



## **DISTRICT OF HUDSON'S HOPE**

### **AGENDA**

Council Chambers

Monday December 11, 2017 at 6:00 PM

- 1. Call to Order:**
- 2. Delegations:**
  - D1 North Peace Regional Airport Society
- 3. Notice of New Business:**
  - Mayor's List
  - Councillors Additions
  - CAO's Additions
- 4. Adoption of Agenda by Consensus:**
- 5. Declaration of Conflict of Interest:**
- 6. Adoption of Minutes:**
  - M1 November 27<sup>th</sup>, 2017 Regular Council Meeting Page 1
- 7. Business Arising From the Minutes:**
- 8. Staff Reports:**
  - SR1 CAO Action and Other Updates Page 7
  - SR2 Urban System Report Page 10
- 9. Committee Meeting Reports:**
- 10. Bylaws:**
  - B1 Garbage Bylaw Amendment No. 892, 2017 Page 14
  - B2 Amended Fees and Charges Bylaw No. 893, 2017 Page 20
- 11. Correspondence**
  - C1 Letter to Muscular Dystrophy Canada Page 24
  - C2 NCLGA Northern Mayors and Chairs Roundtable Page 25

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| C3  | UBCM-Gas Tax Agreement Community Works Fund Payment | Page 28 |
| C4  | Thank you from Hudson's Hope Historical Society     | Page 29 |
| C5  | Peace River Regional District-Regional Initiatives  | Page 31 |
| C6  | District of Sicamous request                        | Page 32 |
| C7  | The Royal Canadian Legion                           | Page 37 |
| C8  | UBCM submission on Cannabis Legalization            | Page 39 |
| C9  | Canada Energy Partners Disposal Well                | Page 40 |
| C10 | UNBC Cumulative Impacts Research Consortium         | Page 54 |
| C11 | Support request from Double "H" Saddle Club         | Page 55 |

**12. Reports by Mayor & Council on Meetings and Liaison Responsibilities**

**13. Old Business:**

|     |                   |         |
|-----|-------------------|---------|
| OB1 | NCLGA Resolutions | Page 56 |
|-----|-------------------|---------|

**14. New Business:**

**15. Public Inquiries:**

**16. Adjournment:**



**REGULAR COUNCIL MEETING**  
**November 27, 2017**  
**6:00 P.M.**  
**MUNICIPAL HALL COUNCIL CHAMBERS**

Present: **Council:** Mayor Gwen Johansson  
Councillor Dave Heiberg  
Councillor Caroline Beam  
Councillor Kelly Miller  
Councillor Travous Quibell  
Youth Councillor Jade Rowe

**Absent:** Councillor Heather Middleton

**Staff:** CAO, Tom Matus  
Director Of Protective Services, Robert Norton  
Bylaw Enforcement/Safety Officer Wallace Roach  
Corporate Officer, Tammy McKeown  
Office Assistant, Lorraine Roach

**Other:**

1. **CALL TO ORDER:**  
The meeting called to order at 6:00 p.m. with Mayor Gwen Johansson presiding.

2. **DELEGATIONS:**

3. **NOTICE OF NEW BUSINESS:**

**Mayors Additions:** Mayor's report  
**Councillors Additions:**  
**Staff Additions:**

4. **ADOPTION OF AGENDA AS AMENDED BY CONSENSUS**

5. **DECLARATION OF CONFLICT OF INTEREST:**

6. **ADOPTION OF MINUTES:**

M1 **November 6<sup>th</sup>, 2017 Committee of the Whole**  
Correction: Date of meeting should read November 6, 2017.  
M2 **November 6<sup>th</sup>, 2017 Special Council Meeting**  
Correction: Date of meeting should read November 6, 2017.  
M3 **October 23<sup>rd</sup>, 2017 Regular Council Meeting**  
Correction to CR5: It has been suggested that the planned facility have an all-year farmer's market

0550-01

**RESOLUTION NO.220/17**  
**M/S Councillors Heiberg/Miller**

That

*"The minutes of the November 6<sup>th</sup>, 2017 Committee of the Whole, the November 6<sup>th</sup>, 2017 Special Council Meeting and the November 14<sup>th</sup>, 2017 Regular Council Meeting be adopted as amended."*

**CARRIED**

7. **BUSINESS ARISING OUT OF THE MINUTES:**

- |     |  |                |
|-----|--|----------------|
| BA1 | <p>SR9 November 14<sup>th</sup> Regular Council Meeting- <b>Solar Array: Pool/Museum</b></p> <ul style="list-style-type: none"> <li>• Staff has notified the museum staff of Council's decision to install the solar array on the museum building.</li> <li>• Councillor Miller has met with the museum society and discussed the delay of installation until spring of 2018.</li> </ul> | <b>0970-01</b> |
| BA2 | <p>CR1 November 6<sup>th</sup> Special Committee Meeting- <b>Meeting with Ministry of Transportation</b></p> <ul style="list-style-type: none"> <li>• Safety Officer directed to follow-up with the Ministry regarding recommendations.</li> <li>• Director of Protective Service has been in contact with Mr. Kelly regarding the entrance to the transfer station.</li> </ul>          | <b>0400-20</b> |
| BA3 | <p>BA2 November 14<sup>th</sup> Regular Council Meeting- <b>Grant Writer</b></p> <ul style="list-style-type: none"> <li>• Regional District is waiting on input from municipalities in regard to sharing a grant writer.</li> <li>• District of Hudson's Hope has not received any response in regard to grant application.</li> </ul>   | <b>1855-01</b> |
| BA4 | <p>D1 November 6<sup>th</sup> Committee of the Whole Meeting- <b>Volunteers: William Lindsay.</b></p> <ul style="list-style-type: none"> <li>• Discussion in regard to youth volunteers attending Lions Club meeting.</li> </ul>   | <b>0230-01</b> |
| BA5 | <p>CM1 November 14<sup>th</sup> Regular Council Meeting- <b>North Peace Regional Airport Society Meeting.</b></p> <ul style="list-style-type: none"> <li>• Staff directed to extend invitation to Chair of Society to attend District of Hudson's Hope Council meeting as a delegate.</li> </ul>   | <b>8400-01</b> |

8. **STAFF REPORTS:**

- |     |  |   |
|-----|--|---|
| SR1 | <p><b>CAO Report- Action and other Updates</b></p> <ul style="list-style-type: none"> <li>• <b>Atkinson Subdivision</b> <ul style="list-style-type: none"> <li>○ Appraisal costs may not need to be shared between District and BC Hydro as there may be a surplus available in the budget. Costs could be paid out of the escrow account.</li> <li>○ Atkinson street lights- Staff directed to find out if cost of connection is part of amount covered by BC Hydro.</li> </ul> </li> <li>• <b>Staff Tentative Travel</b> <ul style="list-style-type: none"> <li>○ Is there coverage in place for CAO planned periods of leave?</li> <li>○ Major projects should all be completed so there should be no issues with CAO being away for tentative sessions.</li> </ul> </li> <li>• <b>Wastewater Facility Upgrade</b> <ul style="list-style-type: none"> <li>○ Upgrades should be completed prior to December 25.</li> </ul> </li> </ul> | <p><b>0110-01</b></p> <p><b>3320-01</b></p> <p><b>2810-01</b></p> <p><b>0720-20</b></p> |
|-----|--|---|

- Project is on budget
  - This was an in-camera item and should not have been included in this report.
  
- SR2     **Campground Year-End Report**

  - Diarize to bring back to budget strategic planning meeting
  - Council would like acknowledgment of a good job to be passed onto Becky Mercereau.

**6130-20**
  
- SR3     **Valve Replacement Project Update**

  - Diarize to bring back to budget strategic planning meeting
  - Move to In-Camera Agenda.

**5600-01**
  
- SR4     **Youth Councillor Policy**  
**RESOLUTION NO.221/17**  
**M/S Councillors Heiberg/Quibell**  
**That**  
*"Council approve the Youth Councillor Policy."*  
**CARRIED**

**0340-50**
  
- SR5     **Christmas Parade Prize**  
**RESOLUTION NO.222/17**  
**M/S Councillors Heiberg/Miller**  
**That**  
*"Council authorize a first place prize, for the District of Hudson's Hope Christmas parade, in the amount of a \$200 donation to a non-profit organization of the winner's choice."*  
**CARRIED**

**4710-01**
  
- 9.     **COMMITTEE MEETING REPORTS:**
  
- 10.    **BYLAWS:**
  
- B1     **Garbage Bylaw Amendment No. 892, 2017**  
Tabled until December 11, 2017 meeting due to lack of quorum for vote.

**3900-02**  
**5360-01**
  
- B2     **Amended Fees and Charges Bylaw No. 893, 2017**

  - Discussion in regard to ensuring water stands and metered premises are not included in the proposed changes.
  - Discussion in regard to whether or not to include a discount for early payment in the bylaw.
    - Argument for keeping a discount was made as it acts as an incentive for payment and also assists those with a lower income.
    - Council decided to remain with the 4% discount and have it written into the Bylaw.
    - Direction given to amend the proposed bylaw by including reference to the 4% discounts for both the water and the sewer fees.

**RESOLUTION NO.223/17**  
**M/S Councillors Quibell/Heiberg**  
**THAT:**

**3900-02**  
**1820-00**

*"Council approve First, Second and Third Readings of "Hudson's Hope Amended Fees and Charges Bylaw No. 893, 2017" as amended".*

- |      |   |                                  |
|------|---|----------------------------------|
| B1   | CAO revisited the discussion in regard to the declaration of Conflict of Interest made by Councillor Beam and Mayor Johansson. CAO stated that under s.96 of the "District of Hudson's Hope Council Procedure Bylaw No. 765, 2009", there is no conflict of interest. Council stated that they would prefer to act on the side of caution and treat the declarations as valid.                              | <b>3900-02</b>                   |
| <br> |   |                                  |
| 11.  | <b>CORRESPONDENCE:</b>  |                                  |
| C1   | <b>Royal Canadian Legion</b><br>FOR INFORMATION.  | <b>0320-00</b>                   |
| C2   | <b>2018 LGLA Leadership Forum</b><br>FOR INFORMATION.   | <b>0390-00</b>                   |
| C3   | <b>Letter from National Energy Board</b><br>FOR INFORMATION.  | <b>0400-20</b>                   |
| C4   | <b>Letter from University of Waterloo</b><br>Discussion in regard to the District of Hudson's Hope's Asset Management to date.<br>FOR INFORMATION.  | <b>1610-01</b>                   |
| C5   | <b>BC Rural Dividend Program</b> <ul style="list-style-type: none"> <li>• CAO was under the assumption that the District would not be applying on any grants that did not fund at 100% of project.</li> <li>• Possibly apply to provide additional funding towards the solar project or towards development of the light industrial park.</li> <li>• Review for allowable uses.</li> </ul> FOR INFORMATION. | <b>1855-03-20</b>                |
| C6   | <b>Peace Energy Co-operative- O&amp;M course and ribbon cutting event</b> <ul style="list-style-type: none"> <li>• Council in agreement with holding the ceremony in the spring.</li> <li>• Suggestion made in regard to holding the ceremony at the new District of Hudson's Hope Public Works Shop.</li> <li>• <a href="#">Staff directed to inform Don Pettit of decision.</a></li> </ul>                | <b>0970-01</b><br><b>0330-01</b> |
| <br> |   |                                  |
| 12.  | <b>REPORTS BY MAYOR &amp; COUNCIL ON MEETINGS AND LIAISON RESPONSIBILITIES</b>  |                                  |
| CR1  | <b>Museum Report- Councillor Miller</b> <ul style="list-style-type: none"> <li>• The Historical Society would like to thank everyone that supported their Museum Harvest Social and Fundraising Dinner.</li> <li>• To date, the Historical Society has raised \$7,500.</li> <li>• Council would like to thank the members of the Historical Society for all their time and effort.</li> </ul>               | <b>0230-20</b>                   |

**CR2 Mayor's Report to Council**

- Progress Oil and Gas has been in contact with the Mayor. **6660-20**  
They informed the Mayor that the partnership between Sasol Limited and Talisman in regard to the Montney shale gas play has now been cancelled. The partnership had owned a substantial piece of property, within the Hudson's Hope area, which they are planning to put on the market.
- Scott Fraser, Minister of Indigenous Relations and Reconciliation attended meeting with the Peace River Regional District. He was there to list to the concerns of the affected municipalities. Representatives from Hudson's Hope, Fort St. John, Taylor, Electoral Area B and Electoral Area C were in attendance. The discussion was in regard to the lands being affected by the different agreements coming into place. Mayor Johansson requested information pertaining to the Peace Boudreau boundaries. **0400-20**
- Site C- cabinet meeting to be held on November 30, 2017, there is no agenda in place, possibly discussing the potential impact on hydro rates. There will be one more meeting with Finance in regard to the financial implications of both options. Mayor Johansson has located a letter from prior discussions in relation to Site C which stated that there would be no changes made in regard to BC Hydro grants in lieu. **6660-20**

13. **OLD BUSINESS:**14. **NEW BUSINESS:**15. **PUBLIC INQUIRIES:**16. **ADJOURNMENT:**

6:49 motion to move into in-camera meeting.

**RESOLUTION NO.224/17**

**M/S Councillors Quibell/Miller**

**THAT:**

**"Council move into In-Camera meeting".**

Mayor Johansson declared the meeting adjourned at 7:40 pm

**DIARY*****Diarized******Conventions/Conferences/Holidays***

*Beryl Prairie Septic Field*

*07/25/16*

*Grant Writer Program Sponsorship-September*

*04/10/17*

*Water and Tax Rates comparison*

*06/26/17*

*NDIT Community Halls and Recreation Facilities Program-*

*-to be brought forward at Strategic Planning Meeting*

*08/14/17*

*Requests from Mr. Kelly-Entrance to dump, handrail*

*at Community Hall, Cemetery Plot Map*

*10/23/17*

*NCLGA resolutions for December meeting*

*10/23/17*

Certified Correct:

\_\_\_\_\_  
Chair/Mayor Gwen Johansson

\_\_\_\_\_  
Corporate Officer Tammy McKeown

**THE DISTRICT OF HUDSON'S HOPE**

**REPORT TO:** MAYOR JOHANSSON and COUNCIL

**SUBJECT:** ACTION and other UPDATES

**DATE:** December 11, 2017

**FROM:** Tom Matus, CAO

**Staff Travel:****Staff Tentative Travel:**

|   |  |
|---|--|
| Tom: MATI The Successful CAO: Local Gov't Advanced Management: Bowen Island         | Feb 15 <sup>th</sup> – 20 <sup>th</sup>    |
| MATI Advanced Communication Skills for Local Government Professionals: Bowen Island | April 22 <sup>nd</sup> - 27 <sup>th</sup>  |
| MATI Managing People in Local Government Organizations: Bowen Island                | May 27 <sup>th</sup> - Jun 1 <sup>st</sup> |
| MATI Leadership in Local Government Organizations: Bowen Island                     | June 17 <sup>th</sup> – 22 <sup>nd</sup>   |

**Wastewater Facility Upgrade**

Contract extension to January 31, 2018 due to weather and late deliveries of equipment. Additional reports in the agenda package.

**Atkinson Subdivision**

Project is completed, list of deficiencies was addressed by Omicron, LNB, L&M, and AQAT. LNB has agreed to come back in the Spring to address deficiencies.

We expect to do more landscaping next year as we expect some funds to be remaining in the budget due to a limited expense for utilities installations – came in much less than originally budgeted.

Final survey completed, deposited to LTSA on December 8<sup>th</sup>, to be paid through Escrow.

BCH is to put live power to the Atkinson subdivision on December 7<sup>th</sup>.

Appraisal of lots completed by Plant & Associates. Appraisal can be paid by Escrow as utilities installations came in much cheaper than expected.

In regard to the email presented at last meeting regarding street lighting which read:

*"There will be no more invoices from BC Hydro Distribution Design since this became an internally funded project and we refunded the original deposit. There may be streetlight connection fees through the Flat Rate Center once the request for connection is (or has been) made, although this is handled directly by the Flat Rate Center and is not related to the design project – 1-877-453-6575*

*The owners of individual lots will also still have to pay the standard connection charge once they begin to build houses and request connections.*

The following from Willy Lane of BCH confirms my explanation:

Q1: The "maybe" street lights connection fee: is this in relation to the streetlighting monthly bill we receive for all our street lights? I suspect this will be added on to that bill?

**Answer 1:** The street lights connection fee is in relation to the streetlighting monthly bill we receive for all our street lights. This will be added on to that bill, once the (we) request for connection has been

made, which I recommend we do once we know a resident will be residing in the subdivision. Apparently, it takes only 7 days for service to be connected once the call is received from us;

Q2: Individual lots: we are the owner of the lots – is this a charge that a subsequent owner will have to pay to BCH once they purchase the lot from us and request residential electrical service for their lot?

Answer 2: Individual lots: presently, we are the owner of the lots – this is a charge that a subsequent owner will have to pay to BCH once they purchase the lot from us and request residential electrical service for their home.

### **Solar Array**

Update on the project for your information, all complete on the Arena, Curling Rink, District Office, Visitor Centre, District Shop, Lagoons. Once we get BC Hydro's approval to go on line they will be turned on as soon as possible. Need labels installed and pictures of labels on equipment to be sent to BC Hydro of each site other than Visitor Centre which is already on line as it is not considered a complex net metering install. Lagoons will require power at the new Blower Building for commissioning. Beryl Prairie is close to being completed as all we are waiting for is the inverter which will be installed as soon as we get it and completed on the same day.

An extension has been granted for the Strategic Priority Fund grant deadline to August 31, 2018, though invoicing deadline is December 31, 2019.

PEC has been made aware of:

1. suggestion made in regard to including a monitoring program on the District website so that the public had ease of access: could this be done?; and
2. Will need to determine where information will be stored due to being a Cloud-based application. Regulations in place in regard to storing municipal information outside of Canada. Apparently, we, as a municipality, must ensure that our data is stored in Canada? Is this so? Seeing that SolarEdge is American.

We have confirmed that the Cloud based application is indeed outside of Canada as per Greg Dueck's email:

*"Good morning Tom, we are finalizing our plans for the communications and kiosk display.*

*From our discussion with SolarEdge we can confirm that the SolarEdge servers are outside of Canada. They have supplied us with information about how to host the data on a Canadian server and we are using that information to come up with a plan which we will present to you for review and approval before moving forward. We will contact the District IT company if needed for further information or assistance.*

*We are reviewing the option to have the monitoring link on your website however that may be tied to how the server is set up and will become clearer as we finalize those plans."*

I will keep in touch and convey any new info, as received, to Council.

### **Dudley Drive Asphaltting**

DGS Astro completed Dudley Drive, only. Shop and intersections will be deferred to summer of 2018. Awaiting budget figures from DGS Astro for proposed work next year: Lynx Creek, Paquette Ave, valve replacements.

### **Director of Public Works Position**

Second prospective candidate withdrew his application citing salary. Layton has also withdrawn his candidacy due to health issues. Considering devising a mentoring plan for one of the DPW Staff if they are interested. Union is on board. Further details at in-camera meeting.

### **Special Events Candidate**

Held interview with Wallace, Tammy and myself. Have successfully negotiated the contract with candidate, completed reference checks, I have signed and returned the two-year contract, Kaitlyn Atkinson will begin January 2<sup>nd</sup>, pending secured living quarters.

### **BizzyBody**

Lorraine and I met with Jocelyn Eisert and Connie Morris of Bizzybody. I plan to introduce them to Council before the Winter Carnival. Other team members are Corinne Stephens, Mark Bodnar, Lisa Knickerbocker and Ryan Hoitt. We plan on holding the event from January 27<sup>th</sup> to February 4<sup>th</sup>. They will draft the event schedule and provide the budget by end of next week. We plan to post the events early so as to allow for community feedback as there will be some new events?

### **Infrastructure Planning Grants**

"The Infrastructure Planning Grant Program (the Program) offers grants up to \$10,000, and offers grants of 50% for the next \$10,000 to help local governments plan, design and manage infrastructure. The Program can assist in the development of long-term comprehensive plans and feasibility studies that will improve public health and safety, enhance environmental protection and increase infrastructure sustainability. Funding is available for projects that support improved water, sewer, drainage and other environmental infrastructure."

I would like to apply to this grant for "design work" to upgrade the Beattie Lift Station, this could develop a preliminary design for inclusion in further infrastructure grants. Deadline January 17<sup>th</sup>, 2018.

### **Rural Dividend Fund**

Will try to submit an application to "develop a strategy to sell the Atkinson lots and the light industrial lots".

### **BC Hydro Preliminary and Conceptual Design Submissions**

In regard to the following:

1. Water Intake and Pumphouse Conceptual Design Memo
2. Drawings for the Preliminary Design of the Shoreline Protection Works

Councillors Miller and Heiberg with the following Staff: Tom Matus, CAO; DPW Staff: Ed Reschke, Darren Anderson, Keith Reschke and John Vandenberg; and Darryl Brizan of L&M will meet to discuss the drawings week of December 11<sup>th</sup> – Confidentiality Agreements have been signed. Will then meet with Council, and then met with BCH. Meeting with BCH is tentatively scheduled for January 10<sup>th</sup>.

### **2018 Budget**

I am presently compiling figures from/with Staff.



Tom Matus, CAO

# MEMORANDUM

Date: December 5, 2017  
 To: Tom Matus, CAO  
 cc: Doug Keith, Bear Mountain Construction  
 From: Kimberly Zackodnik, Eric Sears  
 File: 0664.0039.03  
 Subject: Wastewater Treatment Plant - Commissioning

The Wastewater Treatment Plant upgrades project commenced in summer 2017, and is currently nearing completion. Several of the components of the facility will need to be commissioned to allow proper operation by the District through the winter, as well as long-term operation of the facility. In order to ensure successful commissioning activities, as well as to protect the new infrastructure, the following outlines considerations and proposed plan for completing the remainder of the works.

## 1. Considerations for commissioning

### 1.1 Construction timeline

- As of November 28<sup>th</sup>, the liners have been installed in both Cell #1 and Cell #4.
- The aeration equipment has not been installed in either cell as we are awaiting the cells to be filled with liquid, however the liner pipe penetrations have been installed.
- The remainder of the stainless steel aeration piping is expected by December 8<sup>th</sup>.
- The slide gates are expected to be installed by December 8<sup>th</sup>.
- BC hydro has indicated they will be onsite the week of December 4<sup>th</sup> to complete the power connection for the site.

### 1.2 Aeration Equipment

- The new EDI diffusers (aeration equipment) that are to be installed in Cell 1 and 4 have a membrane on them made of EPDM. These membranes shouldn't have water freeze around them, or be left for prolonged periods exposed to sunlight. Either of these activities could degrade the membrane, creating holes or maintenance issues.

### 1.3 Freezing

- To prevent issues with freezing within pipes around the facility, consideration should be given to prevent slow layers of ice forming within the cells.

### 1.4 Grant Funding Deadline

- This project is funded under the Build Canada – Small Communities Fund, and the funds are set to expire March 31, 2018.

## 2. Proposed Next Steps

### 2.1 Fill Cell #4 with liquid from Cell #2 and Cell #3; redirect flow to Cell #4. In order to have the Aeration equipment running there needs to be certain level of liquid in Cell #4. This step will transfer all the liquids from the existing cells to Cell #4.

- Currently all flow from the lift station is being directed into Cell #3, flowing to Cell #2, and then being discharged in the RI basins.

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- A portion of the water volume in Cell #2 has been transferred to Cell #4. When the control structures are finished (final slide gate valves expected by December 8<sup>th</sup>), the remainder of the volume will be transferred to Cell #4. The intent of Cell #2 is to remain empty and be used for sludge storage, therefore this will assist in emptying this cell. The liquid from Cell #3 will also be transferred to Cell #4.
- To transfer the liquids, pumps will be required. The pump intakes will be placed above the bottom of the cells, and the decant from these cells will be pumped. The Contractor has been advised to minimize the quantity of solids being transferred into the new cell.
- The exact volumes in Cell 2 and 3 are unknown. Based on record information, and lagoon sizes, the full volume of Cell #2 is 13,660 m<sup>3</sup> and Cell #3 is 4,400 m<sup>3</sup>. It is unlikely that this entire volume can be transferred as a result of solids and sludge build up. 17,000 m<sup>3</sup> is required to fill Cell #4 full. If 50% of Cell #1 and 80% of Cell #2 is available for transfer, it would fill Cell #4 approximately 60% full with regards to volume, and would result in an approximate depth of 3.8 m. This depth is sufficient to reduce the likelihood of freezing of the pond or aerators.
- During this time flows from the lift station will also be transferred to Cell 4 however these flows are not expected to result in a large volume increase in the cell during this time.

## 2.2 *Install aeration equipment in Cell #4*

- Once Cell 4 has adequate liquids in it, the aeration equipment can be installed.
- The Contractor will install aeration equipment in this cell as per the design. This work will not likely occur until January as a result of the holiday period. Depending on the level of the water in the pond, the aerators may have to be tied up to prevent damage from the diffuser weights to the liner. The Contractor will need to coordinate this with the manufacturer.

## 2.3 *Operate Cell #4 until it fills.*

- Based on average day flows from the lift station (125 m<sup>3</sup>/d) it will take approximately 53 days to fill the remainder of this pond (not considering snowfall/melt). During this fill time, the lagoon cell will not discharge to the rapid infiltration basins.
- 
- Once Cell #4 is full and discharging to the infiltration basins the system is now “online” and will be running as intended.

## 2.4 *Fill Cell #1*

- The emphasis has been put on filling Cell #4 and running the plant from that cell.
- Once warmer temperatures are expected, and the risk of freezing declines, flow can be rerouted to Cell #1 to begin filling this cell.
- Based on average daily flows, it would be expected to take over 150 days to fill this flow, excluding snow melt or rainfall.

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### 2.5 *Postpone Cell #1 Aeration equipment install*

- After the risk of freezing is over, and there is sufficient volume of water in Cell #1 to protect the diffusers from the sunlight, the aerators can be installed.
- It is proposed the Contractor complete the fusing of aeration pipes and all other works associated with the aeration equipment installation, without installing the laterals. A credit could be offered to the District for the install of this equipment, and either Bear Mountain or the District could install the equipment at this later date, most likely in the Fall of 2018.

## 3. **Commissioning and Training**

Based on the above there will be a couple of different commissioning exercises between now and the completion date. Commissioning will include start-up of the blowers, electrical programming of the PLC/MCC, aeration equipment start-up and training for the operators. Training will be provided by ICI for the electrical components (HMI/PLC), Aerzen for the blowers, and EDI for the aerators. Commissioning is proposed in a couple of stages. Finalized timing for these activities will be solidified as soon as possible in order to ensure sufficient notice to all parties.

### 3.1 *Phase One – Blower Commissioning*

The blower commissioning will be led by Aerzen and is proposed for the week of December 18<sup>th</sup>. During this time, ICI will also be on-site to complete programming. The compressed air will be expelled through the aeration laterals, but not through the diffusers as they will not have been installed at this time.

Training for operators will occur during this week by Aerzen and ICI on the blowers and PLC/HMI. We will confirm a time for this to take place once we know their schedule.

### 3.2 *Phase Two – Aeration Commissioning*

The aeration equipment is proposed to be installed in early January, after Cell #4 has been allowed to fill. After the equipment has been installed, it will be connected to the aeration header and commissioned by Nexom. Any additional training by Nexom will occur at this time.

## 4. **Contract Extension**

To achieve the above noted timelines, the Contractor has requested an extension to January 15, 2018. The Contractor's request and proposed schedule is attached. Based on our experience with scheduling suppliers, and completing deficiencies identified during commissioning, we recommend a contract extension to January 31, 2018.

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The above outlines the proposed next steps for this project. If there are any questions or concerns, please do not hesitate to contact the undersigned.

**Urban Systems Ltd.**

A handwritten signature in black ink that reads "K Zackodnik".

Kimberly Zackodnik, EIT  
Consultant

A handwritten signature in blue ink that appears to be "E. S.".

Eric Sears, P.Eng  
Project Engineer

/knz

U:\Projects\_FSJ\0664\0039\03\C-Correspondence\01-Client\2017-11-01 Commissioning Plan.docx

## REQUEST FOR DECISION

|   |                                  |
|---|----------------------------------|
| <b>RFD#:</b>                              | <b>Date: November 16, 2017</b>   |
| <b>Meeting#:</b>                          | <b>Originator: Tammy McKeown</b> |
| <b>RFD TITLE: Garbage Bylaw Amendment</b> |                                  |

### BACKGROUND:

Derek Beam contacted the office requesting an amendment to the District of Hudson's Hope's Garbage Bylaw in order to extend the service boundary. The District has received a letter of application signed by the residents who would be affected by the new garbage service boundary (see attached).

### DISCUSSION:

The amendments to the bylaw would include the creation of an additional service area as shown in Schedule A-6.

Section 4.3 of the Garbage Bylaw is amended to refer to the new Schedule A-6 and reads as follows:

*Every occupier of premises within any of the collection areas shown on Schedules A, A-1, A-2, A-3, A-4, A-5 or A-6 to this bylaw must make use of the collection service established by this bylaw and pay the applicable fees imposed under Schedule B to this bylaw.*

Section 4.4 of the Garbage Bylaw is amended to refer to the new Schedule A-6 and reads as follows:

*Every occupier of premises outside of the collection areas shown on Schedules A, A-1, A-2, A-3, A-4, A-5 or A-6 to this bylaw must make use of the collection service established by this bylaw and pay the applicable fees imposed under Schedule B to this bylaw.*

The Garbage Bylaw will be amended by replacing Schedule B with a revised version that refers to Schedule A-6 for Fees for Premises within and outside Collection areas and refers to Schedule A-6 for Fees for access to and use of the transfer station.

**BUDGET:**

We will incur an increase to revenues from garbage fees in the amount of \$88.00 per household. This will amount to a total increase in revenues of \$352.00 per year.

**RECOMMENDATION/ RESOLUTION:**


*That:*

*Council approve First, Second and Third Readings of "Hudson's Hope Amending Garbage Collection Bylaw No. 892, 2017".*

**ADMINISTRATOR COMMENTS:**

This RFD is approved as written.

**Report Approved by:**



**Tom Matus, CAO**

Tammy McKeown, Corporate Officer

September 27<sup>th</sup>, 2017

RE: Bylaw Amendment to Extend service Boundary

Greetings;

We, the undersigned are applying for an amendment to the existing bylaw providing service for garbage pickup. We would like the service boundary extended to include service to the following residences:

Derrek & Caroline Beam  
19133, Highway 29 N  
250-783-3044  
250-783-0886

Signatures:

Handwritten signatures of Derrek and Caroline Beam in black ink, written over a horizontal line.

Amy & Steve Perry  
19299 Highway 29 N  
778-899-4123  
250-609-6066

Signatures:

Handwritten signatures of Amy and Steve Perry in black ink, written over a horizontal line.

Shellie & Kevin Howard  
19337 Highway 29 N  
250-783-3089

Signatures:

Handwritten signatures of Shellie and Kevin Howard in blue ink, written over a horizontal line.

Gwen Johansson  
19361 Highway 29 N  
250-783-5314  
250-783-0820

Signature:

Handwritten signature of Gwen Johansson in blue ink, written over a horizontal line.



## BYLAW NO. 892, 2017

---

A bylaw to establish and provide for the operation of a service comprising the collection, removal storage and disposal of waste material, and to regulate, prohibit and impose requirements in relation to the service.

---

### 1. Title

This Bylaw shall be cited as the "Hudson's Hope Amending Garbage Collection Bylaw No. 892, 2017".

2. "Hudson's Hope Garbage Collection Bylaw No. 838, 2014" is hereby amended by adding a Schedule A-6 which is attached to and forms part of this Bylaw.
3. Section 4.3 of "Hudson's Hope Garbage Collection Bylaw No. 838, 2014" is hereby amended to insert reference to Schedule A-6.
4. Section 4.4 of "Hudson's Hope Garbage Collection Bylaw No. 838, 2014" is hereby amended to insert reference to Schedule A-6.
5. "Hudson's Hope Garbage Collection Bylaw No. 838, 2014" is hereby amended by deleting Schedule "B" and replacing with Schedule "B" attached to this bylaw.

Read a First Time this    day of    , 2017.

Read a Second Time this    day of    , 2017.

Read a Third Time this    day of    , 2017.

Adopted this    day of    , 2017.

---

MAYOR GWEN JOHANSSON

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CORPORATE OFFICER, TAMMY MCKEOWN

Certified a true copy of Bylaw No. 892, 2017

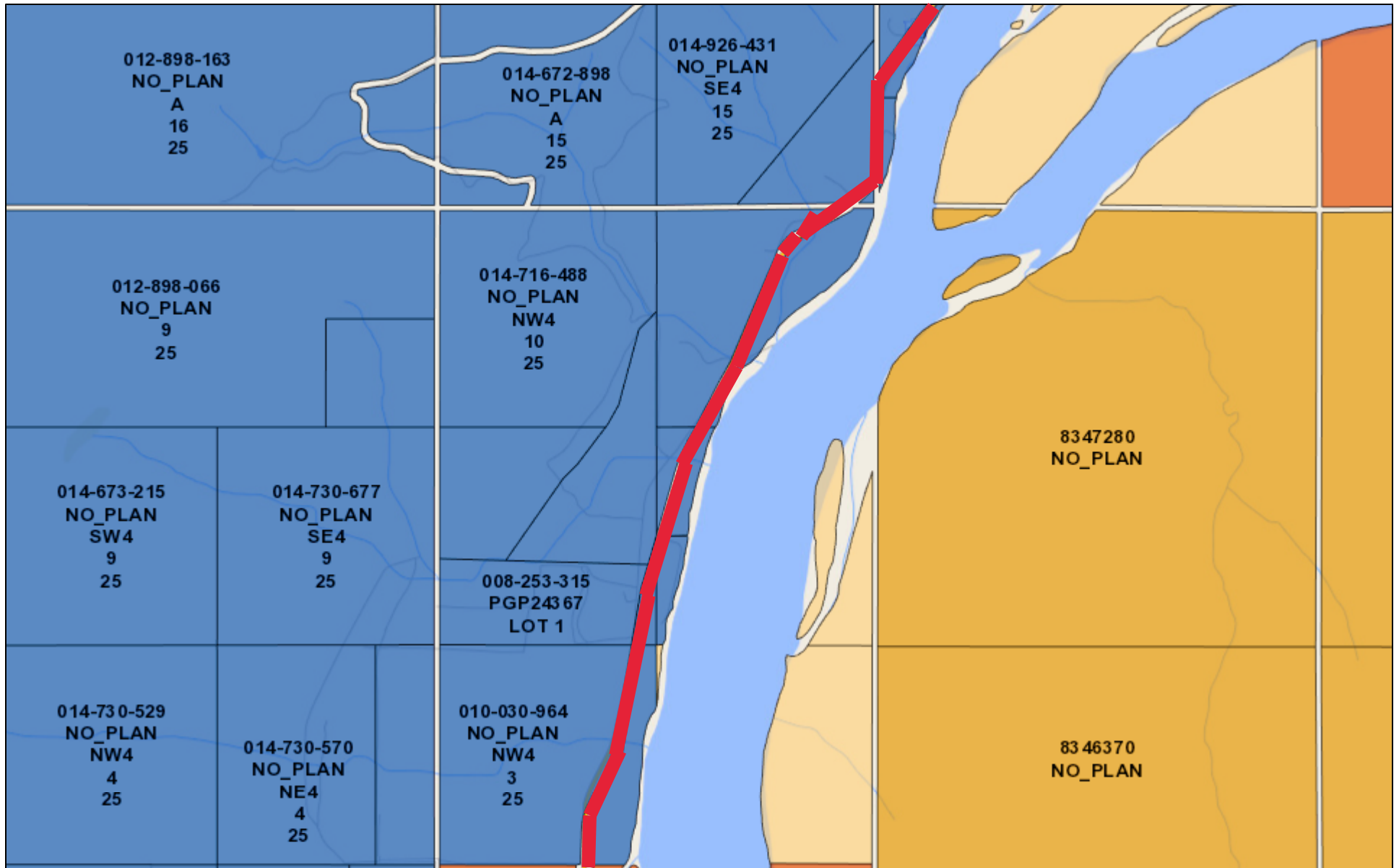
this \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

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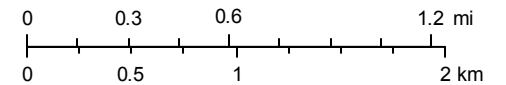
Clerk

# Highway 29 N- Garbage Route Map (Schedule A 6)

December 14, 2017 Regular Council Meeting Agenda Package



1:36,12



Government of British Columbia, DataBC, GeoBC



**Schedule B**  
**Fees for Garbage Collection and**  
**Use of Transfer Station**

| <b>Description</b>   | <b>Annual Fee<br/>(except where stated)</b> |
|--|---|
| <b>Fees for Premises within Collection Areas Shown on Schedules A-1, A-2, A-3, A-4, A-5 or A-6</b>   |   |
| Residential Dwellings - once weekly collection   |   |
| (a) For each single family residence (each manufactured home in a manufactured home park is considered as a single family residence and the owner/operator is charged (pro rata) on the basis of occupied units each month.                | \$118.00                                    |
| (b) For each dwelling unit in a two-family residence or multi-family residence   | \$118.00                                    |
| (c) For each bed and breakfast unit in a residence   | \$118.00 plus<br>\$9.00/unit                |
| Commercial and Other   |   |
| (a) For premises that receive daily collection (excepting Saturdays and Sundays)   | \$716.00                                    |
| (b) For premises that receive twice weekly collection  | \$243.00                                    |
| (c) For premises that receive once weekly collection   | \$148.00                                    |
| BC Hydro and Power Authority   |   |
| (a) W.A.C Bennett Dam- twice weekly collection:<br>All household garbage removal sites.  | \$15,600.00                                 |
| (b) W.A.C Bennett Dam- once weekly:<br>Cardboard removal.  | \$6,500.00                                  |
| (c) Peace Canyon Generating Station:<br>Control Building garbage site<br>General Trades Shop site  | \$2214.00<br>\$2214.00                      |
| <b>Fees for Premises outside of Collection Areas Shown on Schedules A-1, A-2, A-3, A-4, A-5 or A-6</b>   |   |
| For access to and use of the transfer station by owners and occupiers of premises outside of collection areas shown on Schedules A-1, A-2, A-3, A-4, A-5 and A-6   | \$30.00                                     |
| The District of Hudson's Hope will provide one "Garbage Container" free of charge to every premise which pays for "Collection Services". The loss, replacement or an additional Garbage Container will be charged at the cost for each of: | \$65.00                                     |

## REQUEST FOR DECISION

|  |                                  |
|--|----------------------------------|
| <b>RFD#:</b>                                       | <b>Date: December 5, 2017</b>    |
| <b>Meeting#:</b>                                   | <b>Originator: Tammy McKeown</b> |
| <b>RFD TITLE: Fees and Charges Bylaw Amendment</b> |                                  |

### BACKGROUND:

At the November 27<sup>th</sup>, 2017 Regular Council Meeting, Council requested the proposed '*Hudson's Hope Amended Fees and Charges Bylaw No. 893, 2017*' to be amended to include the 4% discount for early payment of water and sewer fees. Council approved First, Second and Third Readings of '*Hudson's Hope Amended Fees and Charges Bylaw No. 893, 2017*' as amended.

### DISCUSSION:

Schedule "B", Section 5.0 of the District of Hudson's Hope Fees and Charges Bylaw No. 843 will be amended to incorporate the new rates for residential and commercial & non-residential.

The proposed new rates are as follows:

| <b>Service</b>              | <b>Existing Rate</b> | <b>Proposed Rate</b> |
|-----------------------------|----------------------|----------------------|
| Residential                 | \$228 annually       | \$250.80 annually    |
| Commercial/ Non-residential | \$465 annually       | \$511.50 annually    |

Schedule "B", Section 5.0.1 and Schedule "C". Section 3.0.1 will be amended by inserting the following:

*An owner may elect to pay the annual fee in two installments and a 4% discount will be given if the first installment is paid prior to February 15<sup>th</sup> and a 4% discount will be given if the second installment is paid prior to August 15<sup>th</sup>.*

### BUDGET:

In regard to the increased water rates to unmetered water clients only, we expect a \$7,000 increase to the water utility services revenue, this includes the discount.

**ADMINISTRATOR COMMENTS:**

**Report Approved by:**

\_\_\_\_\_  
**Tom Matus, CAO**

**RECOMMENDATION / RESOLUTION:**

*That:*

*Council adopt the "Hudson's Hope Amended Fees and Charges Bylaw No. 893, 2017".*

  
\_\_\_\_\_  
**Tammy McKeown, Corporate Officer**

**BYLAW NO. 893, 2017**

---

A Bylaw to amend the District of Hudson's Hope Fees and Charges Bylaw No. 843, 2014

**WHEREAS** pursuant to Section 194 of the *Community Charter*, Council may, by bylaw impose a fees and charges payable in respect of any service it considers necessary or desirable;

**AND WHEREAS** Council deems it necessary and desirable to exercise the authority provided by the *Local Government Act* to cover costs or providing various services and information;

**NOW THEREFORE** the Council of the District of Hudson's Hope, in open meeting assembled, enacts as follows:

1. This bylaw shall be cited as the "Amended Fees and Charges Bylaw No. 893, 2017."
2. Schedule "B", Section 5.0.1 of the "District of Hudson's Hope Fees and Charges Bylaw No. 843, 2014" is hereby amended to read:

The owner of each dwelling unit as defined in the District's Zoning Bylaw, which is connected to the municipal water supply and distribution systems, shall pay an annual fee of \$250.80 per year. An owner may elect to pay the annual fee in two installments and a 4% discount will be given if the first installment is paid prior to February 15<sup>th</sup> and a 4% discount will be given if the second installment is paid prior to August 15<sup>th</sup>.

3. Schedule "B", Section 5.0.4 of the "District of Hudson's Hope Fees and Charges Bylaw No. 843, 2014" is hereby amended to read:

The owner of each commercial or other non-residential premises, which is connected to the municipal water supply and distribution systems, shall pay an annual fee of \$511.50 per year.

4. Schedule "C", Section 3.0.1 of the "District of Hudson's Hope Fees and Charges Bylaw No. 843, 2014" is hereby amended to read:

The owner of each dwelling unit as defined in the District's Zoning Bylaw, which is connected to the municipal sewage collection and disposal system, shall pay an annual fee of \$207.00 per year. An owner may elect to pay the annual fee in two installments and a 4% discount will be given if the first installment is paid prior to February 15<sup>th</sup> and a 4% discount will be given if the second installment is paid prior to August 15<sup>th</sup>.

Read a First Time on this 27<sup>th</sup> day of November, 2017.

Read a Second Time on this 27<sup>th</sup> day of November, 2017.

Read a Third Time on this 27<sup>th</sup> day of November, 2017.

Adoption of Bylaw on this    day of    , 2017.

\_\_\_\_\_  
Gwen Johansson, Mayor

\_\_\_\_\_  
Tammy McKeown, Corporate Officer

Certified a true copy of Bylaw No. 893, 2017

this \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

\_\_\_\_\_  
Clerk

December 5, 2017

Devon Bailey  
Muscular Dystrophy Canada  
302-601 West Broadway  
Vancouver, BC  
V5Z 4C2

Re: Hudson's Hope Fire Rescue MD Fundraising Efforts 2017

Dear Devon,

Please find enclosed two cheques totaling \$1600.00 which represents the department's annual fundraising efforts for Muscular Dystrophy Canada which was raised through our annual fireworks show and associated boot drive.

Fire fighters have a long and proud history of working with Muscular Dystrophy Canada to fund research and programs to support people affected by neuromuscular disorders, and we look forward to continuing to support those efforts through our ongoing fundraising efforts.

Regards,



Robert Norton  
Director of Protective Services  
District of Hudson's Hope



November 22<sup>nd</sup>, 2017

Dear Mayors, Chairs and CAOs,

This is an official invitation for you to attend the second ***Northern Mayors and Chairs Roundtable*** at the Prince George Civic Centre taking place January 19<sup>th</sup>, 2018. The purpose of this event is twofold:

- To identify common challenges and highlight opportunities where information sharing and/ or cooperation within the region would be mutually beneficial including any follow up with Provincial and Federal government as required.
- To produce a summary of conclusions of the meeting to share with all relevant stakeholders and NCLGA members.

This meeting will be co-chaired by the President of the NCLGA, Shaely Wilbur, and Prince George Mayor, Lyn Hall. Like last time, the general aim of this roundtable is to identify and focus on the priorities and perspectives of all local governments in the region.

As you know, our communities and regional electoral areas account for nearly 70% of BC's landmass; 80% of agricultural lands; 60% of BC's aboriginal population; provides 80% of Provincial exports; and includes some of the largest resource development projects on the continent. At the last roundtable, we recognized that we each have our own priorities. More importantly, however, it became very clear that our communities share unique circumstances and common goals and that there are benefits and a shared responsibility for us to work together toward our mutual interests.

This year, we are happy to have the Assembly of First Nations' new regional Chief (BC), Terry Teegee join us and speak specifically on the topic of reconciliation. As well, we will have Provincial Government Representation, and an update on the softwood lumber negotiation from Council of Forest Industries (COFI) Vice President Public Affairs, Mina Laudan and a Q&A with a director from the Oil and Gas Commission.

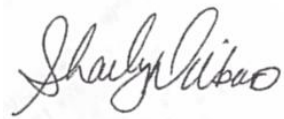
We look forward to having each community in the region represented at this event, and we strongly encourage CAO participation. Material costs associated with this event will be covered by the NCLGA's

Northern Voices Endowment fund, and the City of Prince George, as host, will provide staff support preceding the event and on the actual day.

There will be no event fees this time around, although we require that you register by contacting Kaila Nielsen, NCLGA Communications Coordinator, at [knielsen@nclga.ca](mailto:knielsen@nclga.ca) or 250-564-6585 so we can properly account for space, materials and catering.

Lastly, we are proud to be hosting this event on Lheidi T'enneh Territory. If your community would like to bring a small gift of acknowledgment and appreciation, we will ensure it is officially received by Chief Dominic Frederick and the Lheidi T'enneh Nation.

Sincerely,



Shaely Wilbur  
President, NCLGA



Lyn Hall  
Mayor, Prince George

## Northern Mayors and Chairs Roundtable

Friday, January 19<sup>th</sup>, 2018

Prince George Civic Centre, Auditorium

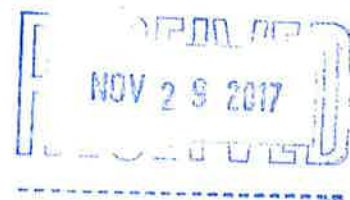
The roundtable will be divided into four main sessions: economic development, social responsibility, environmental stewardship and next steps. During each session, your local government representative will have an opportunity to discuss your specific priorities and perspectives as they relate to the session title. Throughout the day, staff will facilitate discussions and record/ tabulate information. Themes will emerge and common challenges and opportunities will be identified. During the concluding session, you will discuss next steps to ensure this valuable information yields the best possible results for your community. As well, you will decide on a format/ timings for the next Northern Mayors & Chairs Roundtable based on lessons learned.

|                  |   |
|------------------|---|
| 8:30 – 8:45 AM   | Official Welcome and Introduction to Sessions   |
| 8:45 – 9:30 AM   | Chief Terry Teegee (Assembly of First Nations (BC)  |
| 9:30 – 10:30 AM  | BC Government Representatives (TBC)   |
| 10:30 – 10:45 AM | Networking Break  |
| 10:45 – 12:30 PM | Umbrella Topic: Social Responsibility (i.e. housing, reconciliation, opioid crisis, etc.)                                   |
| 12:30 – 1:30 PM  | Lunch<br><i>Special Presentation/ Q&amp;A: Mina Laudan, Vice President of Public Affairs, Council of Forest Industries.</i> |
| 1:30 – 3:00 PM   | Umbrella Topic: Environmental Stewardship   |
| 3:00 – 3:15 PM   | Networking Break  |
| 3:15 – 5:00 PM   | Umbrella Topic: Economic Development  |
| 5:00 – 5:30 PM   | Conclusions: Northern Priorities and Perspectives/ Summarizing key takeaways  |



November 21, 2017

Mayor Gwen Johansson  
District of Hudson's Hope  
Box 330  
Hudson's Hope, BC V0C 1V0



Dear Mayor Gwen Johansson:

**RE: GAS TAX AGREEMENT COMMUNITY WORKS FUND PAYMENT**

I am pleased to advise that UBCM is in the process of distributing the second of two Community Works Fund (CWF) payments for fiscal 2017/2018. An electronic transfer of \$46,993.90 is expected to occur within the next 30 days. These payments are made in accordance with the payment schedule set out in your CWF Agreement with UBCM (see section 4 of your Agreement).

CWF is made available to eligible local governments by the Government of Canada pursuant to the Administrative Agreement on the Federal Gas Tax Fund in British Columbia. Funding under the program may be directed to local priorities that fall within one of the eligible project categories.

Also included with the 2017/18 funding payment is a one-time federal legacy infrastructure funding payment, which was committed by the Government of Canada in *Budget 2016*.

Further details regarding use of CWF and project eligibility are outlined in your CWF Agreement and details on the Renewed Gas Tax Agreement can be found on our website at [www.ubcm.ca](http://www.ubcm.ca).

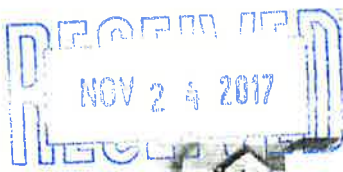
For further information, please contact Gas Tax Program Services by e-mail at [gastax@ubcm.ca](mailto:gastax@ubcm.ca) or by phone at 250-356-5134.

Kind regards,

A handwritten signature in black ink, appearing to read "Wendy Booth", is written over a light blue horizontal line.

Wendy Booth  
UBCM President

Pc: Rhonda Eastman, Deputy Treasurer/Collector



## Museum and Gift Shop

9510 Beattie Drive (across from the info center)  
PO Box 98, Hudson's Hope, B.C. V0C 1V0

Ph. 250-783-5735 Fax. 250-783-5770

Email: [hmmuseum@pris.ca](mailto:hmmuseum@pris.ca)

Web Site: [www.hudsonshopemuseum.com](http://www.hudsonshopemuseum.com)

District Hall  
Hudson's Hope BC  
VOC 1V0  
November 23, 2017

Dear Mayor and Council of the District of Hudson's Hope,

On behalf of the Hudson's Hope Historical Society, I would like to thank you for supporting the Museum Social on November 18, 2017, your donations to the Museum's fundraiser were greatly appreciated.

Without your kind support, the museum would not be able to continue to provide an interesting, educational, and fun place for locals and visitors to Hudson's Hope.

Thank you;

Sincerely

Elinor Morrissey  
Museum Manager/Curator

**Thank You**



**Thank You for Supporting the  
Hudson's Hope Museum!**

**The Hudson's Hope Historical Society**

November 28, 2017

Mayor and Council  
District of Hudson's Hope

Via Email: [gwen.iohansson@prrd.bc.ca](mailto:gwen.iohansson@prrd.bc.ca)

Dear Mayor and Council,

**RE: Regional Initiatives Requiring Municipal Participation**

At the November 23, 2017 Peace River Regional District Board Meeting, the following resolution was passed:

"That staff be directed to forward a formal letter from the Board to all member municipalities regarding regional initiatives that require municipal participation, so that municipal staff can be authorized to participate."

Further to the resolution, please be advised that PRRD staff will be working on the following projects over the coming months that may require participation and would ask for your support:

- Development Services – Cannabis related business facilitated workshop (workshop to be held in late January to mid-February)
- Community Services – Regional Emergency Response Collaboration Model (all member municipalities have agreed to participate in the study)
- Community Services – Research and implement mass communication system
- Corporate Administration – Discussion to see if there is interest in shared Information Technology services
- Environmental Services – Review dated Landfill Hauling Agreements
- Environmental Services – Tracking and enforcement of noxious weeds within municipal boundaries

If you have any questions or concerns please contact me at your convenience.

Thank you,



Chris Cvik  
Chief Administrative Officer

c. [clerk@hudsonshope.ca](mailto:clerk@hudsonshope.ca)

**District of Sicamous**

446 Main Street  
PO Box 219  
Sicamous, BC  
V0E 2V0

T: 250 836 2477  
F: 250 836 4314  
E: info@sicamous.ca  
sicamous.ca



November 29, 2017

Honourable George Heyman  
Minister of Environment and Climate Change Strategy  
Via E-mail: ENV.Minister@gov.bc.ca  
PO Box 9047 Stn Prov Govt  
Rm 112, Parliament Buildings  
Victoria, BC V8W9E2

**Re: Prevention of Quagga and Zebra Mussels**

---

Dear Honourable Heyman,

On behalf of the District of Sicamous we write to express our concern about the threat of Quagga and Zebra mussels. Sicamous submitted a resolution at UBCM that was endorsed requesting more funding from the Provincial Government to increase awareness and Education for the threat of Quagga and Zebra mussels into BC Lakes.

The effects to ALL BC Lakes would be devastating:

- Zebra and quagga mussels filter water to the point where food sources such as plankton are removed, altering food webs. This also causes clearer water, allowing sunlight to penetrate deeper, increasing growth of aquatic vegetation. One mussel can produce one million mussels per year.
- Impact fish and wildlife by increasing toxic algal blooms.
- Large colonies affect spawning areas, impacting the survival of fish eggs.
- Affects recreational activities by cutting swimmers feet as a result of their sharp shell
- Non-reversible once infested with mussels, all BC Lakes will be contaminated and there is currently no solution to destroy them.
- Cost to British Columbia will be Billions, to government, taxpayers and businesses if mussels manage to get into our eco-system
- Eco-system compromised, water intakes plugged, fish destroyed, beaches destroyed
- No long-term research provided on drinking water quality
- Negative tourism impact

Solutions:

- Guard the borders - cost British Columbia Millions to guard the borders 24/7 365 days per year to prevent infestation or Boat border crossing hours, that work.
- Train border patrols - this is a serious issue, they must collect the correct information from boaters (of all kinds such as zodiacs, blow up paddle boards)

- More conservation officers, with more authority
- This is no longer a campaign, it should now be a department of the government with funding to continue prevention
- This is no longer a provincial problem, it is a federal problem, lakes that are contaminated in Canada should not be allowed to let boats leave without inspection to prevent contaminating other lakes.
- Transport Canada should now prevent float planes from hopping provinces and states
- Education – Major Media campaign announcing BC's commitment to keep our waters pristine. TV, Billboards, News paper, social media
- All Municipalities and Regional Districts should run a banner on their website home pages – "British Columbia is Committed to keeping their lakes Quagga and Zebra Mussel free. Please respect our Lakes and boarder crossing patrols, STOP at the boat inspection stations". This should have a link to a website explaining the seriousness of this issue, and explain fines for breaking the law by transporting invasive species.
- All British Columbia tourism sites should also announce and run the banner on their sites. Tourism will stay healthy if BC lakes stays healthy.
- Boaters registration, should include education
- Immediate allocations of funds dedicated to research, to enable BC biologists to work on a solution with Manitoba & US studies research groups. Let's work on removing them, together.
- Collaborate with infested US bordering Lakes on research and prevention of cross contamination.
- Collaborate with Alberta and Saskatchewan to stay mussel free

Funding:

BC government will find the funds (billions) if we lose the battle against mussels, as we'll need to manage the problem. This is how can we help fund the prevention now (millions):

- Out of province user pay at all BC boat ramps
- Lake passes for BC boaters
- All fines are allocated back to the program
- Boat registration increase some funding back to project

Thank you for your consideration of this issue.

Regards,



Terry Rysz, Mayor  
**DISTRICT OF SICAMOUS**

Cc: Mark Zarcharias, Deputy Minister (via email: [DM.ENV@gov.bc.ca](mailto:DM.ENV@gov.bc.ca))  
Wendy Booth, UBCM President (via email: [wndbooth@gmail.com](mailto:wndbooth@gmail.com))  
UBCM Members (via emails)

DATE, YEAR

Honourable George Heyman  
Minister of Environment and Climate Change Strategy  
Via E-mail: ENV.Minister@gov.bc.ca  
PO Box 9047 Stn Prov Govt  
Rm 112, Parliament Buildings  
Victoria, BC V8W9E2

Re: Prevention of Quagga and Zebra Mussels

---

Dear Honourable Heyman,

On behalf of YOUR MUNICIPALITY we write to express our concern about the threat of Quagga and Zebra mussels. Sicamous submitted a resolution at UBCM that was endorsed requesting more funding from the Provincial Government to increase awareness and Education for the threat of Quagga and Zebra mussels into BC Lakes.

The effects to ALL BC Lakes would be devastating:

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- Impact fish and wildlife by increasing toxic algal blooms.
- Large colonies affect spawning areas, impacting the survival of fish eggs.
- Affects recreational activities by cutting swimmers feet as a result of their sharp shell
- Non-reversible once infested with mussels, all BC Lakes will be contaminated and there is currently no solution to destroy them.
- Cost to British Columbia will be Billions, to government, taxpayers and businesses if mussels manage to get into our eco-system
- Eco-system compromised, water intakes plugged, fish destroyed, beaches destroyed
- No long-term research provided on drinking water quality
- Negative tourism impact

Solutions:

- Guard the borders - cost British Columbia Millions to guard the borders 24/7 365 days per year to prevent infestation or Boat border crossing hours, that work.
- Train border patrols - this is a serious issue, they must collect the correct information from boaters (of all kinds such as zodiacs, blow up paddle boards)

- More conservation officers, with more authority
- This is no longer a campaign, it should now be a department of the government with funding to continue prevention
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- Boaters registration, should include education
- Immediate allocations of funds dedicated to research, to enable BCbiologists to work on a solution with Manitoba & US studies research groups. Let's work on removing them, together.
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Funding:

BC government will find the funds (billions) if we lose the battle against mussels, as we'll need to manage the problem. This is how can we help fund the prevention now (millions):

- Out of province user pay at all BC boat ramps
- Lake passes for BC boaters
- All fines are allocated back to the program
- Boat registration increase some funding back to project

Thank you for your consideration of this issue.

Regards,

File: 0530-01

December 5, 2017

Honourable George Heyman  
Minister of Environment and Climate Change Strategy  
PO Box 9047 Stn Prov Govt  
Rm 112, Parliament Buildings  
Victoria, BC V8W9E2

**Subject: Prevention of Quagga and Zebra Mussels**

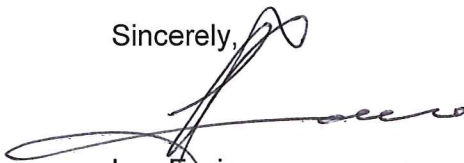
Dear Minister Heyman:

At a recent meeting of Council on December 4, 2017, Council passed a resolution in support of the District of Sicamous' concerns and threat of Quagga and Zebra mussels in the Province. Sicamous submitted a resolution at UBCM that was endorsed requesting more funding from the Provincial Government to increase awareness and education for the threat of Quagga and Zebra mussels into BC Lakes.

As expressed in the District of Sicamous' letter of November 29, 2017, the Village concurs that the impacts these bivalve molluscs can inflict in our BC waters is of a huge concern. We wholeheartedly agree with the District and recommend that the Province take the necessary steps to ensure continuing health and well-being of our waters and work towards a solution for the eradication of this invasive species.

We respectfully request that you consider the requests made on this very important issue.

Sincerely,

  
Leo Facio  
Mayor

enclosure

cc: Mark Zarcharias, Deputy Minister (via email: [DM.ENV@gov.bc.ca](mailto:DM.ENV@gov.bc.ca))  
Wendy Booth, UBCM President (via email: [wndbooth@gmail.com](mailto:wndbooth@gmail.com))  
UBCM Members (via emails)  
Council



## **British Columbia / Yukon Command The Royal Canadian Legion**

### ***“Military Service Recognition Book”***

Dear Sir/Madam:

Thank you for your interest in the **BC/Yukon Command / The Royal Canadian Legion**, representing **British Columbia** and the **Yukon’s Veterans**. Please accept this written request for your support, as per our recent telephone conversation.

Our **BC/Yukon Command Legion** is very proud to be printing another **9,000 copies** of our Annual **“Military Service Recognition Book”**, scheduled for release by Remembrance Day 2018, to help identify and recognize many of the brave **Veterans** of British Columbia and the Yukon who served our Country so well during times of great conflict. This annual publication goes a long way to help the Legion in our job as the **“Keepers of Remembrance”**, so that none of us forget the selfless contributions made by our **Veterans**.

We would like to have your organization’s support for this Remembrance project by sponsoring an advertisement space in our **“Military Service Recognition Book.”** Proceeds raised from this important project will allow us to fund the printing of this unique publication and will also help our Command to improve our services to **Veterans** and the more than 150 communities that we serve throughout British Columbia and the Yukon. The Legion is recognized as one of Canada’s largest “Community Service” organizations, and we are an integral part of the communities we serve. This project ensures the Legion’s continued success in providing these very worthwhile services.

Please find enclosed a rate sheet for your review, along with a detailed list of some of the many community activities in our **149 Branches and 80 Ladies Auxiliaries** in the **BC/Yukon Command**. Whatever you are able to contribute to this worthwhile endeavor would be greatly appreciated. For further information please contact **BC/Yukon Command Office** toll free at **1-866-354-6277**.

**Thank you for your consideration and/or support.**

**Sincerely,**

**Penny Aujla  
Events and Marketing Coordinator**



www.legionbcyukon.ca



## British Columbia / Yukon Command The Royal Canadian Legion

### *“Military Service Recognition Book”*

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## UBCM Submission On Cannabis Legalization

Dec. 5, 2017

UBCM has provided a submission regarding the development of a provincial framework for non-medical cannabis to the provincial Cannabis Legalization and Regulation Secretariat (CLRS). The submission is based upon the work undertaken by the Joint Provincial-Local Government Committee on Cannabis Regulation (JCCR) and has been endorsed by UBCM's Executive.

UBCM's recommendations call for a hybrid retail model (public and private retailers) that resembles the hybrid provincial liquor retail framework. Other notable recommendations call on the Province to retain the federal 4 plants per household limit for personal cultivation operations, and to extend existing public tobacco regulations/restrictions to smoking or vaping non-medical cannabis.

The recommendations contained in UBCM's submission relate to the seven broad issues outlined in the provincial discussion paper, *Cannabis Legalization and Regulation in British Columbia*, including:

- Minimum age to buy, grow and possess non-medical cannabis;
- Personal possession limits for adults and youth;
- Public consumption (e.g. smoking, vaping);
- Drug-impaired driving regulations;
- Personal cultivation (number of plants, location, security, etc.);
- Distribution model; and,
- Retail model.

The local government JCCR members' responses to these questions have informed the recommendations made by UBCM in this submission. This document represents the first portion of UBCM's feedback, addressing specific time-sensitive issues tabled by the Cannabis Legalization and Regulation Secretariat. Other local government issues and concerns (e.g. distribution of taxation revenue, regulation of edibles) will be addressed through the JCCR over the coming months.

### Background

On September 21, 2017, UBCM received an invitation from Minister of Public Safety and Solicitor General, Mike Farnworth, to form a standing committee on cannabis legalization. In addition to the broader provincial engagement strategy to support the development of the provincial regulatory framework for legalized cannabis, the standing committee provides a forum for local governments to share their experiences and knowledge and discuss issues of interest or concern with the Cannabis Legalization and Regulation Secretariat. The Committee may also be used to assist in required statutory consultation if changes to local government legislation are considered.

The twelve JCCR members include a mix of local government elected officials, senior staff members and staff members with specialized skill sets and experience in planning, building inspection, bylaw enforcement and/or public safety. Understanding that the provincial Cabinet may consider policy decisions prior to 2018, the JCCR undertook an intensive two-month engagement process. Members met every two weeks to consider expert opinions, analyze high priority policy issues, and determine appropriate recommendations, with the objective of using this information to form a submission.

### Provincial Action

Earlier today, the province announced its initial decisions with regard to minimum age, distribution and retail model, each of which reflect UBCM's submission.

### Follow Us On

**Tammy McKeown**

---

**Subject:** FW: Canada Energy Partners Disposal Well

**From:** "Paulson, Ken" <[Ken.Paulson@bcogc.ca](mailto:Ken.Paulson@bcogc.ca)>  
**Date:** December 4, 2017 at 4:38:27 PM PST  
**To:** Gwen Johansson <[mayor@hudsonshope.ca](mailto:mayor@hudsonshope.ca)>  
**Subject:** Canada Energy Partners Disposal Well

Just left a message on your cell phone Gwen.

I wanted to let you know, the decision on the appeal following the commission's suspension order last spring has been made and is posted to our website.

The short version is that the Commission is not cancelling CEP's permit but is adding additional conditions to enhance monitoring and assure safety of BCHydro's infrastructure.

The decision is here: <http://www.bcogc.ca/whats-new>

Should you wish more information, we can set something up for you.

Thanks.



**Ken Paulson**, P.Eng  
Executive Vice President, Chief Operating Officer  
[Ken.Paulson@bcogc.ca](mailto:Ken.Paulson@bcogc.ca)

Victoria BC  
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Dec. 4, 2017

Via Email: [bjones@canadaenergypartners.com](mailto:bjones@canadaenergypartners.com)  
Attention: Benjamin M. Jones, CEO  
Canada Energy Partners Inc.  
343 Third St., Suite 412  
Baton Rouge, La. 70801

Dear Sir:

**Re: Consideration of cancellation of well permit for WA#22031 (the Well Permit) pursuant to section 26 of the *Oil and Gas Activities Act***

I write regarding the BC Oil and Gas Commission's (Commission) consideration of whether the above noted Well Permit held by Canada Energy Partners Inc. (CEP) should be cancelled pursuant to section 26 of the *Oil and Gas Activities Act* (OGAA or the Act). WA#22031 (the Well) is a disposal well operated by CEP to inject waste water from oil and gas operations into a deep underground formation (called the Baldonnel formation).

I initiated this consideration on June 16, 2017 in relation to concerns that an induced seismic event from CEP's operations at the Well could generate peak ground accelerations sufficient to negatively impact the Peace Canyon Dam (PCD or the dam) that is owned and operated by BC Hydro. The dam is located approximately 3.3km away from the Well. As the Commissioner's delegate, I am authorized to make determinations under section 26(1) of the Act.

I have undertaken a careful review of this matter, including consideration of submissions made by CEP and by BC Hydro through the opportunity to be heard offered pursuant to section 26(6) of the OGAA. I appreciate this review has taken considerable time and effort and I am grateful for the input that has been provided. For the reasons outlined below, I have decided not to cancel the Well Permit.

## **Background**

CEP is the current operator of the Well. CEP holds subsurface rights associated with the Well issued by the Province. CEP's disposal operation is also governed by the terms of a special project order (Order 08-02-008, as amended) that was originally issued by the Commission in 2008. CEP did not own the Well at the time the Well Permit and special project order were originally issued.

The Well was used for disposal of waste water (called produced water) into the Baldonnel formation from 2008 to 2010. At that time, the source of water for disposal was a byproduct of coal bed methane. Disposal rates ranged from 100 to 260m<sup>3</sup>/d. Disposal well depth was 1,514m. (Disposal wells in B.C. range from about 600m to approximately 2,000m in depth.) No induced seismic events were recorded on the Canadian National Seismograph Network (CNSN) during this period of disposal operations. I am aware the CNSN was not sufficient to record seismic events below local Magnitude 3.0 during this time frame.

In 2009 BC Hydro contacted the Commission to request information about the potential that oil and gas activities (including local well fracturing) in the area of the Peace Canyon Dam might impact BC Hydro's infrastructure. To assist in its response to BC Hydro's request for information, the Commission employed a consultant (Ryan) to produce a report, which identified little risk due to the ongoing hydraulic fracturing but recommended additional monitoring of disposal activities. The Commission shared the report prepared by Ryan with BC Hydro in 2010.

In March 2010, the Commission amended the Special Project Order to specify a maximum well injection pressure limit of 6,500 kPa, which was based on a formation fracture pressure of 22,000 kPa, below the estimated fracture pressure of 28,500 kPa.

The operator of the Well ceased disposal in April 2010. The Well was subsequently transferred to a new operator. On Mar. 3, 2014, the Commission further amended the Special Project Order. The Well was again transferred, this time to CEP. In 2016, CEP completed testing requirements and on Jan. 10, 2017 re-commenced disposal operations at the Well.

The CNSN was upgraded during the time when the CEP well was suspended. It is now sufficiently configured to record seismic events down to local Magnitude 2.0 in the Peace Canyon Dam area. No seismic events have been recorded on the CNSN network within 5 km of the CEP well since operations were recommenced in January 2017. The Baldonnel formation reservoir quality at this location is considered favourable for disposal purposes.

Faulting is known in the area of the CEP Well and the Peace Canyon Dam. The Well and the dam are located at the intersection of the structurally complicated disturbed belt and the Fort St. John graben complex (a subsurface structural feature). Not all faults are susceptible to failure, but there is insufficient information about the faults to conclusively evaluate the failure susceptibility of specific faults in the area of the dam.

Hydraulic fracturing and disposal activities have both been known to trigger movement of pre-existing faults resulting in induced events. Both types of activities have the potential to alter the existing stress field, increasing the risk of movement on susceptible faults in the vicinity. The nature of any impact in terms

of size and magnitude will depend on how the activity is designed and carried out (based, for example, on the volumes, rates and pressures used). There are some differences between impacts from fracturing and from disposal. In particular, one study, Atkinson, 2017<sup>1</sup>, observes that for events triggered by fluid disposal, the maximum magnitude may be limited by the cumulative volume of fluid injected in the area. In these disposal situations, fluid is pumped in at low pressures and then dissipates in the formation. Where a pressure increase is observed, action may be taken. Dr. Atkinson also observes that “the hypothesis that magnitude is limited by the injected volume does not appear to hold for earthquakes triggered by hydraulic fracturing in Western Canada.” This is because during hydraulic fracturing, large amounts of fluid are pumped in short time frame at high pressures to fracture the formation.

Induced seismic events have been observed in association with high volume water disposal, including Baldonnell water disposal in the Altares area to the north of CEP’s Well. Increased cumulative volumes of disposal can increase the risk of seismic events where faults exist. However, the CEP disposal well is considered to exist in a separate Baldonnell structure. The reservoir quality is much better at the CEP well.

The Commission studies and monitors induced seismicity from oil and gas activities. The Commission initiated two studies into induced seismicity, which resulted in the publication of two reports that were subject to peer review prior to publication. It is a member of the B.C. Seismic Research Consortium, made up of federal and provincial government agencies, industry representatives and academic institutions. The Commission has also worked closely with the University of British Columbia in the study of causes and mitigation of induced seismic events.

It is the Commission’s role to provide in-depth regulatory oversight of disposal wells to ensure safe operation. As the body of information about induced seismicity has grown, the Commission has implemented regulatory updates, imposed additional operating and monitoring requirements in project approvals, and created conditions for the further collection and analysis of data.

Monitoring indicates most occurrences of induced seismicity in B.C. occur at depths greater than 1.5 kilometres below the surface and are of a low magnitude. Most events are not felt at surface. Felt events are usually of a short duration, and in all reported cases less than a few seconds long. The intensity of felt events has been measured as moderate and the associated vibrations are not expected to be great enough to cause damage. There have been no reports of injury or major structural damage related to induced seismic events in northeast B.C. However, there is no validated predictive model available that can predict the ground motions associated with all events.

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<sup>1</sup> Atkinson GM 2017 *Strategies to prevent damage to critical infrastructure due to induced seismicity*, FACETS 2:374-394.

In March 2017, the Commission received new information from BC Hydro indicating the Peace Canyon Dam was particularly susceptible to low level ground motion. BC Hydro communicated that “due to foundational problems that were discovered during construction”, the Peace Canyon Dam may be more susceptible than other infrastructure built in or around the same time period, and that BC Hydro had been using “0.07g as its seismic withstand against damage/excessive leakage/gate problems etc.”

Based on this new information from BC Hydro regarding the particular susceptibility of the Peace Canyon Dam to low level seismicity, Lance Ollenberger, the Commission’s Vice-President, Compliance Operations and an official designated under the OGAA, determined it was necessary to suspend CEP’s operations at the Well pending the consideration of technical information. The Commission officer issued General Order 2017-008 requiring operations at the Well to be immediately suspended. The order was issued on the basis that the suspension was necessary to mitigate a risk to public safety or protect the environment while the Commission gathered and considered more information about the issue.

CEP suspended its operations in compliance with General Order 2017-008. CEP also appealed the Order to the Oil and Gas Appeal Tribunal. After conducting a hearing by way of written submission, the Tribunal dismissed the appeal. As of today’s date, General Order 2017-008 remains in place.

After receiving the information from BC Hydro in March 2017, the Commission initiated a review of Information about CEP’s operations at the Well and the potential for those operations to negatively impact the Peace Canyon Dam. As part of that work, the Commission received information from Commission staff, CEP and BC Hydro, including a technical meeting held in the Commission’s offices on Apr. 10, 2017. The Commission also received a report from an engineering consulting firm with particular expertise in civil engineering, Advisian. Information gathered through the review was shared with CEP and BC Hydro at the technical review meeting on Apr. 10, 2017 and by email on June 16, 2017.

## **Section 26 of OGAA**

By my letter to CEP dated June 16, 2017, I initiated a consideration of whether CEP’s Well Permit should be cancelled pursuant to section 26 of the OGAA. In doing so, I communicated that while the information before the Commission demonstrated the potential for complete failure of the Peace Canyon Dam was extremely low, the damage potential from induced seismicity was more difficult to assess. I also communicated there were outstanding concerns an induced seismic event could generate peak ground accelerations sufficient to impact the Peace Canyon Dam.

Before making any decision under section 26 the Commission is required to provide a permit holder with an opportunity to be heard. I determined the

opportunity to be heard in this matter may be conducted by way of written submissions. I advised CEP that I would also consider the submissions and information previously provided to the Commission.

CEP made a submission to the Commission under the opportunity to be heard provisions. In that submission, CEP communicated, in part, that its operations are consistent with the Commission's mandate and regulatory regime and were unlikely to have a public safety impact on the Peace Canyon Dam. CEP also communicated that even if an event occurred that impacted the Peace Canyon Dam, the environmental impacts would be "transitory" (quoting from a summary from Commission staff) and, essentially, would be equivalent to BC Hydro's planned future work on the dam.

On June 26, 2017, BC Hydro made a brief submission in the opportunity to be heard provisions. In that submission BC Hydro requested that I consider BC Hydro's submissions and other materials provided to the Commission and set out its view regarding the scope and application of section 26 of the OGAA. I agree with BC Hydro's submission that all materials should be considered. I comment briefly on the Commission's power under section 26 below. I provided BC Hydro's letter to CEP and advised CEP that it could make a submission in reply. On June 28, 2017, CEP provided a reply submission.

I have reviewed and considered all of the submissions and information provided to the Commission. I will comment on only some of those submissions and information in this letter.

CEP has communicated it "does not believe that the OGC can site section 49(1)(b) in the Suspension Order and then claim the Well Permit cancellation was under another provision of OGAA." General Order 2017-008 was made by the Commission official very shortly after the Commission received new information from BC Hydro that the seismic withstand of the Peace Canyon Dam could be exceeded by ground motions at levels that have been previously recorded in association with induced seismicity in other areas of northeast B.C. Little information was available to assess this information, evaluate the likely outcome of any exceedance. Further, additional time would be required to gather and assess available data and information to consider potential impacts relating to CEP's operations. In making the order, the official communicated his view that it was necessary to immediately suspend operations at the Well pending a review of additional technical information. Section 49 allows the Commission to require immediate actions to be taken to address non-compliances or where such action is necessary to address a risk to public safety, protect the environment or to ensure conservation of the resource.

Where the Commission contemplates more permanent action – such as the suspension or cancellation of a permit – it may act under section 26 of OGAA. The actions taken by the Commission under section 49 and the action that I have considered under section 26 are not incompatible. Section 26 is the only

statutory provision in the OGAA that allows a permit to be amended, suspended or cancelled at the Commission's initiative (rather than through an application made by a permit holder through, for example section 31 or 33 of OGAA). Section 26 actions are not limited to the circumstances set out in section 49(1)(a) and (b). A broader range of circumstances may be considered to ensure oil and gas activities are regulated in a manner consistent with the purposes of the Commission identified in section 4 of the OGAA. For clarity, the Commission's authority to act under section 26 is not limited to the circumstances set out in 26(2). As communicated in BC Hydro's submission, section 26(2) specifies "without limiting the authority of the Commission", the Commission may take action under section 26 in specific circumstances. None of the circumstances listed in section 26(2) were relevant to my consideration as to whether CEP's Well Permit should be cancelled at this time.

### **Consideration**

As outlined above, the Peace Canyon Dam lies at the intersection of two major structural terrains in northeast British Columbia; the foothills disturbed belt and the Fort St. John graben complex. The CEP well depth is within the foothills disturbed belt thrust faulting, not the graben structure.

A subset of the thrust faults within the foothill settings may generate induced events from disposal activity, if they are oriented in a direction favorable to retaining tectonic strain, as observed in similar structural settings in northeast B.C. There is insufficient well control and seismic information in the area to adequately characterize the geo-mechanical properties of the area. As with other areas of northeast B.C., existing faults cannot always be mapped and known, even after available seismic data is collected and analyzed.

Based on my review, I find the likelihood of a damaging event resulting from water disposal operations is very low. While I have reached this conclusion, I acknowledge there is uncertainty regarding the ability to predict an induced seismic event. Such uncertainty is inherent where there is no reliable predictive model.

In that context, Dr. Atkinson's 2017 paper, covers extensive induced seismic history in a range of circumstances and identifies both avoidance and mitigation strategies to reduce hazards. In doing so, she emphasizes that in each case, a combination of factors will determine risks. For example, the likelihood of damaging motions will depend on a number of different factors, including event initiation, characteristics of event sequences, ground motion characteristics, and the response characteristics of the structure. In turn, the damage potential of motion will depend on amplitude, frequency content, and duration. Dr. Atkinson's work suggests that site specific information is likely the best source of information for decision making.

In considering data regarding seismic events, it is important to understand the conditions under which seismicity was induced. For example, comparisons of

disposal operations in B.C. to those in Oklahoma USA (which have been associated with a magnitude 5.7 seismic event that has been noted by both CEP and BC Hydro), are not practical. Northeast B.C. and Oklahoma are associated with very different geological settings and fault characteristics. Potentially even more important is the fact that disposal operations are monitored and regulated very differently in each jurisdiction. At the time of the Oklahoma event, that jurisdiction did not monitor ground motion or seismic activity, did not monitor disposal pressures, did not monitor reservoir pressures, and did not take action after smaller pre-cursor events were measured. In contrast, disposal in British Columbia is highly regulated and monitored.

For example, in British Columbia reservoir pressure testing is required annually for disposal wells. This test is not required in many other jurisdictions. Reservoir pressure will build up at the disposal well and will dissipate with distance from the well into the point in time when all available pore space is occupied. This is when the pressure is considered to have contacted a boundary in the reservoir and the pressure will build throughout the reservoir. Testing has proven to be an effective way to monitor the build-up of formation pressure, which is a key cause of induced seismicity.

While complete geo-mechanical data is not available, due to monitoring activity, data regarding volumes, pressures, ground motion detection specific to the CEP Well (and to other northeast B.C. operations) is available and continues to be gathered, analyzed and acted upon. I am of the view that additional operating conditions and monitoring and response requirements are available that would further mitigate against the likelihood that induced seismic activity would occur or would have the potential to impact the Peace Canyon Dam. Many of these mitigations are not expressly considered in Dr. Atkinson's paper, and indeed many involve reservoir engineering. Dr. Atkinson does indicate hazard reduction strategies, including mitigation measures, will change as knowledge of the processes that control hazards associated with induced seismicity improve.

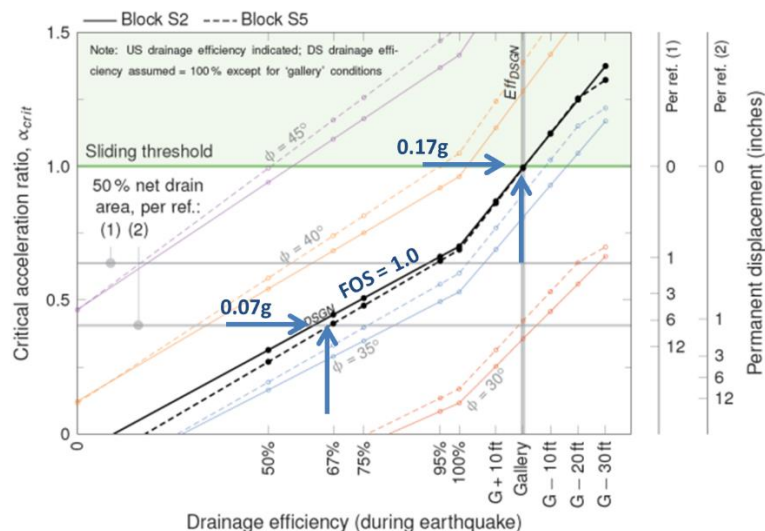
In British Columbia, 100 per cent of disposal induced events have exhibited smaller precursor events prior to any Magnitude 3+ event and have not demonstrated repeated events in a short (less than six hour) time span. Considering the CEP Well, I find additional monitoring of disposal activities and other operating requirements would mitigate risks associated with a series of events that could reduce the Peace Canyon dam's ability to withstand further seismic events.

The evidence indicates the most severe potential consequences (such as a complete failure of the dam) from an induced seismic event are extremely unlikely. BC Hydro has indicated that when the dam was built, the design was for a factor of safety of 1.5, but the dam's seismic withstand is extra sensitive to the effective operation of its drainage systems and other factors. I accept the information from BC Hydro's documents and representatives indicating the Peace Canyon Dam is susceptible to relatively low peak ground accelerations

(0.07 -0.2g). While ground motions of that intensity could be generated by induced seismic events, the low end peak ground accelerations are only of concern when the dam is operating with water levels above the gallery level, which is not the current standard operating practice.

I find while impacts to the dam infrastructure, operations, the environment, surrounding area and the public are possible, they are greatly reduced due to the safety factors BC Hydro employs in the daily operation of the Peace Canyon Dam, along with redundancies to prevent any reduction in safety factors. In particular, the dam's drainage system includes galleries and pumps that work to maintain water levels in the structure. These systems provide high drainage efficiency, and allow BC Hydro to achieve "acceptable" levels of stability. BC Hydro has indicated "[u]nder current conditions of uplift, we likely have a seismic withstand sliding threshold of about 0.2g, however this could be significantly reduced through a temporary loss of the pumping wells. With a loss of about half of the existing drainage efficiency due to any cause, the seismic withstand for the sliding threshold reduces to about 0.07g. This is likely somewhat conservative, due to assumptions of limited support being provided by the rock mass downstream of the dam."

BC Hydro provided this helpful representation of drainage efficiency of the dam:



While not impossible, it is unlikely that PCD's two pumps and a dedicated back up pump, being designed specifically to mitigate structural shortcomings, would lose pumping capability at the same time. Nevertheless, the risk associated with such an event could be mitigated, in part, by a requirement that activities at the Well be suspended in the event the PCD's factor of safety falls below 1.5. Such a step would create an added measure of safety during times when the dam may be more vulnerable to impacts from ground motion.

I accept BC Hydro's submissions that in the event of damage to the dam, impacts could include increased seepage which in turn could require a drawdown of the Dinosaur lake reservoir to assess damage, with resulting impacts for some time, including impacts to electrical generation, water turbidity, risk of erosion, and fish mortality due to increase water discharge rates. As the Peace Canyon Dam has been an important part of B.C.'s hydroelectric power infrastructure for decades, I consider it to be in the public interest to avoid potential damage to this infrastructure and associated possible impacts to the environment.

I accept Advisian's finding that they did not identify any compelling reason for induced seismicity to result in significant damage to or an outright failure of the Peace Canyon Dam. However I acknowledge this conclusion was qualified by the scope of Advisian's review.

Atkinson, 2017, states that:

Numerous authors have noted that, in general, PGA tends to be well correlated with felt effects (and lower MMI levels), whereas peak ground velocity (PGV) tends to be well correlated with damage (and higher MMI levels) (e.g., Worden et al. 2012).

Atkinson, 2017 also states that:

There is no single definitive measure of what makes ground-motion damaging. In general, the damage potential of ground motion depends on a combination of factors including amplitude, frequency content, and duration. Small-to-moderate events tend to be of short duration and are rich in high frequency content (at close distances), whereas larger events are longer in duration and have significant energy at longer periods.

While, the Commission has measured ground motions that exceed 5%g and 10%g, which may be considered at or approaching the damage threshold, solely using PGA (%g) is not a conclusive measure. In two cases in British Columbia where we have measured ground motions, the event that had an 11.4%g (PGA) had a corresponding PGV of 0.73cm/s PGV, and the 5.4%g measured event had a PGV of 0.89 cm/s. Atkinson considered many sources and concluded:

Considering this range of estimates, a value of PGV = 10 cm/s was adopted as the damage threshold for induced earthquakes.

Given this determination, it has been demonstrated that solely relying on PGA is not a sufficient indicator of potential damage and PGV must be taken into account. When this is done, it shows the PGVs that have so far been measured in B.C. are well below the damage threshold outlined by Atkinson and the paper further qualifies that PGV is a better indicator of damage. Atkinson, 2017 does not consider duration in detail, but the duration for measured ground motions that the Commission has collected demonstrates if a ground motion exceeds 1, 5 or

10%g, it does so for a fraction of a second. The result of this very brief acceleration is that the ground motions do not have sufficient time, or duration, to reach a damaging velocity.

Finally, I find increased monitoring would mitigate the risk of induced seismicity from disposal operations. The possibility that a large magnitude (greater than local Magnitude 4.0) event could occur without smaller precursor events under the proposed monitoring regime is extremely unlikely. Such an event, sufficient to impact important infrastructure and trigger significant impacts to BC Hydro's operations, has not been observed either in the Altares Baldonnel disposal well (analog) or in other portions of the disturbed belt with seismicity related to disposal. The immediate curtailment of disposal might not prevent additional, possibly damaging events from occurring, however, Appendix A outlines potential operating conditions designed to effectively mitigate over-pressured reservoir occurrences and enhance the ability of the reservoir to dissipate reservoir pressures due to disposal volumes well in advance of any such incident.

## **Conclusion**

Based on the above, I have decided not to cancel the Well permit. That decision is based on my view that with certain identified operating restrictions in place, the disposal activities at this particular location and to this formation location can proceed safely and without impact to the Peace Canyon dam.

I find allowing the activity to continue under strict circumstances is consistent with the Commission's purpose to regulate oil and gas activities for the benefit of British Columbians, having regard to fostering a healthy environment, a sound economy and social well-being. I note not all of the operating restrictions I have identified in this decision and Appendix A are currently in place at the Well. General Order 2017-008 remains in place until it is terminated by the Commission.

I have asked Richard Slocomb, the Commission's Vice President, Reservoir, Field Engineering & Technical Services to contact you to discuss CEP's special project order and the operating and monitoring requirements identified in Appendix A.

I recognize this decision will have some impacts on CEP's business due to the operating conditions outlined in Appendix A, however these conditions are consistent with operating conditions imposed on disposal wells in B.C. I want to recognize my appreciation for CEP and BC Hydro's participation in the process to evaluate these issues and for the work done to effectively communicate each party's perspective.

This decision is a "determination" as that term is defined in section 69 of the OGAA and so pursuant to Part 6 of the OGAA, CEP has an opportunity to

request a review of the decision to a Commission review official or initiate an appeal of the decision to the Oil and Gas Appeal Tribunal.

Yours Sincerely,

A handwritten signature in black ink, appearing to be 'M. Kennedy', with a long horizontal stroke extending to the right.

Mayka Kennedy, P.Eng.  
Executive Vice President, Chief Engineer  
Oil and Gas Commission  
[mayka.kennedy@bcogc.ca](mailto:mayka.kennedy@bcogc.ca)

cc: Attention: Shawn M. Munro  
Bennett Jones  
[munros@bennettjones.com](mailto:munros@bennettjones.com)

[Attention: Jeff Christian](#)  
[Lawson Lundell](#)  
[jchristian@lawsonlundell.com](mailto:jchristian@lawsonlundell.com)

## Appendix A

### Conditions for operation of CEP Well (WA#22031):

- a) Inject produced water, including well flowback completion fluids, only into the well CE Portage a-20-D/094-A-04 (Well Permit # 22031), Baldonnell formation (1520.0 mKB to 1574.5 mKB).
- b) Not exceed an injection pressure, measured at the wellhead on the subject well, of 6,200 kPag or the pressure required to fracture the formation, whichever is lesser.
- c) Not exceed an injection rate of 200 m<sup>3</sup>/d.
- d) Inject only through tubing.
- e) Continually measure and record the wellhead casing and tubing pressures.
- f) Cease injection and notify the Commission immediately if hydraulic isolation is lost in the wellbore or formation.
- g) Submit the annual packer isolation test report to the Commission within 30 days of the completion of the test.
- h) Include the disposal operating hours and the maximum injection pressure values on the monthly disposal statement.
- i) Cease injection upon reaching a maximum formation pressure of 18,000 kPaa, measured at mid point perfs (1547.3 mKB).
- j) Conduct a reservoir pressure test on the Baldonnell formation in the subject well within 6 months of recommencement of disposal and then each 6 months thereafter, with a shut-in period of sufficient length to provide data for calculation of the reservoir pressure, and submit a report of the test within 60 days of the end of the test.
- k) Perform a casing inspection log on the subject well and submit results to the Commission within 30 days of the completion of logging, at an interval of not more than every 10 years, commencing from the original date of initial disposal.
- l) Perform a hydraulic isolation log on the subject well within 60 days of the date of recommencement of produced water disposal and submit results to the Commission within 30 days of the completion of logging, and thereafter at an interval of not more than every 5 years, commencing from the date of recommencement of disposal.
- m) Not conduct hydraulic fracture stimulation on any formation in the subject well without prior Commission approval.

- n) Before recommencing disposal operations, install and fully activate a monitoring program to observe and record seismic events within a 5 km radius of the well; WA #22031, that:
  - i. is capable of real-time monitoring;
  - ii. has a magnitude detection of 1.5Mw and greater;
  - iii. has hypocenter accuracy to within  $\pm 500$  metres;
- o) Before recommencing disposal operations, install and fully activate an accelerometer within 1 km of the wellsite able to record three components of ground acceleration with a minimum detectability of 0.005g and a dynamic range of  $\pm 2g$ .
- p) Report the results of seismicity monitoring in items n) and o), including date, time, location, magnitude, ground acceleration and depth of seismic events, to the Oil and Gas Commission (Commission) via email to [reservoir@bcogc.ca](mailto:reservoir@bcogc.ca), at 1 month intervals, commencing one month from the date that monitoring begins, or upon request. The Commission may request full SEED data for any significant seismic event and will make any event equal to or exceeding local Magnitude 3.0 available in the public domain.
- q) Cease injection upon receiving notification from BC Hydro that the Peace Canyon dam factor of safety has fallen below 1.5. Injection operations may only resume upon notification from the Commission.

**From:** circ-list-bounces@unbc.ca  
**To:** ["circ-list@unbc.ca"](mailto:circ-list@unbc.ca)  
**Subject:** [Circ-list] 2018 CIRC Forum - Prince George, January 18-19, 2018  
**Date:** Thursday, December 07, 2017 5:04:51 PM

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Dear colleagues,

The UNBC Cumulative Impacts Research Consortium (CIRC), with support from the Environment, Community, Health Observatory (ECHO) Network and the Pacific Institute for Climate Solutions (PICS), is convening a **policy-focused forum** on **January 18-19, 2018**.

All events will be taking place on Lheidli T'enneh territory, at UNBC's Prince George campus. We hope that this event will be a chance to bring together policymakers, scientists, practitioners, all levels of government (First Nations, municipal, regional, provincial, federal), and community members working on issues related to environment, community, health and resource development which are actively impacting communities across northern BC. A more **detailed event description** can be found [here](#).

We are thrilled to announce that Megan Leslie, Incoming President & CEO of World Wildlife Fund Canada and former NDP Member of Parliament, will be giving a public keynote address on **Thursday January 18 (6:30 PM, UNBC, Canfor Theatre)**.

On **Friday January 19**, we will be hosting a full day of sessions focused on the following themes:

- Cumulative Effects Assessment
- The health impacts of resource development
- Indigenous land use planning and cumulative impacts management
- Watershed governance
- Wildfire preparedness

In hosting this event, CIRC intends to increase the visibility of policy-relevant research and community initiatives directed towards the complex and unique challenges facing communities across northern BC, directed towards both imagining and planning for thriving and just futures.

Registration is free, however to secure your attendance you must RSVP to [madeline.wilson@unbc.ca](mailto:madeline.wilson@unbc.ca) before **January 5, 2018**.

**Madeline Wilson**

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Communications Lead  
The Cumulative Impacts Research Consortium (CIRC)

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University of Northern British Columbia

*Lheidli T'enneh Territory*

3333 University Way | Prince George, B.C. | V2N 4Z9

E: [madeline.wilson@unbc.ca](mailto:madeline.wilson@unbc.ca) | P: +1.250.960.5994 | [www.unbc.ca/cumulative-impacts](http://www.unbc.ca/cumulative-impacts)

**From:** haags1  
**To:** [Tammy McKeown](#)  
**Subject:** Letter of support for grant application  
**Date:** Friday, December 08, 2017 1:21:52 PM

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Hello Tammy,

The members of the DHSC would like to ask the Hudson's Hope council to draw up a letter of support towards the BC Rural Dividend grant application. We are asking for a large overhead door and panels to create a cost efficient and saver riding arena for our community members.

Thank you,

Board of Executives  
Double "H" Saddle Club



District of Hudson's Hope  
Box 330  
Hudson's Hope BC  
V0C 1V0



October 10, 2017

Re: Resolutions deadline

Good Morning NCLGA Local Governments,

In an attempt to strengthen the resolution process and allow enough time for thorough review, research and dialogue with members, the NCLGA board is asking that resolutions be submitted by February 9<sup>th</sup>, 2018.

Technically, NCLGA bylaws call for resolution submission no later than sixty days before the AGM. However, this deadline constricts our ability to help coordinate amongst our membership, have UBCM do the necessary policy research and then disseminate all resolutions and background material as thoroughly as possible.

Resolutions will not be considered late before March 9<sup>th</sup>, but we are asking for a friendly deadline of February 9<sup>th</sup> next year.

Thank you for accommodating this request as we build a more robust and fruitful resolutions process moving forward.

Sincerely,

Shaely Wilbur,

A handwritten signature in blue ink that reads "Shaely Wilbur". The signature is fluid and cursive, with the first name "Shaely" and last name "Wilbur" clearly distinguishable.

President, NCLGA  
City Councillor, Dawson Creek