



PEACE RIVER REGIONAL DISTRICT

Electoral Area Directors Committee

Revised Agenda

June 18, 2020, 9:00 a.m.

1981 Alaska Avenue, Dawson Creek, BC

Pages

1. **Call to Order**
 - 1.1 Director Goodings to Chair the meeting
2. **Directors' Notice of New Business**
3. **Adoption of Agenda**
4. **Gallery Comments or Questions**
5. **Adoption of Minutes**
 - 5.1 Electoral Area Directors Committee Draft Meeting Minutes of May 21, 2020 3
 - 5.2 Draft Minutes of Special Electoral Area Directors Committee Meeting June 4, 2020 8
6. **Business Arising from the Minutes**
7. **Delegations**
 - 7.1 Dawson Creek Society for Community Living - Pilot Project for Seniors 10
Sam Barber, Board Chairperson
(by invitation of the Committee)
 - 7.2 Coastal GasLink Pipeline Project Summer Construction Program
Heather Desarmia, Public Affairs Coordinator; Kiel Giddens, Public Affairs Manager; Anthony Heywood-Smith – Project Manager for Wilde Lake Compressor Station; and Brian Jewer – Project Manager for Coastal GasLink, Work Package 1
 - 7.3 Pacific Northern Gas - Update 35
Brock John, Director, Business Development and Stakeholder Relations, and Al Kleinschmidt, Manager Energy Management & DSM.
8. **Correspondence**

9.	Reports	
9.1	PRRD Grant Writer Services, ADM-EADC-008	36
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10.1	Electoral Area Economic Development Function	
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PEACE RIVER REGIONAL DISTRICT

ELECTORAL AREA DIRECTORS COMMITTEE MEETING **MINUTES**

DATE: May 21, 2020

PLACE: Regional District Office Boardroom, Dawson Creek, BC

PRESENT: **Directors**

Director Goodings, Meeting Chair
Director Sperling
Director Hiebert
Director Rose

Staff

Shawn Dahlen, Chief Administrative Officer
Crystal Brown, Electoral Area Manager
Tyra Henderson, Corporate Officer
Paulo Eichelberger, General Manager of Environmental Services
Kari Bondaroff, Environmental Services Manager
Gerritt Lacey, Solid Waste Services Manager
Trish Morgan, General Manager of Community Services
Teri Vetter, Acting Chief Financial Officer
Trevor Ouellette, IT Manager
Naomi Donat, Recording Secretary

Others

Call to Order The Chair called the meeting to order at 11:00 a.m.

DIRECTORS NOTICE OF NEW BUSINESS:

Director Hiebert COVID-19 messaging and resources

ADOPTION OF AGENDA:

MOVED by Director Rose, SECONDED by Director Sperling,
That the Electoral Area Directors Committee agenda for the May 21, 2020 meeting,
including Director's new business, be adopted as amended:

1. Call to Order
 - 1.1. Director Goodings to Chair the Meeting
2. Directors' Notice of New Business
3. Adoption of Agenda
4. Adoption of Minutes
 - 4.1. Electoral Area Directors Committee Draft Meeting Minutes of April 16, 2020
5. Business Arising from the Minutes

Adoption of Agenda
continued

6. Delegations
 - 6.1. Cleanfarms - Agricultural Plastics in Peace River Regional District – Collection Opportunities, Shane Hedderson, Western Business Manager, and Kim Timmer, Member and Stakeholder Relations (*by invitation of the Committee*)
 - 6.2. Urban Systems - Rose Prairie Water Treatment Plant, Jaime Adam, Project Engineer and Principal, Kimberly Zackodnik, Environmental Engineer, and Edward Stanford, Local Government Consultant (*by invitation of the Committee*)
7. Correspondence
 - 7.1. Gloria and Tom Rounds - Internet Access
8. Reports
 - 8.1. Area B Water – Rose Prairie Water Station Deferred Motion from April 16, 2020, ADM-EADC-006
 - 8.2. Hope Air, ADM-EADC-002
 - 8.3. Regional District of Kitimat-Stikine Proposed Boundary Expansion, ADM-EADC-003
 - 8.4. March 9, 2020 Charlie Lake Fire Department Road Rescue and First Medical Response Public Engagement
9. Discussion Items
 - 9.1. Pacific Northern Gas Action Items - March 18th, 2020 Update
 - 9.2. Pacific Northern Gas - Automated Meter Reading Presentation
 - 9.3. BC Oil and Gas Commission Community Working Groups
 - 9.4. Abandoned/Orphan Well Fund - Identifying and Prioritizing
 - 9.5. Synergy Group
 - 9.6. Rural Seniors Initiative - Next Steps
10. New Business
 - 10.1. Director Hiebert – COVID 19 messaging and resources
11. Communications
12. Diary
 - 12.1. May EADC Diary
13. Adjournment

CARRIED

ADOPTION OF MINUTES:

- 4.1 EADC Minutes MOVED by Director Sperling SECONDED by Director Rose,
That the Electoral Area Directors Committee Meeting Minutes of April 16, 2020 be adopted.

CARRIED

BUSINESS ARISING FROM THE MINUTES:

- 5.1 South Peace Health Services Society Staff will reach out again to Shaely Wilbur to ask her to provide a financial breakdown of what is left to fund for Bulterys House.

DELEGATIONS:

- 6.1 Cleanfarms - Agricultural Plastics in Peace River Regional District - Collection Opportunities Shane Hedderson, Western Business Manager with Cleanfarms described for the Committee, who Cleanfarms are, their programs, and how they are funded. He explained considerations for starting a pilot agricultural plastics collection program as well as how programs operate, possible partnerships and funding options.
- Extended Producer Responsibilities (EPR) provide approx. 90 percent of Cleanfarms' current funding. EPRs are possible when regulations are in place to require producers to pay towards recycling their products. These costs are passed on to the consumer as an "invisible" fee, and the producers pay the recycling portion directly to Cleanfarms. This is similar to the environmental handling fees paid when purchasing electronics.

The Province of BC has not yet allocated specific funding into recycling agricultural plastics, as has been done by the Province of Alberta.

Cleanfarms' two main objectives in providing programs are to minimize costs and maximize opportunities for farmers. Programs could be encouraged by farmers speaking to producer groups and regional directors speaking to provincial representatives to initiate regulations that would facilitate the creation of an EPR. Possible next steps include conducting a "Waste Characterization Study" to identify specific materials to be recycled and the volumes present in the Regional District.

6.2 Urban Systems –
Rose Prairie Water
Treatment Plant

Jaime Adam, Project Engineer and Principal, Kimberly Zackodnik, Environmental Engineer, and Edward Stanford, Local Government Consultant, provided the Committee with information on the Rose Prairie Treatment Plant, including:

- Project background and timeline
- Water treatment challenges
- Level of service review
- Options review, and
- Summary and next steps

Recess
Reconvene

The Chair recessed the meeting for luncheon at 1:00
The Chair reconvened the meeting at 1:30 pm

CORRESPONDENCE:

7.1
Gloria and Tom
Rounds

MOVED by Director Rose, SECONDED by Director Hiebert,
That the Electoral Area Directors Committee receive for discussion, the letter from Gloria and Tom Rounds, dated April 22, 2020.

CARRIED

REPORTS:

8.1
Area B Water – Rose
Prairie Water Station
Deferred Motion from
April 16, 2020, 2020,
ADM-EADC-006

MOVED by Director Goodings, SECONDED by Director Sperling,
That the Electoral Area Directors Committee authorize conducting a four-six week Granular Activated Carbon (GAC) pilot study at the current Rose Prairie Tankloader location, to determine if the proposed treatment will meet Northern Health water quality parameters as required for public consumption.

CARRIED

8.2
Hope Air, ADM-EADC-
002

MOVED by Director Hiebert, SECONDED by Director Sperling,
That the Electoral Area Directors Committee receive for discussion, the report titled "Hope Air" dated May 12, 2020.

CARRIED

8.3
Regional District of
Kitimat-Stikine
Proposed Boundary
Expansion, ADM-
EADC-003

MOVED by Director Rose, SECONDED by Director Hiebert,
That the Electoral Area Directors Committee receive for discussion, the report titled "Regional District of Kitimat-Stikine Proposed Boundary Expansion" dated May 12, 2020.

CARRIED

MOVED by Director Rose, SECONDED by Director Hiebert ,
That the Electoral Area Directors Committee recommend that the Regional Board

send a letter to the Regional District of Bulkley-Nechako, stating that at this time, the Regional Board does not wish to change the boundaries of the Peace River Regional District.

CARRIED.

8.4
March 9, 2020 Charlie
Lake Fire Department
Road Rescue and First
Medical Response
Public Engagement

MOVED by Director Sperling, SECONDED by Director Rose,
That the Electoral Area Directors Committee provide further direction.

CARRIED

MOVED by Director Sperling, SECONDED by Director Rose
That the Electoral Area Directors Committee recommend that the Regional Board move forward with assent voting (referendum) in the Charlie Lake Fire Protection Area to amend the Service Establishment Bylaw to include first medical responder services and road rescue services; further, that each question be asked separately on the ballot.

CARRIED

DISCUSSION ITEMS:

9.1 PNG Action Items -
March 18th, 2020
Update

MOVED by Director Hiebert, SECONDED by Director Sperling,
That the Electoral Area Directors Committee receive for discussion, the Pacific Norther Gas, Natural Gas Service – Action Items.

CARRIED

MOVED by Director Rose, SECONDED by Director Hiebert,
That the Electoral Area Directors Committee send a letter to Pacific Northern Gas reiterating the Directors' desire for commitment from PNG to provide services in specific areas of the Regional District and further,

That this letter and future letters to PNG, be copied to the BC Utilities Commission.

CARRIED

Staff will review other topics that the Committee wished to address with the BC Utilities Commission and report back at the next EADC meeting.

9.2 PNG - Automated
Meter Reading
Presentation

This will be presented at the June Board meeting.

9.3 BC Oil and Gas
Commission
Community Working
Groups

MOVED by Director Rose, SECONDED by Director Sperling,
That the Electoral Area Directors send a letter to Dave Nikolejsin, Deputy Minister of Energy, Mines and Petroleum Resources, expressing the Committee's disappointment with the lack of content in the BC Oil and Gas Commission Community Working Groups template.

CARRIED

Director Rose will work with staff to draft the letter.

9.4
Abandoned/Orphan

MOVED by Director Sperling, SECONDED by Director,
That the Electoral Area Directors Committee recommend that the Regional Board

Well Fund - Identifying and Prioritizing send a letter to Premier John Horgan and Bruce Ralston, Minister of Energy, Mines and Petroleum Resources stating that the Board wants to be involved in the prioritization process for clean up of orphan and inactive oil and gas wells.

CARRIED

9.5 Synergy Group MOVED by Director Rose, SECONDED by Director Hiebert,
That the Electoral Area Directors Committee will write a letter to Inés Piccinino, Executive Vice President, Legal & Regulatory Affairs and Strategic Services with the BC Oil and Gas Commission, to enquire about taking steps towards establishing a Synergy Group and securing funding.

CARRIED

9.6 Rural Seniors Initiative – Next Steps MOVED by Director Rose, SECONDED by Director Hiebert,
That the Electoral Area Directors Committee invite Sam Barber to the next EADC meeting, and further,

That the report submitted to Director Rose by Sam Barber, detailing costs and services provided to seniors during the pilot project, be distributed to Committee members.

CARRIED

NEW BUSINESS:

10.1 COVID-19 Messaging and Resources MOVED by Director Rose, SECONDED by Director Hiebert,
That the Electoral Area Directors Committee recommend to the Regional Board to send a letter to Adrian Dix, Minister of Health, asking that the provincial medical health officer be more open and candid about where cases of COVID-19 are in the province.

CARRIED

COMMUNICATIONS: None.

DIARY:

12.1 No changes were made to the Diary.

ADJOURNMENT

The Chair adjourned the meeting at 3:00 p.m.

Director Goodings, Meeting Chair

Naomi Donat, Administrative Clerk/Receptionist



PEACE RIVER REGIONAL DISTRICT

SPECIAL ELECTORAL AREA DIRECTORS COMMITTEE MEETING **MINUTES**

DATE: June 4, 2020

PLACE: Regional District Office Boardroom, Dawson Creek, BC

PRESENT: **Directors**

Director Goodings, Meeting Chair
Director Sperling
Director Hiebert
Director Rose

Staff

Shawn Dahlen, Chief Administrative Officer
Crystal Brown, Electoral Area Manager
Naomi Donat, Recording Secretary

Others

Call to Order The Chair called the meeting to order at 1:03 p.m.

ADOPTION OF AGENDA:

MOVED by Director Rose, SECONDED by Director Hiebert,
That the Electoral Area Directors Committee agenda for the June 4, 2020 Special meeting be adopted:

1. Call to Order
 - 1.1. Director Goodings to Chair the Meeting
2. Adoption of Agenda
3. Reports
 - 3.1. Wonowon Community Safety Improvement – Feasibility Study – RFP 15-2020-Contract Award, ADM-EADC-007
 - 3.2. Notice of Closed EADC Session – June 4, 2020, ADM-EADC-003
4. Adjournment

CARRIED

REPORTS:

3.1
Wonowon Community
Feasibility Study
Contract Award

MOVED by Director Goodings, SECONDED by Director Sperling,
That the Electoral Area Directors Committee recommend that the Regional Board award RFP 15-2020 “Wonowon Community Safety Improvement – Feasibility Study” to Urban Systems Ltd., for a total cost of \$19,400 (excluding GST); further, that the Chair and the Chief Administrative Officer be authorized to sign the agreement on behalf of the PRRD.

CARRIED

3.2
Notice of Closed
Session

MOVED by Director Sperling, SECONDED by Director Hiebert,
That the Electoral Area Directors Committee recess to a Closed Meeting for the
purpose of discussing the following items:

Agenda Item M-1, M-2, M-3 – Closed Meeting Minutes (CC Section
97(1)(b))

Agenda Items D-1 & R-1 – Negotiations Related to a Proposed Service (CC
Section 90 (1)(k) & 90(1)(j))

CARRIED

ADJOURNMENT

The Chair adjourned the meeting at 2:39 p.m.

Director Goodings, Meeting Chair

Naomi Donat, Recording Secretary

Peace River Regional District
Attention: Director Rose and Director Hiebert

RE: Rural Seniors Initiative (RSI) Trial Program Final Report

In June of 2019 Dawson Creek Society for Community Living (DCSCL) received a grant from the above directors for a trial program focusing on keeping rural seniors in their own homes longer.

The primary objectives of the program were:

- to a select number of rural seniors in electoral areas D and E (appendix 1) that could lead to seniors in the rural areas staying in their own homes longer.
- to determine viability and costs associated with the selected initiatives.
- to attempt to determine the total numbers of seniors in the two areas that could benefit from receiving services.

To determine the above, a committee of local active volunteers were selected to formulate details and assist in operating a trial program.

The trial operated from January 1, 2020 until February 29, 2020. Ten locations within area D and ten locations within area E were selected by a committee. Locations were selected by need, location and willingness to participate.

The primary initiatives chosen were:

- Supply one meal per day for each of the persons residing at the chosen locations
- Supply home cleaning services to each of the locations two hours every two weeks
- Supply snow removal as needed during the trial period

For the trial there was no cost to the seniors receiving the services.

From the beginning residents involved, recognized the chosen initiatives were not the only ones that may be needed but we felt those were key and could benefit the rural seniors the most.

We needed to see if services could actually be delivered during the winter months, hence the trial months of January and February.

When dealing with rural seniors we knew we needed to be flexible and some of the questions we explored were:

- Could local community kitchens using local expertise supply the meals?
- Could small businesses be established to supply home cleaning to the locations in both areas?
- What types of snow removal equipment would be most efficient when dealing with the distances involved?
- Could the trial deal with seniors moving in and out of the trial?

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www.dcscl.org

The idea of using rural contractors to supply the services during the trial was deemed critical for success. They not only knew most participants; they also knew where the locations were and what was the most efficient way of delivering the services.

Meals in Area D

A qualified food contractor supplied those living in the ten locations with one meal a day for the duration of the trial. The meals were prepared using the Tate Creek community kitchen every Monday. The meals were placed in disposal containers and delivered using local people every Tuesday and Wednesday. Approximately 980 meals were prepared and delivered during the trial.

Meals in Areas E

Meals were supplied by a local catering company to the ten locations using the community kitchen at McLeod School. Meals were prepared for delivery every Wednesday and each participant received one hot meal, one cool meal and five frozen meals. The meals were delivered using local residents in area E. There were approximately 980 meals made and delivered during the trial.

All involved with meal preparation had to have appropriate background checks and food safe training. The cost paid to the meal contractors included container cost and delivery. All meals had heating instructions on the individual containers, special diets were considered and those delivering the meals checked to make sure the service was going well and people were eating the meals.

Home Cleaning

As mentioned, a total of 20 locations were used in the trial. A local contractor from Area D provided service to the ten locations and another local contractor supplied service to the ten locations in Area E. For WorkSafeBC reasons two people attended all locations to house clean.

During the trial each location received two hours of service every two weeks. There was no limits on what the contractors were allowed to do as long as the task would allow a senior to stay in their own home longer. A total of 76 home visits were provided.

The contractor was responsible for all travel, insurance, cleaning supplies and tools. All cleaning staff were required to take an enhanced criminal record check. The contractors were also required to have an approved substitute worker if needed.

Snow Removal

This initiative was the hardest to plan. We knew going into the trial snow removal would be essential; not only for the seniors receiving the service but also to provide safe access to the contractors delivering food and home cleaning services.

In the end a maximum figure to supply snow removal to all locations was established. The rate paid to the contractors was based on BC Ministry of Transportation guidelines. Some issues like insurance needed more study but because the trial was so short we ran out of time trying to figure out the many issues around insurance as it relates to snow removal.

Technology

We also had a technology initiative. The idea was to see how technology could be used to assist seniors staying in their homes longer. There were a number of ways technology can help but the trial was too short to implement any ideas. However, a number of strategies did come forward to consider for future use.

Need for Service for Seniors Living in the Rural Area

Significant documentation exists showing the percentage of residents over the age of 65 years living in the Peace River Regional District and how that relates to the province as a whole. As is with most statistics sources some are better than others for the purpose of this report we will use verifiable information.

Statistics Canada

The total population of electoral D in the Peace River Regional District is 5,920 (Census Profile, 2016 Census, Electoral D appendix 2)

There are a total of 2,450 private dwellings

Total population over 65 years of age is 835

Percentage in the area of those over 65 years is 14.1%

Provincial over 65 years is 18.3%

Total population of electoral E in the Peace River Regional District is 2,949 (Census Profile, 2016 Census, Electoral E appendix 3)

There are a total of 1,430 private dwellings

Total population over 65 years of age is 395

Percentage in the area of those over 65 years is 13.4%

Provincial over 65 years is 18.3%

The above numbers are for 2016. BC Senior advocate Isobel Mackenzie in January 2020 stated the percentage of Seniors over 65 living in the province has increased from 14% to 18% (Baby Boomer Bulge appendix 4).

One of the objectives of the Rural Seniors Initiative was to determine need for services for seniors in the rural areas. At the moment; there are no dedicated services generally available to rural seniors.

So, is there a need? There are numerous ways of determining need. Statistics show 13 – 14% of the local rural population is over 65 but that does not mean they need services that would allow them to stay in their own homes longer. It is an indicator that services may be needed in the future and that is all it says.

Members of the RSI organizing committee were asked to list all seniors that might be able to use the suggested trial services in the McLeod – Groundbirch area. The number arrived at was 60+. There again is that number relevant and can it relate to those who actually need services that would allow them to stay in their homes longer? All that number does is provide a little focus to those seniors who might need services either sooner or later.

A needs committee was established to gain additional focus on who may need services and developed a list of potential trial participants. The committee was made up of folks well

connected to the local population. The general committee then had input into the suggested list of participants and the final choice was made on who would participate. Need was obviously key but also location. To determine true costs we needed the trial participants to be spread out from the two hubs. There was no issues filling the allotted spaces in the trial which is another indication of needs for service. While the trial was proceeding numerous people asked about participating showing another level of need. Without going into major detail there appears to be a need for services that would allow seniors living in areas D and E to stay in their own homes longer.

Service Cost Delivery Analysis

Another goal of the trial was to determine cost of delivering the suggested initiatives.

One major decision from the very start was to use local contractors to supply services. The rate paid for services was all inclusive. We wanted contractors to be paid a fair rate for services provided. We also realized the community kitchens needed to be rented during the trial period and in the case of McLeod we had to work around a school that was in session, material needed to be purchased locally and any staff needed had to be from the rural areas.

Meals

Prior to the trial, the food contractor had to visit each location and determine cooking ability, dietary needs, freezer space and a host of other variables.

The contractor was, then required to supply one meal per day for each senior living in the locations chosen in each area. The contractor was responsible to place the meals in appropriate containers. The containers had to be labeled with cooking instructions. Dietary concerns, portion size, Canada Food Guide recommendations, insurance and menu issues were all factors that needed to be considered. All taxes were included in the meal price when first determining a budget amount for the meal initiative. The committee reviewed costs from others supplying similar services. The one closest to our model was the food preparation at DCSCL's Northview senior's facility in Dawson Creek. We determined our cost per meal at Northview is in the range of \$15.00 per meal. That cost did not include delivery or containers. It is difficult to compare the service models, but we took that amount into consideration. In the end an all-inclusive figure of \$23.00 per meal was arrived at and that became the budget figure.

One of the requirements contractors had during the trial was to give actual cost breakdowns for the services they provided after the trial was complete.

This report will not contain all details, but the high lights are:

Food Cost \$ 5.71
Labour Cost \$7.84
Delivery Cost \$ 1.60
Container Cost \$1.00
Total \$ 16.15

The above were taken from both cost detail sheets and are averages more than actual costs. Area D placed their average cost at \$19.10 per meal and area E placed their average at \$15.89.

Average cost went down over the trail as efficiencies were realized.

Both contractors offered very good ideas on problems faced during the trial and how things could be done more efficiently and how to reduce costs if the initiative moves forward. The above will greatly assist in determining what an actual meal budget cost should be.

Home Cleaning

Prior to the trial the home cleaning contractors had to visit each location and talk to the residents. They kept a log of those conversations and all subsequent visits.

The contractor was responsible for all travel, insurance, tools and cleaning supplies. The contractor had to supply two cleaning staff for each visit and had to have a standby preapproved individual in case one cleaner was unavailable.

There were no limits on what the home cleaners could do as long as the task would keep the senior in their own home longer.

Ten locations were chosen in each area and all contractors had to complete enhanced criminal record checks.

Each location received a home cleaning visit for two hours every two weeks.

Two cleaners were sent together for WorkSafeBC reasons but more important seniors love to talk. Two cleaners ensured that the required cleaning got done while meeting the social aspect of the senior. Seniors are often isolated and need to talk to someone.

A total of 76 visits were completed during the trial.

The cost for each visit was set by the organizing committee and like the meal initiative, people were paid a fair wage.

Each visit cost the trial \$175.00.

The following data is for the area D contractor, but the area E data is similar.

Total expenses for area D home cleaning was \$6,300.00

Total wages was \$5,300.00

Total benefits was \$526.36

Total insurance was \$375.00

Each home cleaner was paid \$30.00 per hour plus benefits as per labour standards. They were responsible for all cleaning material, tools, insurance, employee benefits and travel. If the project proceeds the above will be used in determining budget costs for home cleaning.

Snow Removal

Snow removal was the most challenging for the organizing committee. At what point do you provide the service, what type of machinery, what about the required insurance? In the end we placed a maximum figure of \$6,000 per area per month for the initiative. If we had small amounts of snow during the trial, we were fine. If we had lots of snow, we would suspend service when we got to the allocated budget amount. Because the trial was for two months, we

did plow enough snow to get actual costs; however we were lucky as it did not snow too much. Area E received less snow than area D which was interesting.

The contractor was responsible for snow removal and shovel work at the front steps. Non slip grit was also the contractor's responsibility. The machinery used was paid according to Ministry of Transportation rent guidelines. We were not able to resolve the insurance issue as the trial was completed before we got any answers. We arrived at a figure of \$100.00 per visit including all travel. We learned the most efficient equipment for normal snow amounts was a 4x4 plow truck with a blade or large skid steer on a trailer. The service was coordinated with the home cleaning and meal delivery people.

Technology

The technology initiative did not develop fully but we realize rural seniors and their families can use technology to allow them to stay in their own homes longer. Numerous technological devices are now available and others are being released. The technology group established a website and continue to keep that site up to date.

Conclusions

Is there a need for services that would allow seniors in the rural area to stay in their home longer?

- Yes. The trial has indicated the need and it is substantial.

Can initiatives be supplied during all months of the year?

- Yes. We know the offered initiatives are possible. Participants have given very good ideas on what other initiatives should be considered.

Does the model of using existing facilities and local expertise work?

- Yes. We have the infrastructure in the rural area. We have local expertise and knowledge. Local people are willing to engage with the idea.

Do we have data relating to cost to providing service?

- Yes. We have good data on the initiatives offered and know how to determine costs of other initiatives that might be offered.

Other services needed such as the social aspect and medical needs became evident during the trial (How one Hospital Tackles Hallway Medicine appendix 5). These need further exploration. That was not the mandate of the project but suggestions on how to meet the needs were given as feedback from all involved in the project.

May 2020

The final report for the Rural Seniors Initiative was started in early March of 2020. In mid March the Covid-19 pandemic came into focus. Because the RSI had just finished, and we still had our infrastructure in place we asked and received permission from the two rural directors to use the remaining funds from the original grant to continue offering services to seniors. Significant services were offered to all seniors in the Peace River South area until late May.

The pandemic reinforced several outcomes from the original RSI trial.

The most obvious was the need for any senior, rural or urban, to receive services that allow them to stay in their own homes as long as possible.

We gained experience in home delivery of groceries to both urban and rural seniors. How to meet regulations governing delivery of dairy products.

How to deliver meals in a timely fashion to groups very far removed from our established hubs.

How to reach out to seniors who have limited internet access when social gatherings are not possible.

How to interact with other social agencies to provide the best service possible to those needing assistance.

Involve local resources to assist. A prime example of that was getting the McLeod Country Quilters to manufacture face masks. Those masks were available at local business locations free of charge to seniors wishing them.

The Covid-19 pandemic has brought to light significant cracks in how our society deals with seniors. The RSI trial was an attempt to provide services that would allow rural seniors to stay in their own homes longer. This strategy needs to be pursued.

The largest take away we have observed through both the RSI trial and pandemic is to use the local resources you have. Do not assume someone else will come to your aid.

Respectfully submitted

Sam Barbar
Board Chairperson



Home → [Census Program](#) → [Data products, 2016 Census](#) → [Census Profile, 2016 Census](#) → [Search results for "Peace River D"](#)
→ Peace River D, RDA (Regional district electoral area) [Census subdivision], British Columbia and British Columbia [Province]

Census Profile, 2016 Census

Peace River D, Regional district electoral area [Census subdivision], British Columbia and British Columbia [Province]

Topic: **All data**

Counts Rates Submit



Related data ▼

Characteristic	Peace River D, RDA (Regional district electoral area)			British Columbia		
	British Columbia			[Province]		
	[Census subdivision]					
	Total	Male	Female	Total	Male	Female
	Counts (unless otherwise specified)					
Population and dwellings						
Population, 2016 ¹	5,920	... (not applicable)	... (not applicable)	4,648,055	... (not applicable)	... (not applicable)
Population, 2011 ¹	5,479	... (not applicable)	... (not applicable)	4,400,057	... (not applicable)	... (not applicable)
Population percentage change, 2011 to 2016	8.0	... (not applicable)	... (not applicable)	5.6	... (not applicable)	... (not applicable)
Total private dwellings ²	2,450	... (not applicable)	... (not applicable)	2,063,417	... (not applicable)	... (not applicable)
Private dwellings occupied by usual residents ³	2,241	... (not applicable)	... (not applicable)	1,881,969	... (not applicable)	... (not applicable)
Population density per square kilometre	0.5	... (not applicable)	... (not applicable)	5.0	... (not applicable)	... (not applicable)
Land area in square kilometres	11,706.80	... (not applicable)	... (not applicable)	922,503.01	... (not applicable)	... (not applicable)
Age characteristics						
Total - Age groups and average age of the population - 100% data ⁴	5,920	3,095	2,825	4,648,055	2,278,245	2,369,815
0 to 14 years	1,080	565	515	691,390	355,400	335,985
0 to 4 years	335	180	155	220,625	113,355	107,275
5 to 9 years	370	195	180	236,900	122,070	114,830
10 to 14 years	375	185	185	233,860	119,975	113,885
15 to 64 years	4,005	2,080	1,925	3,107,680	1,527,280	1,580,400
15 to 19 years	375	190	185	258,980	133,000	125,985
20 to 24 years	300	155	145	287,560	147,615	139,945
25 to 29 years	295	145	150	303,000	151,585	151,415
30 to 34 years	350	190	160	313,750	155,035	158,715

35 to 39 years	335	165	170	293,590	143,070	150,520
40 to 44 years	390	205	185	295,045	141,930	153,115
45 to 49 years	400	195	205	322,365	155,325	167,040
50 to 54 years	540	290	245	354,375	172,065	182,310
55 to 59 years	565	295	265	354,925	171,210	183,715
60 to 64 years	450	240	205	324,095	156,450	167,645
65 years and over	835	450	385	848,985	395,560	453,425
65 to 69 years	325	165	160	287,520	139,490	148,035
70 to 74 years	215	120	90	201,785	97,675	104,110
75 to 79 years	170	90	80	145,225	68,715	76,510
80 to 84 years	95	55	45	105,255	48,645	56,610
85 years and over	30	20	10	109,190	41,035	68,155
85 to 89 years	25	20	5	67,510	27,930	39,575
90 to 94 years	5	0	0	31,815	10,615	21,205
95 to 99 years	0	0	0	8,545	2,215	6,330
100 years and over	0	0	0	1,325	275	1,050
Total - Distribution (%) of the population by broad age groups - 100% data	100.0	100.0	100.0	100.0	100.0	100.0
0 to 14 years	18.2	18.3	18.2	14.9	15.6	14.2
15 to 64 years	67.7	67.2	68.1	66.9	67.0	66.7
65 years and over	14.1	14.5	13.6	18.3	17.4	19.1
85 years and over	0.5	0.6	0.4	2.3	1.8	2.9
Average age of the population	40.4	40.7	40.1	42.3	41.5	43.1
Median age of the population	42.9	43.2	42.5	43.0	41.9	44.0

Household and dwelling characteristics

Total - Occupied private dwellings by structural type of dwelling - 100% data ^a	2,240	... (not applicable)	... (not applicable)	1,881,970	... (not applicable)	... (not applicable)
Single-detached house	1,915	... (not applicable)	... (not applicable)	830,660	... (not applicable)	... (not applicable)
Apartment in a building that has five or more storeys	0	... (not applicable)	... (not applicable)	177,830	... (not applicable)	... (not applicable)
Other attached dwelling ^a	20	... (not applicable)	... (not applicable)	824,190	... (not applicable)	... (not applicable)
Semi-detached house	5	... (not applicable)	... (not applicable)	57,395	... (not applicable)	... (not applicable)
Row house	0	... (not applicable)	... (not applicable)	147,830	... (not applicable)	... (not applicable)
Apartment or flat in a duplex	5	... (not applicable)	... (not applicable)	230,075	... (not applicable)	... (not applicable)
Apartment in a building that has fewer than five storeys	0	... (not applicable)	... (not applicable)	385,140	... (not applicable)	... (not applicable)

Other single-attached house	5	... (not applicable)	... (not applicable)	3,755	... (not applicable)	... (not applicable)
Movable dwelling ²	305	... (not applicable)	... (not applicable)	49,290	... (not applicable)	... (not applicable)
Total - Private households by household size - 100% data ⁸	2,240	... (not applicable)	... (not applicable)	1,881,970	... (not applicable)	... (not applicable)
1 person	440	... (not applicable)	... (not applicable)	541,910	... (not applicable)	... (not applicable)
2 persons	940	... (not applicable)	... (not applicable)	663,770	... (not applicable)	... (not applicable)
3 persons	345	... (not applicable)	... (not applicable)	277,690	... (not applicable)	... (not applicable)
4 persons	330	... (not applicable)	... (not applicable)	243,125	... (not applicable)	... (not applicable)
5 or more persons	185	... (not applicable)	... (not applicable)	155,470	... (not applicable)	... (not applicable)
Number of persons in private households	5,720	... (not applicable)	... (not applicable)	4,560,240	... (not applicable)	... (not applicable)
Average household size	2.6	... (not applicable)	... (not applicable)	2.4	... (not applicable)	... (not applicable)
Marital status						
Total - Marital status for the population aged 15 years and over - 100% data ⁹	4,835	2,525	2,310	3,956,665	1,922,840	2,033,825
Married or living common law	3,400	1,705	1,690	2,297,325	1,146,175	1,151,150
Married	2,800	1,410	1,395	1,925,345	959,690	965,645
Living common law	595	295	295	371,985	186,485	185,505
Not married and not living common law	1,440	820	620	1,659,335	776,660	882,675
Never married	950	575	380	1,076,085	582,975	493,110
Separated	105	70	40	105,700	45,225	60,475
Divorced	200	135	70	263,870	103,475	160,395
Widowed	180	50	130	213,685	44,990	168,700
Family characteristics						
Total - Census families in private households by family size - 100% data ¹⁰	1,800	... (not applicable)	... (not applicable)	1,311,340	... (not applicable)	... (not applicable)
2 persons	1,000	... (not applicable)	... (not applicable)	703,685	... (not applicable)	... (not applicable)
3 persons	350	... (not applicable)	... (not applicable)	275,965	... (not applicable)	... (not applicable)
4 persons	305	... (not applicable)	... (not applicable)	243,960	... (not applicable)	... (not applicable)
5 or more persons	150	... (not applicable)	... (not applicable)	87,730	... (not applicable)	... (not applicable)

Census Profile, 2016 Census - Peace River CD, Regional district electoral area, Census subdivision, British Columbia and British Columbia (Province)						
2020-03-04, 10:58 AM						
Average size of census families	2.8	... (not applicable)	... (not applicable)	2.8	... (not applicable)	... (not applicable)
Total number of census families in private households - 100% data ¹¹	1,800	... (not applicable)	... (not applicable)	1,311,345	... (not applicable)	... (not applicable)
Total couple families	1,640	... (not applicable)	... (not applicable)	1,113,405	... (not applicable)	... (not applicable)
Married couples	1,340	... (not applicable)	... (not applicable)	927,440	... (not applicable)	... (not applicable)
Common-law couples	300	... (not applicable)	... (not applicable)	185,960	... (not applicable)	... (not applicable)
Total lone-parent families by sex of parent	155	... (not applicable)	... (not applicable)	197,940	... (not applicable)	... (not applicable)
Female parent	90	... (not applicable)	... (not applicable)	155,670	... (not applicable)	... (not applicable)
Male parent	65	... (not applicable)	... (not applicable)	42,265	... (not applicable)	... (not applicable)
Total - Couple census families in private households - 100% data	1,640	... (not applicable)	... (not applicable)	1,113,400	... (not applicable)	... (not applicable)
Couples without children	900	... (not applicable)	... (not applicable)	577,790	... (not applicable)	... (not applicable)
Couples with children	745	... (not applicable)	... (not applicable)	535,610	... (not applicable)	... (not applicable)
1 child	310	... (not applicable)	... (not applicable)	221,065	... (not applicable)	... (not applicable)
2 children	290	... (not applicable)	... (not applicable)	230,705	... (not applicable)	... (not applicable)
3 or more children	140	... (not applicable)	... (not applicable)	83,840	... (not applicable)	... (not applicable)
Total - Lone-parent census families in private households - 100% data	155	... (not applicable)	... (not applicable)	197,940	... (not applicable)	... (not applicable)
1 child	100	... (not applicable)	... (not applicable)	125,890	... (not applicable)	... (not applicable)
2 children	40	... (not applicable)	... (not applicable)	54,900	... (not applicable)	... (not applicable)
3 or more children	20	... (not applicable)	... (not applicable)	17,145	... (not applicable)	... (not applicable)
Total - Persons not in census families in private households - 100% data	650	400	245	882,895	418,495	464,405
Household type						
Total - Private households by household type - 100% data ¹²	2,240	... (not applicable)	... (not applicable)	1,881,970	... (not applicable)	... (not applicable)
One-census-family households	1,735	... (not applicable)	... (not applicable)	1,195,735	... (not applicable)	... (not applicable)



Home → Census Program → Data products, 2016 Census → Census Profile, 2016 Census → Search results for "Peace River E"
→ Peace River E, RDA (Regional district electoral area) [Census subdivision], British Columbia and British Columbia [Province]

Census Profile, 2016 Census

Peace River E, Regional district electoral area [Census subdivision], British Columbia and British Columbia [Province]

Topic: **All data**

Counts Rates Submit

Related data ▼

Characteristic	Peace River E, RDA (Regional district electoral area)			British Columbia		
	British Columbia			[Province]		
	[Census subdivision]					
	Total	Male	Female	Total	Male	Female
Counts (unless otherwise specified)						
Population and dwellings						
Population, 2016 ¹	2,949	... (not applicable)	... (not applicable)	4,648,055	... (not applicable)	... (not applicable)
Population, 2011 ¹	2,764	... (not applicable)	... (not applicable)	4,400,057	... (not applicable)	... (not applicable)
Population percentage change, 2011 to 2016	6.7	... (not applicable)	... (not applicable)	5.6	... (not applicable)	... (not applicable)
Total private dwellings ²	1,430	... (not applicable)	... (not applicable)	2,063,417	... (not applicable)	... (not applicable)
Private dwellings occupied by usual residents ³	1,199	... (not applicable)	... (not applicable)	1,881,969	... (not applicable)	... (not applicable)
Population density per square kilometre	0.2	... (not applicable)	... (not applicable)	5.0	... (not applicable)	... (not applicable)
Land area in square kilometres	16,355.14	... (not applicable)	... (not applicable)	922,503.01	... (not applicable)	... (not applicable)
Age characteristics						
Total - Age groups and average age of the population - 100% data ⁴	2,950	1,560	1,385	4,648,055	2,278,245	2,369,815
0 to 14 years	550	290	260	691,390	355,400	335,985
0 to 4 years	185	95	90	220,625	113,355	107,275
5 to 9 years	195	105	90	236,900	122,070	114,830
10 to 14 years	170	90	80	233,860	119,975	113,885
15 to 64 years	2,000	1,035	965	3,107,680	1,527,280	1,580,400
15 to 19 years	170	90	80	258,980	133,000	125,985
20 to 24 years	135	65	70	287,560	147,615	139,945
25 to 29 years	175	90	90	303,000	151,585	151,415
30 to 34 years	165	80	85	313,750	155,035	158,715

35 to 39 years	150	80	70	293,590	143,070	150,520
40 to 44 years	155	85	70	295,045	141,930	153,115
45 to 49 years	220	115	100	322,365	155,325	167,040
50 to 54 years	300	145	155	354,375	172,065	182,310
55 to 59 years	310	170	135	354,925	171,210	183,715
60 to 64 years	225	120	105	324,095	156,450	167,645
65 years and over	395	235	160	848,985	395,560	453,425
65 to 69 years	175	105	70	287,520	139,490	148,035
70 to 74 years	100	65	35	201,785	97,675	104,110
75 to 79 years	60	30	25	145,225	68,715	76,510
80 to 84 years	50	30	20	105,255	48,645	56,610
85 years and over	20	10	5	109,190	41,035	68,155
85 to 89 years	15	5	5	67,510	27,930	39,575
90 to 94 years	5	0	5	31,815	10,615	21,205
95 to 99 years	5	5	0	8,545	2,215	6,330
100 years and over	0	0	0	1,325	275	1,050
Total - Distribution (%) of the population by broad age groups - 100% data	100.0	100.0	100.0	100.0	100.0	100.0
0 to 14 years	18.6	18.6	18.8	14.9	15.6	14.2
15 to 64 years	67.8	66.3	69.7	66.9	67.0	66.7
65 years and over	13.4	15.1	11.6	18.3	17.4	19.1
85 years and over	0.7	0.6	0.4	2.3	1.8	2.9
Average age of the population	40.5	41.3	39.5	42.3	41.5	43.1
Median age of the population	44.2	45.5	42.2	43.0	41.9	44.0

Household and dwelling characteristics

Total - Occupied private dwellings by structural type of dwelling - 100% data ⁵	1,200	... (not applicable)	... (not applicable)	1,881,970	... (not applicable)	... (not applicable)
Single-detached house	880	... (not applicable)	... (not applicable)	830,660	... (not applicable)	... (not applicable)
Apartment in a building that has five or more storeys	0	... (not applicable)	... (not applicable)	177,830	... (not applicable)	... (not applicable)
Other attached dwelling ⁶	0	... (not applicable)	... (not applicable)	824,190	... (not applicable)	... (not applicable)
Semi-detached house	0	... (not applicable)	... (not applicable)	57,395	... (not applicable)	... (not applicable)
Row house	0	... (not applicable)	... (not applicable)	147,830	... (not applicable)	... (not applicable)
Apartment or flat in a duplex	0	... (not applicable)	... (not applicable)	230,075	... (not applicable)	... (not applicable)
Apartment in a building that has fewer than five storeys	0	... (not applicable)	... (not applicable)	385,140	... (not applicable)	... (not applicable)

Other single-attached house	0	... (not applicable)	... (not applicable)	3,755	... (not applicable)	... (not applicable)
Movable dwelling ^Z	320	... (not applicable)	... (not applicable)	49,290	... (not applicable)	... (not applicable)
Total - Private households by household size - 100% data ^B	1,200	... (not applicable)	... (not applicable)	1,881,970	... (not applicable)	... (not applicable)
1 person	275	... (not applicable)	... (not applicable)	541,910	... (not applicable)	... (not applicable)
2 persons	515	... (not applicable)	... (not applicable)	663,770	... (not applicable)	... (not applicable)
3 persons	165	... (not applicable)	... (not applicable)	277,690	... (not applicable)	... (not applicable)
4 persons	145	... (not applicable)	... (not applicable)	243,125	... (not applicable)	... (not applicable)
5 or more persons	95	... (not applicable)	... (not applicable)	155,470	... (not applicable)	... (not applicable)
Number of persons in private households	2,945	... (not applicable)	... (not applicable)	4,560,240	... (not applicable)	... (not applicable)
Average household size	2.4	... (not applicable)	... (not applicable)	2.4	... (not applicable)	... (not applicable)
Marital status						
Total - Marital status for the population aged 15 years and over - 100% data ^A	2,400	1,270	1,125	3,956,665	1,922,840	2,033,825
Married or living common law	1,635	815	815	2,297,325	1,146,175	1,151,150
Married	1,305	655	650	1,925,345	959,690	965,645
Living common law	330	165	165	371,985	186,485	185,505
Not married and not living common law	765	455	310	1,659,335	776,660	882,675
Never married	475	280	195	1,076,085	582,975	493,110
Separated	55	40	20	105,700	45,225	60,475
Divorced	140	95	45	263,870	103,475	160,395
Widowed	95	40	60	213,685	44,990	168,700
Family characteristics						
Total - Census families in private households by family size - 100% data ¹⁰	915	... (not applicable)	... (not applicable)	1,311,340	... (not applicable)	... (not applicable)
2 persons	540	... (not applicable)	... (not applicable)	703,685	... (not applicable)	... (not applicable)
3 persons	150	... (not applicable)	... (not applicable)	275,965	... (not applicable)	... (not applicable)
4 persons	140	... (not applicable)	... (not applicable)	243,960	... (not applicable)	... (not applicable)
5 or more persons	85	... (not applicable)	... (not applicable)	87,730	... (not applicable)	... (not applicable)

Average size of census families	2.8	... (not applicable)	... (not applicable)	2.8	... (not applicable)	... (not applicable)
Total number of census families in private households - 100% data ¹¹	915	... (not applicable)	... (not applicable)	1,311,345	... (not applicable)	... (not applicable)
Total couple families	810	... (not applicable)	... (not applicable)	1,113,405	... (not applicable)	... (not applicable)
Married couples	645	... (not applicable)	... (not applicable)	927,440	... (not applicable)	... (not applicable)
Common-law couples	165	... (not applicable)	... (not applicable)	185,960	... (not applicable)	... (not applicable)
Total lone-parent families by sex of parent	105	... (not applicable)	... (not applicable)	197,940	... (not applicable)	... (not applicable)
Female parent	60	... (not applicable)	... (not applicable)	155,670	... (not applicable)	... (not applicable)
Male parent	40	... (not applicable)	... (not applicable)	42,265	... (not applicable)	... (not applicable)
Total - Couple census families in private households - 100% data	810	... (not applicable)	... (not applicable)	1,113,400	... (not applicable)	... (not applicable)
Couples without children	475	... (not applicable)	... (not applicable)	577,790	... (not applicable)	... (not applicable)
Couples with children	335	... (not applicable)	... (not applicable)	535,610	... (not applicable)	... (not applicable)
1 child	125	... (not applicable)	... (not applicable)	221,065	... (not applicable)	... (not applicable)
2 children	130	... (not applicable)	... (not applicable)	230,705	... (not applicable)	... (not applicable)
3 or more children	80	... (not applicable)	... (not applicable)	83,840	... (not applicable)	... (not applicable)
Total - Lone-parent census families in private households - 100% data	105	... (not applicable)	... (not applicable)	197,940	... (not applicable)	... (not applicable)
1 child	65	... (not applicable)	... (not applicable)	125,890	... (not applicable)	... (not applicable)
2 children	20	... (not applicable)	... (not applicable)	54,900	... (not applicable)	... (not applicable)
3 or more children	15	... (not applicable)	... (not applicable)	17,145	... (not applicable)	... (not applicable)
Total - Persons not in census families in private households - 100% data	390	255	140	882,895	418,495	464,405
Household type						
Total - Private households by household type - 100% data ¹²	1,195	... (not applicable)	... (not applicable)	1,881,970	... (not applicable)	... (not applicable)
One-census-family households	885	... (not applicable)	... (not applicable)	1,195,735	... (not applicable)	... (not applicable)

British Columbia

Baby boomer bulge pushes percentage of seniors in B.C. higher, report says

Between 2018 and 2019, the percentage of seniors living in the province increased from 14% to 18%

CBC News · Posted: Dec 12, 2019 2:20 PM PT | Last Updated: December 12, 2019



B.C. Seniors Advocate Isobel Mackenzie released her office's annual report on services for seniors. (CBC)

comments 

The annual report from the office of the B.C seniors advocate says the percentage of the

population of people age 65 and over continues to expand, up from 14 per cent in 2018 to 18 per cent in 2019.

The growth represents the bulge of the baby boomers moving into the seniors demographic, but B.C. Seniors Advocate Isobel Mackenzie says the proportion of seniors is not evenly distributed throughout the province.

"Vancouver Island does have the highest percentage of people over the age of 65 — 24 per cent ... compared to the north where only 13 per cent of the population is over the age of 65. So, we might want to pay more attention here on the island," Mackenzie told CBC's *On the Island* host Gregor Craigie.

According to Mackenzie, the health-care system won't feel the full impact of the aging baby boomers for another few years.

- [View the report Monitoring Seniors Services 2019.](#)

According to the report, the number of seniors' subsidized housing units continued to shrink for a fifth straight year, with the waiting lists for such units increasing in tandem.

- [Low wages, few job openings driving B.C.'s care worker shortage, not lack of staff: seniors advocate](#)

"That's a troublesome trend," said Mackenzie. "We're certainly going to be having some discussions with B.C. Housing about why we're seeing that."

Staffing shortages and other problems

Mackenzie said a report coming in January will look at whether care providers are actually providing the care they are being funded for.

"As we review a great amount of the data and reports back from care facilities to the funders, we find that, first of all, not everybody is delivering the hours of care they're funded to deliver," said Mackenzie. "And two, they're not spending all of the money we've provided

to them on delivering those hours of care."

Earlier this year, complaints forced Island Health to take over the administration of senior care facilities in Courtenay and Nanaimo after they were found to be chronically understaffed and non-compliant with the [Community Care and Assisted Living Act](#).

- **[Bentall Centre, Vancouver's largest office complex, selling for secret price](#)**

The facilities in question are part of a group of 23 seniors homes that were bought by China's Anbang Insurance Group in 2017 in a federally approved sale.

The Chinese government took control of Anbang in 2018 when the company's [founder was convicted of fraud in China](#).

Seventy per cent of all the long-term care beds in the province are contracted out, receiving \$1.4 billion in public money annually.

Mackenzie said there needs to be better tools to keep care providers in compliance.

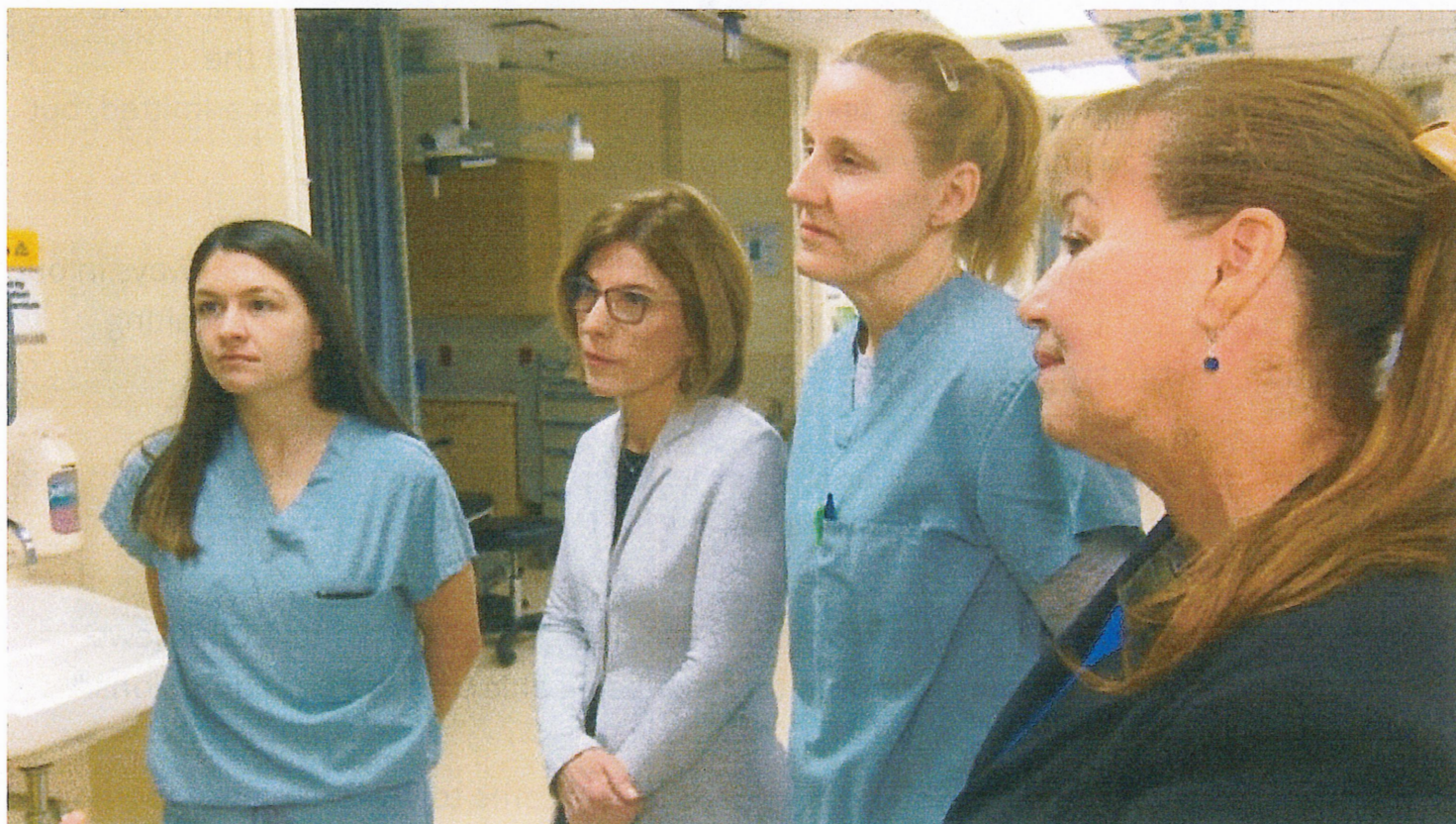
"I'd like us to start talking about whether we can levy financial penalties for infractions far earlier in the process," she said. Right now, there's no incentive for a care home provider to be better than the next care home or to be excellent from a financial perspective. They get paid the same."

Toronto

How one hospital tackles hallway medicine, starting in the emergency room

Sunnybrook's 'ED One Team' aims to help seniors avoid hospital by boosting home supports

Mike Crawley · CBC News · Posted: Feb 13, 2020 4:00 AM ET | Last Updated: February 13



Some of the members of the Sunnybrook ED One Team, from left, include occupational therapist Faith Gallant, social worker Valerie Soper, physiotherapist Belinda Wagner, and geriatric nurse clinician Judith Keen-Bingham. (Paul Smith/CBC)

comments



One Ontario hospital is trying to lessen its "hallway medicine" problem by forming a new team of health-care workers in its emergency room with the aim of reducing admission rates among seniors.

The "ED One Team" at Sunnybrook Health Sciences in Toronto launched in late October and is already showing evidence of success, according to figures provided by hospital officials that suggest a nearly five per cent drop in admissions.

The team brings together a social worker, a geriatric emergency medicine nurse, a physiotherapist, an occupational therapist, a community care co-ordinator, a psycho-geriatric case manager and staff from agencies that provide home-care services.

The team helps patients who come to the emergency room avoid being admitted to the hospital by ensuring adequate supports are available for them at home or in the community. Its target group is those aged 70 and older who don't need to be admitted, but who can't otherwise go home safely straight from the emergency room.

The team has helped Sunnybrook "reduce the number of patients who are in hallways in our emergency department, as well as the number of patients who are stuck in the waiting room," said Dr. Aikta Verma, the hospital's chief of emergency services.

Dr. Aikta Verma, chief of emergency medicine at Sunnybrook Health Sciences Centre, explains how a new team helped prevent a hospital admission for an elderly patient. 0:43

"I'm really proud of the work that the team has been doing here," Verma told CBC News. "This has really made a difference for us in terms of being able to lower our admissions."

Verma pointed to the recent case of an older patient who came to the emergency room with what the doctor described as a "very minor" foot fracture but was unable to walk.

A year ago, said Verma, she would have decided that the patient needed to stay in hospital. Instead, Verma contacted the ED One Team, whose members taught the patient how to walk with support, got her the equipment she needed to be safe at home, and avoided admission.

"This was better for the patient as well as for the system overall," said Verma.

Sunnybrook hopes the team's efforts will help alleviate some of the demand for beds that has led to the "hallway health-care" trend on its wards and in hospitals across the province.

An [investigation by CBC News](#) last month revealed dozens of Ontario hospitals were filled beyond capacity for weeks at a time in 2019. The data showed Sunnybrook with a higher than 100 per cent occupancy rate on 47 days in the six-month period analyzed.



Members of Sunnybrook's team meet every day to discuss the cases of emergency room patients who may need extra supports to make the transition home, rather than be admitted to hospital. (Paul Smith/CBC)

Premier Doug Ford has promised to [end hallway medicine](#). The government's statistics show a five-to-six per cent drop over the past year in the number of hospital patients in "unconventional spaces" such as hallways and storage rooms, but that still means some 950 patients are falling into that category every day.

Sunnybrook's ED One Team operates seven days a week from 8 a.m. until 11 p.m.,

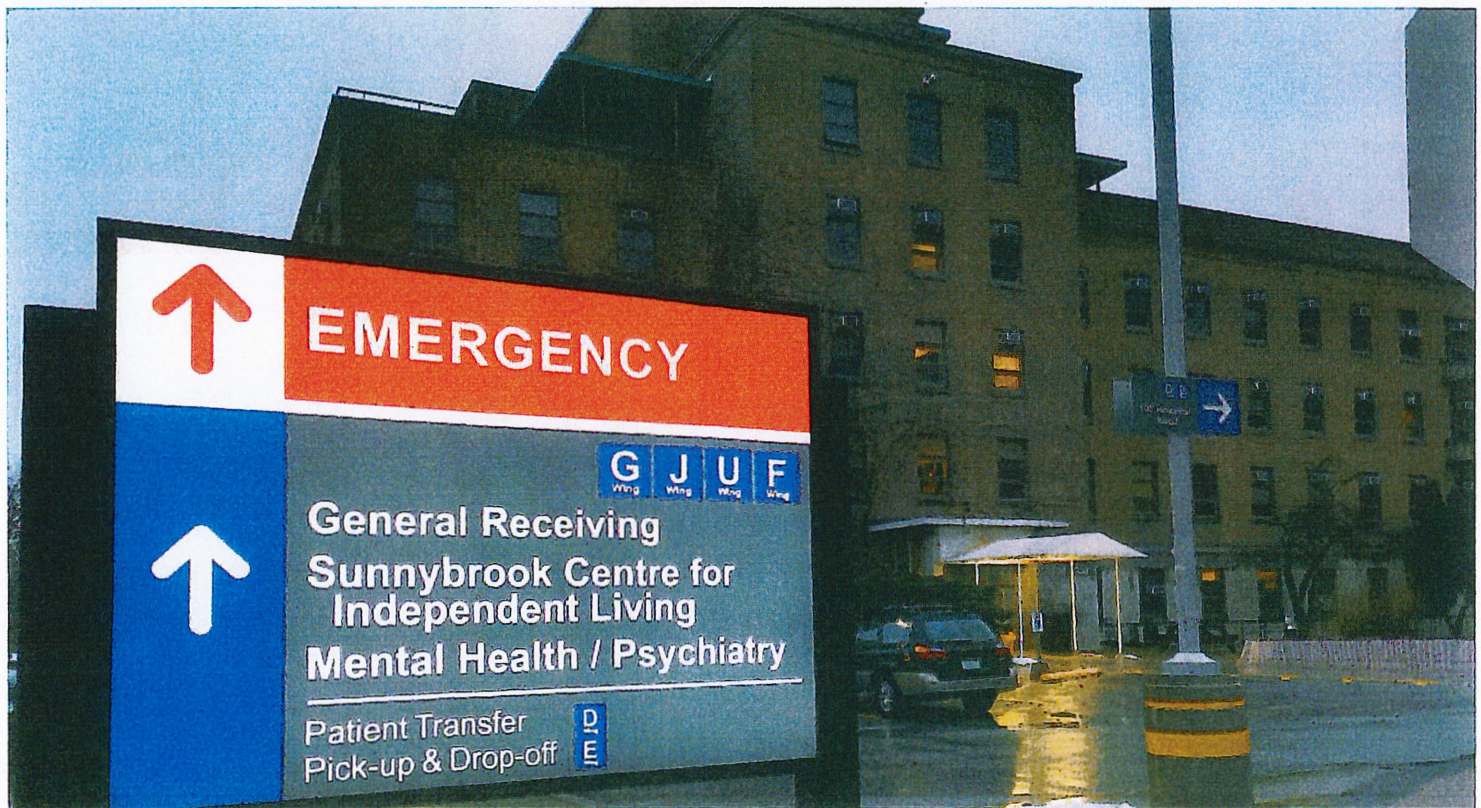
working with the emergency department medical staff to identify patients who don't need hospital admission, but need some form of extra care.

- **Doug Ford boasts of 'tremendous progress' on hallway health care**
- **CBC INVESTIGATES** **How Ontario's 'hallway medicine' problem has become an everyday reality**

That could include physiotherapy right in the emergency room, something that previously was only provided to patients who'd been admitted, unnecessarily taking up a hospital bed sometimes for days.

Physiotherapist Belinda Wagner said the team typically sees patients who come to the ER with an injury or an illness that affects their ability to function safely at home but who don't require a hospital stay.

"If they're medically stable and they're ready to leave this level of care but not necessarily go home safely, we as a team can put our brains together and figure out what is the best next place for them to go," said Wagner.





The ED One Team operates seven days a week from 8 a.m. to 11 p.m. in the emergency department at Sunnybrook. (Doug Ives/Canadian Press)

Team member and social worker Valerie Soper says it's "fantastic because we all come to the table with a different lens and there's so many improvements that have been made in the emergency department."

Soper worked in Sunnybrook's ER long before the formation of the team and said the change has meant each professional's work gets done more efficiently, patients' needs are being met in a more timely fashion, and discharges happen more quickly.

- **One of Ontario's most overcrowded hospitals is in the health minister's riding**
- **ANALYSIS** **How Ontario health care will change with Ford government's reforms**
- **Hallway medicine in Ontario, from the people who've been there**

By working until 11 p.m., the team can set up home-care supports that typically only get arranged during the daytime.

"We're able to see patients in the evening and facilitate a safe discharge home instead of having these patients stay overnight," said occupational therapist Faith Gallant, one of the team members.

In its [health-care reforms](#), the Ford government is encouraging hospitals to work more directly with outside agencies such as home-care providers with the aim of improving connections within the health system for patients.



Natalie Coyle is the co-ordinator of Sunnybrook's ED One Team. (Paul Smith/CBC)

Sunnybrook's ED One Team is putting that into practice in a range of ways:

- Doing physiotherapy or occupational therapy assessments in the ER makes it possible to refer patients directly to a physical rehab facility without the patient having to wait in the hospital.
- Home-care agencies involved in the team can arrange for a personal support worker to accompany the patient home.
- A psycho-geriatric case manager keeps tabs on patients at home after discharge to reduce the risk of re-admission.

The emergency department has seen a 4.5 per cent reduction in admission rates among the team's target caseload since the launch in October, according to hospital officials. That has meant 74 fewer patients admitted to the hospital's already crowded wards.

There's also been a noticeable increase in patient satisfaction with the hospital experience, said Natalie Coyle, the team's co-ordinator.

"We've heard from some patients who have written in to say, 'It was really great that someone followed up with me and was able to provide extra service and ensure that I was safe,'" said Coyle.

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PEACE RIVER
REGIONAL DISTRICT



Natural Gas Service - Action Items

Item	Project Description	Current Status	Next Steps	PNG Contact	PRRD Contact
1	Toms Lake Expansion	Expansion is not economic at this time.	If an alternate supply is developed in the future, parts may become economic.	Dwain	Director: Leonard Hiebert
2	Toms Lake In-fill	Based upon the mapping that Dwains team has done, there are a number of good opportunities to provide service to customers within the existing Toms Lake gas distribution system.	Dwain will contact Director Hiebert to arrange a meeting to go over the potential customers. A field audit will commence once the COVID situation allows for more contact with the community.	Dwain	Director: Leonard Hiebert
3	Prespatou, Buick Creek	Not economic at this time. PNG has found no closer supply options.	PNG will continue to explore alternate supply opportunities which may be closer to Prepetou and could make the project economic.	Brock/Dwain	Director: Karen Goodings
4	Blueberry River FN	PNG has had discussions with CNRL regarding possible supply options and CNRL has indicated that they are cutting back their operations in the Blueberry field and therefore PNG may need to look at alternative supply options or investing in the CNRL infrastructure.	PNG will continue discussions with CNRL regarding possible supply options.	Brock	Director: Karen Goodings
5	Peaceland Farms	PNG is reviewing the possibility to supply Peaceland Farms with natural gas.	PNG is in discussions with Conoco regarding possible supply options.	AI/Dwain/Brock	Director: Karen Goodings
6	Halfway River FN	In conjunction with the Peaceland farms project, PNG is reviewing the possibility to supply the Halfway River FN. PNG has not approached the Halfway River FN with this opportunity pending resolution of supply details with Conoco.	PNG is in discussions with Conoco regarding possible supply options.	AI/Brock	Director: Karen Goodings
7	Kelly Lake FN	PRRD has asked if PNG can investigate supplying the Kelly Lake FN.	No update	Dwain	Director: Leonard Hiebert
8	Regional Landfill Gas	PNG has executed the MOU with the PRRD and awaits an executed copy. On June 19th, PNG is submitting an application to the CLEANBC INDUSTRY FUND: EMISSIONS PERFORMANCE RFP for funding for the PRRD North Peace Landfill Gas project.	PNG will be continuing to assess the capital and operating costs of the project to determine if there is a viable project.	AI	Paulo Eichelberger
9	Builders Breakfasts	PNG has partnered with the Community Energy Association (CEA) to deliver information sessions on the BC Energy Step Code to local building contractors.	Information only. The CEA will work with local municipalities to fund and deliver these programs. Depending on interest, the CEA expects to deliver one or more sessions in Fort St. John and Dawson Creek in 2020.	AI	NA
10	Energy is Awesome	PNG and the Northern Environmental Action Team (NEAT) deliver an energy safety and conservation education program ("Energy is Awesome") to grade 4/5 children in public schools in the PRRD.	Information only. This program is in its third year and has been well received by students and teachers.	AI	NA
11	Fort St. John Trade Show	PNG is working with the Northern Environmental Action Team (neat.ca) to put up a booth and promote the ECI program as well as PNG in general. (https://www.fortstjohntradeshow.com/home.html)	Information only. At this time NEAT is preparing a plan for PNG's presence at the event (which has been postponed from April 3-5 to a yet-to-be-determined date pending developments on COVID-19).	AI	NA
PNG Contact Information:					
Dwain McRae T 250-719-6667 E DMcRae@png.ca					
AI Kleinschmidt T 604-691-5688 E AKleinschmidt@png.ca					
Brock John T 604-697-6223 E BJohn@png.ca					



REPORT

To: Electoral Area Directors Committee

Report Number: ADM-EADC-008

From: Crystal Brown, Electoral Area Manager

Date: June 8, 2020

Subject: PRRD Grant Writer Services

RECOMMENDATION:

That the Electoral Area Directors Committee be provided with a report on options for the PRRD Grant Writer Services to be brought in house, further, that the report identify potential work plan and budget implications.

BACKGROUND/RATIONALE:

Grant writer services are being provided by Adlard Environmental through the PRRD Grant Writer Services Contract, No.26-2018/2020. The position is currently funded through Economic Development. Funding partners include Electoral Area B, C, D, E and Hudson's Hope.

The contract's completion date is December 31, 2020 with no option to renew. From April 1, 2018 to May 1, 2020, the Grant Writers have worked on the following:

Year	Community Groups	Number of Applications Submitted	Total Value of Funds Requested	Dollar Value of Successful Grants
2018	47	30	\$708,312	\$501,051
2019	29	50	\$8,009,974	\$281,697
2020	24	13	\$ 1,174,468	\$50,985

By moving the position in house, the PRRD Grant Writer will be able to complement the existing Grants Coordinator position, and staff will have more control over how grant writing services are being conducted, which community groups the grant writer meets with, advertising and promotion, and will be able to assign other work as deemed appropriate that may be otherwise outside the scope of the existing contract.

ALTERNATIVE OPTIONS:

1. That the Electoral Area Directors Committee issue a request for proposal for a PRRD Grant Writer.
2. That the Electoral Area Directors discontinue the PRRD Grant Writer Service.

3. That the Electoral Area Directors Committee provide further direction.

STRATEGIC PLAN RELEVANCE:

☒ Not Applicable to Strategic Plan.

FINANCIAL CONSIDERATION(S):

The annual value of the Grant Writer Services Contract No.26-2017/2020 is \$79,280 excluding taxes, and is funded through Economic Development.

COMMUNICATIONS CONSIDERATION(S):

If approved, the PRRD will initiate a communication strategy to re-promote the Grant Writer service, targeting community groups that have not used the service to date.

OTHER CONSIDERATION(S):

The Electoral Area Directors will need to decide if the grant writer will work solely for the Electoral Area Directors, or if other municipalities will be invited to participate in the service, and share in the cost of the position or contract.



REPORT

To: Electoral Area Directors Committee

Report Number: ADM-EADC-010

From: Crystal Brown, Electoral Area Manager

Date: June 9, 2020

Subject: British Columbia Utilities Commission Complaint Process

RECOMMENDATION #1:

That the Electoral Area Directors Committee receive the report titled "British Columbia Utilities Commission Complaint Process" dated June 9, 2020 for discussion.

BACKGROUND/RATIONALE:

During the May 21, 2020 Electoral Area Directors Committee meeting, the Committee requested that staff bring forward a report detailing the British Columbia Utilities Commission (BCUC) Complaint Process and a list of topics that the Committee wishes to address with BCUC.

The British Columbia Utilities Commission (BCUC) is an independent agency of the Government of British Columbia that is responsible for regulating BC's energy utilities. It is governed by the Utilities Commission Act and has specific responsibilities under the Administrative Tribunals Act and the Freedom of Information and Protection of Privacy Act.

The BCUC's mission is to ensure that ratepayers receive safe, reliable and non-discriminatory energy services at fair rates from the utilities it regulates, and that shareholders of those utilities are afforded a reasonable opportunity to earn a fair return on their invested capital.

The British Columbia Utilities Commission and Utility Customer Complaints

The BCUC receives complaints from utility customers and works to resolve these complaints where they fall within the BCUC's jurisdiction. BCUC staff investigate customer complaints to ensure utilities are following their tariffs and the Utilities Commission Act.

The BCUC Complaints Guide requires that a customer must attempt to resolve the matter with the utility first. In order to proceed with a complaint, complainants must provide a description of the contacts that they have made with the company, including dates and relevant correspondence, and reasons why their complaint remains unsolved.

In the fall of 2019, the Electoral Area Directors mentioned the following as potential topics to discuss with BCUC:

- Not receiving cost estimates for service expansion in rural areas – i.e. Prespatou, Wonowon, McLeod, and Kelly Lake.
- Not applying for the 40-year main extension test.
- Tomslake Expansion Project.

ALTERNATIVE OPTIONS:

1. That the Electoral Area Directors Committee provide further direction.

STRATEGIC PLAN RELEVANCE:

- ☒ Not Applicable to Strategic Plan.

FINANCIAL CONSIDERATION(S):

None at this time.

COMMUNICATIONS CONSIDERATION(S):

None at this time.

OTHER CONSIDERATION(S):

None at this time.



REPORT

To: Electoral Area Directors Committee

Report Number: ENV-EADC-004

From: Paulo Eichelberger, GM of Environmental Services

Date: June 8, 2020

Subject: Charlie Lake Sewage Collection Network Feasibility Study

RECOMMENDATION:

That the Electoral Area Directors Committee recommend that the Regional Board authorize compilation and issuance of a Request for Proposal (RFP) for qualified professionals to conduct a feasibility study to expand sewage collection capacity along the eastern portion of Charlie Lake.

BACKGROUND/RATIONALE:

The Charlie Lake Sewage Service Area services approximately 400 residences/businesses with capacity for other properties to be connected along the western and southern portions of the lake.

Historically, the eastern portion of the lake has had no ability to add connections to the network due to limited sewer handling capacity. With development focused in the south and west of Charlie Lake, upgrades in the collection network were built elsewhere accordingly.

There has been renewed interest in re-visiting the eastern branch to address these capacity issues and to establish an ability to add new connections. To move forward with investigating the eastern branch of the current service area, a feasibility study must be undertaken to determine:

- a. what the limits of sewage collection capacity are currently on the eastern portion of the lake;
- b. what the opportunities are to expand collection capacity into the network; and
- c. what the estimated cost is to expand the network based on those opportunities.

The intent of this feasibility study is provide options for possible upgrades on the eastern portion of the lake. This study will support future RFP's for design and construction of those upgrades and provide a Class D¹ cost estimate for budgeting purposes.

Funding of future upgrades will be pursued by grant application and/or the Federal Gas Tax Fund.

ALTERNATIVE OPTIONS:

1. That the Electoral Area Directors Committee provide further direction.

STRATEGIC PLAN RELEVANCE:

☒ Not Applicable to Strategic Plan.

¹ Class D construction cost estimates factor in 15% engineering and 30% construction contingencies.

FINANCIAL CONSIDERATION(S):

Estimated costs for assessing options to expand capacity on the eastern portion of Charlie Lake are \$45,000 (based on similar studies on the Charlie Lake System).

COMMUNICATIONS CONSIDERATION(S):

None identified.

OTHER CONSIDERATION(S):

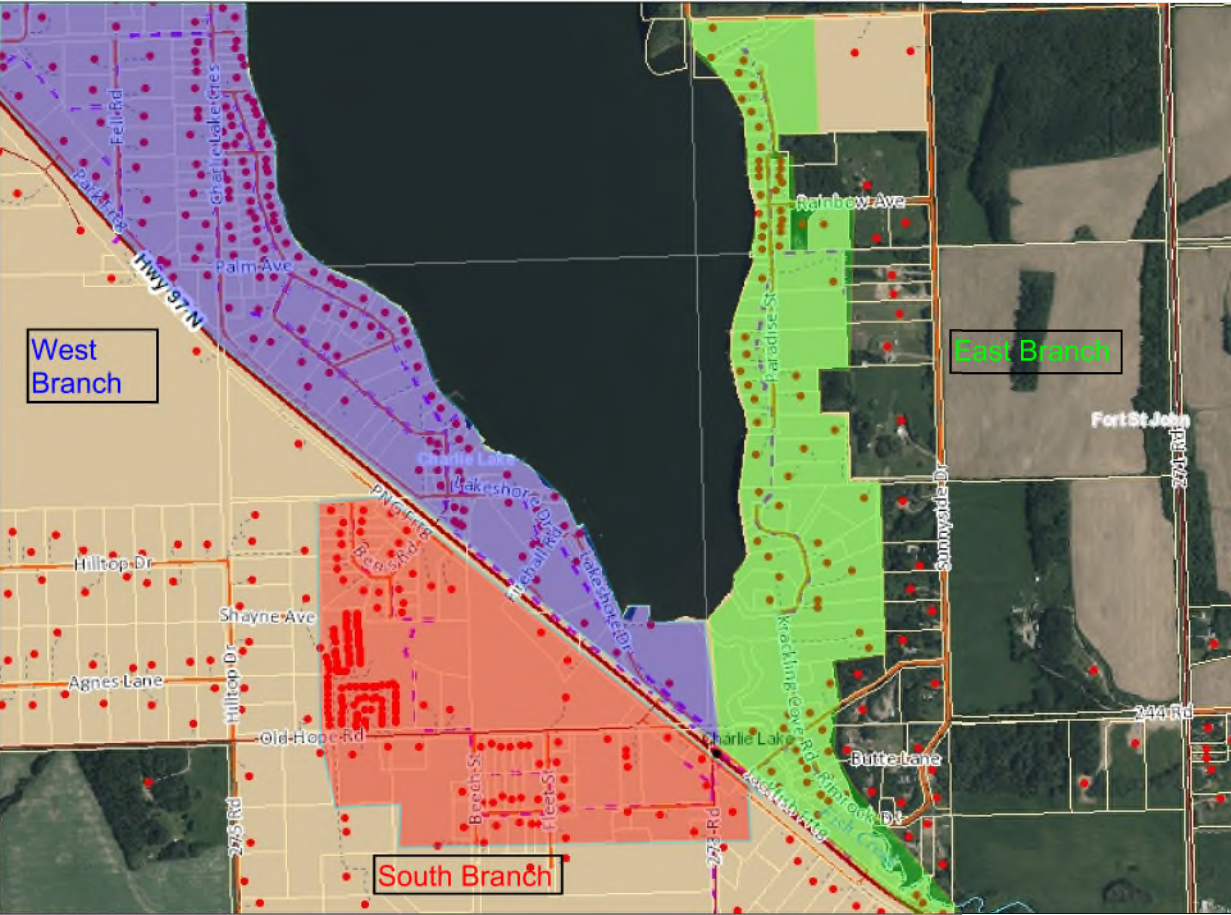
Committee will need to confirm if the planned area of study will include area outside the eastern arm of the Charlie Lake Sewage Service Area for the purpose of the RFP. Branches of the network are shown in the attachment for reference (green is the eastern branch, containing 65 connections).

Attachments:

1. CL Sewer Service Area Reference Map.



CL Sewer Service Area



Legend

- Hwy Mile Marker
- Rural Community
- 911 Civic Address Rural
- 911 Civic Address Municipal
- Regional Park
- Parks
- Parcel / District Lot
- Highway
- Municipal Road
 - Hard Surface
 - Gravel
- Rural Road >1:250k
 - Hard Surface
 - Gravel
 - Seasonal
- Driveway
- PRRD Sewer Systems
 - Sewer Line
 - Storm Water Drainage
- PRRD Water Systems
 - Charlie Lake Sewage SA
 - Friesen Area Sewage SA
 - Harper Imperial Sewage SA
 - Kelly Lake Sewage SA
 - Rolla Subdivision Sewage SA
- Sections
- Streams/Rivers
- Locality

1:20,000

1,016.0 0 508.00 1,016.0 Meters

NAD_1983_UTM_Zone_10N
© Latitude Geographics Group Ltd.

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.
THIS MAP IS NOT TO BE USED FOR NAVIGATION

Notes
Shows "South," "West," and "East" branches



REPORT

To: Electoral Area Directors Committee

Report Number: ENV-EADC-003

From: Paulo Eichelberger, GM of Environmental Services

Date: June 8, 2020

Subject: Charlie Lake Reclaimed Water Facility Design

RECOMMENDATION:

That the Electoral Area Directors Committee recommend that the Regional Board authorize compilation and issuance of a Request for Proposal (RFP) for qualified professionals to design a water reclaim system at the Charlie Lake Waste Water Treatment Facility, based on the recently updated 2017 feasibility study.

BACKGROUND/RATIONALE:

The PRRD operates a Trucked Waste Receiving and Wastewater Treatment Facility (Facility) which serves rural customers from the rural electoral areas as well as the Charlie Lake Sewage Service Area. A recent assessment of the Facility outlined various opportunities of reclaiming the treated effluent at the site for use in several different non-potable, low exposure¹ options which include:

- Equipment process water – operating the screen and centrifuge.
- Wash-down water – onsite cleaning of equipment.
- Composting Site Operations – for use with amending biosolids into acceptable composting material.
- Onsite dust control and site irrigation.
- Selling for offsite non-potable use on industrial sites for hydraulic fracturing; oil/gas well drilling; dust control; hydrostatic testing; soil compaction and equipment washing.

Given that the PRRD has applied for grant funding² to aid in constructing a reclaimed water facility at the Charlie Lake site, it is recommended to move forward with design of the facility in summer of 2020. This will ensure that a design is completed and “shovel-ready” in advance of issuing a construction tender.

ALTERNATIVE OPTIONS:

1. That the Electoral Area Directors Committee provide further direction.

STRATEGIC PLAN RELEVANCE:

☒ Not Applicable to Strategic Plan.

¹ “Exposure” refers to the chance of public contact with reclaimed water under the Municipal Wastewater Regulation (MWR). Onsite works have “low exposure” due to restricted access to the public and low risk to receiving environment.

² Canada-British Columbia Investing in Canada Infrastructure Program-Green Infrastructure grant was applied to Feb 26, 2020. Successful applicants will receive notification September 2020.

FINANCIAL CONSIDERATION(S):

Per the attached feasibility study, Class D cost estimates are as follows:

- Table 5.1.3 -For low-exposure onsite works as described above = \$474,000 (including 15% engineering or \$47,600).
- Table 5.2.3 – For moderate exposure offsite works (specifically crop irrigation and agricultural uses) = \$940,935 (including 15% engineering or \$94,400).

The additional cost for the moderate exposure option reflects added infrastructure in the form of a new truck fill station and civil works attached to the temporary lagoon currently onsite in order to meet a higher standard of reclaimed water quality than low-exposure works.

COMMUNICATIONS CONSIDERATION(S):

None at this time.

OTHER CONSIDERATION(S):

Offsite crop irrigation or other agricultural uses are classified as having “moderate exposure,” as public contact to the water is restricted, users are educated to the risks of using reclaimed water and additional water quality requirements are required to be met to maintain low risk to the environment.

Attachments:

1. 2017 Reclaimed Water Use Feasibility Study
2. 2020 Memorandum Updated on Reclaimed Water Use Feasibility



PEACE RIVER REGIONAL DISTRICT

Evaluation of Reclaimed Water Use

Final Report

December, 2017

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10808 – 100th Street,
Fort St. John, BC, V1J 3Z6

Contact: Dr. Joanne Quarmby, R.P.Bio.
T: | 250.374.8311
jquarmby@urbansystems.ca

File: 0601.0073.01

urbansystems.ca



December 22, 2017

File: 0601.0073.01

Peace River Regional District
Box 810
Dawson Creek, BC V1G 4H8

Attention: Shawn Dahlen, Deputy CAO

**RE: OPTIONS ANALYSIS FOR THE DEVELOPMENT OF A RECLAIMED WATER FACILITY –
FINAL REPORT**

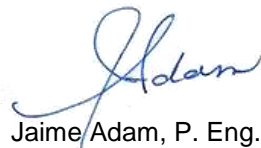
Please find attached the final report for the reclaimed water options analysis. This report includes an analysis of both on-site (process) and off-site uses. The following components are included in this report:

1. Identification of potential uses, both on-site and off-site.
2. An estimation of the potential quality requirements.
3. An assessment of infrastructure needs.
4. An overview to the regulatory requirements.

Please do not hesitate to contact us if you have any further questions regarding the information presented in this report.

Sincerely,

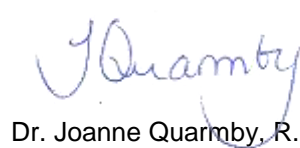
URBAN SYSTEMS LTD.

A handwritten signature in blue ink that reads "Jaime Adam".

Jaime Adam, P. Eng.
Project Leader

/jq

Attachment

A handwritten signature in blue ink that reads "Joanne Quarmby".

Dr. Joanne Quarmby, R.P.Bio.
Water and Wastewater Specialist

U:\Projects_FSJ\0601\0073\01\R-Reports-Studies-Documents\R1-Reports\2017-12-22 LET cover final report.docx

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EXECUTIVE SUMMARY

The wastewater treatment plant at the Charlie Lake wastewater treatment facility produces a standard secondary treatment effluent quality which is discharged through an outfall to the Peace River. The Peace River Regional District (PRRD) is keen to explore opportunities for creating reclaimed water, which is a valuable resource that can be used in place of freshwater, rather than continue with the approach of disposal of all of the effluent to the Peace River. There are both on-site and off-site reclaimed water use opportunities. For the on-site opportunities, the PRRD currently budgets for approximately \$25,000/year to haul water to the Charlie Lake Trucked Waste Receiving Facility (TWRF) for use within the treatment process. There are various situations within a wastewater treatment plant where potable water is used, including wash-down and cleaning, site irrigation and chemical make-down. For some of these uses it is acceptable for the effluent from a wastewater treatment plant to be used in place of potable water. For the off-site uses, given the water supply constraints for the general area and the increasing demand for water, especially from the oil and gas sector, options could include industrial and agricultural uses. The off-site uses may also provide the potential for cost recovery as a result of sales of the reclaimed water. The purpose of this report is to assess the feasibility of developing alternative approaches to the traditional release of effluent to the Peace River.

The following have been identified as potential on-site uses for reclaimed water:

- Equipment process water.
- Wash-down water for equipment, trucked waste vehicles and infrastructure.
- Make-down water for the centrifuge polymer.
- A water source should a biosolids compost operation be developed on the site immediately adjacent to the wastewater treatment facility. The water would be used to ensure that the composting piles do not become too dry, especially during the high temperature phase of composting.
- Dust control.
- Irrigation of landscape and planters.

The following have been identified as potential off-site uses for reclaimed water:

- Use in the oil and gas sector, including hydraulic fracturing, drilling of oil and gas wells, dust control, hydrostatic testing of pipelines and facility piping, soil compaction during construction and washing of site equipment.
- Agricultural uses, including irrigation of crops and as make-down water for pesticides and fertilizers.
- Dust control on roads that are managed by the BC Ministry of Transportation and Infrastructure.

From a high level review, it is anticipated that the reclaimed water quality would need to meet “lower exposure potential” standards for uses around the wastewater treatment plant. For the off-site uses, while the “lower exposure potential” standard is suitable for uses within the oil and gas sector, a higher quality would be required for the agricultural uses (moderate or greater exposure potential) and for dust control on public roads (greater exposure potential). However, the outcomes of an environmental impact study and the use of additional mitigation measures may result in a lower reclaimed water quality being acceptable for the agricultural uses and dust control on public roads.

On-site uses could utilize existing storage within the wet well of the TWRF for chlorine contact time for disinfection and overall storage. A separate potable water cistern and pumps would be required to provide the remaining water for the bathroom and shower.

Off-site uses would need a separate treatment/truckfill station located next to the existing standby lagoon. UV disinfection, followed by chlorination is proposed to treat to a moderate exposure potential, and the existing standby lagoon is proposed for storage of treated water.

There will be the need to amend the current MWR registration, with a registration amendment possibly required for on-site uses and a re-registration possibly required for off-site uses. This would need to be discussed with the BC Ministry of Environment. The process of changing the authorisation could take a year or two. Unless the PRRD develops a local service by-law, there will be the need to involve the local health authority. The local health officer has the ability to authorise or prohibit the use of reclaimed water.

Storage or an alternative discharge approach is a requirement of the MWR. The most common approach is an alternative discharge approach, as storage is often not cost effective or practical. Therefore, there is the need to ensure that the outfall line to the Peace River remains operational, as an emergency or back-up approach to effluent/reclaimed water management.

The following are recommended:

- An environmental impact study should be completed to confirm the reclaimed water quality for each of the intended uses.
- A preferred concept for reclaimed water (on-site/off-site or both) should be selected to complete further pre-design and detailed design assessments on.
- Undertake discussions with the BC Ministry of Environment regarding the process for amending the current MWR authorisation. These discussions will assist in any decisions that need to be made with respect to the viability of the proposed reclaimed water uses.

1.0 INTRODUCTION

The Charlie Lake wastewater treatment facility produces a standard secondary treatment effluent which is discharged through an outfall to the Peace River. The Peace River Regional District (PRRD) is interested in pursuing opportunities by which the effluent can be used in place of freshwater or potable water sources. Both on-site and off-site uses are to be considered. The purpose of this report is to assess the feasibility of developing alternative approaches to the traditional release of effluent to the Peace River.

2.0 BACKGROUND INFORMATION

2.1 Existing Facility

The Charlie Lake wastewater treatment facility consist of two components: a trucked waste receiving facility (TWRF) and biological treatment for the incoming wastewater from the domestic community collection system and the partially treated wastewater from the TWRF.

The trucked waste receiving facility consists of the following components:

- A mechanical screen and grit removal channel;
- An anaerobic lagoon;
- A facultative lagoon; and
- A sludge dewatering system, which is operated on a periodic basis to control the build-up and deposition of solids from the incoming trucked waste.

The biological treatment facility consists of the following components:

- A pump station from the facultative lagoon to the complete mix tanks;
- Two complete mix tanks operated in parallel;
- Two aerated lagoons, operated in parallel; and
- An outfall into the Peace River.

Figure 2.1 shows an overview to the wastewater facility.

The facility is registered under the Municipal Wastewater Regulation (MWR), authorisation number 108540, to produce a secondary quality effluent for discharge to the Peace River. As the effluent is released to a fisheries environment, there is also the need to comply with the Federal Wastewater Systems Effluent Regulations. The effluent quality to meet the regulatory requirements is summarised below:

- 5 day carbonaceous biochemical oxygen demand (CBOD₅): ≤ 45 mg/L maximum and ≤ 25 mg/L average.
- Total suspended solids (TSS): ≤ 45 mg/L maximum and ≤ 25 mg/L average.
- Ammonia: < 1.25 mg/L as un-ionised ammonia to meet Federal requirements and < 600 mg/L as total ammonia to meet chronic concentrations at the edge of the initial dilution zone, as per the Provincial requirements. Nitrification is not required to meet these effluent ammonia concentrations. Therefore, there is no biological ammonia treatment at this site.
- Phosphorus: treatment not required.



Peace River Regional District
Evaluation of Reclaimed Water Use

Site Plan

— Sanitary Main

The accuracy & completeness of information shown on this drawing is not guaranteed. It will be the responsibility of the user of the information shown on this drawing to locate & establish the precise location of all existing information whether shown or not.



Coordinate System:
NAD 1983 UTM Zone 10N
Scale:
1:1,750
Data Sources:
- Imagery provided by Google Earth Pro.

Project #: 0601.0073.01
Author: AK
Checked:
Status:
Revision: A
Date: 2017 / 11 / 1

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systems

FIGURE 2.1

- Disinfection: effluent faecal coliform concentration to be < 338,000 counts/100 mL. Given the effluent faecal coliform concentration, the required effluent quality can currently be met without the need for a managed disinfection process, such as ultra-violet (UV) light or chlorination.

2.2 Regulatory Framework

In addition to being the regulatory framework for the release of the effluent to the Peace River, the BC Municipal Wastewater Regulation (MWR) is also the governing regulation for the production and use of reclaimed water. There is no Federal regulation for reclaimed water use.

The MWR was published in April 2012, and replaced the Municipal Sewage Regulation, which was promulgated in 1999. The initial concepts for reclaimed water use and development were included as part of the now repealed Municipal Sewage Regulation, and form the basis of what is now required in the MWR. The MWR categorises reclaimed water according to risk to public health and/or the environment, with a higher quality being required in cases where the risk is higher. There are four risk categories: Indirect Potable Use (highest risk category), Greater Exposure Potential, Moderate Exposure Potential and Lower Exposure Potential (lowest risk category). The four categories are discussed in greater detail below, and the effluent criteria associated with each risk category are summarised in Table 2.1.

Table 2.1: Quality Criteria – Reclaimed Water Categories

Parameter	Quality Requirement			
	Indirect Potable Use	Greater Exposure Potential	Moderate Exposure Potential	Lower Exposure Potential
CBOD ₅	≤ 5 mg/L	≤ 10 mg/L	≤ 25 mg/L	≤ 45 mg/L
TSS	< 5 mg/L	≤ 10 mg/L	≤ 25 mg/L	≤ 45 mg/L
Turbidity	≤ 1 NTU	≤ 2 NTU (average); ≤ 5 NTU (maximum)	Not applicable	Not applicable
Faecal Coliforms	< 1 CFU/100 mL or < 2.2 MPN/100 mL (as median of 5 consecutive samples)	< 1 CFU/100 mL or < 2.2 MPN/100 mL (as median of 5 consecutive samples); Maximum of 14 CFU/100 mL	100 CFU/100 mL (as median of 5 consecutive samples); Maximum of 400 CFU/100 mL	200 CFU/100 mL (as median of 5 consecutive samples); Maximum of 1,000 CFU/100 mL
pH	Site specific	6.5 to 9	6.5 to 9	6.5 to 9

Indirect Potable Use is the highest standard of reclaimed water identified in the MWR, as this end use is seen as being of greatest risk. The Indirect Potable Use risk category would apply to reclaimed water which is being used to replenish a potable water source.

Greater Exposure Potential is the second highest standard of reclaimed water identified in the MWR, and is defined as a use where public contact with the reclaimed water is likely, or where there is a risk to the receiving environment. In addition to the quality requirements outlined in Table 2.1, this category of reclaimed water also requires treatment to remove viruses.

Moderate Exposure Potential is the third highest standard of reclaimed water identified in the MWR, and is defined as a use where public contact with the reclaimed water is likely to be minimal, or where public access to the reclaimed water is restricted and the users are educated as to the risks associated with reclaimed water. The risk to the receiving environment is also considered to be moderate, as a result of the intended use. In addition to the quality requirements outlined in Table 2.1, there may be additional quality requirements, monitoring and access restrictions, depending on the use of the reclaimed water.

Lower Exposure Potential is the lowest standard of reclaimed water identified in the MWR, and is defined as a use where public access is restricted and users are unlikely to come into contact with the reclaimed water. The uses are intended to be commercial or industrial in nature and the users must be educated with respect to the risks associated with reclaimed water. There must also be a low risk to the receiving environment. In addition to the above quality requirements, as with the moderate exposure risk category, worker contact should be minimised, with additional disinfection being required to ensure a maximum faecal coliform concentration of 14/100 mL in cases where frequent worker contact is expected.

For all three exposure categories (Greater, Moderate and Lower), the MWR indicates that a total residual chlorine concentration of 0.5 mg/L is to be maintained at the point of use unless there are risks to fauna/flora at the point of use. In the case where there is no chlorine residual in the reclaimed water, there is the need for either an increased awareness of the end user with respect to the risks associated with the reclaimed water, or the ability to prove that adequate disinfection was achieved before the reclaimed water is distributed.

In addition to the quality requirements for reclaimed water, the MWR also indicates the following:

1. Although the BC Ministry of Environment has jurisdiction over the MWR, the local health authority must be notified of the intent to use reclaimed water, as there is a provision in the MWR for the local health authority to authorise or prohibit the use of the reclaimed water.
2. There is a requirement for an alternative method of disposal. This requirement is based on the need to address an emergency situation where the reclaimed water cannot be used. A standard alternative method of effluent disposal is the release to a surface water, such as the Peace River, or a release to ground.

3. Monitoring, reporting and precautionary measures, depending on the quality and use of the reclaimed water.

The Reclaimed Water Guideline¹ was published in 2013. The intent of this guideline is to serve as a key reference and guidance document for the use of reclaimed water in BC. The guideline covers several aspects of reclaimed water use, including potential uses and best management tools.

¹ BC Ministry of Environment (2013). Reclaimed Water Guideline. A Companion Document to the Municipal Wastewater Regulation Made under the *Environmental Management Act*. July, 2013.

3.0 POTENTIAL OPPORTUNITIES

3.1 On-site Uses

As there is no on-site water supply to the Charlie Lake wastewater treatment facility, water is trucked in at an annual cost in the order of \$20,000 to 25,000/year. Water uses on-site have been reviewed to identify which activities could replace the trucked water with reclaimed water. The outcome of this review is summarised in Table 3.1.

Table 3.1: Summary of On-site Uses

Potential Use	Comments	Suitability for Using Reclaimed Water
Equipment Process Water	For the operation of the screen and centrifuge	This is an acceptable use of the reclaimed water. It is not uncommon for reclaimed water to be used as process water for the operation of equipment such as screens and centrifuges.
Wash-down water	For the following activities: <ul style="list-style-type: none"> • Cleaning equipment and floors inside buildings. • Wash out tanks and clean any debris or splashes for the trucked waste vehicles. • Cleaning the exterior concrete pad. • Clean-out of the facultative pond lift station. • Control of foam in the complete mix tanks. 	These activities are potentially acceptable for reclaimed water use. Confirmation was received that the vehicle wash-down was for the commercial vehicles that are used to haul the trucked waste. There is no intent to use the reclaimed water for personal vehicles or vehicles used on-site.
Chemical Make-down	This relates to the make-down of polymer for use in the centrifuge.	This is an acceptable use of the reclaimed water. Discussion needed with the polymer supplier to confirm whether there will be any adverse interactions between the polymer and chemical constituents of the reclaimed water. Options for changing the type of polymer can be assessed, if needed.

Table 3.1: Summary of On-site Uses (continued...)

Potential Use	Comments	Suitability for Using Reclaimed Water
Compost Site Operations	In the event that a biosolids composting operation is developed close to the wastewater treatment facility, reclaimed water could be used to ensure that the composting material does not become too dry. The main water use is expected to occur during active composting or the early stages of curing, when the temperature is the most elevated.	This is an acceptable use of the reclaimed water.
Dust Control	This would be to control dust on the gravel access roads located within the perimeter of the wastewater treatment plant.	This is an acceptable use of the reclaimed water.
Site Irrigation	This would be for landscaping purposes only, i.e. grassed areas and planters or baskets.	This is an acceptable use of the reclaimed water.
Domestic Uses (toilet, sink and shower)	Discussion with operations and PRRD staff indicated that there is a low interest in pursuing using reclaimed water for any of these uses. The only viable potential use is for toilet flushing, and it is expected that significant infrastructure changes will be needed to plumb the toilets to a reclaimed water system. This raises the question as to whether the benefit of this use can be balanced by the work needed to plumb in a separate reclaimed water system.	These potential uses of the reclaimed water are not considered viable for this site and will not be considered further.

3.2 Off-site Uses

There are many different potential uses for reclaimed water. The most common use throughout BC is irrigation, and includes both privately-owned lands and public lands. The irrigation options can range from landscape maintenance through to crop growth. In the Peace area, with the water supply constraints, there are also a wide range of options for using reclaimed water in the oil and gas sector. This will replace the use of potable or freshwater sources and has been practiced using reclaimed water from the City of Dawson Creek facility for approximately 5 years. While cost recovery may be challenging for irrigation uses,

especially in the Peace area, where irrigation of crops is not common, there is a clear possibility of cost recovery for uses within the oil and gas sector. A summary of the identified and potential off-site uses is discussed further below.

3.2.1 Uses in the Oil and Gas Sector

There are a number of uses of reclaimed water in the oil and gas sector, including hydraulic fracturing, drilling of oil and gas wells, dust control, hydrostatic testing of pipelines and facility piping, soil compaction during construction and washing of site equipment. Out of these uses, hydraulic fracturing has the single highest demand for water. In all cases, the reclaimed water would be used on sites which are designated for industrial use and where there are access restrictions. Site personnel need to complete safety training and the precautions and safe handling of the reclaimed water can easily be incorporated into existing site orientation and training. There is a possibility that dust control could occur on roads which are under the control of the oil and gas companies but could be accessed by members of the public. This would need to be considered when developing precautions relating to the use and when considering a suitable quality of reclaimed water.

Other uses which could also be included in the oil and gas sector are emergency response such as fire-fighting and irrigation to re-establish vegetation on lands which have been disturbed. As fire-fighting is an emergency situation, there is an increased possibility that personnel who may not have received appropriate training in the use of reclaimed water may access the water. There is also an uncertainty as to the use of the reclaimed water for the irrigation of disturbed lands. There could be a large number of such sites, with a wide range of land ownership, intended use, site topography, soil types, proximity to surface water/wells and type of vegetation. These factors would all need to be considered to assess whether a site-specific approach is needed and what precautions would be required.

3.2.2 Agricultural Uses

The lands surrounding the wastewater treatment plant are used largely for agricultural purposes. Immediately to the west is land that is owned by the PRRD. This land contains mainly grasses and it is understood that the site is used by a contractor for a hay crop for private use/sale. This use is not expected to change. As far as the PRRD is aware, this land has not been used for grazing. It is possible that this land could also be used for biosolids applications, depending on the direction that is developed for the management of the waste organic solids that are produced from the wastewater treatment plant. However, depending on land constraints, the preference at this stage from the PRRD is that the land would be used for reclaimed water irrigation, should there be a potential conflict between the irrigation and biosolids application activities.

Other lands in the area are also used for growing hay, with the standard being that one crop a year is harvested due to the short growing season. Other crops grown in the area include cereal crops such as wheat, barley and oats, which could all be used for human consumption, canola, which would be used for oil production, and peas, which are used as an animal feed.

In addition to the use of reclaimed water for irrigation, the other potential agricultural use is to replace freshwater as the make-down water for pesticides and fertilizers. Spraying in this area occurs in the spring and fall.

3.2.3 Additional Potential Uses

In addition to the uses outlined above, it is possible that the reclaimed water could be used for dust control on the roads in the area. The user could be the PRRD/contractor to the PRRD, but it is also possible that the BC Ministry of Transportation and Infrastructure could use the reclaimed water for dust control. The Ministry holds water licences in the area which allows the use of freshwater for dust control on the roads. Given the current drought situation, it is reasonable to assume that the Ministry would be interested in a more secure and environmentally sustainable water source.

4.0 QUALITY REQUIREMENTS

4.1 Introduction

The quality requirements for a specific reclaimed water use is evaluated through the completion of an environmental impact study. The environmental impact study assesses the potential level of risk to human health and the environment as a result of the intended use and determines an appropriate level of reclaimed water quality. The intent of this overview report is to provide guidance on the potential quality requirements of the various uses, in order to allow a feasibility engineering assessment to be completed. Should the PRRD wish to move forward with reclaimed water use, an environmental impact study will be required as one of the technical supporting documents for the engineering design and changes to the existing MWR registration.

4.2 On-Site Uses

The potential reclaimed water quality for each identified on-site use is summarised in Table 4.1.

Table 4.1: Potential Quality – On-site Uses

Potential Use	Anticipated Quality Required	Additional Comments
Equipment Process Water	Lower exposure potential	The activity is contained within a process with limited operator contact. Any operators will be trained to handle untreated wastewater, so there are low concerns that the operator will have a lack of understanding of the precautions needed when handling treated reclaimed water.
Wash-down water	Lower exposure potential	The activity is contained within the wastewater treatment plant site. Any operators will be trained to handle untreated wastewater, so there are low concerns that the operator will have a lack of understanding of the precautions needed when handling treated reclaimed water. Risk of contact can be further managed by measures such as use of low pressure hoses.

Table 4.1: Potential Quality – On-site Uses (continued...)

Potential Use	Anticipated Quality Required	Additional Comments
Chemical Make-down	Lower exposure potential	The activity is contained within the wastewater treatment plant site. Any operators will be trained to handle untreated wastewater, so there are low concerns that the operator will have a lack of understanding of the precautions needed when handling treated reclaimed water. Discussions with the current chemical supplier have indicated that there are low concerns with the moderate and lower exposure potential CBOD ₅ and TSS concentrations and interference with polymer. There are concerns relating to the presence of chlorine. The chlorine concentration needs to be below 1 mg/L so that there is no interference with the polymer properties. Interference from chlorine could reduce the efficiency of the polymer, however, based on the low existing usage of polymer at the facility, this is not expected to be a significant cost difference.
Compost Site Operations	Lower exposure potential	The activity is contained within a site which will be designated for sludge/biosolids processing. The operators will be trained to handle sludge/biosolids, so there are low concerns that the operator will have a lack of understanding of the precautions needed when handling treated reclaimed water.
Dust Control	Lower exposure potential	The activity is contained within the wastewater treatment plant site. Any operators will be trained to handle untreated wastewater, so there are low concerns that the operator will have a lack of understanding of the precautions needed when handling treated reclaimed water.
Site Irrigation	Lower exposure potential	The activity is contained within the wastewater treatment plant site. Any operators will be trained to handle untreated wastewater, so there are low concerns that the operator will have a lack of understanding of the precautions needed when handling treated reclaimed water. Risk of contact can be further managed by the irrigation methodology and equipment.

4.3 Off-site Uses

The potential reclaimed water quality for each identified off-site use is summarised in Table 4.2.

Table 4.2: Potential Quality – Off-site Uses

Potential Use	Anticipated Quality Required	Additional Comments
Hydraulic fracturing	Lower exposure potential	The activity is contained within a site which has restrictions for access and all site personnel are trained appropriately. Mitigation measures can be put in place to further protect workers and the environment, as needed, and can be developed based on each activity.
Drilling of oil and gas wells		
Dust control (oil and gas sites)		
Hydrostatic testing of pipelines and piping		
Soil compaction		
Equipment washing (oil and gas sites)		
Irrigation and agricultural uses	Moderate or greater exposure potential	Moderate exposure potential is likely to be acceptable in most cases, but is dependent on the type of crop to be grown and site-specific factors. If moderate exposure potential quality is deemed suitable, additional operational constraints are likely required. These additional operational constraints will likely not be required if a high quality reclaimed water (i.e. greater exposure potential) is used.
Dust Control – public roads	Greater exposure potential	There is an increased risk of contact with the public which could result in the need for a higher reclaimed water quality. However, it may be possible to use a lower reclaimed water quality (i.e. moderate exposure potential) depending on whether it is possible to implement mitigative measures (e.g. timing of the application).

5.0 ASSESSMENT OF TREATMENT AND INFRASTRUCTURE NEEDS

Upgrades to the Charlie Lake wastewater treatment facility occurred in 2015 to improve treatment and capacity. Due to filling times within the lagoon, the full plant has only been operating as per design since early 2016. Additionally, the facility underwent operational adjustments in the summer of 2016 to allow for erosion protection to be implemented. As such, there is currently just over one year of complete effluent quality data for the facility.

The design of the facility was to meet an effluent quality of TSS < 25 mg/L and CBOD₅ < 25 mg/L. These criteria meet both the lower and moderate exposure potential quality requirements for reclaimed water as outlined above. Further, the effluent quality data obtained to date indicates that all samples meet this requirement, with the exception of two samples. The two sample data exceedances were during start-up or non-standard operating procedures which could have caused the results.

There is potential for TSS to increase during summer months as a result of algal blooms. This is a natural factor of a lagoon system. The result of this is being out of compliance for moderate exposure quality reclaimed water, however, the quality would most likely remain within the lower exposure quality requirements.

5.1 Infrastructure Needs for On-site Lower Exposure Potential Uses

During construction of the TWRF, attempts at finding an on-site water source were unsuccessful. Currently, water for on-site uses is hauled from potable truck loading facilities in Fort St. John. However, the majority of water uses on-site do not require potable water so there is an opportunity to replace potable water for non-potable uses on-site.

5.1.1 Existing Infrastructure

The existing TWRF has a wet well beneath the building that has the capacity for 88 m³ of water storage. Two vertical turbine pumps and a hydro-pneumatic tank operate based on pressure differentials within the building and flow demands from process equipment. Currently, all water use within the building is plumbed to this infrastructure, with a main water service going to each room.

A 50 micron Amiad filter is installed to protect the solenoid valves within the building from damage by particulates in the water.

The bathroom contains a sink (including an under-sink, on-demand, hot water heater), toilet, and shower (including on-demand hot water heater).

5.1.2 Reclaimed Water Infrastructure Requirements

A retrofit of the existing infrastructure to use reclaimed water on-site would require minimal retrofits to the existing building.

To use reclaimed water within the building the following retrofits are proposed:

- **Distribution Piping**

Distribution piping from the aerated lagoon outlets (located on the west side of the site) to the TWRF will be required. A small duplex pump station, similar to the existing facultative pump station, is proposed to pump from the lagoons to the wet well. Installing a pump station will allow simple control of the flow when required by usage within the building. Flow by gravity from this location may be feasible, however, further studies will need to be conducted to determine the hydraulic grade line and controls to prevent excess flow from entering the wet well when water demand within the facility is low and to determine if that would be more or less costly than pumping.

- **Filtration**

The existing Amiad filter will be sufficient to provide filtering of the reclaimed water to prevent fouling of the solenoid valves. Additionally, the Claro screening equipment has an additional Y-strainer to protect the equipment from particulates in the water.

- **Chlorine Disinfection**

Chlorine disinfection is required in the MWR to meet moderate or lower exposure potential reclaimed water quality. The faecal coliforms in the effluent are currently low during summer months (when more bacteriological activity is present within the complete mix tanks and aerated lagoons), however, the concentrations spike during winter months. The size of the existing tank allows for sufficient contact time for disinfection by chlorine injection prior to distribution within the building. A system of mixing/and or baffles would be needed to prevent short circuiting and ensure adequate disinfection prior to use of the water. An eyewash and safety shower station will be required in the room with chlorine for personnel protection.

- **Potable Water Service**

To maintain potable water service for the bathroom, a separate potable water service is proposed. On-site potable water storage would be required, in the form of a cistern. A distribution pump and hydro-pneumatic tank would be required to provide pressure to the sink and shower. Additionally, the water service to the bathroom is required to be re-plumbed. This system would be much smaller than the existing system because a relatively small amount of potable water is required compared to process water.

Figure 5.1 shows the proposed upgrades for on-site reclaimed water use at a lower or moderate exposure potential quality.

5.1.3 Cost Estimate

A Class 'D' cost estimate for the proposed upgrades is identified in Table 5.1 below. These cost estimates include 15% engineering and 30% contingency, consistent with a Class D estimate.

Table 5.1: On-Site Uses – Lower Exposure Potential Upgrades Class D Cost Estimate

Item	Units	Quantity	Unit Cost	Extended Cost
Reclaimed Water Upgrades				
Mixing/Baffling for Wet Well	LS	1	\$ 15,000	\$ 15,000
Piping from Discharge to Wet Well	lm	400	\$ 300	\$ 20,000
Power and Control Conduit/Cable	lm	400	\$ 30	\$ 12,000
Chlorine Injection including dosing skid, etc.	LS	1	\$ 30,000	\$ 30,000
Duplex Pump Station from Discharge to Wet Well	LS	1	\$ 100,000	\$ 100,000
Eyewash and Safety Shower Station	LS	1	\$ 25,000	\$ 25,000
Potable Water Upgrades				
Cistern	LS	1	\$ 5,000	\$ 5,000
Water Pump	LS	1	\$ 2,500	\$ 2,500
Hydro-pneumatic tank	ea	1	\$ 500	\$ 500
Piping allowance to re-route bathroom piping	LS	1	\$ 2,000	\$ 2,000
Piping cistern to building (19 mm service)	LS	1	\$ 5,000	\$ 5,000
Sub-Total				\$ 317,000
Engineering (15%)				\$ 47,600
Sub-Total				\$ 364,600
Contingency (30%)				\$ 109,400
Total				\$ 474,000

5.2 Infrastructure Needs for Off-site Uses

As identified above, the existing effluent quality from the Charlie Lake wastewater treatment facility is sufficient to meet the CBOD₅/TSS requirements of a moderate exposure reclaimed water quality under normal conditions. The design of the facility is to meet these requirements to the 20 year (2034) design horizon. The remaining requirements for effluent quality are disinfection and to provide a chlorine residual.

Based on the uses identified, it has been assumed that off-site users will obtain the reclaimed water through a truckfill station. Further, it is our understanding that the PRRD would like to see all current effluent be diverted to reclaimed water, and this was considered during the feasibility assessment.

There are two potential sites located within the existing property lines for the Charlie Lake lagoon site – one just south of the main access road to the TWRF in the field to the east of the facultative cell, and the other at the standby lagoon location.

The first location could potentially utilize the wet well at the TWRF for storage (if the infrastructure for the on-site uses of reclaimed water is installed), however, this would require additional pumps and piping along the access road to the truckfill site. This site would need significant site upgrades to be suitable for a roadway (gravels/earthworks) and fencing. Additionally using the same access for the TWRF may cause a mix of sewer and water trucks along the access and could result in congestion. For these reasons, the standby lagoon location was identified as preferable, and is the subject of the further analysis.

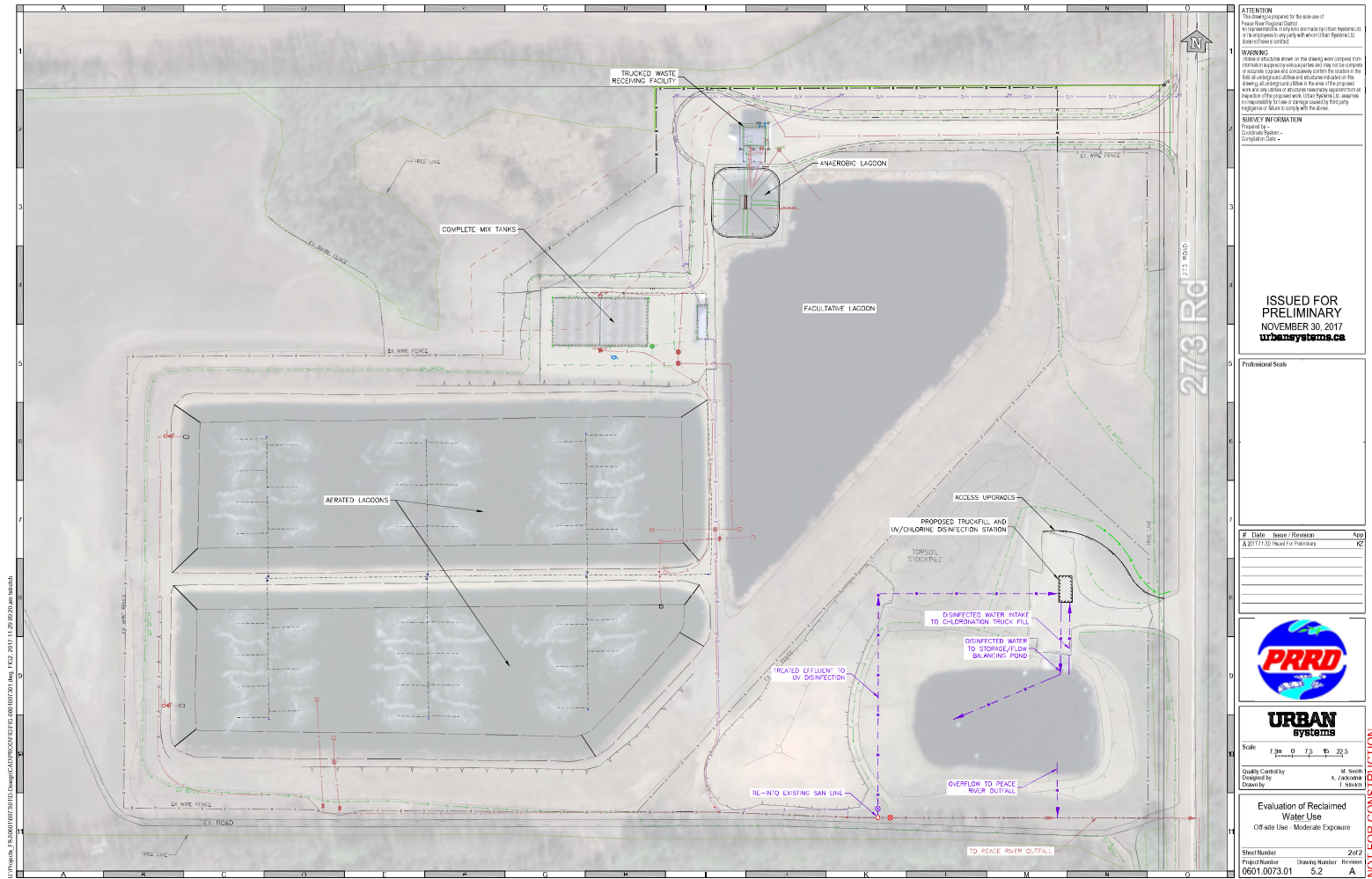
The preferred location identified is at the south side of the wastewater treatment facility, at the standby lagoon site. Existing infrastructure at this site, and separating from the TWRF traffic, make this site desirable. It should be noted that during operation of the standby lagoon, some truck drivers had difficulty with the northbound slope of the hill from the standby lagoon driveway to the TWRF driveway but there are alternate access points to avoid this. Future asphaltting and upgrades by the Ministry of Transportation and Infrastructure on this road may assist with northbound egress. The proposed and existing infrastructure for this site is outlined below and shown in Figure 5.2.

5.2.1 Existing Infrastructure

The standby lagoon was built in December 2014 for use by trucked waste haulers until the TWRF was constructed and commissioned in December 2015. The existing infrastructure includes a chain-link gate fence across the gravelled “T” shaped access road. The entire site is fenced on all sides, separate from the main wastewater treatment facility.

There is a clay lined storage pond with approximately 8,100 m³ of storage. A small section on the north side has a HDPE liner which was installed to prevent erosion during waste disposal. There is ditching and culverts to divert surface water around the pond and away from the storage pond. The pond is currently listed in the MWR registration for the plant as emergency infrastructure, however, it is not currently used for any operational purpose.

The current outfall line runs from the control manholes at the west end of the aerated lagoons, along the southern property boundary, and then turns 90 degrees and travels south along the 273 road to the existing outfall at the Peace River. The outfall line is 200 mm HDPE.



5.2.2 Reclaimed Water Infrastructure Requirements

To meet the moderate exposure potential and provide reclaimed water for off-site uses, the following upgrades are required:

- Distribution Piping and Valves

Supply

The proposed supply piping for the treatment and truckfill station would be from the existing outfall line which runs along the south side of the property boundary for the Charlie Lake wastewater treatment facility. A manhole and two isolation valves would accompany a tie-in to the gravity line. A gravity line is assumed from the existing outfall to the treatment/truckfill station.

A 200 mm line is proposed to match the existing discharge line.

Storage

Two reclaimed water lines would be required to and from the truckfill and treatment station and the storage pond to discharge and draw from the pond.

Discharge

An overflow/discharge line from the storage pond to the existing outfall line is proposed. If all of the treated water is not used by truckfill users, the remaining will be discharged to the river. This water will not be chlorinated, so will be suitable for discharge to the River.

- Disinfection

Two different methods of disinfection could be used to meet the quality guidelines. Because a chlorine residual is required prior to distribution, either ultraviolet (UV) light plus chlorine or just chlorine could be used. However, if excess water is not used by truckfill users, the reclaimed water will need to be discharged to the river. Chlorinated water cannot be discharged to the Peace River and, therefore, it would need to be dechlorinated before discharge. The additional costs for UV are sometimes off-set by reducing the infrastructure and chemical costs for dechlorination. For the purposes of this feasibility, UV and chlorination was assumed.

Ultra Violet Light

UV light would be sized to meet peak day demands and disinfect the reclaimed water prior to discharge to the storage pond. During more detailed studies, sizing could be optimized to take advantage of available storage for reaching peak demands. UV disinfection is proposed to meet the moderate exposure potential requirements for faecal coliforms. This would increase the usage of the reclaimed water, and the difference in infrastructure between 100 CFU/100 mL to meet moderate exposure potential quality and 200 CFU/100 mL to meet lower exposure potential quality is minimal.

Chlorination

Chlorine injection is proposed to provide a chlorine residual. This would be injected immediately before distribution through the truckfill ports. A minimum total chlorine residual of 0.5 mg/L is required as per the MWR.

- **Storage**

The existing standby lagoon has more storage than would be required to allow for the entire maximum daily flow to be stored in this pond. This would allow for truck drivers to use this volume over a shorter period (working hours), without treatment delays. Because reclaimed water is not potable, a liner and cover is not required for the pond. An allowance in the cost estimates has been included to clean the existing pond to remove sludge from the bottom.

At this feasibility stage, it has been assumed no further upgrades would be required in the pond, and that the volume could be optimized by depth, however there is the potential that a berm could be required to reduce the storage volume.

- **Truckfill Station**

It is proposed that the treatment/truckfill station be housed within the same building. Service levels that are similar or better to similar facilities across the region would be provided from this station. A duplex truckfill station is proposed to reduce wait times and increase flow out of the station to meet demands. A concrete pad is proposed for the building and a sidewalk, however no pads for the truck drivers are currently proposed.

- **Access Upgrades**

The current access road is a “T” shape (as shown on Figure 5.2) which requires a truck driver to back up to turn around. This is not ideal and inhibits flow of traffic and the ability to have trucks line-up on-site. To alleviate these issues, some access upgrades would be required to allow one-way flow on the site.

Access road improvements (including ditching) on the north side of the site are proposed to facilitate this. Additionally, the treatment building is proposed in the centre of the road to allow for filling on either side of the building. Trucks would be able to line up along the access road.

- **Power**

This site currently does not have power. The three phase power terminates at the TWRF, approximately 200 m to the north. There is also single phase power approximately 500 m south of the site. Due to the

pump and equipment sizing, it would be expected that the preference is three phase power. An allowance for power to be brought from the TWRP driveway has been included.

5.2.3 Cost Estimate

A Class 'D' cost estimate for the proposed upgrades is identified in Table 5.2 below. These cost estimates include 15% engineering and 30% contingency, consistent with a Class D estimate.

Table 5.2: Off-Site Uses - Moderate Exposure Potential Upgrades Class D Cost Estimate

Item	Units	Quantity	Unit Cost	Extended Total
Piping from Discharge line to Treatment Building	lm	162	\$ 300	\$ 48,600
Piping to and from storage pond	lm	40	\$ 300	\$ 12,000
Overflow line to discharge line	lm	25	\$ 300	\$ 7,500
Valves	ea	2	\$ 7,500	\$ 15,000
Tie-in Manhole	ea	1	\$ 7,000	\$ 7,000
Power from TWRP site	LS	1	\$ 100,000	\$ 100,000
UV Disinfection (including pumps)	LS	1	\$ 150,000	\$ 150,000
Chlorine Injection including dosing skid, etc.	LS	1	\$ 30,000	\$ 30,000
Eyewash and Shower Station	LS	1	\$ 25,000	\$ 25,000
Truckfill Station (including pumps)	LS	1	\$ 150,000	\$ 150,000
Concrete Pad for truckfill	LS	1	\$ 20,000	\$ 20,000
Clean Temp. Lagoon	LS	1	\$ 25,000	\$ 25,000
Access Road Upgrades - Subgrade Prep/Stripping	m ³	225	\$ 5	\$ 1,125
Access Road Upgrades - 300 mm Subbase Gravels	m ²	750	\$ 30	\$ 22,500
Access Road Upgrades - 150 mm Base Gravels	m ²	750	\$ 20	\$ 15,000
Re-route Ditching	lm	50	\$ 12	\$ 600
Sub-Total				\$ 629,325
Engineering (15%)				\$ 94,400
Sub-Total				\$ 723,725
Contingency (30%)				\$ 217,200
Total				\$ 940,925

6.0 REGULATORY REQUIREMENTS

The current facility is registered under the MWR for the release of a secondary quality effluent to the Peace River. There is no recognition in the current MWR registration for reclaimed water use, either on-site or off-site. The authorisation of reclaimed water use will require an amendment to the MWR registration, with the scope of the amendment to be clarified with the BC Ministry of Environment. However, based on past situations, it is expected that the on-site uses can be authorised by an amendment to the existing MWR registration, but that the off-site uses could need an MWR re-registration. The information requirements and the processing timing of the authorisation changes are unlikely to be significantly different whether just on-site or off-site uses are requested or whether these two types of uses are amalgamated into a single MWR application. Therefore, it is advised that the application should include as many uses as are viable and realistic for the PRRD. It is also reasonable to expect that the processing time could be in the order of a year or two, but this will need to be confirmed with the Ministry.

The authorisation changes will require the following supporting information:

1. Application forms
2. Site figures and layout
3. An environmental impact study
4. Operations and commissioning plans, which may also include the need for an irrigation plan
5. Design drawings
6. Documentation that the local health officer has been notified of the intent to use reclaimed water; and
7. An application fee of \$200.

The current approach with the Ministry is to submit an application form indicating the intent to amend the authorisation, followed by a meeting with a Ministry representative to confirm all the information requirements for the application submission. Therefore, it is possible that there could be changes to the list of information requirements outlined above.

The following should also be noted with respect to the authorisation of reclaimed water use under the MWR:

1. Notification must be given to the local health officer at least 60 days before registering the proposed reclaimed water use under the MWR. The local health officer has the ability to authorise or prohibit the use of reclaimed water. However, there is no need for involvement from the local health officer if the PRRD authorises the use of the reclaimed water under a local service area by-law. This by-law indicates that the PRRD is responsible for ensuring compliance with the MWR and that proper operation and maintenance will occur.
2. The treatment processes must meet the redundancy requirements outlined in the MWR.

3. There is the requirement for an alternative discharge route or storage, should there be any issue with the reclaimed water system or a reduction in the demands. Demands for irrigation activities are seasonal, as the water is only required during the growing season. The amount of water used for irrigation over the growing season will vary depending on the timing of the spring/freeze-up, crop harvesting and whether the summer is hot and dry or cool and wet. It is important that irrigation is undertaken at an appropriate rate and is not viewed as an opportunity for the maximum disposal of effluent. Demands for an industrial user also vary and will depend on the activity at the time and the need for down-time or maintenance. It is quite possible that an industrial user may require significant amounts of reclaimed water over a short period of time followed by long periods where little or no water is needed. It is important that there is sufficient storage to accommodate periods of high user demands and periods of little to no demand. The required storage capacity is likely to be significant and may not be practical to achieve. An alternative release approach needs to be in place, which would not only address time periods where there is the inability to store all the reclaimed water but would also address an emergency situation when there is a quality issue. This would result in the need to ensure that the outfall line to the Peace River remains operational, as an emergency or back-up approach to effluent/reclaimed water management.

7.0 SUMMARY AND RECOMMENDATIONS

To summarise:

- The following have been identified as potential on-site uses for reclaimed water:
 - Equipment process water.
 - Wash-down water for equipment, trucked waste vehicles and infrastructure.
 - Make-down water for the centrifuge polymer.
 - A water source should a biosolids compost operation be developed on the site immediately adjacent to the Charlie Lake wastewater treatment facility.
 - Dust control.
 - Irrigation of landscape and planters.
- The following have been identified as potential off-site uses for reclaimed water:
 - Use in the oil and gas sector, including hydraulic fracturing, drilling of oil and gas wells, dust control, hydrostatic testing of pipelines and facility piping, soil compaction during construction and washing of site equipment.
 - Agricultural uses, including irrigation of crops and as make-down water for pesticides and fertilizers.
 - Dust control on roads that are managed by the BC Ministry of Transportation and Infrastructure.
- From a high level review, it is anticipated that the reclaimed water quality would need to meet “lower exposure potential” standards for uses around the wastewater treatment plant. For the off-site uses, while the “lower exposure potential” standard is suitable for uses within the oil and gas sector, a higher quality would be required for the agricultural uses (moderate or greater exposure potential) and for dust control on public roads (greater exposure potential). However, the outcomes of an environmental impact study and the use of additional mitigation measures may result in a lower reclaimed water quality being acceptable for the agricultural uses and dust control on public roads.
- On-site uses could utilize the existing wet well and water distribution equipment for treatment, with the addition of chlorine and baffling. A potable water service (including on-site storage and pumps) would be required to provide water for the bathroom and shower.
- Off-site uses could require a truckfill and treatment station. The existing standby lagoon could provide storage volume for reclaimed water treated by UV light, prior to chlorination and discharge through the truckfill.
- There will be the need to amend the current MWR registration, with a registration amendment possibly required for on-site uses and a re-registration possibly required for off-site uses. This would need to be discussed with the BC Ministry of Environment. The process of changing the authorisation could take a year or two.

- Unless the PRRD develops a local service by-law, there will be the need to involve the local health authority. The local health officer has the ability to authorise or prohibit the use of reclaimed water.
- Storage or an alternative discharge approach is a requirement of the MWR. The most common approach is an alternative discharge approach, as storage is often not cost effective or practical. Therefore, there is the need to ensure that the outfall line to the Peace River remains operational, as an emergency or back-up approach to effluent/reclaimed water management.

The following are recommended:

- An environmental impact study should be completed to confirm the reclaimed water quality for each of the intended uses.
- A preferred concept should be selected for which upgrade option the PRRD would like to proceed with. A pre-design level of detail should be completed on either the on-site, off-site, both or no option presented.
- Undertake discussions with the BC Ministry of Environment regarding the process for amending the current MWR authorisation. These discussions will assist in any decisions that need to be made with respect to the viability of the proposed reclaimed water uses.

MEMORANDUM

Date: February 13, 2020
To: Paulo Eichelberger, General Manager of Environmental Services
cc: Jaime Adam, Urban Systems Ltd.
Kimberly Zackodnik, Urban Systems Ltd.
Katrin Saxty, Urban Systems Ltd.
From: Adrianna Johnson, B.Sc.
Dr. Joanne Quarmby, R.P.Bio.
File: 0601.0086.01
Subject: Document Update – Reclaimed Water Use

1. Introduction

In 2017, an assessment was completed to evaluate creating reclaimed water at the Charlie Lake wastewater treatment facility (Evaluation of Reclaimed Water Use, dated December 2017, File # 0601.0073.01). Several options for reclaimed water use were identified, with the irrigation of agricultural lands being one opportunity.

Since the completion of the 2017 reclaimed water assessment, there have been changes in the BC legislative framework that could affect the intent to irrigate agricultural lands with reclaimed water. In February 2019, the Agricultural Waste Control Regulation was replaced with the Code of Practice for Agricultural Environmental Management (AEM Code). The AEM Code includes approaches to manage nutrient applications to land, and reclaimed water is identified as a potential nutrient source. A review of the requirements of the AEM Code is presented below and focuses on the implications for any future activities related to reclaimed water irrigation. Although not included in the intended scope of work, there have also been substantial recent updates in 2018 and 2019 to both the *Agricultural Land Commission Act* and the *Agricultural Land Reserve Regulations*, which affects lands designated within the Agricultural Land Reserve (ALR). Additional topic-specific updates continue to be rolled out by the ALC. Seeing as the potential lands for irrigation and the Charlie Lake wastewater treatment facility are within the ALR, a brief summary on these implications has also been included.

The requirements of the AEM Code could affect the use of reclaimed water for irrigation on agricultural lands, regardless of whether this water is sourced directly from the Charlie Lake reclaimed water storage facility or whether it is trucked off-site via the bulk filling station. Any other potential use such as in-plant uses, hydraulic fracturing, etc., will not be affected by the requirements of the AEM Code.

The purpose of this memorandum is solely to provide an update to the 2017 reclaimed water report regarding the recent legislative changes.

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2. Background – Reclaimed Water Facility

Although several options were identified for the reclaimed water uses in the 2017 report, focusing on the irrigation of agricultural land, the quality expectation for this use was either moderate exposure potential or greater exposure potential, as defined in the BC Municipal Wastewater Regulation (MWR). The quality of these two types of reclaimed water are summarised in Table 2.1, below.

Table 2.1: Summary of Reclaimed Water Quality

Parameter	Greater Exposure Potential Quality	Moderate Exposure Potential Quality
CBOD ₅	≤ 10 mg/L	≤ 25 mg/L
TSS	≤ 10 mg/L	≤ 25 mg/L
Turbidity	≤ 2 NTU (average); ≤ 5 NTU (maximum)	Not applicable
Faecal Coliforms	< 1 CFU/100 mL or < 2.2 MPN/100 mL (as median of 5 consecutive samples); Maximum of 14 CFU/100 mL	100 CFU/100 mL (as median of 5 consecutive samples); Maximum of 400 CFU/100 mL
pH	6.5 to 9	6.5 to 9
Nutrients	Not applicable	Not applicable

CBOD₅: 5 day carbonaceous biochemical oxygen demand

TSS: total suspended solids

While the design of the current system is aligned with the moderate exposure potential quality for CBOD₅ and TSS, this is not the case for the higher quality needed for greater exposure potential. The 2017 report focused on the needs to meet moderate exposure potential quality standards, and indicated that disinfection was the only form of further treatment required. The cost estimates were developed on this basis. There is no requirement for nutrient treatment for either reclaimed water quality standards. In the case of irrigation uses, the reclaimed water will supply nutrients in the form of nitrogen and phosphorus, which can be used for plant growth. Although in low concentrations compared with other forms of nutrients sources (e.g. commercial fertilizers, manures, etc.), the nutrients present in reclaimed water can be sufficient to be considered as a nutrient supply for plant growth.

3. AEM Code

The AEM Code applies to all agricultural operations in BC for a basic level of environmental protection. The requirements in the AEM Code focus on preventing contaminated run-off, leachate, and solids from entering drinking water sources and other watercourses, or from crossing property boundaries. The AEM Code also aims to ensure that nutrient land application rates meet crop needs. In the case of using reclaimed water

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to irrigate agricultural land, the AEM Code outlines several requirements for nutrient application, as discussed further below.

3.1 Nutrient Land Application

The requirements for nutrient land application are intended to prevent nutrient discharge into a watercourse, across a property boundary, or below the seasonal high-water table, while ensuring that nutrient land application rates meet crop needs. Under the AEM Code, reclaimed water that is treated, provided, and used in accordance with the Municipal Wastewater Regulation (MWR) is defined as a “nutrient source”.

Nutrient sources cannot be applied to:

- Land on which there is standing water or water saturated soil.
- Ground in which the top 5 cm of soil is frozen so it is impenetrable to manually operated equipment.
- A field having at least 5 cm of ice or snow over at least half of its area.

These restrictions are consistent with the general expectation for irrigation practices, regardless of whether the water source is reclaimed water or fresh water.

The AEM Code requires that the total amount of nitrogen in the soil from all nutrient sources applied in one year must be equal to or less than the amount of nitrogen needed for optimum crop growth and yield (agronomic nitrogen application rate). Moreover, the nutrient application must consider the meteorological, topographical, and soil conditions of the area where the nutrients are applied.

For a land base area greater than 2 hectares, there is also the requirement to keep the following records with respect to each field where nutrients are applied:

- The location and size of the field.
- The crop nutrient requirements of the field.
- The crop yields of the field.
- The date and location of each application of nutrients.
- The type of nutrient sources applied.
- The calculated nutrient application rate.
- The rate at which the nutrients were actually applied.
- The result of testing conducted.

The field adjacent to the Charlie Lake wastewater treatment facility could be a location where reclaimed water is used for irrigation. This field is approximately 10 hectares in size. Therefore, this would trigger the

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need for the record keeping outlined above. Should another site be selected for irrigation using reclaimed water, the area would need to be confirmed to assess whether the additional record keeping is required.

3.2 Soil Testing

Soil testing (nitrogen and phosphorus) is required when nutrients are applied to land, unless the land is less than 2 hectares in size. There are also exemptions related to flooding of a field for harvesting and the presence of organic soils. However, these conditions are not expected to apply in the general Charlie Lake area. The testing requirements focus on the presence of nitrate and available phosphorus, with the frequency to be either annually or once every three years, depending on whether the outcome of the nitrate test indicates a concentration ≥ 100 kg N/hectare. For nitrate, there are additional requirements relating to establishing the amount of nitrate-nitrogen left in the soil after plant growth has ceased. This approach focuses on the direction that applications are to be agronomic.

Should reclaimed water from the Charlie Lake wastewater treatment plant be used for irrigation, this will trigger a change to the registration under the MWR. Monitoring requirements are determined during the registration change and are set by a qualified professional based on risks to public health and the environment. Under the MWR registration, it is possible that monitoring will include soil samples before and after the growing season, at a very minimum, and the soils will be monitored for a number of parameters, in addition to nitrogen and phosphorus. Groundwater and vegetation sampling may also be required. Therefore, monitoring requirements will be largely dictated by the MWR, and the requirements in the AEM Code are not expected to represent an additional monitoring expectation.

3.3 Nutrient Management Plan

The AEM Code indicates that a nutrient management plan must be developed if all of the following conditions are met:

- The field is part of an agricultural operation having an agricultural land base totalling 5 hectares or more,
- The field is located in a vulnerable aquifer recharge area, with such areas being defined through mapping linked with the AEM Code, and
- The result of a nitrate test for the field is 100 kg N/ha or more.

This plan must be developed to limit the loss of nitrogen and phosphorus from a field to the environment. However, since the general location in and around Charlie Lake is not designated as being in a vulnerable aquifer recharge area, a nutrient management plan is not required should reclaimed water from the Charlie Lake wastewater treatment facility be used for irrigating agricultural lands.

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3.4 Additional Comments

The AEM Code also indicates setback requirements for the application of nutrient sources to land. These setback requirements could also apply to the irrigation of reclaimed water. The AEM Code indicates the following setbacks for “other nutrient sources” and while the description excludes “irrigation water” there is no reference to the setbacks excluding “reclaimed water”. Both types of water are listed separately in the definitions section of the AEM Code.

- 30 m from a well or diversion point used as a drinking water source.
- 3 m from any other drinking water source.
- 3 m from a water course. A water course in the AEM Code is defined as an area of land which perennially or intermittently contains surface water. This excludes puddles, dug-out ponds for livestock watering, and furrows, grassed waterways and other temporary ponded areas that are normally farmed.
- No application on the property boundary.

With the nature of the depressions observed on the adjacent field, it is reasonable to assume that any surface water in these depressions would not be considered to be a watercourse.

There are also setback requirements in the MWR for the use of reclaimed water for irrigation, with a standard setback of 30 m being required for wells/in-ground domestic water sources. There are also standard requirements to ensure that the reclaimed water does not migrate off a property. Therefore, any additional requirements in the AEM Code regarding setbacks are expected to have minimal impacts on existing reclaimed water practices under the MWR for irrigation of agricultural lands.

4. Agricultural Land Commission

The Agricultural Land Commission (ALC) and its legislation is of utmost importance in considering any land use decisions for lands that fall within the ALR. This importance is further noted within the Agricultural Land Commission Act (ALC Act) s. 2, which speaks to which other pieces of legislation that the ALC Act is subject to. Because of the weight placed on protecting BC’s limited high-quality farmland, the ALC Act is not subject to any other enactment, with the exception of the following:

- Interpretation Act;
- Environment and Land Use Act; and
- Environmental Management Act.

It should be noted that the Charlie Lake wastewater treatment facility is registered under the Municipal Wastewater Regulation, which falls under the Environmental Management Act. The facility is located on lands designated as being within the ALR, and was not excluded from the ALR when the original lagoons

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were constructed. It is not known if this land has received a non-farm use designation to accommodate the construction and operation of a domestic wastewater treatment facility. Such records may be available within the Peace River Regional District archives.

In a review of the ALC Act, the Agricultural Land Reserve General Regulations and the Agricultural Land Reserve Use Regulations, there does not appear to be any references made to domestic wastewater treatment systems and how they are treated within the ALR. Furthermore, domestic wastewater treatment systems are not identified as a permitted use or a non-farm permitted use, however various linear infrastructure elements, such as connecting pipe-works, are.

In addition to this, the Agricultural Land Reserve Use Regulation specifically sets out regulations as they relate to irrigation use of ALR lands in the **Infrastructure** and **Permitted soil or fill uses** sections. The relevant sections are as follows:

25 The following uses of agricultural land are permitted but may be prohibited as described in section 20:

- (b) constructing, maintaining and operating, for the purpose of drainage or irrigation or to combat the threat of flooding,
 - (i) dikes and related pumphouses, and
 - (ii) ancillary works, including access roads and facilities.

35 Subject to Section 36 [*prohibited fill*], the removal of soil from, or the placement of fill on, agricultural land for one or more of the following purposes is permitted if all applicable conditions are met:

- (c) constructing or maintaining flood protection dikes, drainage, irrigation and livestock watering works for farm use, if the total annual volume of soil removed or fill placed is 320 m³/16 ha or less;

While the ALC Act and its regulations are silent with respect to any regulations related to domestic wastewater treatment systems, the regulations do make provisions relating to irrigation. Furthermore, as the ALC Act has seen recent updates that are fairly significant in nature, the PRRD may wish to seek further clarification from the ALC prior to beginning any additional activities on the subject parcel to ensure that the uses proposed are indeed permitted within the ALR and in compliance with the ALC Act and its regulations.

5. Summary and Recommendations

An assessment was completed in 2017 to evaluate the production of reclaimed water at the Charlie Lake wastewater treatment facility, with one of the potential uses of the reclaimed water to irrigate agricultural land. With the recent changes in legislation, it is expected that the new AEM Code will have little impact on irrigation practices given the following:

- The requirements in the MWR and the standard practices which are associated with the use of reclaimed water for irrigating agricultural lands.

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- The Charlie Lake area is not located within a vulnerable aquifer recharge area.

However, should irrigation of agricultural lands with reclaimed water be pursued by the Peace River Regional District, and any parcel or irrigated land be greater than 2 hectares in size, there will be the need to confirm that the appropriate records are being kept in accordance with the Section 51 of the AEM Code. While it is expected that the records identified in this Section of the AEM Code should be relatively consistent with the monitoring and record requirements under the MWR, this may not be the case.

The introduction of the AEM Code should not result in any implications which could affect the engineering design or the operation of a reclaimed water facility at the Charlie Lake wastewater treatment facility. This is on the assumption that nutrient applications to an agricultural land can be managed by considering all sources, with the application rates to be managed accordingly. This would negate the requirement to implement nutrient treatment at the Charlie Lake wastewater treatment facility.

Given the power of the ALC Act in BC legislation, it would be beneficial to consult with the ALC to ensure compliance with their legislation prior to proceeding with any activities associated with this project.

6. Closing

We trust that the above information provides sufficient guidance as to the recent legislation changes and the potential implications should reclaimed water from the Charlie Lake wastewater treatment facility be used to irrigation agricultural lands. However, please do not hesitate to contact us if you require clarification or additional information.

Sincerely,

URBAN SYSTEMS LTD.

A handwritten signature in black ink, appearing to read "Adrianna Johnson".

Adrianna Johnson, B.Sc.
Environmental Consultant

A handwritten signature in blue ink, appearing to read "Joanne Quarmby".

Dr. Joanne Quarmby, R.P.Bio.
Water and Wastewater Specialist

/aj/jq

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REPORT

To: Electoral Area Directors Committee

Report Number: CS-EADC-001

From: Kari Bondaroff, Environmental Services Manager

Date: June 8, 2020

Subject: Grounds Maintenance of Cemeteries within the Peace River Regional District

RECOMMENDATION:

That the Electoral Area Directors Committee receive the report titled "Grounds Maintenance of Cemeteries within the Peace River Regional District", dated June 8, 2020 for discussion.

BACKGROUND/RATIONALE:

On September 19, 2019, the Regional Board passed the following resolution:

MOVED, SECONDED, and CARRIED

That the Electoral Area Directors Committee be provided with a report on options for the Regional District to operate and maintain cemeteries in the Peace Region when local community groups can no longer look after them, and further, that the report identify process, legislation requirements, budget implications, work load, and department responsibility.

On May 21, 2020, the Rural Budgets Administration Committee passed the following resolution:

MOVED, SECONDED, and CARRIED

That the Rural Budgets Administration identify the cost for the PRRD to conduct lawn maintenance for rural cemeteries in the Peace Region comparing it to the cost of providing grants to cemetery organizations for similar work; further, that the report be brought back to a future Electoral Area Directors Committee.

There are 31 rural cemeteries located in the PRRD. Staff have been conducting research on what would be required for the PRRD to operate, develop and maintain rural cemeteries. This would include grounds maintenance, internments, record keeping and budget impacts.

Service Function

In 1993, the Regional Board converted the Supplementary Letters Patent Dated October 29, 1987 to Bylaw No. 839, 1993 to include Electoral Areas B, C, D and E as participants and contribute financial aid toward the cost of operating, developing and maintaining cemeteries.

If the PRRD was to begin operating, developing and/or maintaining cemeteries directly, the Regional Board may have to establish new individual service areas for each cemetery. Establishing new service areas would require electoral assent.

Funding – Grants-In-Aid

Cemetery maintenance within Electoral Areas B, C, D, and E is funded through Function 285. Of the 31 rural cemeteries located in the PRRD, 11 have historically received grant funding from the PRRD. The following chart is a summary of rural cemeteries who received grant funding between 2015 and 2019.

Cemetery Name	Area	2015	2016	2017	2018	2019
Sunrise Valley & Mountainview Cemetery (Groundbirch)	E	\$1,300	\$1,300	\$1,000	\$1,000	\$1,000
Tomslake Cemetery	D	\$1,200	\$1,200	\$1,200	\$1,200	\$1,200
Goodlow Community Club Cemetery	B		\$4,000			
Sunset Prairie Cemetery	E		\$1,200	\$1,200	\$1,200	
Willow Valley Cemetery	E		\$1,200	\$1,200	\$1,200	\$1,200
Rolla Cemetery Pioneers Bench	D			\$1,000	\$500	\$1,000
Flatrock Community Cemetery	B				\$1,656	\$684
Halfway Graham Community Cemetery	B				\$1,200	
Greunfeld Cemetery	D				\$856	
Rolla Cemetery Veterans Bench	D				\$500	
Sunken Graves Peace View Cemetery	D					\$500
Total Spent on Maintenance		\$2,500	\$8,900	\$5,600	\$9,312	\$5,584

Lawn Maintenance –Direct Budget Considerations

The following table outlines the estimated direct budget implications should the PRRD conduct lawn maintenance on behalf of 10 previously identified cemeteries listed above.

Note: The Halfway Graham Community Cemetery is inaccessible by vehicle, as such, has not been considered.

	Year One	Year Two	Budget Notes
Staff Wages	\$50,000	\$50,000	Includes 2 full time seasonal staff for 4 months.
Vehicle/Equipment Purchase	\$60,000	\$1,500	
Vehicle Use Allocation		\$20,000	Includes Use and Maintenance of Vehicles
Administration Costs	\$15,000	\$15,000	Insurance, WCB, phones, PPE, training, meals, etc
Total Cost	\$125,000	\$86,500	

Operational Considerations

It is estimated that it will take two seasonal staff a total of five 10-hour days to complete lawn maintenance work required for all 11 sites. Staff will have to attend each site a minimum of 12 times over the season to mow, whipper snip and complete garbage clean-up as required. Regular maintenance at a cemetery will take more time than at a park, because one has to mow around more obstacles and the standard of care is usually higher.

Administration Considerations

Administrative costs including staff wages and benefits are budgeted for under this function for grant administration. As the function increases in service level, the costs of administrative activities will increase.

Incomplete Information on Locations of Plots

Exploratory work into cemetery size, number of headstones, and land ownership and land agreement specifications will need to be conducted. The GIS department will need a minimum of 11 days to conduct this work. Further, maintenance agreements for each site will need to be developed.

Internments

If the PRRD was to begin operating, developing and/or maintaining cemeteries directly, the following considerations for internments will have to be considered:

- Capital costs:
 - Skid steer with necessary attachments = \$100,000
 - Additional vehicle, trailer, mower, etc. = \$100,000
 - Ongoing capital for columbariums, fencing, etc.
- GIS & Plotting
 - Developing mapping and plotting of current and future internments
 - Depending on the condition of records, the ground may need to be x-rayed to determine the location of internments.
- Staffing
 - If staff are responsible for internments, it will require shift changes to allow for work on weekends. This will either take staff away from other work scheduled in the week, or require additional staff to manage.

Other Work

- Establish a record system that meets regulatory requirements and convert existing records to the new record system.
- Establish a care fund (money for the ongoing care and maintenance).
- Develop regulatory and fees bylaws, policies and procedures and levels of service which will impact maintenance standards.
- Establish a Board of Trustees.
- Scheduling internments, answering questions, and general administration.

Grounds Maintenance - Winter:

Service levels will need to be established to determine whether sites will be plowed during the winter or only plowed when there is an internment.

ALTERNATIVE OPTIONS:

1. That the Electoral Area Directors Committee provide further direction.

STRATEGIC PLAN RELEVANCE:

- ☒ Not Applicable to Strategic Plan.

FINANCIAL CONSIDERATION(S):

The PRRD also provides maintenance support through grant funding to the District of Chetwynd (\$30,000 annually) and the Village of Pouce Coupe (\$1,500 annually).

COMMUNICATIONS CONSIDERATION(S):

OTHER CONSIDERATION(S):



REPORT

To: Electoral Area Directors Committee

Report Number: ADM-EADC-011

From: Kelsey Bates, Deputy Corporate Officer

Date: June 11, 2020

Subject: Item Previously Released from a Closed Committee Meeting

For Information

The following resolution has been authorized for release to the public from a prior closed Electoral Area Directors Committee Meeting:

June 4, 2020

MOVED, SECONDED, AND CARRIED

That the Electoral Area Directors Committee research further options for the distribution of connectivity across the region, inclusive of a work plan.

BACKGROUND/RATIONALE:

The above resolution was authorized for release, and is provided in this report as the official disclosure of the item to the regular committee agenda, as per the 'Closed Meetings and Proactive Disclosure Policy'.

ALTERNATIVE OPTIONS: N/A

STRATEGIC PLAN RELEVANCE:

☒ Not Applicable to Strategic Plan.

FINANCIAL CONSIDERATION(S): N/A

COMMUNICATIONS CONSIDERATION(S): N/A

OTHER CONSIDERATION(S): N/A



REPORT

To: Electoral Area Directors Committee

Report Number: ADM-EADC-009

From: Crystal Brown, Electoral Area Manager

Date: June 8, 2020

Subject: Notice of Closed EADC Session – June 18, 2020

RECOMMENDATION:

That the Electoral Area Directors Committee recess to a Closed Meeting for the purpose of discussing the following item:

Agenda Items M-1 & R-2 - Closed Meeting Minutes & Items for Release (CC Section 97(1)(b))

Agenda Item R-1 - Negotiations Related to a Proposed Service (CC Section 90 (1)(k) & 90(1)(j))

BACKGROUND/RATIONALE:

As per the Closed Meeting Process and Proactive Disclosure Policy

ALTERNATIVE OPTIONS:

1. The Electoral Area Directors Committee may recess to a Closed Meeting to discuss whether or not the items proposed properly belong in a Closed Session. Community Charter Section 90(1)(n).

STRATEGIC PLAN RELEVANCE:

☒ Not Applicable to Strategic Plan.

FINANCIAL CONSIDERATION(S):

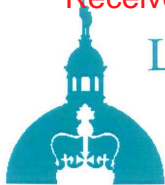
N/A

COMMUNICATIONS CONSIDERATION(S):

N/A

OTHER CONSIDERATION(S):

N/A



LEGISLATIVE ASSEMBLY
of BRITISH COLUMBIA

March 5, 2020

Honourable Doug Donaldson
Minister of Forest, Lands, and Natural Resources
Room 248, Parliament Buildings
Victoria, BC

Dear Minister Donaldson,

I have enclosed five letters from concerned constituents from North-Eastern British Columbia. These constituents have raised several concerns relating to your Ministry's handling of ranching issues.

They are concerned with the lack of service that is offered by FLNR, including a lack of staff with experience or training in ranching related issues, high staff turnover, and unreasonable delays in communications and approvals.

There is also a large concern over the removal of natural boundaries by third party operators (often logging companies). The third-party operators have not been consistently replacing these boundaries, and both they and the Ranchers have faced numerous delays in approvals for fence installation.

Additionally, the Ranchers are facing hardships in filling out and submitting their range burning applications. The lack of qualified staff in your office, who can assist with these applications, is contributing to this issue. This is preventing them from properly managing their tenures and limiting the grazing area for their cattle.

These delays and issues have continued for significantly longer than reasonable. I look forward to your response on what is being done to help these Ranchers.

Best regards,

Dan Davies
MLA for Peace River North

CC: MLA John Rustad FNLRO Critic
MLA Donna Barnett Rural Critic
PRRD Board

BC Liberal Official Opposition
Parliament Buildings
Victoria, BC V8V 1X4
T: 250-356-6171

Subject: FW: Range Tenure Crystal Springs Ranch, Upper Halfway, Tenure # RAN 074995
Date: Wednesday, February 12, 2020 at 7:55:03 AM Pacific Standard Time
From: Davies.MLA, Dan
To: Davies, Dan

[REDACTED]
Sent: Wednesday, February 12, 2020 12:08 AM
To: Davies.MLA, Dan <Dan.Davies.MLA@leg.bc.ca>
Subject: Range Tenure Crystal Springs Ranch, Upper Halfway, Tenure # RAN 074995

Dear Mr. Davis

Thank you for meeting with the Range Tenure holder group on Tuesday, February 4, 2020 at your office. We have been experiencing some issues regarding our tenure in 2019, two of which are explained below:

1. Timber Harvesting, removal of natural boundaries:

With an amended Forest Operation Schedule (FOS) for this area coming into effect, response was made to the Licensee and to BSTS outlining concerns regarding movement of cattle in the newly harvested areas. An agreement was reached for construction of approx.. 7 km of fence. The extend and pace of the timber harvesting near the range boundary made this the only possible solution. The project was broken into phase 1 and 2, each phase relating to specific Cutting Permits and application for authorization of the fence was made to FLNRORD in May 2019. As harvesting activities followed directly along with the planning, in fact some harvesting preceded the planning stages, cattle could not be contained as soon as grazing season started.

Some intermediate steps of increased riding and fencing had to be taken to utilize the range and adhere to the Range Use Plan.

However, no decision was made by FLNRORD on the authorization of the fence.

The timber licensee as well as BCTS acknowledged the need for fencing, a services agreement with the licensee was signed for construction of the fence, pending authorization by FLNRORD.

As of Wednesday, February 5, 2020 the licensee has decided to honor the services agreement and compensate for phase 1 of the work done by the range tenure holder.

However, a decision by the Ministry on authorization has been outstanding for more than 180 days and phase 2 cannot proceed. This will create the problem of containing cattle to the tenure area for the grazing season 2020, starting on June 1.

2. Range Maintenance Burning:

The burn plan filed for maintenance burning of traditionally burned areas in the range tenure was filed in January 2019. The burn plan followed requirements discussed with Wildfire Services BC and covered all aspects that were required for burn plans in the past. Range maintenance burning has been regularly and successfully conducted on this tenure for decades and has been maintaining carrying capacity for livestock as well as contributing to biodiversity and forage available to wildlife. A rejection letter of the filed plan was received several months after the burn window. Throughout the spring burn window it was uncertain if an authorization would come. Since burning requires planning and preparation this left a lot of uncertainty. When the rejection letter finally arrived, it only allowed the conclusion that filing a successful burn plan will be almost impossible. A trained Natural Resources Specialist may be able to address the numerous aspects listed in the rejection, however this comes at great cost to the tenure holder. Range maintenance burning has been conducted successfully and is an important tool of range management.

As for 2020, a Professional Biologist has been retained to prepare the burn plans, yet the time of

engagement was October 2019, already too late for the deadline of September 2019 to file the 2020 plans. Incidentally this deadline was communicated to the retained professional in November of 2019. With that, no new burn plan authorizations for this tenure for spring 2020.

These are two examples of issues that are very important to successful range management and that are time sensitive. Decisions by FLNRORD don't seem to be made in a timely manner and the process seems to lack clarity. To Range Tenure Holders it should not be required to retain the help of Natural Resource Specialists, rather Range Staff should have the time and resources to guide and assist with applications.

Kind regards,

A black rectangular redaction box covering the signature of the sender.

Subject: FW: Grazing licence

Date: Tuesday, February 11, 2020 at 8:21:53 AM Pacific Standard Time

From: Davies.MLA, Dan

To: Davies, Dan

[REDACTED]

Sent: Monday, February 10, 2020 11:10 PM

To: Davies.MLA, Dan <Dan.Davies.MLA@leg.bc.ca>

Subject: Grazing licence

Dan,

Thank you for taking the time to meet with us and all your efforts in helping us to resolve these issues.

1. Our aum's have been changed from 3,140 to 980, because of negligence on the part of forestry staff.
2. They have been invoicing us on the 3,140 aum's, that we had worked our way towards, and we have been remitting payment of the full amount.
3. We worked our way up from 980 to 3,140, through the process that forestry requires for an increase in aum's, by burning.
4. This increase, as of now, has been erased by Tanya and Greg, employees of forestry.
5. Also, as of this date, we have been unable to acquire a burn permit for the last 2 years, which is necessary to increase our aum's and maintain grass management.
6. Forestry is being most difficult in trying to resolve this situation.
7. This imposition would require us to drastically reduce our herd numbers, which would cause a huge financial loss.
8. This has been forestry's error and they are not taking responsibility to fix this. They say their hands are tied, and that they can't leave our numbers as is, because of government regulations. (district manager not signing off)
9. We are not alone in this, forestry has many issues with other lease holders. ie. fencing, Canfor, logging and First Nations.
10. This is a very serious issue and time is of the essence, with summer turnout close at hand.

Thank you again for your time and concern with this situation!

[REDACTED]

[Sent from Yahoo Mail on Android](#)

Subject: Fw: FLNRO concerns on Range Tenures
Date: Monday, February 10, 2020 at 12:02:38 PM Pacific Standard Time
From: Davies.MLA, Dan
To: Davies, Dan
Priority: High

Sent: February 10, 2020 11:30 AM
To: Davies.MLA, Dan
Subject: FLNRO concerns on Range Tenures

Dear Mr. Davies MLA,

I am a rancher in the North Peace and am writing this letter over concerns regarding FLNRO as they relate to our operations.

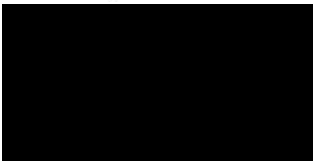
We have got to a point where FLNRO provides many stumbling blocks and few solutions. Here are a few examples:

- Range burning applications have been changed so as to make it impossible for a tenure holder to fill out, and expensive to have done by a professional. Even when professionally done the permits are not being granted. Range burns are necessary to maintain forage and reduce wildfire danger.
- Range Use Plans for existing tenures which must be submitted upon expiry of previous RUP's are now unnecessarily difficult and burdensome to complete
- Local office incompetence / mishandling of documents and procedures is resulting in a tenure holder being threatened to not stock the range at previous approved rates until a new tenure inventory can be completed. This is an internal issue within FLNRO and should not create a hardship for the tenure holder
- FLNRO is allowing natural cattle movement barriers to be removed by logging companies but not requiring OR allowing fencing to be put in its place, thus creating hardship for the tenure holder and in fact going against Forest Practice code.
- Forage has a very low priority within FLNRO, and the vast majority of grazing tenures fall within the ALR. As such it is important to recognize the agricultural aspect of these tenures.

In an attempt to keep this brief I will stop here, but in reality the list is much longer. I am not alone in noting that the Ministry is more interested in putting up road blocks for the agricultural sector than making any effort to assist in making it competitive and vibrant.

Any effort you could put towards holding the Ministry to it's mandate would be much appreciated.

Best Regards



Subject: FW: FLNRO-RD SERVICE

Date: Wednesday, February 12, 2020 at 12:43:12 PM Pacific Standard Time

From: Davies.MLA, Dan

To: Davies, Dan

[REDACTED]
Sent: Wednesday, February 12, 2020 12:30 PM

To: Davies.MLA, Dan <Dan.Davies.MLA@leg.bc.ca>

Subject: FLNRO-RD SERVICE

MLA

Peace River North

Dan Davies,

This letter is to bring to light the inadequate service provided by the Forests, Lands, Natural Resources Operations and Rural Development branch out of Dawson Creek, BC. As a member of the BC Cattlemen's I have been dealing with them for 20+ years and my family for many years previous. Since taking over the ranch we have given FLNRO every opportunity to communicate and work together on arising issues. We invited them to numerous Cattlemen's meetings, gone to their office for meetings, provided contacts through email and phone. For years we and many others have been very dissatisfied with the lack of service. Our ranches are our livelihood and most have been in our family for years. FLNRO makes running our ranches difficult at every turn. The amount of turnover within the organization is frustrating as every year we have a new person to deal with. This means explaining issues over and over again. Dealing with people who do not understand the industry cost us time and money. No one ever gets back to us with any answers on numerous questions and issues. I personally have been waiting for my application for a rental grazing tenure since 1999. I have inquired numerous times in the last 20 years as to its status. I just got a call in Aug of 2019 from Tanya Sharko regarding the application. She told me she would mail me the correct paperwork to get things moving. I followed up with her at a Cattlemen's meeting in Dec 2019 and she wrote a note in her book. I'm writing this letter in Feb of 2020 and still have received nothing. Just one of many examples of the constant incompetence from FLNRO.

In conclusion the services or lack of for that matter from the FLNRO are unacceptable. I and many others have invested countless hours trying to get answers and bring new staff up to speed on issues. I am requesting staff get back to us in a timely manner, follow up with concrete answers, and perhaps put someone on staff who understands the industry and is willing to stay in their position for longer than a year.

Subject: FW: FLNRO and Range Tenures

Date: Wednesday, February 12, 2020 at 7:53:42 AM Pacific Standard Time

From: Davies.MLA, Dan

To: Davies, Dan

[REDACTED]

Sent: Tuesday, February 11, 2020 4:57 PM

To: Davies.MLA, Dan <Dan.Davies.MLA@leg.bc.ca>

Subject: FLNRO and Range Tenures

To Dan Davies MLA, Peace River North

This is a follow up letter to our meeting on February 3, in regards to our Ministry of Forest, Land, and Natural Resource Operation department in the North. It is felt by myself and other grazing tenure holders that we are not getting the proper support from the FLNRO office, when it comes to grazing. Some of the key problems, that I feel, are:

- making burning permits so complex for the rancher to fill out that you can't get a burn permit to maintain grazing quality
- losing key files that pertain to one's grazing history and or new files that have been completed then lost in their office
- no recognition of revenue that a grazing tenure provides to the province on an annual basis for the last forty years and that we always take a back seat to forestry and its logging, that only can be harvested every 80 years
- not taking action when a natural barrier has been removed by third party (logging company), and allow cattle to leave ones tenure
- they don't make grass a priority even though most tenures fall under the ALR

Thank you for taking the time to look into this.

[REDACTED]

ELECTORAL AREA DIRECTORS COMMITTEE

DIARY ITEMS

<u>Topic</u>	<u>Notes</u>	<u>Added/Updated</u>
1. Cell Towers within the Region	Investigate partnership opportunities	May 27, 2019
2. Electoral Area D Referendum	Water (service areas) in 2020	October 16, 2018
3. Don Nearhood Museum	As the Peace Canyon building is closed, a new location for the display is needed	November 13, 2018
4. Oil and Gas Working Groups A. Template B. Synergy Groups	Provide updates from each meeting	January 18, 2019 October 17, 2019 April 16, 2020
5. Natural Gas	Expansion of services to rural areas	May 27, 2019
6. Section 381(Cost sharing for services under Part 14 <i>[Planning and Land Use Management]</i> of the <i>Local Government Act</i> .		August 15, 2019
7. Volunteer Recognition		November 21, 2019