions of this Agreement to the contrary. For these shipments transported solely by road, if a conflict arises between the provisions of the CMR and this Air Waybill, the terms of the CMR shall prevail. Limitation of Liability: If not governed by the Warsaw Convention or the CMR, as described above, our maximum liability for loss, damage or delay is limited by this Air Waybill to U.S. \$100 per shipment or U.S. \$20.38 per kilo (or equivalent local currency), whichever is greater, unless you declare a higher value for carriage as described below. FedEx does not provide cargo liability or air-traffic insurance, but you may pay an additional charge to obtain actual damages. LIABILITY FOR ANY DAMAGES WHETHER DIRECT, INCIDENTAL, SPECIAL OR CONSEQUENTIAL, IN EXCESS OF THE DECLARED VALUE FOR CARRIAGE (INCLUDING BUT NOT LIMITED TO LOSS OF INCOME OR PROFITS) WHETHER OR NOT WE HAD ANY KNOWLEDGE THAT SUCH DAMAGES MIGHT BE INCURRED, UNLESS SUCH DAMAGES WERE CAUSED BY OUR OWN WILLFUL MISCONDUCT OR GROSS NEGLIGENCE. We won't be liable for your actions or omissions, including but not limited to incorrect declaration of cargo, improper or inadequate packing, securing, marking or addressing of the shipment, or for the acts or omissions of the recipient or anyone else with an interest in the shipment. Also we won't be liable if you (or the recipient) violate any of the terms of our agreement. We won't be liable for loss of or damage to shipments of cash, currency or other prohibited items. We won't be liable for loss, damage or delay caused by events we cannot control, including but not limited to acts of God, acts of public enemies, war, strikes, civil commotions, or acts or omissions of public authorities (including customs and health officials) with actual or apparent authority. NO WARRANTIES: We make no warranties, express or implied. CLAIM FOR LOSS, DAMAGE FOR DELAY: ALL CLAIMS MUST BE NOTIFIED TO US WITHIN 15 DAYS AFTER DELIVERY OF THE SHIPMENT FAILING WHICH NO ACTION FOR DAMAGES MAY BE BROUGHT. Air claims for loss, non-delivery or mis-delivery must be received by us within 30 days after the shipment is accepted by us. The right to damages against us shall be extinguished unless an action is brought within two years from the date of delivery of the shipment or from date on which the shipment should have been delivered. Within 30 days after notification to us (or the claim, if it must be determined by sending us all relevant information about it. We are not obliged to act on any claim until all transportation charges have been paid. The claimant(s), original consignee(s) and applicable carrier(s) must be available to us for inspection. RIGHT TO INSPECT: Your shipment may, at our option or at the request of governmental authorities, be opened and inspected by us or such authorities or us at any time. Furthermore, you understand that civil and criminal penalties, including forfeiture and sale, may be imposed for making false or fraudulent statements or for the violation of any United States laws on exportation, including but not limited to, 13 USC Sec. 305; 22 USC Sec. 1410; 18 USC Sec. 1410; 50 USC app. 2410. CUSTOMS CLEARANCE: It is your responsibility to provide proper customs documentation and information for you for export control and customs purposes. You hereby certify that all statements and information contained in this air waybill relating to exportation are true and correct. EXPORT CONTROL: You authorize Federal Express to act as forwarding agent for you for export control and customs purposes. We will assume the shipment was delivered in good condition, in order for us to consider a claim for damages. The right to damages against us shall be extinguished unless an action is brought within two years from the date of delivery of the shipment or from date on which the shipment should have been delivered. Within 30 days after notification to us (or the claim, if it must be determined by sending us all relevant information about it. We are not obliged to act on any claim until all transportation charges have been paid. The claimant(s), original consignee(s) and applicable carrier(s) must be available to us for inspection. Furthermore, you understand that civil and criminal penalties, including forfeiture and sale, may be imposed for making false or fraudulent statements or for the violation of any United States laws on exportation, including but not limited to, 13 USC Sec. 305; 22 USC Sec. 1410; 18 USC Sec. 1410; 50 USC app. 2410. MAILING INFORMATION: We are not responsible for any provisions such as provisions that remain in effect as part of our agreement to the extent that it is not overridden. The handling or non-handling of any provision shall not affect any other part of this Air Waybill. Unless otherwise indicated on the face of this Air Waybill is the place of execution and the place of departure, and Recipient's address listed on the face of this Air Waybill is the place of destination. Unless otherwise indicated Federal Express Corporation, P.O. Box 77, Memphis, TN 38194 USA is the first carrier of this shipment.

Client: ALS Environmental
Project: L2075607
Sample ID: L2075607-1
Legal Location:
Collection Date: 4/3/2018

Date: 20-Apr-18
Work Order: 1804078
Lab ID: 1804078-1
Matrix: WATER
Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Gross Alpha/Beta by GFPC			SOP 724		Prep Date: 4/9/2018	PrepBy: RGS
GROSS ALPHA	0.018 (+/- 0.045)	U	0.1	BQ/l	NA	4/16/2018 10:28
GROSS BETA	-0.051 (+/- 0.049)	U	0.12	BQ/l	NA	4/16/2018 10:28

Client: ALS Environmental
Project: L2075607
Sample ID: L2075607-1
Legal Location:
Collection Date: 4/3/2018

Date: 20-Apr-18
Work Order: 1804078
Lab ID: 1804078-1
Matrix: WATER
Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
----------	--------	------	--------------	-------	-----------------	---------------

Explanation of Qualifiers

Radiochemistry:

- "Report Limit" is the MDC
- U or ND - Result is less than the sample specific MDC.
- Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
- Y2 - Chemical Yield outside default limits.
- W - DER is greater than Warning Limit of 1.42
- * - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.
- # - Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.
- G - Sample density differs by more than 15% of LCS density.
- D - DER is greater than Control Limit
- M - Requested MDC not met.
- LT - Result is less than requested MDC but greater than achieved MDC.
- M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
- L - LCS Recovery below lower control limit.
- H - LCS Recovery above upper control limit.
- P - LCS, Matrix Spike Recovery within control limits.
- N - Matrix Spike Recovery outside control limits
- NC - Not Calculated for duplicate results less than 5 times MDC
- B - Analyte concentration greater than MDC.
- B3 - Analyte concentration greater than MDC but less than Requested MDC.

Inorganics:

- B - Result is less than the requested reporting limit but greater than the instrument method detection limit (MDL).
- U or ND - Indicates that the compound was analyzed for but not detected.
- E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.
- M - Duplicate injection precision was not met.
- N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.
- Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.
- * - Duplicate analysis (relative percent difference) not within control limits.
- S - SAR value is estimated as one or more analytes used in the calculation were not detected above the detection limit.

Organics:

- U or ND - Indicates that the compound was analyzed for but not detected.
- B - Analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user.
- E - Analyte concentration exceeds the upper level of the calibration range.
- J - Estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).
- A - A tentatively identified compound is a suspected aldol-condensation product.
- X - The analyte was diluted below an accurate quantitation level.
- * - The spike recovery is equal to or outside the control criteria used.
- + - The relative percent difference (RPD) equals or exceeds the control criteria.
- G - A pattern resembling gasoline was detected in this sample.
- D - A pattern resembling diesel was detected in this sample.
- M - A pattern resembling motor oil was detected in this sample.
- C - A pattern resembling crude oil was detected in this sample.
- 4 - A pattern resembling JP-4 was detected in this sample.
- 5 - A pattern resembling JP-5 was detected in this sample.
- H - Indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest.
- L - Indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest.
- Z - This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products:
 - gasoline
 - JP-8
 - diesel
 - mineral spirits
 - motor oil
 - Stoddard solvent
 - bunker C

Date: 4/20/2018 12:31

ALS -- Fort Collins

Client: ALS Environmental
 Work Order: 1804078
 Project: L2075607

QC BATCH REPORT

Batch ID: **AB180409-2-1** Instrument ID **LB4100-C** Method: **Gross Alpha/Beta by GFPC**

LCS		Sample ID: AB180409-2		Units: BQ/I			Analysis Date: 4/14/2018 11:30				
Client ID:		Run ID: AB180409-2B			Prep Date: 4/9/2018			DF: NA			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	DER Ref	DER	DER Limit	Qual
GROSS ALPHA	8.47 (+/- 1.56)	0.248	8.358		101	72-130					P,M3
GROSS BETA	7.68 (+/- 1.33)	0.432	7.951		96.6	86-115					P,M3

MB		Sample ID: AB180409-2		Units: BQ/I			Analysis Date: 4/13/2018 13:48				
Client ID:		Run ID: AB180409-2B			Prep Date: 4/9/2018			DF: NA			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	DER Ref	DER	DER Limit	Qual
GROSS ALPHA	-0.026 (+/- 0.017)	0.031									U
GROSS BETA	-0.036 (+/- 0.025)	0.041									U

The following samples were analyzed in this batch:

1804078-1	1804045-2
-----------	-----------

REPORT

Appendix C – Pilot Study Data Collection

A summary of daily logging parameters for each pilot system, along with water quality parameters evaluated on-site versus off-site by external labs, is provided in Table C-1 and C-2 respectively.

Table C-1
Pilot Study Data Collection and Logging

Direct Filtration	Membrane Filtration
Frequency: Monitor at start of run, hourly during run, and during backwash.	Frequency: Monitor and log HMI screen data at least once daily. Collect and upload SCADA data daily.
<ul style="list-style-type: none"> • Pre-treatment doses • Turbidity (online turbidimeter) • Head losses via water and piezometer levels • Influent flow for each column • Effluent flow for each column • Backwash flow rate, duration, bed expansion 	<ul style="list-style-type: none"> • Pre-treatment doses • Trans-membrane pressure (TMP) • Feed turbidity • Permeate turbidity • Flocculation tank pH • Temperature

Table C-2
Pilot Study Water Quality Analysis

On-Site Analysis	Off-Site Analysis
Frequency: Daily and after implementing changes to system.	Frequency: During stable pre-treatment conditions, producing desirable on-site analytical results.
<ul style="list-style-type: none"> • Temperature • pH • Turbidity • Alkalinity • UVT • Apparent colour • True colour 	<ul style="list-style-type: none"> • TOC • DOC • Total and dissolved metals
Raw water sample location: collected from sample port on membrane skid when system running.	
Filter effluent sample location: collected from online turbidimeter inlet tubing (removed from apparatus for grab sample only).	
Membrane permeate sample location: collected from sample port on membrane skid.	



REPORT

Appendix D – Suez Pilot Report: Confidential



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REPORT

Appendix E – ALS Lab Report, DBP Analysis



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ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID				
	L2098640-1 EFFLUENT 16-MAY-18 12:00 KENNEDY LAKE TREATED WATER (UF + 10PPM ACH)				
Grouping	Analyte				
WATER					
Organic / Inorganic Carbon	Dissolved Organic Carbon (mg/L)	2.09			
	Total Organic Carbon (mg/L)	1.85			
Trihalomethanes	Total THMs (mg/L)	0.0737			
Formation Potential Trihalomethanes	Bromoform (mg/L)	<0.00050			
	Bromodichloromethane (mg/L)	0.00418			
	Chloroform (mg/L)	0.0695			
	Chlorodibromomethane (mg/L)	<0.00050			
	Surrogate: 4-Bromofluorobenzene (SS) (%)	95.7			
	Surrogate: 1,4-Difluorobenzene (SS) (%)	99.9			
Haloacetic Acids	Bromochloroacetic Acid (mg/L)	0.0014			
	Dibromoacetic Acid (mg/L)	<0.0010			
	Dichloroacetic Acid (mg/L)	0.0304			
	Total Haloacetic Acids 5 (mg/L)	0.0693			
	Monobromoacetic Acid (mg/L)	<0.0010			
	Monochloroacetic Acid (mg/L)	<0.0050			
	Trichloroacetic Acid (mg/L)	0.0390			
	Surrogate: 2,3-Dibromopropionic Acid (SS) (%)	128.4			
Formation Potential Haloacetic Acids	Chlorine, Amount Dosed (mg/L)	5.03			
	Chlorine, Amount Achieved (mg/L)	3.10			
	Chlorine, Demand (mg/L)	1.93			

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
C-DOC-HTC-WP	Water	Dissolved Organic Carbon by Combustion	APHA 5310 B-WP
		Filtered (0.45 um) sample is acidified and purged to remove inorganic carbon, then injected into a heated reaction chamber where organic carbon is oxidized to CO2 which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.	
C-TOC-HTC-WP	Water	Total Organic Carbon by Combustion	APHA 5310 B-WP
		Sample is acidified and purged to remove inorganic carbon, then injected into a heated reaction chamber where organic carbon is oxidized to CO2 which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.	
HAA-FP-ECD-WP	Water	HAA Formation Potential	APHA 5710B (modified)
		The HAA formation potential procedure is used to determine the potential for water sources or water treatment processes to form HAAs. HAA concentration is determined using liquid-liquid extraction, capillary column, GC/electron capture techniques.	
HAA5-SUM-CALC-WP	Water	Total Haloacetic Acids 5 (HAA5)	CALCULATION
		Total Haloacetic Acids 5 (HAA5) represents the sum of monobromoacetic acid, monochloroacetic acid, dibromoacetic acid, dichloroacetic acid and trichloroacetic acid. For the purpose of calculation, results less than the detection limit (DL) are treated as zero.	
THM-FORM-HS-WP	Water	THM Formation Potential	APHA 5710B (modified)
		The THM formation potential procedure is used to determine the potential for water sources or water treatment processes to form THMs. THM concentration is determined using head space techniques.	
THM-SUM-CALC-WP	Water	Total Trihalomethanes (THMs)	CALCULATION
		Total Trihalomethanes (THMs) represents the sum of bromodichloromethane, bromoform, chlorodibromomethane and chloroform. For the purpose of calculation, results less than the detection limit (DL) are treated as zero.	

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WP	ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

mg/kg - milligrams per kilogram based on dry weight of sample.

mg/kg wwt - milligrams per kilogram based on wet weight of sample.

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.

mg/L - milligrams per litre.

< - Less than.

D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

REPORT

Appendix F – Filter System Results



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**APPENDIX F
Filtration System Results**

Table F-1. Filter Run Results

Run No.	Date	Chemical Dose (ppm)			Influent Flow (LPM)		Loading Rate (m/h)		Outcome	Primary Reason for Outcome	True Colour (TCU) [1]			UVT (%) [2]		
		Soda Ash	Alum	AP1065	F1	F2	F1	F2			Raw	F1	F2	Raw	F1	F2
1	5-Apr-18	3	44.8	-	4.5	4.5	14.5	14.5	Fail	High effluent turbidity.	-	-	-	80	88	86
2	6-Apr-18	3	25.2	-	5.0	5.0	16.1	16.1	Fail	High effluent turbidity.	34	-	-	81	81	81
3	6-Apr-18	4	28.0	-	5.0	5.0	16.1	16.1	Fail	High effluent turbidity.	20	15	8	80	84	77
4	9-Apr-18	4	28.0	-	5.0	5.0	16.1	16.1	Fail	High effluent turbidity.	20	11	7	78	90	91
5	10-Apr-18	4	25.2	-	5.0	5.0	16.1	16.1	Fail	Intake pump fail.	23	-	-	74	88	86
6	12-Apr-18	4	22.4	0.06	4.5	4.5	14.5	14.5	Fail	High effluent turbidity.	-	-	-	77	92	88
7	12-Apr-18	4	22.4	0.06	5.0	5.0	16.1	16.1	Fail	Rapid overflow.	-	-	-	83	96	97
8	13-Apr-18	4	22.4	0.06	4.5	3.5	14.5	11.3	Fail	High effluent turbidity.	25	3	3	-	-	-
9	13-Apr-18	4	22.4	0.08	4.5	3.5	14.5	11.3	Fail	High effluent turbidity.	-	-	-	83	97	96
10	16-Apr-18	1	4.5	0.05	5.0	5.0	16.1	16.1	Fail	Polymer ball formation in filter column.	-	-	-	-	-	-
11	17-Apr-18	1	2.9	0.05	5.0	5.0	16.1	16.1	Fail	High effluent turbidity.	-	-	-	79	81	80
12	17-Apr-18	1	4.5	0.02	5.0	5.0	16.1	16.1	Fail	High effluent turbidity.	-	-	-	79	81	80
13	18-Apr-18	1	4.5	0.02	5.0	5.0	16.1	16.1	Fail	High effluent turbidity.	18	25	13	80	80	80
14	18-Apr-18	1	9.0	0.02	5.0	5.0	16.1	16.1	Fail	High effluent turbidity.	31	39	37	83	80	80
15	19-Apr-18	1	11.2	0.02	5.0	5.0	16.1	16.1	Fail	Intake pump fail.	-	-	-	-	-	-
16	19-Apr-18	1	11.2	0.02	4.5	5.0	14.5	16.1	Improved	Improved turbidity; poor UVT/colour results (end run at 20 hrs).	28	33	33	81	81	81
17	20-Apr-18	1	14.6	0.02	5.0	5.5	16.1	17.7	Improved	Improved turbidity; poor UVT/colour results (end run at 9 hrs).	22	18	18	80	83	80
18	23-Apr-18	2	17.4	0.02	5.5	5.5	17.7	17.7	Fail	Intake pump fail.	-	-	-	-	-	-
19	24-Apr-18	2	17.9	0.02	5.5	5.5	17.7	17.7	Improved	Improved turbidity, colour, UVT; poor runtime (<15 hrs).	18	0	0	82	95	94
20	25-Apr-18	2	14.6	0.02	5.2	5.5	16.8	17.7	Error	Columns were not drained prior to run start.	21	3	2	85	95	94
21	26-Apr-18	2	12.5	0.02	5.0	5.0	16.1	16.1	Fail	Insufficient waste capacity causing backflow into system.	7	0	0	83	92	91
22	27-Apr-18	2	12.5	0.02	5.0	5.2	16.1	16.8	Fail	Insufficient waste capacity causing backflow into system.	27	9	9	78	86	87
23	30-Apr-18	2	12.5	0.02	5.7	5.5	18.4	17.7	Fail	Rapid overflow (<4 hrs) and high effluent turbidity.	26	7	9	77	93	93
24	1-May-18	2	12.5	0.02	2.4	2.4	7.7	7.7	Fail	Rapid overflow (<2 hrs) and high effluent turbidity.	19	6	7	84	82	85
25	2-May-18	2	25	0.02	2.4	2.4	7.7	7.7	Fail	Rapid overflow (<2 hrs) and high effluent turbidity.	-	-	-	-	-	-
26	3-May-18	2	25	0.02	2.4	2.4	7.7	7.7	Fail	High effluent turbidity (end run at 1.5 hrs).	-	-	-	-	-	-
27	4-May-18	2	10	0.02	2.4	2.4	7.7	7.7	Fail	High effluent turbidity (end run at 1.5 hrs).	-	-	-	-	-	-
28	9-May-18	20	15	0.20	1.8	2.4	5.8	7.7	Improved	Improved turbidity and run time (>18 hrs); poor UVT/colour results.	23	19	20	85	86	85

[1] Represents grab sample results for true colour. Values less than 15 TCU are highlighted to indicate compliance with GCDWQ (Health Canada, 2017).

[2] Represents grab sample results for UVT. Values greater than 85% are highlighted to indicate desirable results (as there is no guideline available from Health Canada).



STAFF REPORT TO COUNCIL

Council Meeting: November 13, 2018
500 Matterson Drive, Ucluelet, BC V0R 3A0

FROM: JOHN TOWGOOD, PLANNER 1

REF No: RZ18-06 **FOLIO No:** 174.000 **FILE No:** 3360-20

SUBJECT: APPLICATION TO AMEND ZONING BYLAW No. 1160, 2013 (1672 CEDAR ROAD) **REPORT No:** 18-109

ATTACHMENT(S): APPENDIX A –APPLICATION

APPENDIX B – ZONING BYLAW AMENDMENT BYLAW No. 1239, 2018

RECOMMENDATION:

1. **THAT** District of Ucluelet Zoning Bylaw Amendment Bylaw No. 1239, 2018 be given first and second reading and advanced to a public hearing.

PURPOSE:

To provide Council with information on an application to amend Zoning Bylaw No. 1160, 2013 (the “**Zoning Bylaw**”) to allow a combined residential/commercial use on the ground floor of a proposed mixed use building located at 1672 Cedar Road, PID 006-167-926, Lot D, Plan VIP4011, District 09 (**Figure 1**).



Figure 1 - Subject Lot

BACKGROUND:

On July 11th, 2017 Council approved a development permit (DP) and development variance permit (DVP) for 1672 Cedar Road (The “**Subject Property**”) for a Mixed-use building consisting of 9

Multiple Family Residential (MFR) Units and 640sf of ground floor commercial space. The applicant, after completing the full design and engineering for the building, determined that the building size needed to be scaled down to make the project viable. On June 26th, 2018, the applicant requested to amend the July 11th DP to reduce the residential component from 9 suites to 8 suites and increase the commercial component by 130sf. This DP amendment was granted. The applicant has now requested that the zoning bylaw be amended to allow what is currently a ground floor commercial only unit to be a “Work/Live” or a combined commercial/residential unit (Figure 2).

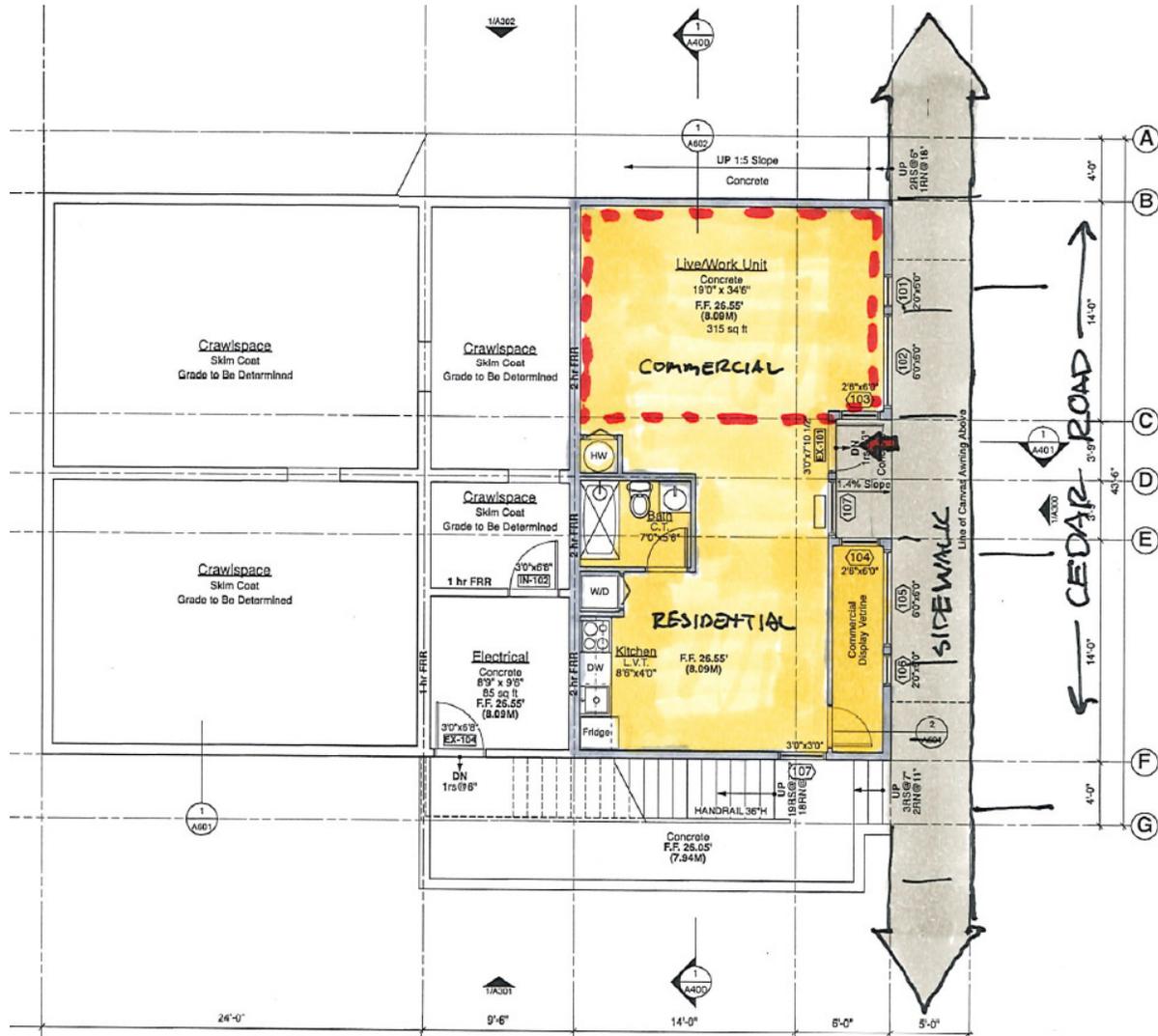


FIGURE 2 – UNIT PLAN

DISCUSSION:

The subject property is located in the CS-1 Zone – Village Square Commercial. This area is intended to be Ucluelet’s core or intensive commercial area. For this type of commercial area, it is important that there is a continuity of commercial uses to keep the street active and vibrant. Gaps in a streetscape such as an empty lot, a boarded-up shop, a parking lot, or a non-conforming residential dwelling can work against the success of the area as a commercial destination. It is also important that the village core increase in residential density. An increase in density can add residential

housing options, encourage the walkability or foot traffic within the community, and add to activeness and vitality of the village core. To encourage both the commercial continuity and the residential density, the zoning bylaw allows a mixed use that requires the ground floor to be commercial (maintaining the commercial continuity) while allowing residential uses on second storey and above (allowing for an increased density). The following is the zoning definition for “Mixed Commercial/Residential”:

“Mixed Commercial/Residential” means the use of a building containing a combination of:

(a) commercial uses that are otherwise permitted within the Zone on any storey, including commercial tourist accommodation uses not on the first storey, and

(b) residential uses located exclusively at the second storey or higher, unless otherwise specified in a particular Zone;

The applicant has requested to amend the zoning bylaw to allow for a mixed residential commercial unit on the ground floor. This mixed use within a unit is allowed in other communities, usually know as a “Live /Work” use. For example, Tofino has a recent development called “The Gateway” which is the traditional Live/Work concept:



Figure 3 – The Gateway

The “Live/Work” use in this instance has been a good addition to Tofino’s land use fabric. The building is setback from the street with strong landscaping and it is located in an area that is a transition from service commercial to Tofino’s more intense commercial area. The proposed Cedar Road location is a different setting, the building is located solidly in the village core and the unit has a zero setback from the street. If the area was completely built out in a commercial context a reduction in commercial intensity that a live/work unit represents would not be desirable. But that is not the case; the area is just starting to transition from a traditional residential context. Staff do

not consider a proliferation of a ground floor mixed uses as positive, but a single instance of a mixed-use unit could be a step in the right direction. Staff consider the best approach for the zoning amendment would be to spot zone the property with a text amendment similar to what already occurs within the CS-1 zone. The following is the proposed amendment with the changes shown in green and red:

*“CS-1.1.3 On the following properties, residential use is also permitted on the first storey **of existing buildings** provided the **existing building or part thereof** also contains commercial use(s) otherwise permitted in this Zone in accordance with the condition so noted below:*

(1) PID 007-073-267 Lot 9, District Lot 282, Clayoquot District, Plan 1686 [286 Main Street], the exclusively commercial use on the majority of that first storey and fully occupying the front of the building.

(2) PID 005-117-861 Lot 13, District Lot 282, Clayoquot District, Plan 11055 [1766 Cypress Road], the exclusively commercial use measuring an area not less than 9.7 m² (11 ' x 9.5') at the front of the building.

(3) PID 006-167-918 Lot C, Plan VIP4011 Clayoquot District [1656 Cedar Road], the exclusively commercial use measuring an area not less than 28m² (15 ' x 20') at the front of the building.

ZONING:

The proposed building size and configuration did not change therefore setbacks, height and density requirements will not be affected. The parking requirement for the unit will also stay the same with two parking spaces required for the commercial only unit compared to one parking space for the 28m² of commercial area and one parking space for the residential unit.

TIME REQUIREMENTS – STAFF & ELECTED OFFICIALS:

Should the application proceed, staff time will be required to prepare and process this Zoning Bylaw Amendment including giving notice of a Public Hearing.

FINANCIAL IMPACTS:

There may be a modest drop in taxation for the unit as a result of the reduction of commercial space. Exactly how the BC assessment authority would approach the proposed mixed unit is not clear.

POLICY OR LEGISLATIVE IMPACT:

The Official Community Plan (OCP) contemplates mixed uses and the proposed zoning change is considered consistent with the OCP.

SUMMARY:

The proposed zoning amendment represents a reduction to the intensity of the commercial activity along the frontage of the subject property but considering that area is in transition, the proposed mixed-use unit could represent a good first step in the area's revitalization.

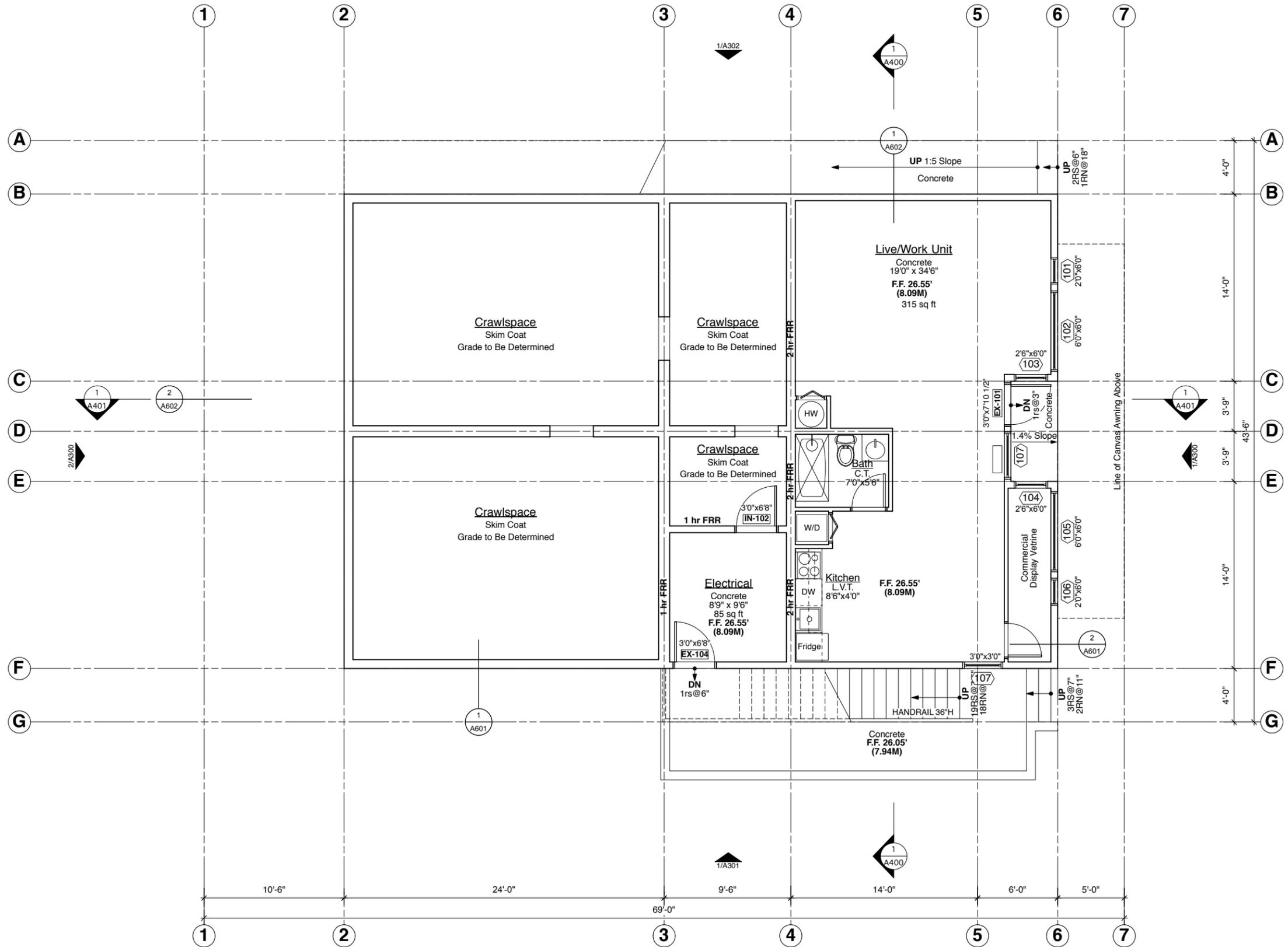
OPTIONS REVIEW:

1. THAT District of Ucluelet Zoning Bylaw Amendment Bylaw No. 1239, 2018 be given first and second reading and advanced to a public hearing. **(Recommended)**
2. THAT Council defer the current request to seek further information from the applicant; or,
3. THAT Council determine that Bylaw No.1239 should not proceed further.

Respectfully submitted: John Towgood, Planner 1
Bruce Greig, Manager of Planning
Mark Boysen, Chief Administrative Officer

NO.	REVISION	DATE
1	Client Review	31/05/2018
2	Client Review	18/07/2018
3	Consultant Review	20/08/2018
4	Re-Zoning	26/09/2018
5	Consultant Co-ordination	27/09/2018

NOTE:
 This set of drawings and the design as shown remain the property of Helliwell + Smith Blue Sky Architecture Inc. Contractor and all sub-trades shall verify all dimensions on site. Do not scale these drawings. Report any discrepancies to Helliwell + Smith Blue Sky Architecture Inc.
 Contractor shall be responsible for all conditions on the job and shall notify this office of any variations of the conditions immediately. All work completed on site to conform to the British Columbia Building Code 2012.



PROJECT
THE WAVE
 1672 Cedar Road
 Ucluelet, BC

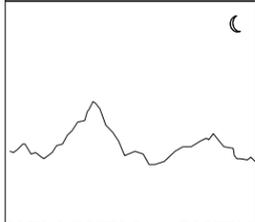
SHEET TITLE
Street Level Floor Plan

DRAWN BY
 SG/KS/JR

SCALE
 1/4" = 1'-0"
 (scales on 22"x34")

FIRST ISSUED

CHECKED BY
 KS/BH



**HELLIWELL + SMITH
 BLUE SKY
 ARCHITECTURE
 INC.**

4090 BAYRIDGE AVE.
 WEST VANCOUVER
 BRITISH COLUMBIA
 CANADA, V7V 3K1

PHONE (604) 921-8646
 FAX (604) 921-0755

SHEET NO.
A201

DISTRICT OF UCLUELET**Zoning Bylaw Amendment Bylaw No. 1239, 2018 (1672 Cedar Road)**

A bylaw to amend the District of Ucluelet Zoning Bylaw No. 1160, 2013.

WHEREAS the District of Ucluelet Council by Bylaw No. 1160 adopted the Zoning Bylaw and now deems it appropriate to amend the Zoning Bylaw;

NOW THEREFORE the Council of the District of Ucluelet, in open meeting assembled, enacts as follows:

1. That Section CS-1.1.3 of Zoning Bylaw 1160, 2013 (the "Zoning Bylaw") be amended by deleting and replacing this text such that this section reads as follows:

"CS-1.1.3 On the following properties, residential use is also permitted on the first storey provided the building or part thereof also contains commercial use(s) otherwise permitted in this Zone in accordance with the condition so noted below:

(1) PID 007-073-267 Lot 9, District Lot 282, Clayoquot District, Plan 1686 [286 Main Street], the exclusively commercial use on the majority of that first storey and fully occupying the front of the building.

(2) PID 005-117-861 Lot 13, District Lot 282, Clayoquot District, Plan 11055 [1766 Cypress Road], the exclusively commercial use measuring an area not less than 9.7 m² (11 ' x 9.5') at the front of the building.

(3) PID 006-167-926 Lot D, District Lot 282, Clayoquot District Plan VIP4011 [1672 Cedar Road], the exclusively commercial use measuring an area not less than 28m² (15 ' x 20') on the first storey at the front of the building.

2. This bylaw may be cited for all purposes as the "District of Ucluelet Zoning Bylaw Amendment Bylaw No. 1239, 2018.

READ A FIRST TIME this day of , 2018.

READ A SECOND TIME this day of , 2018.

PUBLIC HEARING held this day of , 2018.

READ A THIRD TIME this day of , 2018.

ADOPTED this day of , 2018.

CERTIFIED A TRUE AND CORRECT COPY of “District of Ucluelet Zoning Bylaw Amendment Bylaw No. 1239, 2018.”

Mayco Noël
Mayor

Mark Boysen
Corporate Officer

THE CORPORATE SEAL of the
District of Ucluelet was hereto
affixed in the presence of:

Mark Boysen
Corporate Officer