



A G E N D A

Wednesday, January 24, 2018

in the Regional District Office Boardroom, 1981 Alaska Avenue, Dawson Creek, BC

Commencing at 10:30 a.m.

1. CALL TO ORDER: Director Goodings to Chair meeting
2. DIRECTOR'S NOTICE OF NEW BUSINESS:
3. ADOPTION OF AGENDA:
4. ADOPTION OF MINUTES:
M-1 Electoral Area Directors' Committee Minutes of December 14, 2017
5. BUSINESS ARISING FROM THE MINUTES:
BA-1 Manfred Stief, Farrell Creek - Ownership of BC Hydro Equipment
BA-2 Agriculture Support Program
BA-3 Interprovincial Meeting
6. DELEGATIONS
D-1 11 a.m. - Jim Strasky - Encana Concerns in Farmington
7. CORRESPONDENCE:
C-1 January 5, 2018 - A. Watson - Telephone Outage
8. REPORTS:
R-1 January 9, 2018 - Barb Coburn, Secretary - December's Directors Information Package (referred from December 2017 EADC)
R-2 January 9, 2018 - Deborah Jones-Middleton, Protective Services Manager and Aden Fulford, GIS Coordinator - Locality Boundaries - Digital Road Atlas of BC
R-3 November 29, 2017 - Chris Cvik, Chief Administrative Officer - Policy and Procedure for Electoral Area Specific Issues.
R-4 January 17, 2018 - Erin Price, Bylaw Enforcement Officer - Bylaw Enforcement Quarterly Update
R-5 January 10, 2018 - Paulo Eichelberger, General Manager of Environmental Services - North Pine Tower - Next Steps for Usage
R-6 January 18, 2018 - Bruce Simard, General Manager of Development Services - Municipal Participation in Planning
R-7 January 23, 2017 - Crystal Brown, Electoral Area Manager - Contract Award - PRRD Grant Writer
R-8 January 8, 2018 - Deborah Jones-Middleton, Protective Services Manager - Feasibility of expansion of the Charlie Lake Rural Fire Protection Area
R-9 January 9, 2018 - Deborah Jones-Middleton, Protective Services Manager - Charlie Lake Fire Road Rescue and First Medical Responder Service Provision Feasibility
R-10 January 9, 2018 - Deborah Jones-Middleton, Protective Services Manager - Expansion of the Dawson Creek Rural Fire Protection Area Feasibility

9. DISCUSSION ITEMS:

DI-1 PNG - Areas to Investigate Providing Natural Gas to Residents

DI-2 Telus

DI-3 Updates on Water and Sewer

DI-4 Possible Water Referenda in Areas C and D

DI-5 Grimes Theft

DI-6 Community Roundtables Update - 2018 Budget Implications, Frequency, Spring Dates

DI-7 2018 Budget - Economic Development - Gotta Go, Rural Roads, Horticulture, Communication

10. NEW BUSINESS:

11. COMMUNICATIONS:

12. DIARY:

13. ADJOURNMENT:



PEACE RIVER REGIONAL DISTRICT

ELECTORAL AREA DIRECTORS' COMMITTEE MEETING MINUTES

DATE: December 14, 2017
 PLACE: Regional District Office Boardroom, Dawson Creek, BC
 PRESENT:

DIRECTORS: Karen Goodings, Electoral Area 'B' (Chair)
 Brad Sperling, Electoral Area 'C'
 Leonard Hiebert, Electoral Area 'D'
 Dan Rose, Electoral Area 'E'

STAFF: Shawn Dahlen, Deputy Chief Administrative Officer
 Crystal Brown, Electoral Area Manager
 Bruce Simard, General Manager of Development Services
 Aden Fulford, GIS Coordinator
 Barb Coburn, Recording Secretary

CALL TO ORDER Chair Goodings called the meeting to order at 10:35 a.m.

ADOPTION OF AGENDA:

December 14, 2017 Agenda **MOVED** by Director Rose, **SECONDED** by Director Hiebert,
 That the Electoral Area Directors' Committee agenda for the December 14, 2017 meeting be
 adopted:

CALL TO ORDER: Director Goodings to Chair meeting

DIRECTOR'S NOTICE OF NEW BUSINESS:

ADOPTION OF AGENDA:

ADOPTION OF MINUTES:

M-1 Electoral Area Directors' Committee Minutes of November 16, 2017

BUSINESS ARISING FROM THE MINUTES:

BA-1 Locality Boundaries - Digital Road Atlas of BC

BA-2 Grant Writer Request for Proposal

DELEGATIONS

CORRESPONDENCE:

C-1 September 22, 2017 - Manfred Stief, Farrell Creek - Ownership of Hydro Equipment.

C-2 December 6, 2017 - UBCM - The Compass

REPORTS:

R-1 December 6, 2017 - Kole A. Casey, South Peace Land Use Planner - Temporary Use Permit
 Application No. 180/2017 (Borton)

DISCUSSION ITEMS:

DI-1 How to Liaison with Northern Alberta regarding health care

D-2 Cell Towers in Groundbirch and Hasler

D-3 Roundtable Meetings

D-4 Agriculture Support Program

D-5 Farmington Roundtable

- Update

- Above Ground Water Pumping for Oil and Gas Purposes

- Letter requests

NEW BUSINESS:

NB-1 Director's Items for Information Package

COMMUNICATIONS:

DIARY:

ADJOURNMENT:

January 24, 2018

CARRIED.

Peace River Regional District
Electoral Area Directors' Committee Meeting Minutes

ADOPTION OF MINUTES:

M-1
EADC meeting minutes of
November 16, 2017

MOVED by Director Hiebert, SECONDED by Director Sperling
That the Electoral Area Directors' Committee Meeting minutes of November 16, 2017 be adopted.
CARRIED.

BUSINESS ARISING:

BA-1
Locality Boundaries

Crystal Brown, Electoral Area Manager, advised the Directors that she and the GIS Department have been working with PNG to develop maps for Prespatou. In addition, PNG is still looking for communities where residents would like to receive natural gas. The Manager was asked to contact PNG to investigate the request further.

BA-2
Grant Writer Request for
Proposal

The Directors discussed the Grant Writer Request for Proposal.

CORRESPONDENCE:

C-1
Manfred Stief, Farrell Creek -
Ownership of Hydro
Equipment.

The Directors discussed the ownership of BC Hydro equipment and BC Assessment requirements to have farms classified with farm status. Director Goodings will follow up with Manfred via email.

C-2
UBCM - The Compass

The Directors requested that the Manager get more information regarding the Agriculture Support Program mentioned in the December issue of The Compass and bring back to a future Electoral Area Directors' Committee.

REPORTS:

R-1
TUP Application No.
180/2017 (Borton)

The Directors discussed the Temporary Use Permit Application No. 180/2017 (Borton).

DISCUSSION ITEMS:

DI-1
Liaison with Northern Alberta
regarding health care

MOVED by Director Rose, SECONDED by Director Hiebert,
That the Electoral Area Directors' Committee recommends to the Regional Board that the topic of health care be put forward to go on the Inter-Provincial Meeting Agenda.
CARRIED.

DI-2
Cell Towers in Groundbirch
and Hasler

MOVED by Director Rose, SECONDED by Director Sperling,
That the Electoral Area Directors' Committee recommends to the Regional Board that the topic of the installation of cell towers in the counties be added to the Inter-Provincial meeting agenda.
CARRIED.

MOVED by Director Rose, SECONDED by Director Sperling,
That the topic of Cell Towers within the Region be put on the Diary.

CARRIED.

DI-3
Roundtable Meetings

MOVED by Director Hiebert, SECONDED by Director Rose,
That the Electoral Area Directors' Committee recommends to the Regional Board that the topics of 'Managing Solid Waste' and 'Provision of Potable Water to Residents' be added to the Inter-Provincial meeting agenda.

CARRIED.

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DISCUSSION ITEMS (CONTINUED):

DI-4 Agriculture Support The Directors discussed these topics earlier in the meeting (C-2 and DI-3).
Program and
DI-5 Farmington Roundtable

NEW BUSINESS:

NB-1 MOVED by Director Sperling, SECONDED by Director Rose,
Directors Items for That the December Directors' Information Package be placed on the January Electoral Area
Information Package Directors' Committee Meeting Agenda.

CARRIED.

MOVED by Director Rose, SECONDED by Director Hiebert,
That the January 18, 2018 Electoral Area Directors' Committee meeting be re-scheduled for
Wednesday, January 24, 2108.

CARRIED.

ADJOURNMENT: The Chair adjourned the meeting at 11:55 a.m.

Karen Goodings, Chair

Barb Coburn, Recording Secretary**January 24, 2018**

Oil and Gas in Farmington

Presented to Peace River Regional District

January 24, 2018

January 24, 2018

Fracking Water Hoses



January 24, 2018

Water Discharge in our field



January 24, 2018

Trespassing



January 24, 2018



January 24, 2018

- Broken Water Line



January 24, 2018

Corner post taken out by Encana Grader



January 24, 2018

Frack Pond Pile



January 24, 2018

Frack Pond con't



January 24, 2018

Flaring Fall 2017 - daily living room view



January 24, 2018

Winter – Flaring to the South of the House



January 24, 2018

Flaring to the North of the house



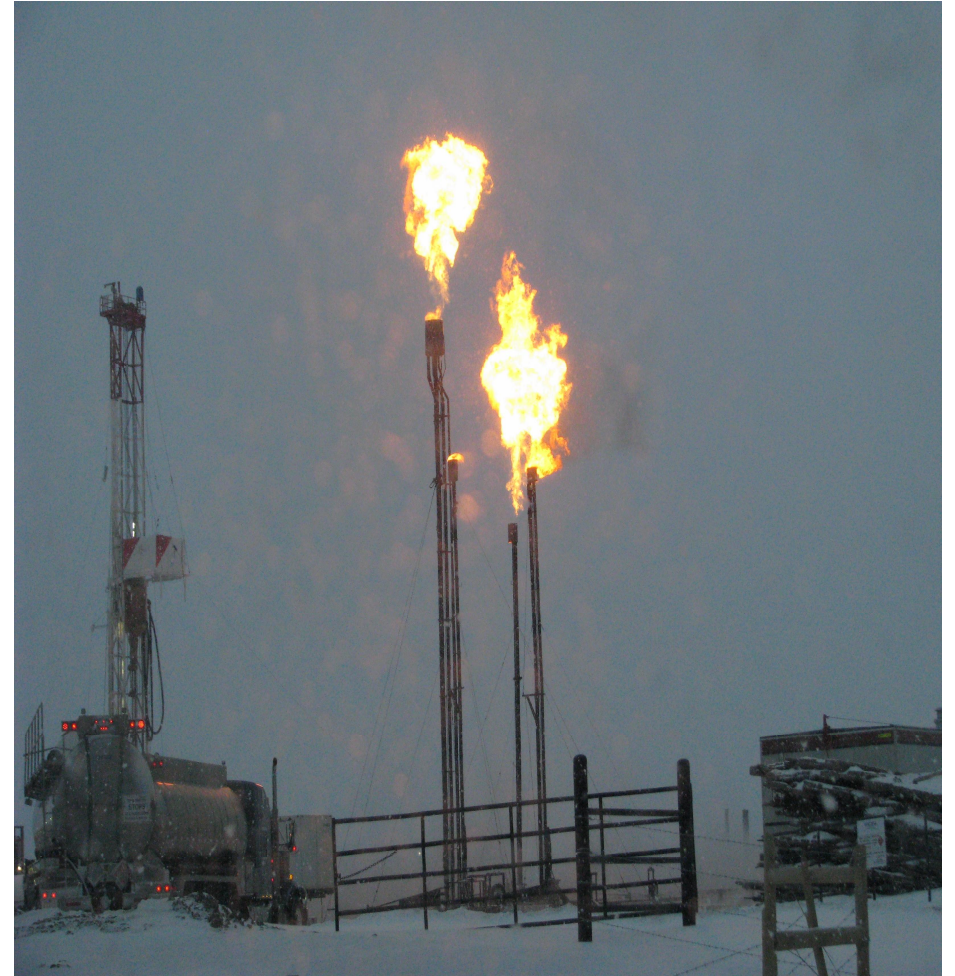
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Encana Flare stacks



January 24, 2018

Truck traffic heading to two separate Rigs



January 24, 2018

Second Encana Well



January 24, 2018

Night flares North and South Jan 2018



January 24, 2018

Video of Night sky. Jan 2018



January 24, 2018

Night Flares from the North from my kitchen 2:00 AM



January 24, 2018

New Normal ?



January 24, 2018

5392 PARKLAND RD
PRRD, BC V1G 0J2

Dear Surface Owner:

RE: Notification Letter
Project Description: Multiwell Pad at 1-5-80-17 W6M
Legal Description: SE 5-80-17 W6M
Encana File Number: S470991

Encana Corporation ("Encana") is proposing to construct and operate the above referenced project as part of Encana's ongoing development program in the area to produce natural gas, natural gas liquids and oil. This **may** also include the construction of an access road, as shown on the attached mapping. Pursuant to the requirements under the Oil and Gas Activities Act ("OGAA"), Section 22 (Consultation and Notification), the purpose of this letter is to provide you with information regarding the proposed project.

General Description of Project :	<p>Encana is currently proposing to develop this padsite with 20 wells, which may contain hydrogen sulphide (H₂S). Upon construction of this padsite and access road a drilling rig will be moved on to drill the wells. Encana plans to commence drilling Q 2 to Q4, 2018. Drilling will be followed by well completion operations (hydraulic fracturing, clean-up, production testing) and associated wellsite facility construction.</p> <p>Approximate timing breakdown per operation is as follows:</p> <ul style="list-style-type: none"> • Padsite and access construction – 30 days • Drilling – 15 days per well • Completions – 10 days per well • Wellsite Facility construction – 45 days <p>Any future drilling on this padsite is subject to the requirements of the OGAA governed by the BC Oil & Gas Commission ("OGC").</p>
Planned and Potential Future Wellsite Facilities for the Site:	<p>Wellsite facility equipment on this padsite may include:</p>

Encana Corporation

500 Centre Street SE PO Box 2850 Calgary AB T2P 2S5 CANADA 403.645.2000 encana.com

Notify SW&SRWell Rev 2, Dec 2017.doc

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- Radio tower)
- high/low pressure shut down valves
- H₂S monitor
- above ground lines
- pigging facilities
- associated riser/header modifications
- riser site

<p><i>How often</i></p> <p><i>What evidence that OGC is regulating</i></p>	<p>Flaring/Incineration:</p> <p>Flaring/incinerating are important measures when required to manage produced gas in a safe and responsible manner. Following drilling, the well(s) will be completed ("hydraulically fractured"), cleaned up and tested to determine productive capability.</p> <p>A flare stack is a critical component of safe wellsite facility design. Flaring is regulated by the OGC's Drilling and Production Regulations and further supported by the Flaring and Venting Reduction Guideline (the "Guideline"). With natural gas conservation a key objective, the Guideline provides regulatory requirements for flaring, incinerating, and venting regulated under the Petroleum and Natural Gas Act and Pipeline Act in British Columbia.</p> <p>These regulations are available on-line at: https://www.bco.gc.ca/content/flaring-and-venting-reduction-guideline. If approved, the proposed project would be subject to these guidelines and OGAA regulations.</p> <p>If pipeline and wellsite facilities are in place, the well(s) may be flowed in-line to conserve the gas during the completion operations. Where the pipeline and/or wellsite facilities are not in place, gas may be temporarily flared or incinerated until the clean-up and/or test flow periods are finished.</p>
<p>Odours:</p>	<p>Encana does not anticipate any odours associated with the construction and/or operation of the proposed padsite.</p>

Notify SW&SRWell Rev 2, Dec 2017.doc

<p>Noise:</p>	<p>Any increase in noise will be temporary in nature and associated with the construction, drilling and completions of the proposed padsite.</p>
<p>Lighting:</p> <p><i>Excessive for domestic homes</i></p>	<p>To safely conduct our drilling and completions operations, Encana requires adequate lighting. The lighting associated with these activities will be temporary in nature.</p>
<p>Traffic:</p> <p><i>How much is an increase? What kind of traffic?</i></p>	<p>The increase in traffic will be temporary in nature and associated with the construction, drilling and completion of the proposed padsite.</p> <p>In consideration of the temporary increase in traffic and the potential impacts to residents and the public road system, we have developed a "preferred route" for all traffic in the development of this multi-well padsite. Encana works closely with the Ministry of Transportation and Infrastructure (MOTI) to manage various road and traffic strategies to best ensure that impacts to public roads and related residents are minimized.</p> <p>Additional mitigation strategies that may be employed include dust abatement, strategic travel times in sensitive areas and speed restrictions.</p> <p>Traffic during the regular operation of the padsite will consist of regular visits by the operator in a pick-up truck.</p>
<p>Emergency Response Plan / Emergency Planning Zone:</p> <p><i>BUS ROUTE</i></p>	<p>This information is for 'early engagement' of affected stakeholders who are within the Emergency Planning Zone (EPZ) if one is required. If you have an interest in land within an EPZ covered by the existing Encana sour gas production Emergency Response Plan (ERP) for this area, you will have received ERP information already. If you are a new addition to this ERP or part of a site specific ERP you will be provided further information regarding the ERP in addition to this notification as per the OGC Emergency Response Plan Requirements.</p> <p>During drilling and completion operations, continuous hydrogen sulfide (H₂S) and fire monitoring will be in place at the site. Also, 24-hour supervision of the site will be maintained while work is completed. Well safety equipment, such as blowout prevention devices, will be installed and tested prior to the commencement of work and throughout the project. In the event of an operational problem, these safety devices would be shut in to prevent the possibility of a release of H₂S.</p>

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Define Temporary

- This multiwell is based on 20 wells, minimum is:
 - 15 days per for drilling = 300 days
 - 10 per for completion = 200 days
 - 30 day set up and 10 to take down = 40 days
- This would mean the well site would be active in our neighborhood
- for a minimum of 540 days. Or, one year, 5 months, 25 days.
- Is this considered **temporary**?
- What happens if the drilling goes over 20 wells?

C-1

From the office of Allen B Watson
 Box 229 – Tomslake, B.C., - V0C 2L0
 Ph/Fax 250-786- 5253 – e-mail awatson@xplornet.ca

January 05, 2018

Telus
 PO Box 7575
 Vancouver, BC
 V6B 8N9



Dear Sir / Madam

I live in the Tupper, BC area, which is 34 Km south east of Dawson Creek. Tupper is a rural community on the 250-786 exchange. On January 1st, 2018, our telephone went dead. At our location, we do not get cell service. With no way to communicate with TELUS regarding the outage, I went to several neighbors places to see where the service was out, or on. I discovered many residences were without phone service. Some had cell service so called TELUS about the outage.

One person was put on hold for one hour and fifty five minutes. When TELUS finally answered her call, she was told she could not call on behalf of others whose phones were also out of order even though she knew the outage was greater than her residence. She was also told there would be no service person to correct the problem until January 16th, 2018. Her call was taken by the TELUS's Victoria office.

I spoke with two other residents that had called TELUS regarding the outage. One call was taken by someone in Montreal, and another resident had someone in South America answer. Each of those callers was also put on hold for periods well over one hour. This is unacceptable.

As I drove around the community checking the telephone line to see if I could spot some obvious problem, I observed a multitude of locations that could have caused the outage. In places I could see where the telephone line had rubbed the bark off trees from the wind blowing; as well, many places where the line actually disappeared amongst spruce trees for many meters at a time; and I also observed many junction boxes that were in various stages of disrepair. The telephone line from the main highway to where it branches off and follows the Old Edmonton highway to serve the Tupper area, is in terrible condition and very much in need of some upgrading.

Fortunately, someone disregarded the 15 days we were told it would take to repair the service, and did the right thing and fixed it, so we were only out of service for two days. Thank you to the person that made that decision.

.../2

January 24, 2018

C-1

-2-

In view of the state the Tupper line is in, there are going to be more outages if TELUS does not do a major upgrade. I am an active member of the local Rural Crime Watch group that patrols the community on a daily basis therefore observing miles of telephone line that are equally in need of upgrading. The problems range from very old poles to the lines disappearing among trees and there are also many dead trees leaning on the line.

My question is – what are TELUS's plans for doing a major upgrade of these rural lines? Is it TELUS's plan to let the lines deteriorate to the point everyone will have to use cell phones? If this is the case, TELUS had better make sure all their customers can get cell service.

Should you wish to seek further information, you can call me at 250-786-5253 (as long as the phone is working), or my cell phone at 250-784-7035 should I be on the road where I can get cell service. You can also respond via email at awatson@xplornet.ca.

I should mention, I tried to report the outage by using the complaint website at www.ccts-cprst.ca. I found the website to be very unfriendly to use and gave up in frustration. I considered other options to bring this issue forward including CBC's 'Go Public' program however, I have chosen to write this letter and see what response I get from TELUS.

In closing, let me remind TELUS I have been a loyal customer for fifty years either in the Rolla area or at our retirement residence here at Tupper. This is not the way any corporation should treat loyal customers?

Respectfully,



Allen B Watson

Accnt#126505182 9

CC MLA Mike Bernier
 ✓ Area D Director, Peace River Regional District

January 24, 2018



REPORT

R-1

To: Electoral Area Directors Committee

Date: January 9, 2018

From: Barb Coburn, Secretary

Subject: December 2017 Directors' Information Package

RECOMMENDATION:

That the Electoral Area Directors Committee receive all of the "December 2017 Directors' Information Package" for discussion.

BACKGROUND/RATIONALE:

At its December 14, 2017 Electoral Area Directors' Committee meeting, the following motion was passed:

"That the December Directors' Information Package be placed on the January Electoral Area Directors' Committee Meeting Agenda."

The Information Package is attached.

OPTIONS:

1. That the Directors provide further direction to staff.

STRATEGIC PLAN RELEVANCE:

- ☐ Ensure that the Solid Waste Management Plan is operating on a fiscally defensible basis.
- ☐ Ensure effective execution of Public Safety and Emergency Services initiatives.
- ☐ Foster Collaboration on services with municipalities and electoral areas.
- ☐ Establish a strategy for coordinated advocacy on identified issues.
- ☐ Manage parks and trails in the region.
- ☐ Support the agricultural industry within the regional district.
- ☒ Not Applicable to Strategic Plan.

FINANCIAL CONSIDERATION(S):

none

COMMUNICATIONS CONSIDERATION(S):

none

OTHER CONSIDERATION(S):

Attachments: Information Package.

Staff Initials: *Coburn*

Dept. Head:

January 24, 2018

CAO:

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R-1

PEACE RIVER REGIONAL DISTRICT

Items for Information

1. December 1, 2017 Northern Health News Release – MR! services reach a Milestone at Fort St. John Hospital.
2. December 2017 Northern Health Healthier Northern Communities ebrief.
3. November 2, 2017 BC Guidelines for Industrial Camps Regulations.
4. November 30, 2017 Ministry of Municipal Affairs and Housing – Public Review on proposed changes for the 2020 National Building Code, Fire and Plumbing Codes.
5. December 4, 2017 Northern Health Media Bulletin – Northern Health holiday bus schedule
6. December 1, 2017 STARS Air Ambulance – Thank you for 32 Years.
7. November 21, 2017 Climate Action Initiative – accomplishment Factsheets.

DEPARTMENT: Administration

DATE: December 8, 2017

diverse. vast. abundant.

NEWS RELEASE

For Immediate Release
December 1, 2017

MRI services reach a milestone at Fort St. John Hospital

Northern Health leaders and staff in Fort St. John joined with the Peace River Regional Hospital District, the Fort St. John Hospital Foundation and the Hospital Auxiliary today to mark a milestone in diagnostic imaging services in northeast B.C. The new MRI unit at Fort St. John Hospital has now performed its first 300 exams.

“This milestone means that hundreds of residents of Northeast B.C. have been able to receive important diagnostic imaging services closer to home,” said Northern Health Board of Directors chairperson, Colleen Nyce. “This is a key aim of our overall strategy to help improve access to medical imaging technology in northern B.C.”

The new MRI unit at Fort St. John Hospital went into service in late September, following approximately 5 months of construction, and equipment testing. The unit is expected to do approximately 2,000 scans in its first year of operation.

The Fort St. John MRI project was one of three MRI installation projects across the Northern Health region in 2017, including a new MRI at Mills Memorial Hospital in Terrace, and a replacement unit at the University of Northern BC in Prince George. Together, the new units triple the number of MRI's in the region, improving access and wait times and bringing services closer to home for residents across the north.

“The Regional Hospital Board is pleased to see this milestone reached,” said Peace River Regional Hospital District Chair Brad Sperling. “MRI is an important service to have in our region, and the Board welcomed the opportunity to support this expansion of medical imaging in the Northeast.”

Funding for the \$2.6 million Fort St. John MRI project came from:

- Ministry of Health (Province of B.C.) - \$1.36 Million
- Peace River Regional Hospital District - \$1.04 Million
- Fort St. John Hospital Foundation - \$150,000
- Fort St. John Hospital Auxiliary - \$50,000

"The addition of equipment like the MRI to the Fort St John Hospital is important to residents of Northeast B.C., saving patients time and money and reducing wait times for

diagnostic imaging procedures,” said Chris Maundrell, Chair of the Fort St. John Hospital Foundation Board. “It’s another step in enhancing patient care and comfort in the Fort St John Hospital, and the Foundation and its donors are thrilled to have been able to support this project.”

An MRI is a valuable test for medical professionals that use a magnetic field and pulses of radio wave energy to make pictures of organs and structures inside the body. Muscles, ligaments, cartilage, and other joint structures are often best seen with an MRI. In many cases MRI gives information about structures in the body that cannot be seen as well with an X-ray, ultrasound, or CT scan.

Northern Health’s 10-year medical imaging plan to help improve access to medical imaging technology in northern B.C. also includes the implementation of the Provincial Breast Health Strategy, which has recently seen state-of-the-art digital mammography units installed at hospitals in Quesnel, Dawson Creek, Smithers, Terrace and Prince Rupert.

Media contact: NH Communications – 877-961-7724

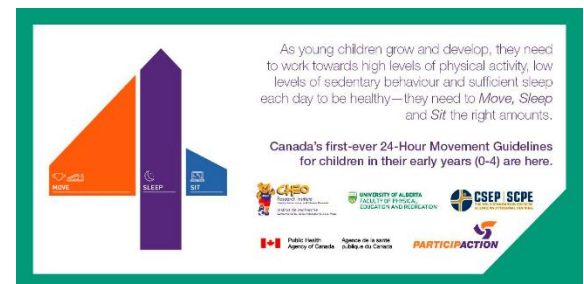
December 2017

Healthier Northern Communities ebrief

The Healthier Northern Communities ebrief is produced by the regional Population Health program (Population and Public Health, Northern Health). In the spirit of healthy people who live, work, learn, and play in healthy communities across the north, the ebrief delivers information on resources, learning events, funding opportunities, and other information specific to promoting healthy living and the prevention of chronic disease and injury.

Canadian 24-Hour Movement Guidelines for the Early Years (0-4 years)

Integrating physical activity, sedentary behaviour, and sleep, these guidelines are relevant to all apparently healthy infants, toddlers, and preschoolers. Following these guidelines through the early years is associated with better growth, cardiorespiratory and musculoskeletal fitness, cognitive development, psychosocial health/emotional regulation, motor development, body composition, quality of life/well-being, as well as reduced injuries. To learn more, visit ParticipACTION.com.



Food for Thought

- [ICBC's Operation Red Nose](#) provides rides to drivers and their passengers who have been drinking or are too tired to drive home during the holiday season. Operation Red Nose is available in Prince George.
- [Shift Into Winter](#): Conditions change. So should your speed. Slow down!
- Health Canada update on [Baby Nests](#).
- Heating your home with a wood stove? Tips for burning responsibly can be found on our [Northern Health website](#), or see if you qualify for the [BC Wood Stove Exchange Program](#).
- Thinking of donating food to an organization in your community this holiday season? Here's why you should give a monetary donation instead and some ideas for [healthier food donations](#).
- Survey for local planners on considering aging in community planning. Access this 5-10 minute survey through the [American Planning Association](#).
- The Youth Experiences Project PG is seeking participants in Prince George between 16-30y to complete a survey on their experience with drug use. Visit their [Facebook](#) for more information and to see if you qualify, or call/text 250-532-0065. Participation is anonymous and confidential. Participants will be offered \$25 for their time.

Resources

When Words Matter: A Guide – Fraser Health

Whether you're a parent, child, friend, partner, or co-worker of someone who may be using substances, reaching out and having conversations about overdose prevention is a crucial step that you can take together. Use this [Guide](#) to prepare for and begin the conversation about overdose prevention. For more information visit [Fraser Health](#).

Youthspace.ca

This free, online [text chat](#) for youth operates between 6pm and midnight PST daily. Youth do not need to be in crisis to chat. Volunteer staff are certified in ASIST (Applied Suicide Interventions Skills Training) and are available to youth to talk about stress, relationships, school, suicide, abuse or other concerns. Average chats are about 40 minutes and can sometimes require a wait to get on. [The Need2 Suicide Prevention Education and Support program](#) is based in Victoria, BC.

Private Out-Patient Addictions Treatment in Prince George

[Brazzoni and Associates](#) has opened a new, privately-run addictions treatment program aimed to support people seeking help while also holding down jobs and maintaining families. This is an [intensive out-patient program](#) and is run in partnership with Edgewood Health Network.

UPnGO with ParticipACTION – Workplace Wellness Program

UPnGO with ParticipACTION helps deskbound workplaces seamlessly integrate fun, rewarding, and healthy behaviour programming into the workday to help employees be at their best. This unique program is designed to mobilize entire workforces, not only the physical activity keepers. To learn more check out the [ParticipACTION.com](#).

Canadian Assessment of Physical Literacy (2nd Edition)

The Canadian Assessment of Physical Literacy (CAPL) is the first tool of its kind to help assess the physical literacy level of a child. The [website](#) includes manual, quick reference guides, training videos and webinars, and has built-in data entry. The training provided allows parents, teachers, public health practitioners, coaches and rec leaders to administer the assessment.

Get Active Questionnaire (Canadian Society for Exercise Physiology)

Thinking of getting active or have clients/children wanting to increase their physical activity? Take this [pre-participation questionnaire](#) to help yourself or someone you're working with identify risk factors that should be considered before engaging in physical activities. Also a great discussion tool to use with your primary care provider.

Community Events

November 25th - December 10, 2017 – 16 Days of Activism against Gender-Based Violence Campaign

Running from International Day for the Elimination of Violence against Women (Nov 25) to Human Rights Day (Dec 10), this campaign and theme "Leave No One Behind" reinforces the UNITE Campaign's commitment to a world free from violence for all women and girls around the world. To join in the conversation share your photos and messages with the hashtag #orangetheworld on [Facebook](#) and [Twitter](#).

December 1st, 2017 – CBC Open House and Food Bank Day

CBC's annual open house and food bank day continues for the 31st year! The need for emergency food for families, single adults, seniors and children in our communities continues to grow. Listen to CBC radio from 6am-6pm on December 1st for live radio programs and amazing guest performers. Tour the CBC studios from 8am-3pm and learn how digital radio and television programming work. Donations are accepted on behalf of BC food banks. To donate to the food bank near you visit the [foodbankbc.com](#).

Funding Opportunities

Community Dialogues on Opioid Use – CISUR Grants

Apply now – available until funding expended

[The Canadian Institute for Substance Use Research](#) (CISUR) is providing a second phase of funding to support community dialogues in response to the opioid overdose crisis in BC. Selected communities will receive grants from \$2,000 to \$15,000 to assist with costs of hosting. For more information visit the [uvic.ca](#).

Annual Bus Pass Supplement for Persons with Disabilities

Beginning January 1, 2018

A transportation supplement of \$52 per month will be available to support those on disability assistance with transportation costs. People who have the Persons with Disabilities (PWD) designation can use the new supplement for an annual bus pass or for other transportation needs, such as HandyDART. For more information see the [BC Bus Pass Program](#) on the Ministry website.

R-1

Education/Learning Opportunities

WEBINAR: “Racing” the social determinants of health and health equity (Part 2)

December 5th, 2017 – 10:00-11:30am PST

This [webinar](#) is the second of a two-part series on the impact of racism on health. The aim of the discussions is to explore approaches to addressing racism, as well as improve the health of Indigenous and racialized peoples. The [recording of Part 1](#) is available here.

WEBINAR: Building for Mental Health: Healthy built environments for children and youth

December 11th, 2017 – 10:00am PST

This webinar will focus on factors in the urban built and social environments that promote child and youth mental health, and how public health can work to support these factors through upstream approaches. To register visit the [National Collaborating Center for Determinants of Health](#).

2018 Active Living Research Conference

February 11-14th, 2018 – Banff, Alberta

This conference brings together active living researchers and champions from over 30 disciplines to advance knowledge and action around active communities. Hear from scientists, practitioners, and policy makers on how to create and sustain active living environments. Visit their [website](#) for more information and to register.

Rural Routes Podcasts – Memorial University

Online

A Canadian podcast series out of Newfoundland that focuses on topics of relevance to rural and remote communities. Previous episode topics include: community research, the future of forestry, food waste, research ethics in indigenous communities, housing, immigration, and more. Visit the [website](#) to listen to pre-recorded episodes and subscribe for updates.

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Online

This course provides you with the tools you need to plan, implement, and monitor a winter driving safety program in your organization. You will be presented with challenges to complete using the winter driving safety employer toolkit. To take the course visit the [ShiftintoWinter.ca](#).

Addictions Best Practices – Canadian Mental Health Association

Online

The BC Division on Addiction Best Practice, which focuses on addiction in the workplace, has pre-recorded a [webinar on Addictions Best Practices](#). You will find a review of addiction and information on human rights considerations.

Northern Health Blogs

- [Falling is not a “right of passage”; Falls Prevention Awareness Week](#) By: Amy Da Costa
- [IMAGINE Community Grants: An opportunity to connect with your community](#) By: Mandy Levesque
- [Discovering BC apples](#) By: Emilia Moulechkova
- [Protecting the vulnerable: the reality of flu](#) By: Ami Drummond

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R-1

Are there other opportunities for people to connect within your community in the Northern Health region? Do you have information, articles or resources that you think might be of interest to northern communities? Send your information by email to healthycommunities@northernhealth.ca

These ebriefs are an information service bringing news of relevant health promotion, resources and research to northern communities from the Population and Public Health Programs at Northern Health. The news items are for information only and do not reflect any official viewpoint of Northern Health.

For more information on the Northern Health’s Population Health Programs visit the Northern Health website at <https://northernhealth.ca/YourHealth/HealthyLivingCommunities.aspx>

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*Northern Health’s Population Health Team
Centre for Healthy Living
1788 Diefenbaker Drive, Prince George, British Columbia*

Next edition to follow in January 2018

Claire Negrin

R-1

From: PRRD_Internal
 Sent: Thursday, November 02, 2017 11:08 AM
 To: Bruce Simard; Claire Negrin; Jacqueline Burton; Kole Casey; Christina Hovey
 Subject: FW: B.C. Guidelines for Industrial Camps Regulation

Edda Berthold | Receptionist/Secretary
 Direct: 250-784-3200 | reception.dc@prrd.bc.ca

PEACE RIVER REGIONAL DISTRICT | Box 810, 1981 Alaska Highway Avenue, Dawson Creek, BC V1G 4H8
 Toll Free: (24 hrs): 1-800-670-7773 | Office: 250-784-3200 | Fax: 250-784-3201 | www.prrd.bc.ca



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From: Population and Public Health HLTH:EX [<mailto:hlth.pph@gov.bc.ca>]
 Sent: November-01-17 3:06 PM
 To: HP-PHW, HLTH <HP-PHW@gov.bc.ca>
 Subject: B.C. Guidelines for Industrial Camps Regulation

Hello all,

I am pleased to inform you that the B.C. *Guidelines for Industrial Camps Regulation* is now available at <https://www2.gov.bc.ca/gov/content/health/keeping-bc-healthy-safe/industrial-camps>.

The Health Protection Branch (HPB) developed these best practice guidelines in response to requests from BC health authorities, local governments and various industries for a tool to assist industrial camp operators and regulators interpret the Industrial Camps Regulation (ICR).

As a background, the operation of an industrial camp is a regulated activity and Section 18 of the *Public Health Act* pertaining to duties of operators in reducing health hazards applies to camp operators. Issues related to health conditions in industrial camps arise from time to time due to lack of adherence to the ICR. These guidelines provide a tool to help mitigate such incidences by helping camp operators, employers and regulators understand the ICR; outlining duties of employers and operators; and providing best practices for maintaining minimum camp conditions to make workers' accommodations safe, sanitary and fit for human habitation.

Please feel free to share the web link with your colleagues.

Sincerely,

Tim Lambert, Ph.D.
 Executive Director
 Health Protection Branch

B.C. GUIDELINES FOR INDUSTRIAL CAMPS REGULATION

OCTOBER 1, 2017

**HEALTH PROTECTION BRANCH
MINISTRY OF HEALTH**



INTRODUCTION

The B.C. Guidelines for Industrial Camps Regulation (guidelines) supports and are intended to help industrial camp operators and regulators interpret the Industrial Camps Regulation. The standards set out in the guidelines represent generally accepted minimum standards of safe practices.

The primary intent of the Industrial Camps Regulation (ICR) and the guidelines is to establish minimum camp conditions essential to good health and make accommodations for workers safe, sanitary and fit for human habitation.

The ICR states that the operation of an industrial camp is prescribed as a regulated activity. This means that, pursuant to Section 18 of the *Public Health Act*, the employer/operator (or an operator working for the employer) of an industrial camp must:

- Take reasonable care to prevent health hazards (something that endangers or may endanger public health) from arising.
- Respond to health hazards that do arise, including mitigating their harmful effects.
- Ensure camp operations employees are adequately trained and sufficiently equipped to recognize, prevent and respond to health hazards.

The guidelines also incorporate information that was provided by the health authorities in industrial camps related consultations.

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GENERAL

1. OVERVIEW

The B.C. Guidelines for Industrial Camps Regulation (guidelines) provide interpretation for the Industrial Camps Regulation (ICR). For convenience, the content in this document is organized by sections, which correspond to the sections of the ICR. Where appropriate, this document also provides supplemental guidance in the form of best practices.

NOTE: Please note that best practices provided in this document are recommendations and some may not be mandatory or enforceable under the ICR. Consult your health authority if you have any questions in specific situations.

The ICR applies in situations where industrial camp accommodations (i.e., structures used for accommodation by industrial camp residents) or amenities (see definition in Appendix A - Glossary) are provided by an employer in connection with a logging, sawmill, mining, oil or gas operation, a railway construction project, a cannery or a similar industry, such as agriculture work camps and tree planting camps.

Given the restricted definition of camps in the ICR, the various forms of accommodations fall in a grey area and there may be a need to review each case, if required. For the purpose of guidance to the health authorities, if the accommodations and amenities are provided by the employer as stated above, the camp provides accommodation and services only to employees, and the general public is not able to stay there, it should be considered as an industrial camp.

The ICR does not apply to the following camps:

1. Accommodation or amenities provided by a third party, for a fee, to a wide range of clientele on a “drop in” basis. For example, accommodations such as large “hotel-like” accommodations that are constructed and managed by a third party, and resource companies or “employers” rent out blocks of rooms at these facilities for their employees who work in the area. Third party-provided accommodations that are not established by an employer in the resource sector are subject to other public health regulations in the same way as any hotel accommodation.
2. Occupied by five persons or less,
3. Established to meet emergency situations and occupied for not more than seven days.

Although the ICR does not apply to small or emergency industrial camps, the guidelines can be used as a reference guide for them.

There is other legislation and codes that pertain to industrial camps. A list of related legislation and codes pertaining to industrial camps is included in Appendix B. In addition, other provisions of the *Public Health Act* may apply to communicable diseases and environmental health hazards in industrial camps that may impact public health.

2. LEGISLATION / REGULATIONS APPLICABLE TO INDUSTRIAL CAMPS

1. Ministry of Health

- a. *Public Health Act*, Industrial Camps Regulation

- b. *Drinking Water Protection Act*

2. Ministry of Environment

- a. *Environmental Management Act*, Waste Discharge Regulation
- b. *Integrated Pest Management Act* (pesticide storage)

3. Ministry of Technology, Innovation and Citizen Services

- a. *The Manufactured Home Act*

4. BC Codes:

It is the owner's responsibility to ensure that all construction is in compliance with the following BC Codes. This document does not identify all applicable provisions of all the BC Codes. Contact the appropriate municipal building department or the Regional District in your area for additional information.

- a. **BC Building Codes** - applies to the construction of buildings, including extensions, substantial alterations, and buildings undergoing a change for occupancy, "green" building specifications, or upgrading of buildings to remove an unacceptable hazard. It applies the core concepts of the National Building Code, combined with elements specific to BC's unique needs.
- b. **BC Fire Code** - contains technical requirements designed to provide an acceptable level of fire safety within a community. It applies the core concepts of the National Fire Code, combined with elements specific to BC's unique needs.
- c. **BC Plumbing Code** - applies the core concepts of the National Plumbing Code, combined with elements specific to BC's unique needs and sets out technical provisions for the design and installation of new plumbing systems. It also applies to the extension, alteration, renewal and repair of existing plumbing systems.

Note: the [BC CODES](#) can be accessed online (through a fee for service) or at a public library.

3. NOTIFICATION OF INDUSTRIAL CAMP OPERATION

The health authorities require each industrial camp operator to notify the health authority before building or operating a camp. The following information is required when completing the health authority process for approval:

1. Name of camp	<i>Provide the name of the industrial camp and the organization responsible for operating the camp.</i>
2. Contact information	<i>Provide the name and contact information of the person in charge of the day-to-day operation of the industrial camp (e.g., direct phone, cell phone and email). This is the person who will deal primarily with the health authority.</i>
3. Location of camp	<i>Provide the location of the camp site (e.g., address, co-ordinates, lot numbers, etc.)</i>

4. Camp access directions	<i>Provide the directions for access to the camp site and any access restrictions.</i>
5. Camp purpose	<i>Provide the camp purpose (e.g., oil and gas, mining, forestry, etc.)</i>
6. Permanent or short term	<i>Indicate if the camp is a permanent or short term industrial camp.</i>
7. Camp duration	<i>Provide the camp duration: timeline for occupancy, including the start date of camp construction, and start and closure dates of operation.</i>
8. Maximum number of residents	<i>Provide the maximum number of residents at the industrial camp, during construction and operation, broken out by camp workers and camp staff.</i>

PART 1 – DEFINITIONS AND INDUSTRIAL CAMPS

Definitions: in the ICR:

Approved means approved in writing by a health officer.

Bedroom includes a structure used solely for the purpose of sleeping.

Common use means the use of a thing by more than one person without its being thoroughly cleaned and, if applicable, sterilized, after each person's use.

Dwelling includes an apartment and a housekeeping suite.

Industrial camp means land or premises on which an employer, in connection with a logging, sawmill, mining, oil or gas operation, a railway construction project, a cannery, or a similar thing, owns, operates or maintains, or has established, permanent or temporary structures for use, with or without charge, by employees as living quarters. Accommodation types on industrial camps may be of the following types:

- **Apartment** – structure built as per building code for multifamily residential use.
- **Dormitory** – purpose built/renovated structure, that has separate eating, sleeping and living areas. This includes portable structures that used in remote mining, gas and lumber industrial camps.
- **Hotel/hotel style** – purpose built structures built to building code requirements. Hotel style accommodations differ from other accommodations in that the sleeping quarters do not have to be separated from the other living spaces.
- **Converted storage area** – a repurposed structure that has been converted into a multi-person accommodation.
- **Float homes** – barges, ships or other structures that are constructed or modified to house and accommodate industrial camp workers. For the purpose of guidance to the health authorities, if the accommodations and amenities are provided exclusively for the employees by the employer, then float homes are considered industrial camps and subject to the ICR.
- **Mobile home** – as defined by the *Manufactured Home Act of BC*. The Ministry of Agriculture does not approve of travel or tourist trailers, campers, park model trailers as acceptable accommodation structures for Temporary Foreign Workers.
- **Tent** - a portable shelter made of cloth or another fabric, supported by a solid frame or poles and stretched tight by cords or loops attached to pegs driven into the ground. Tents must meet the requirements outlined in section 5 of the ICR. Subsection (1) (d) of section 5 does not apply to temporary tents used for industrial camp purposes.

Note: The ICR does not apply where accommodation or amenities are provided by a third party supplier, such as large accommodations that are constructed and managed by a third party, and resource companies or “employers” rent out blocks of rooms at these facilities for their employees who work in the area. In terms of achieving the necessary public health goals, these types of accommodation are regulated in the same manner as hotels.

Pest means animals, including insects that may carry an infectious agent or endanger the safety of residents.

Sanitary facility means a structure containing a toilet, washbasin and ancillary equipment and includes a privy, shower or urinal.

Short term industrial camp means an industrial camp that operates for 5 months or less in any 12-month period.

Prescribed regulated activity

The operation of an industrial camp is prescribed as a regulated activity. This means that all activities discussed in the ICR and this guide are governed by the *Public Health Act* and/or other applicable legislation and associated regulations.

Parts 2 and 3 do not apply to small or emergency camps

Parts 2 [*Construction and Facilities*] and 3 [*Operation*] of the ICR do not apply to an industrial camp that is occupied by fewer than five persons, or is established to meet emergency conditions and occupied for a period of not more than 7 days.

PART 2 – CONSTRUCTION AND FACILITIES

DIVISION 1 – LOCATION AND CONSTRUCTION

SECTION 4 – SITE OF INDUSTRIAL CAMP

Industrial camps and all areas within them must be well drained. The camps should be located on sites where there is good natural drainage or providing adequate drainage where natural drainage is not sufficient. In no instance should the drainage contaminate, or have the potential to contaminate any water supply in the vicinity of the industrial camp, either surface or ground water, including the water source that provides domestic use water to the camp.

Industrial camp construction must also comply with all requirements of the *B.C. Wildfire Act* and *Wildfire Regulation*, particularly with respect to fuel breaks, hazard assessment and abatement.

SECTION 5 – CONSTRUCTION OF STRUCTURES

The British Columbia Building Code (BCBC) applies to all new construction, renovations or additions to existing structures, including factory constructed trailers, even in areas where there is no building inspection.

The only structures exempt from the BCBC are temporary structures (e.g., used for construction-site offices, storage and emergency facilities), structures that are under 10 m² (107 sq. ft.) that do not create a hazard, and factory-constructed buildings that meet the Canadian Standards Association (CSA) Z240 MH (mobile home) standard. Industrial camp structures that do not fall within these exemptions must meet the BCBC.

It is the employer's responsibility to ensure compliance with the BCBC. These guidelines do not identify all applicable provisions of the BCBC. Contact the local government office in area where the camp is located for more information.

Any structures established or maintained as dwellings in an industrial camp must be structurally sound, effectively protected against entry by pests, maintained in good repair, and in a sanitary and weatherproof condition.

A person who establishes or maintains a structure used for living quarters in an industrial camp must ensure that all of the following conditions are met:

- (a) floors not built on solid concrete or a rodent-proof foundation have a clearance of at least 30 cm between the surface of the ground and the underside of the floor joists;
- (b) the structure is wind and weather proof;
- (c) living quarters and bedrooms have heating arrangements that will ensure a temperature of at least 18°C (64°F) during the season in which the structure is to be occupied;
- (d) living rooms, bedrooms, dining rooms, kitchens and sanitary facilities have adequate artificial or natural lighting; and,
- (e) the floors and walls of rooms used for living, sleeping or eating are of a smooth, easily cleanable finish and are kept clean.

A. Best Practice – Permanent Structures

The builder and operator should ensure that:

- For smaller buildings, there are at least 10 m (33 ft.) between dwellings, or between dwellings and any other structures, unless the applicable spatial separation provisions of the BCBC are met (as required by the BCBC. There are different requirements for larger buildings – please refer to the BCBC for more information.)
- Dwellings have heating arrangements capable of maintaining a temperature of at least 18°C (64°F) during occupancy (as required by the BCBC).
- Heating system fuels and combustible gases are stored and dealt with appropriately, for example, as required by the BCBC, the BC Fire Code or the Canadian Standards Association (CSA). Oil burning appliances and ancillary equipment (e.g., storage tanks, pipes, etc.) fall under CSA B139. For more information, see <http://shop.csa.ca/> or contact the Canadian Standards Association.
- Walls extend at least 2.1 m (7 ft.) above floor level. Walls may be more than 2.7 m (9 ft.) tall, but a maximum height of 2.7 m (9 ft.) will be used for calculating airspace in the sleeping areas. Closets, storage areas etc., may be less than 2.1 m (7 ft.), but these areas are not included in area or volume calculations.
- Walls fit tightly together and should be of sound structure (for example, solid behind wall tiles).
- The surface of the interior walls is smooth, and painted or covered with a treated material that can be easily maintained.
- Floors are made of materials that can withstand regular wet washing.
- If residents prepare their own meals, the rooms used for food preparation and cooking have walls and floors made of materials that are durable, moisture-proof and easy to clean.
- All windows and doors are screened from the outside from May 1 to November 1.

- Living areas, bedrooms, dining rooms, kitchens and sanitary facilities have adequate artificial or natural light for the intended purposes. Light switches should be located in such a way as to minimize the need to move into a dark room.
- Rooms are adequately ventilated to prevent the accumulation of moisture, disagreeable odours and mould.
- All camp residents are provided with individual storage space for their possessions and clothing. This storage space must be pest-resistant, moisture-proof and lockable.
- All accommodations must, at a minimum, have dual exits leading directly to the exterior of the building. Secondary exits must meet the specification of the Fire Code (i.e. use of rope ladders).
- Dual purpose buildings storing highly flammable material or hazardous goods are not acceptable accommodations. Empty pesticide, fertilizer, fuel containers etc. are considered hazardous.

B. Best Practice – Tents or Other Temporary, Membrane Structures

For industrial camps that provide tents (or other temporary, membrane structures) as accommodations, the operator must ensure that the structures:

- Have sufficient ventilation to prevent the accumulation of disagreeable odours and condensation.
- Are fully enclosed and weather-proof.
- Provide adequate artificial or natural lighting.
- Can maintain a temperature that is comfortable for residents to engage in the activities for which the tent is intended to be used.
- Are made of flame-resistant materials.
- Have floors that are kept clean and have an easily cleanable surface.
- Have an unobstructed clearance of at least 1 m (3 ft.) from every other bed, whether measured from the side or the end, and 1 m (3 ft.) over each bed.
- Where double bunk beds are used, have a minimum space between the lower and upper bunk of not less than 0.7 m (27 in.).
- Have at least 3 m (10 ft.) between tents or between a tent and another structure.
- Have a moisture barrier (ground sheet) where the bedding is not elevated 30 cm (1 ft.) or more above the ground.
- Provide all camp residents with individual storage space for their possessions and clothing. This storage space must be pest-resistant, moisture-proof and lockable.

SECTION 6 – VENTILATION

The operator must ensure that the rooms are adequately ventilated to prevent the accumulation of moisture, disagreeable odours and mold.

SECTION 7 – PESTS

All industrial camp structures must be constructed and maintained in a manner that will deter pests. This includes insects, rodents and other animals that may present a risk to human health. In situations where an operator becomes aware of the presence of pests, he/she must take appropriate steps to keep the premises free of them (e.g., use of professional pest-control technicians).

DIVISION 2 – DWELLINGS AND BEDROOMS

SECTION 8 – DWELLINGS

A person who constructs a dwelling in an industrial camp must ensure that the following conditions are met:

- (a) The dwelling has at least a living room and a kitchen.
- (b) The living room has a net floor area of at least 11 m² (118 sq. ft.).
- (c) The kitchen has a net floor area of at least 7 m² (75 sq. ft.).
- (d) The bedroom has a net floor area of at least 9 m² (97 sq. ft.).

SECTION 9 – OVERCROWDING

An operator, tenant or occupier of a dwelling in an industrial camp must ensure that the dwelling is not overcrowded. A dwelling is considered overcrowded if:

- (a) two persons, 10 years of age or older, of opposite sex and not married or cohabiting, are required to sleep in the same room, or
- (b) the number of persons sleeping in the dwelling is more than that permitted under Schedule 1 (see Box 1: *Industrial Camps Regulation: Schedule 1 - Overcrowding*).

Box 1: Industrial Camps Regulation: Schedule 1 - Overcrowding

A dwelling is overcrowded for the purposes of section 9 (2) (b) if there are more persons sleeping in it than the number permitted under Column 2 in the table below, opposite the number of bedrooms in the dwelling as set out in Column 1. In determining the number of permitted persons,

- (a) children under the age of one year are to be counted as 0,
- (b) children aged one year or more but less than 10 years are to be counted as 1/2, and
- (c) persons who are 10 or more years of age are to be counted as one.

Column 1 - Number of bedrooms in dwelling	Column 2 - Number of persons permitted in dwelling
2	3
3	5
4	7 1/2
5	10
Each additional bedroom over 5	An additional 2 persons

SECTION 10 – BEDROOMS IN INDUSTRIAL CAMPS GENERALLY

Section 10 does not apply to operators of short term camps. For information related to bedrooms in short term camps, see Section 11.

An operator must ensure all bedrooms have adequate heat, ventilation, light, space and a means of egress. In addition, the operator is to ensure that:

- Each bedroom (other than a bedroom in a factory constructed trailer) which is used to accommodate 2 or more persons has:
 - ▶ A total floor space for the bedroom (excluding space for sanitary facilities) of at least 9 m² (96 sq. ft.) a cubic air space of at least 21.5 m³. This is an equivalent of 4.5 m² (48 sq. ft.) of floor space per resident.
 - ▶ If more than 2 persons are occupying one bedroom, an additional net floor area of at least 5.5 m² (59 sq. ft.) and an additional cubic air space of at least 13.5 m³ for each additional person.
- Each bedroom in a factory-constructed trailer has a net floor area of at least 4.5 m² (48 sq. ft.) and a cubic air space of at least 9.5 m³ for each person.
- Each employee has a separate bed that is not part of a system or arrangement of double deck or multiple tier bunks.

- An operator must ensure that suitcases and other articles are not stored under beds unless the bed has built in drawers, and clothes are not dried in bedrooms.
- An operator must ensure that:
 - ▶ Clean, laundered sheets and pillow cases are supplied to each employee on arrival and at least once each week after arriving.
 - ▶ All mattresses, sheets, pillows, pillow cases, blankets and bed covers are kept in a sanitary condition.
 - ▶ Employees do not use their own blankets in a bedroom.

SECTION 11 – BEDROOMS IN SHORT TERM INDUSTRIAL CAMPS

An operator of a short term industrial camp must ensure that:

- Each bedroom has an unobstructed clearance of at least 0.6 m (2 ft.) between beds, and 1 m (3 ft.) between each bed and the ceiling.
- Individual dry storage space for personal possessions and clothes is provided for each employee using the bedroom.
- Clothes are not dried in a bedroom.
- All mattresses, sheets, pillow cases, blankets and bed covers are kept in a sanitary condition.

C. Best Practice – Bedrooms in Industrial Camps

The operator should ensure the following:

- A separate bed for each person accommodated in the bedroom (or for people who are married or co-habiting).
- Beds are at least 30 cm (12 in.) above the floor and have an unobstructed clearance of at least 1 m (3 ft.) from every other bed, whether measured from the side or the end, and 1 m (3 ft.) over each bed.
- Where double bunk beds are used in short term camps, the minimum space between the lower and upper bunk is not less than 0.7 m (27 in.). Under the ICR, bunk beds are not permitted in permanent camps. Triple bunk beds are not allowed in any camps.
- Clean bedding is provided for each industrial camp resident on arrival. The bedding and mattresses should be kept in sanitary condition. Bedding is laundered as required and before each new user. Sufficient natural or indoor lighting is provided to ensure resident safety.
- A safe and adequate means of egress (exit) are provided in the bedroom in the event of fire or other evacuation emergency (as required by the BCBC).
- The bedroom should have windows that, when opened, are big enough allow a way to get out in the event of fire.
- Except where the suite has sprinklers, the bedroom should have at least one outside window or exterior door in each bedroom that can be opened from the inside without keys, tools or special knowledge, or removing sashes or hardware. The window must provide an unobstructed opening of not less than 0.35 m² (3.7 sq. ft.) in area, with no dimension less than 380 mm (15 in.). The window should be constructed so it can maintain the required opening, during an emergency, without additional support (as required by the BCBC for smaller buildings. There are different requirements for larger buildings – please refer to the BCBC for more information). The bedroom

should have working smoke alarms in all bedrooms, as required by the BC Fire Code. See the Office of the Fire Commissioner's *Smoke Alarm Bulletin* at:
http://embc.gov.bc.ca/ofc/services/bulletins/pdf/smoke_alarm.pdf.

DIVISION 3 – SANITARY, LAUNDRY AND OTHER FACILITIES

SECTION 12 – SANITARY FACILITIES

The operator must ensure that all of the following requirements are met.

Toilets: an industrial camp must have the minimum number of fixtures required under Schedule 2 (see Box 2: *Industrial Camps Regulation: Schedule 2 – Fixtures*).

Any toilets in a permanent industrial camp dwelling with rooms used for sleeping, eating or other living purposes must be flush toilets. Toilets must be located within 30 m (100 ft.) from any bedroom. Toilets are to be enclosed in a manner that provides privacy to the user.

Typical best practice requires water flush toilets to be connected to a wastewater facility under the Municipal Wastewater Regulation, or a sewerage system, holding tank or to a properly designed and constructed septic tank and ground absorption system as specified under the Sewerage System Regulation (SSR). Rooms with toilets must have screened vents, windows and doors. Self-closing (also called soft-close or slow-close) seat covers must be provided and should be in operation at all times.

All toilets, other than water flush toilets, must be constructed and maintained to ensure that pests and small domestic animals cannot access waste materials, and that surface or ground water cannot enter the pit or vault. The construction and placement of toilets must ensure that waste material cannot contaminate any water supply.

All sewage disposal system must be approved in writing by a health officer. A sanitary pit privy, chemical closet or frost-proof closet should not be installed within any building used for human occupancy, or within 3 m (10 ft.) of any dwelling.

BOX 2: Industrial Camps Regulation: Schedule 2 - Fixtures

1. An operator must ensure that an industrial camp providing accommodation for the number of persons set out in Column 1 has at least the fixtures set out in Columns 2 to 4 opposite the number of persons.
2. In making a determination under this Schedule, if an industrial camp is for the exclusive use of males, urinals may be substituted for half of the required number of toilets.

Column 1	Column 2	Column 3	Column 4
No. of persons for whom accommodation is available	Minimum no. of toilets or privy seats	Minimum no. of showers	Minimum no. of wash basins
1-7	1	1	1
8-15	2	1	3
16-30	3	2	6
31-45	4	3	9
46-60	5	4	12
61-75	6	5	15
76-100	7	6	20
Each additional 6 persons over 100			One additional
Each additional 20 persons over 100	One additional	One additional	

Sanitary facilities must be kept in good repair and in a sanitary condition. They must be vented to the outside air to allow for proper air circulation and air exchange. All facilities must be maintained with adequate supplies of toilet tissue and hand soap and a single-service towels or air dryers for hand washing/drying. An operator must not permit towels including roller towels to be in common (shared) use. Sanitary facility floors must be constructed of durable material such as concrete, wood or other suitable material and finished with a smooth, watertight surface and preferably with a light-coloured surface that can be easily sanitized, cleaned and dried so as to not cause a health hazard or an accident.

SECTION 13 – SEPARATE TOILETS

If more than one toilet or bathing unit is installed in a single room, other than in a private dwelling unit, the operator must restrict the use of the room to persons of the same sex. This means that a single room with two or more toilets or showers has to be gender specific. Where separate sanitary facilities are provided for men and women, an operator must ensure that each sanitary facility is clearly and properly marked and is closed by full-sized doors to ensure privacy. An operator may provide urinals for use only in sanitary facilities that are provided for the exclusive use of males.

D. Best Practice – Pit Privies and Holding Tanks

If approved in writing by a health officer, pit privies or holding tanks may be used in industrial camps where the camp is not equipped with a sewerage disposal system.

PIT PRIVIES

Pit privies, including latrines, are typically intended to be used mainly for camps where installing permanent or long-term sewerage infrastructure is impractical (e.g., short term camps with relatively few residents, i.e. 20 or fewer, no running water, spring/summer camps, and where the camps are readily moveable).

Contact the health authority to find out if privies are an approved option for your camp. If pit privies are an option, the following are the minimum requirements for construction and maintenance, in addition to any specific requirements that the health authority may have. Appendix C provides examples of technical/construction specifications for plywood and concrete vault privies.

Construction: Pit privies must be constructed and maintained so that:

- They do not create a health hazard.
- Domestic sewage will not contaminate a source of water to be used for domestic purposes.
- They are located a minimum of:
 - i. 30 m (100 ft.) from any water source used for domestic purposes.
 - ii. 30 m (100 ft.) from any stream, lake or other body of water.
 - iii. 10 m (30 ft.) from any area used to prepare or provide food to residents.

Pit privies should also be constructed and maintained so that:

- Pests are prevented from gaining access to the waste materials in the pit.
- Surface or ground water will not enter the pit.
- The enclosure is vented.
- The vault area is vented, using a screened cap or downturn on the pipe to avoid precipitation entering the vault area.
- They are not located within any building used for human occupancy or within 3 m (10 ft.) of any dwelling.
- They are constructed to ensure the base of the pit remains at least 0.9 m (3 ft.) above the seasonal high water table.
- They are enclosed and provide privacy to the user.
- Ensure that hand-washing facilities and/or sanitizer are provided.
- Waste material will not contaminate a water supply.

Latrines: The construction guidelines for pit privies noted above also apply to latrines with the exception of the 'enclosure' as latrines are not covered by a structure. Latrines are typically considered a 'temporary' means of disposal as they are covered over after use with the excavated material. The excavation dimensions of latrines usually are similar to those used for outhouses. Trench latrines can be constructed for multiple use and may extend laterally up to 20 feet, depending on the area available.

Soil Type: Pit privies and latrines should only be constructed in suitable soils which will not contaminate the water table due to high permeability (i.e. very sandy or gravelly soils). If the soil percolation rate is 5 minutes per inch or less, the excavated pit should be lined with approximately 1 foot of loamy soil (with a percolation rate between 10 and 20 minutes per inch) to provide suitable treatment.

Pumping: The operator must maintain the privies to meet the following requirements:

- Privies are to be pumped out as necessary to ensure proper function.
- Where privies are watertight vaults, the pumping requirements will be as specified on the permit issued by the health authority and/or any local bylaw requirements that may exist for vault privies.
- Where privies are used and depending on soil conditions, regular pump outs may be required to prevent overflow.
- Whenever a pump out is performed, disposal of contents must be to a permitted wastewater facility. A written record should be maintained of all pump out dates, volumes, and hauler name and contact information.

The camp operator is responsible for providing sufficient information/evidence to the health officer to ensure these requirements are met.

HOLDING TANKS

Holding tanks should:

- (a) Be located at least 15 m from any water body or domestic water source.
- (b) Be watertight and constructed of concrete or other corrosive-resistant material in accordance with good engineering practice, and recognized standards (CSA, NSF, etc.). A health officer may require a water test. It is preferable that holding tanks used on floating structures are double-walled.
- (c) Be constructed such that pests and animals are deterred from gaining access to the waste materials;
- (d) Be sized to the design peak flow (2 times the estimated daily sewage flow times the desired number of days the effluent is to be held before pumping out) of the camp operation and for the maximum anticipated number of occupants. The daily flow can be estimated as below:
 - For grey water, 200 litres/day per worker
 - For black water, 27 litres/day per worker
- (e) Include risers and access covers - when the top of the tank is greater than 75 cm below the surface grade.
- (f) Not be buried deeper than the maximum depth marked on the tank by the manufacturer.
- (g) Incorporate additional precautions as needed to prevent intrusion of water/floating of tank in areas where there is a high water table.
- (h) Be monitored daily and maintained as required. This includes regular pump outs as required.

Note: Holding tank operators need to have written confirmation that an approved waste facility has agreed to accept the holding tank liquid waste, along with a copy of the contract with the hauler.

SPRAY IRRIGATION

Spray irrigation systems may only be used to disperse grey water and only if the use has been approved by the health authority. They should be constructed and maintained so that liquid waste:

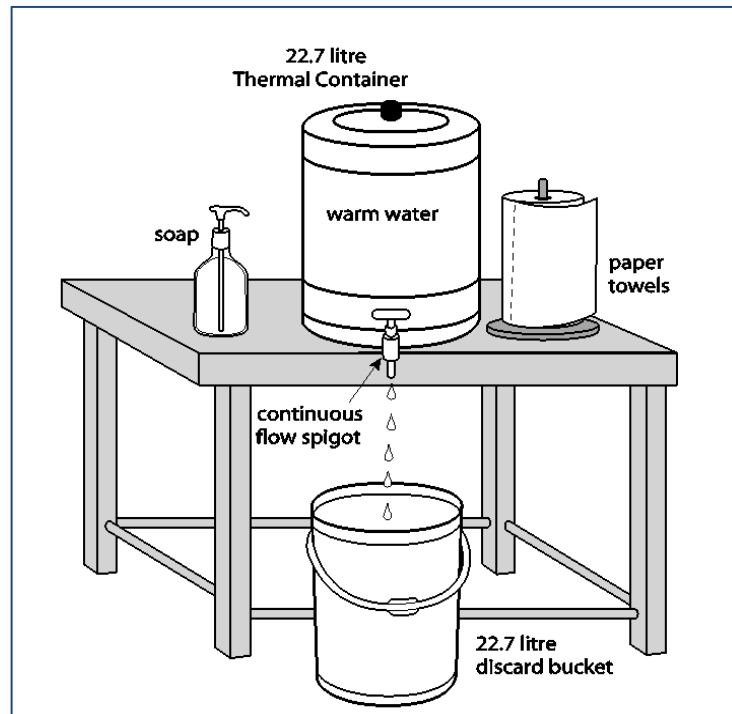
- (a) Is spread over an area with a minimum soil depth of 50 cm to ground water (water table) or hardpan.
- (b) Does not spread within 30 m (100 ft.) of a stream, lake, or source of water for domestic purposes, i.e., water used for human consumption, food preparation or sanitation.

Note: Due to the risk of aerosols and potential contamination of water supplies, spray irrigation should be implemented only in an area approved by the health officer, and after the fire emergency has subsided (unless the health officer determines a suitable area for placement during the fire where risks are minimal).

SECTION 14 – WASHING, BATHING AND LAUNDRY FACILITIES

An operator must provide a room or building with hot and cold water for washing, bathing and laundering purposes. The camp must be provided with hand-washing and bathing/ showering facilities in a number and manner sufficient to meet the needs of residents working or residing at the camp (see the *Industrial Camps Regulation: Schedule 2 – Fixtures* in section 12 of this guide). The operator should ensure the following:

- Hand-washing and showering facilities must be kept in good repair and sanitary condition.
- There must be an adequate supply of soap in dispensers and single-service towels or air dryers for hand washing/drying. An operator must not permit towels including roller towels to be in common (shared) use.
- Hot and cold water must be provided for washing and showering facilities.
- For privacy purposes, showering facilities must be enclosed so they are screened from view.
- Each shower should have access to an adequate dressing space that is private and dry.
- Bathing/ showering facilities should be constructed with smooth, impervious and easily cleanable floors and walls.
- In industrial camps where there is a lack of pressurized water, portable showers can be used as well as hand-washing stations (e.g., at privies), similar to the one shown below. (Hand-washing stations can be supplemented with waterless hand sanitizers where appropriate.)

Figure 1: Hand-washing Stations

Source: MarketSafe © Province of British Columbia

Laundry service or laundry facilities must be available onsite or offsite and should meet the following requirements:

- Laundry operations must not be carried out in a stream, lake or other water body.
- Laundry facilities must be reasonably accessible and enable residents to launder their personal items as required.
- Onsite laundry facilities should be large enough for one shift of workers to use at a time, and have drying facilities that will allow the clothes to dry by the start of the next shift.
- Adequate laundry supplies should be available in onsite laundry facilities (e.g., provided by the operator either free of charge or sold in packets via vending machines). Only phosphate-free detergents should be used.
- For all industrial camps, discharge of grey water to an infiltration pit may be allowed if approved in writing by the health officer, as per section 21 of the ICR.

SECTION 15 – DRY ROOM

In industrial camps where there are ordinarily more than 10 residents, an area must be provided in which residents may change out of their wet work clothes and leave them to dry. This room must be separate from the food preparation/serving and sleeping areas, and located in or near the washrooms/shower areas.

PART 3 – OPERATION**DIVISION 1 - SUPERVISION AND MAINTENANCE****SECTION 16 – SUPERVISION AND MAINTENANCE**

The operator must ensure the industrial camp is under continuous supervision and an individual must be designated to be in charge and responsible for industrial camp operations at all times. The operator must also make sure that the camp complies with all requirements of the ICR, including:

- All camp equipment is maintained in good repair.
- All structures, facilities, furnishing, appliances and bedding are maintained in good repair and in a sanitary condition.

The operator must post the following information in a prominent and accessible place. The information posted must be in English, as well as any other language the camp residents speak:

- Industrial Camps Regulation.
- B.C. Guidelines for Industrial Camps Regulation.
- Contact information for the health authority with jurisdiction over the industrial camp (name, phone number and email address).

DIVISION 2 - WATER**SECTION 17 - WATER SUPPLY, QUALITY AND SOURCE**

Public water supply is regulated by local health authorities. The health authorities' drinking water officers are responsible for providing the oversight to ensure compliance and drinking water safety. Drinking water officers are mandated to apply and enforce the *Drinking Water Protection Act* and Drinking Water Protection Regulation. They monitor the operations of drinking water systems and act on any notices of threats to drinking water quality. Drinking water officers are responsible for issuing operating permits, and will work with water suppliers to help them achieve compliance with the legislation and the conditions on their permits.

- (1) The operator must ensure that an adequate supply of safe, uncontaminated water is available at all times for drinking and domestic purposes.

Industrial camps must meet the requirements of the *Drinking Water Protection Act* and the Drinking Water Protection Regulation with regard to supplying potable and nonpotable water for domestic purposes to a camp.

Under section 1 of the *Drinking Water Protection Act*, **potable water** is defined as water provided by a domestic water system that meets the standards prescribed by regulation, and is safe to drink and fit for domestic purposes without further treatment. Domestic purpose is defined in the *Drinking Water Protection Act* to mean the use of water for human consumption, food preparation or sanitation, some household purposes, and other prescribed purposes.

Non-potable water includes all water from an ambient source, such as lakes, rivers, streams, springs and groundwater that does not meet the definition for potability as per the *Drinking Water Protection Act*. Non-potable water may be used for purposes such as sanitation activities and other household purposes aside from human consumption, food preparation and sanitation.

See:

- *Drinking Water Protection Act*:
http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_01009_01
- Drinking Water Protection Regulation:
http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/200_2003

Under the *Drinking Water Protection Act*, the operator must obtain a construction permit or construction permit waiver and an operating permit from the health authority for all industrial camp water supply systems before camp operation, with exceptions noted below. Water supply systems include systems providing water for human consumption, food preparation, sanitation and household purposes. Each health authority has a process/package for approval of water systems. Contact the local health authority for information on this topic.

In instances where a water supply system has not previously been named on an operating permit, a water source assessment will generally be required before the issuance of a construction permit or waiver. Source assessments will be considered by the health officer upon review of submitted water analysis results, as well as any other information required by the health authority.

- (2) Some industrial camps may get water from another source (e.g., bottled water and trucked water) if a safe public water supply is not available. This safe water must be available for all purposes that require potable water. These other sources must be approved in writing by the health officer.

For additional information please contact your local Authority:

<http://www2.gov.bc.ca/gov/content/environment/air-land-water/water/water-quality/drinking-water-quality/health-authority-contacts>

- (3) An operator must not use a well as a source of water unless the water obtained from it is free from contamination. For more information on contaminants in ground and well water, see:

- (a) *Guidance Document for Determining Ground Water at Risk of Containing Pathogens (GARP)*
http://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/documents/garp_assessment_v2_dec1_2015_final.pdf

(b) *Drinking Water Officers' Guide, Part B- Best Practices and Technical Assistance* provides supplemental guidance for drinking water officer (DWO) decisions on monitoring water for various chemical and physical parameters.

<http://www2.gov.bc.ca/assets/gov/environment/air-land-water/dwog-part-b.pdf>

Wells: For camps that use wells as a drinking water source, the Health Hazards Regulation (Section 8) (http://www.bclaws.ca/civix/document/id/complete/statreg/216_2011) requires that any well be located at a minimum distance of:

- 30 m (100 ft.) from a probable source of contamination.
- 6 m (20 ft.) from a private dwelling.
- 120 m (400 ft.) from a cemetery or dumping ground (e.g., landfills and garbage dumps).

In accordance with the SSR, all components of a sewerage system including tanks and treatment facilities must be at least 30 m (100 ft.) from any drinking water well. Also, all new wells must comply with the Ground Water Protection Regulation:

http://www.bclaws.ca/Recon/document/ID/freeside/11_299_2004

The Canadian Drinking Water Quality Guidelines may be used for reference:

<http://hc-sc.gc.ca/ewh-semt/water-eau/drink-potab/guide/index-eng.php>

SECTION 18 - WATER STORAGE CONTAINERS

All portable drinking water containers/coolers must be sanitized when they are changed or refilled. They must be kept in a sanitary condition and equipped with a sanitary water-dispensing device.

MyHealthAlberta.ca has information on cleaning water coolers on its website:

<https://myhealth.alberta.ca/alberta/pages/water-coolers.aspx>

If water needs to be transported, the operator must ensure that the water containers are sanitized, are properly and securely capped or covered so no contaminants can get in, and are only used to carry water. Drinking water storage containers should be bacteriologically safe, clean, sanitary, covered and equipped with a sanitary dispensing device such as a tap.

SECTION 19 - DISPENSING WATER

An operator must ensure that:

- (a) Where drinking water is made available upon the premises, individual drinking cups/vessels should not be used by more than one person (each employee has an individual cup or glass) to prevent health risks or cross contamination.
- (b) The cups should be stored in such a manner that protects them from contamination and use. Disposable paper cups can also be used.
- (c) Drinking water should not be collected by dipping from open springs, wells or water containers. Cup or other utensils used to collect drinking water from open springs, wells or from water containers cannot be re-dipped or reused as this might contaminate the supply.
- (d) If installed, drinking fountains should conform to standards guidelines. The nozzle should be made of non-oxidizing impervious material with a non-oxidizing guard to prevent the mouths and noses of persons using the fountain from coming in contact with the nozzle. The fountain should

issue a slanting jet of water. The jet of water should not touch the guard and should be discharged at such an angle that the water can neither fall back nor be forced back to the nozzle. The drinking fountain should have its own receiving bowl with a strainer over the waste water opening. The fountain should not be installed over sink used for hand washing or other purposes.

SECTION 20 - CROSS CONNECTIONS

The operator must ensure that the approved drinking water supply is not cross contaminated. If a non-potable water supply is used for the purpose of fire protection or for industrial purposes, it is the operator's responsibility to ensure that suitable warning signs are posted at all outlets providing nonpotable water. In addition, an operator must ensure there is no physical connection between a nonpotable water supply and an approved drinking water supply. Nonpotable drinking lines must be clearly marked at all outlets.

DIVISION 3 – SEWAGE AND GARBAGE DISPOSAL

SECTION 21 – SEWAGE DISPOSAL

Plans to treat and disperse sewage in industrial camps must be approved by the health officer in writing before the camp operations begin.

*E. Best Practice - Sewage Disposal in Permanent Industrial Camps***Systems with total sewage design flows of less than 22,700 litres/day:**

Section 21 of the ICR requires health officer ‘approval’ of the means of sewage disposal utilized by the camp. At the discretion of the health officer, the SSR may apply to the discharge of sewage to land (e.g., septic dispersal field) with total sewage design flows of less than 22,700 litres/day, and to holding tanks.

- Permanent industrial camps may be constructed and maintained in compliance with the SSR: http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/22_326_2004
- Discharges to surface water or any use of reclaimed water are prohibited under the SSR and can only be authorized by the Ministry of Environment under the *Environmental Management Act’s* Municipal Wastewater Regulation or in writing by a health officer.
- For systems that fall under the SSR, contact your local health authority.

Systems with total sewage design flows of 22,700 litres/day or more:

The Municipal Wastewater Regulation applies to the discharge of sewage to land and all discharges to surface water or reclaimed water (e.g., re-use of treated effluent for irrigation) with total sewage design flows of 22,700 litres/day or more.

- Authorization is required under the Municipal Wastewater Regulation: http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/87_2012
- See the Ministry of Environment’s Municipal Waster Regulation website to learn about the regulation, registration process and required documentation (e.g., environmental impact study, operating plan, and closure plan)
- A pre-registration meeting with the Ministry of Environment should be held at least 60 days before registration.
- All reclaimed water uses must be authorized by the Ministry of Environment under the Municipal Wastewater Regulation. The discharge may also be subject to additional conditions specified by the health officer.
- Permanent industrial camps with an average annual effluent discharge of greater than 100 cubic m/day (100,000 litres) to surface water (streams, lakes, rivers) must comply with the federal Wastewater System Effluent Regulation. Information on this regulation on Environment Canada’s Wastewater website: <http://www.ec.gc.ca/eu-ww/default.asp?lang=En&n=BC799641-1>

F. Best Practice - Sewage Disposal in Short-term Industrial Camps**Systems with total sewage design flows of less than 22,700 litres/day:**

The Sewerage System Regulation (SSR) applies to the discharge of sewage to land (e.g., septic dispersal field) with total sewage design flows of less than 22,700 litres/day, and to holding tanks.

Section 21 of the ICR states:

“An operator must ensure that sewage in an industrial camp is disposed of in an approved manner that does not

- (a) create a health hazard or nuisance,*
- (b) contaminate any stream, lake or other body of water, or*
- (c) contaminate a shellfish growing area.”*

Section 21 of the ICR requires health officer ‘approval’ of the means of sewage disposal utilized by the camp. Accordingly, the approval of sewage systems for industrial camps is at the discretion of Health Authority health officers. Health officers may require that all provisions of the SSR be achieved, may waive certain requirements, or may attach specific conditions to the operation of the sewage system. For example, for less complex systems used in temporary camps (such as tree planting camps), the health officer may not require that the industrial camp be designed and constructed by an authorized person, as per SSR section 6.

- Typically, short-term or small scale (e.g., 20 people or less) industrial camps may propose alternative means for:
 - Disposal of human waste (black water) into above-ground sewerage systems, privies, holding tanks or latrines (for definition see: D. Best Practice – Pit Privies).
 - Disposal of effluent from kitchens, showers, laundry and hand-washing facilities (grey water) into infiltration pits.
 - Disposal of sewage via appropriate sewage system designs and technologies, as covered in the BC Standard Practice Manual - version 3 (e.g. ‘at grade systems’).
- A health officer may attach terms and conditions to the sewage system approval, which may include requiring the operator to comply with the SSR.
- Where latrines are used, the operator must ensure camp residents are trained to dig and cover them in a manner that prevents health hazards from arising.
- Infiltration pits must be constructed and maintained so that:
 - They will not create a health hazard.
 - Domestic sewage will not contaminate a source of water to be used for domestic purposes.
 - They are located a minimum of:
 - 30 m (100 ft.) from any water source used for domestic purposes.
 - 30 m (100 ft.) from any stream, lake or other body of water or a drinking water source.
 - 10 m (30 ft.) from any area used to prepare or provide food to residents.
- Infiltration pits also should be constructed and maintained so that they:
 - Are more than 30 m (100 ft.) from any water body or drinking water source.
 - Are adequately sized and not be permitted to overflow or accumulate onto the soil surface.

- Do not cause water quality guidelines or established water quality objectives of nearby water bodies to be exceeded. For details, see:
Water Quality Guidelines: http://www.env.gov.bc.ca/wat/wq/wq_guidelines.html
- Are more than 15 m (50 ft.) from any dwelling, property lines or a dining/cooking facility.
- Are allowed to infiltrate or evaporate completely (if achievable within a reasonable time period) or pumped out when necessary and filled in with earth when an industrial camp is moved. Pumped out effluent must be disposed of in an approved facility. It is not to be pumped out over the ground.
- Are constructed so there is a minimum of 90 cm (3 ft.) of vertical separation between the top of the seasonal high water table and the bottom of the pit.
- Good practice for infiltration pits includes ensuring they are:
 - Located on level ground and, wherever possible, the maximum slope is less than 10%.
 - Constructed with sloped sides (45 degree angle) if deeper than 1.2 m (4 ft.) to minimize sloughing.
 - Located down slope from any water intake to minimize the risk of contamination.
 - Located in a contained area (natural or constructed) such that there is at least 30 cm (1 ft.) freeboard between the surface of any accumulating water and the top edge of the pit at all times. Overflow must not occur.
 - Sized to provide at least 5 m² (542 sq. ft.) of disposal area for every 1 m³/per day of grey water being discharged into it.
 - Covered where possible.
 - Constructed with barriers (flagging/fencing where available) to prevent entry.
 - Constructed with a means of egress if a resident or animal falls in.
Monitored daily and maintained as required by a designated industrial camp supervisor (person in charge of the day-to-day operation of the camp), including regular pump out.
 - Constructed so that natural runoff does not enter and overflow the pit.
 - Receiving kitchen wastewater that has fats, oils and grease reduced or removed.

Systems with total sewage design flows of 22,700 litres/day or more:

Requirements for sewage treatment for short-term industrial camps where the total sewage design flow is 22,700 litres/day or more is the same as for permanent industrial camps.

SECTION 22 – GARBAGE DISPOSAL

All garbage (refuse) must be disposed of in accordance with the *Environmental Management Act* and associated regulations (e.g., the Waste Discharge Regulation). Garbage must be managed in a manner that does not contribute to a health hazard.

At an industrial camp, the operator must:

- Provide leak-proof, pest-proof, durable containers with tight-fitting tops or contained within an electric fence (or other suitable means) capable of excluding bears and other wildlife. There should be an adequate number and size of containers for buildings to store all garbage accumulated between collections and these should be located in a convenient location.
- Label clearly all containers in English and the language of the workers.
- Maintain garbage containers so that they do not become foul-smelling, unsightly or a breeding place for pests. All containers must have sealable lids.
- Take steps to prevent the camp site from being littered with garbage or other waste. Dispose of all garbage and other waste by burial, incineration or an approved method.

Garbage should be removed after each meal from any room in which food is prepared, served or stored. It should be collected daily and stored appropriately until final disposal. Garbage must be removed for sanitary disposal at least once every week. Refuse incineration, and disposal to land at industrial camp sites, are within the jurisdiction of the Ministry of Environment. Sorting and recycling where possible is encouraged before sending the solid waste for disposal.

For more information on refuse handling and disposal, as well as dealing with hazardous waste, see Industrial Camps: Waste Authorizations and Best Practices:

<http://www2.gov.bc.ca/gov/DownloadAsset?assetId=8AD4271AC17644EC802204174C1FB20E&filename=workcampsfs.pdf>

If there are wildlife concerns, contact the Conservation Officer Service at 1-877-952-7277 (available 24/7).

DIVISION 4 – REPORTING ILLNESS

SECTION 23 – DUTY TO REPORT ILLNESS

Industrial camp operators, have the following obligation under the ICR:

An operator must notify a medical health officer within 24 hours after it comes to the attention of the operator that there is an outbreak or occurrence of illness, above the incident level that is normally expected, at an industrial camp.

Outbreaks can be respiratory e.g. coughing illness such as influenza, gastrointestinal illnesses with vomiting and/or diarrhea, or skin rashes such as caused by scabies. Outbreaks may spread quickly and affect a substantial proportion of the worker population. In a healthy industrial camp population there will be occasional incidents of these diseases i.e. “the incident level that is normally expected”, but if the operator notices more people are getting sick than usual, and often over a short period of time, there is likely an outbreak developing and they must notify the medical health officer. This will enable the medical health officer to provide advice on what to do to control the outbreak, and whether additional measures are needed to investigate the source of the outbreak.

Industrial camps should establish emergency procedures to deal with such events as medical emergencies, facility emergencies and natural disasters. These include isolation, prevention and control procedures, and a written resident case log for reporting purposes. Specific requirements can be provided by the local health authority.

Facilities must not exceed design or approved capacity. Overcrowding fosters the spread of communicable diseases and increases the risk of outbreaks (For details see Section 9 – Overcrowding.)

PART 4 – ABANDONING INDUSTRIAL CAMPS

SECTION 24 – ABANDONED INDUSTRIAL CAMPS

If an industrial camp is to be temporarily decommissioned or abandoned, the operator must leave the grounds, structures, equipment and infrastructure in a safe and sanitary condition.

G. Best Practice - Temporary Closure of Industrial Camps

- (a) An operator should notify the health authority at least 10 business days before an industrial camp ceases operation (i.e., the date and length of closure).
- (b) An industrial camp is deemed to have ceased operation as of the date in the notification.
- (c) If an industrial camp is to be temporarily decommissioned and subject to the land owner's requirements, the operator must leave the grounds, structures, equipment and infrastructure in a safe and sanitary condition.
- (d) The operator may also have responsibilities to notify the land owner or the agency responsible if a special-use permit or a permit of Crown land occupation was issued.
- (e) If a new operator will be assuming control of the industrial camp, he/she must notify all agencies before occupation. The operator must also submit a notification of any new construction or improvements to be completed to the health authority.
- (f) Sewage and refuse collection and treatment locations (e.g., the location of refuse bins, onsite sewage discharge areas, lagoons, infiltration pits and dispersal fields), as approved by the *Environmental Management Act* must be remediated to a sanitary state.
- (g) Operators should not fill in or remove tanks in the case of temporary camp closures. Sewage storage tanks should be emptied and inspected by the operator to ensure contamination will not occur. For a temporary closure, the tanks are suitable for future use in the same location. Filling them or breaking them up renders them unusable. Also, they should not be emptied if they are to be used again. If the tank is pumped out, there is greater risk of unintentional collapse.
- (h) Privies, latrines and infiltration pits should be properly secured to prevent human use and the entry of pests, and block surface water from entering or overflowing the pit.
- (i) Drinking water systems must be properly deactivated to avoid contaminating the treatment, storage and delivery infrastructure.
- (j) The Ground Water Protection Regulation has a requirement for all ground water wells to be properly deactivated and ultimately closed at the end of their service. See the Ground Water Protection Regulation http://www.bclaws.ca/civix/document/id/complete/statreg/39_2016 or contact the Ministry of Environment for more information.
- (k) If an industrial camp is to be left unoccupied over winter, all steps should be taken to ensure that heavy rain, snow load and cold temperatures do not cause infrastructure and structural damage or contamination events at the site.

H. Best Practice - Permanent Closure of Industrial Camps

- (a) An operator should notify the health authority at least 10 business days before an industrial camp ceases to operate (i.e., the date of closure).
- (b) An industrial camp is deemed to have ceased to operate as of the date in the notification.
- (c) In most cases, and subject to the land owner's requirements, if an industrial camp is to be permanently decommissioned, the operator will remove all structures, including foundations, equipment and infrastructure. In addition, the operator must leave the grounds and any remaining structures, equipment and infrastructure in a safe and sanitary condition.
- (d) The operator may also have responsibilities to notify the land owner or the agency responsible if a special-use permit or a permit of Crown land occupation was issued. All areas occupied by the industrial camp should be remediated according to the permit specifications and the permitting bodies' satisfaction or, where private land has been occupied, to the land owner's satisfaction.
- (e) The operator should also be aware of the site profile requirements when a facility/camp is decommissioned, as per Section 40 of *Environmental Management Act*.
- (f) Sewage and refuse collection and treatment locations (e.g., the location of refuse bins, onsite sewage-discharge areas, lagoons, infiltration pits and dispersal fields) should be fully decommissioned and the land remediated to the satisfaction of the appropriate regulatory authority.
- (g) All garbage (refuse), sewage and sludge must be removed and disposed of at an approved waste-treatment facility as authorized under the *Environmental Management Act*. If this facility is registered under the Municipal Wastewater Regulation, the closure plan submitted with registration, which describes the procedures for decommissioning the system, is to be followed.
- (h) When a septic tank or other subsurface treatment tank is abandoned one of the following procedures should be taken in order to prevent future health and safety hazards:
 - The contents of the tank should be pumped out and the tank, if structurally sound, should be filled with inorganic material such as soil or rock; or,
 - The tank should be removed or broken up, and the resulting excavation should be filled with soil or rock. Filling the tank will prevent caving in, collapse and floatation. Organic materials should not to be used for this purpose as they can decay; possibly leading to caving in or collapse and can produce toxic and possibly explosive gases.
- (i) All water system intake-and-delivery infrastructures must be removed. Where a ground water well was used, it must be deactivated or closed, as per Section 9 of the Ground Water Protection Regulation

FOOD SAFETY

PUBLIC HEALTH ACT

The *Public Health Act* (PHA) requires that the operator of an industrial camp (a regulated activity) must take reasonable care to prevent health hazards from arising and respond to any health hazards that arise, including mitigating harmful effects of the health hazard. It further requires that the operator of the camp must ensure that employees are adequately trained and sufficiently equipped to recognize, prevent and respond to health hazards that may arise during the time when the industrial camp is in operation.

The food safety practices outlined in this section provide guidance to camp operators in complying with the requirements of section 18 of the PHA. An operator's failure to comply with the guideline could cause an Environmental Health officer (EHO) to form the reasonable belief that the food related practices of the operator present a significant risk of causing a health hazard, under section 30 of the PHA. In such instances, the EHO could issue an order to the operator under section 31 requiring the operator to comply with the guideline in order to prevent a health hazard.

FOOD PREMISES REGULATION

The Food Premises Regulation (FPR) under the *Public Health Act* outlines public health requirements for businesses supplying and serving food to the public. The health authorities are responsible for licensing, inspecting and responding to complaints about food facilities.

A **food premises**, as defined in the FPR, refers to any place where food intended for public consumption is sold, offered for sale, supplied, handled, prepared, packaged, displayed, served, processed, stored, transported or dispensed.

There is a wide range of 'accommodation' options that are currently being used to serve the purpose of an industrial camp. These include onsite short-term or permanent camps to situations where large accommodations are constructed and managed by a third party, and resource companies/ employers rent out blocks of rooms at these facilities for their employees. Whether or not a particular operation includes a 'food premises' will depend on aspects of the operation. For example, the definition of a food premises applies if a camp provides meals to people other than their employees (i.e., the public). In this case, the camp's "food premises" would be considered a "food service establishment" and would have to comply with the requirements of the FPR (e.g., obtaining an operating permit). If, however, the camp is available only to employers for the accommodation of employees, rather than to anyone seeking lodging on an individual and short term basis, an argument could be made that it is serving or dispensing food to its residents only, rather than to the public, as contemplated by the FPR.

Regardless of the applicability of the FPR to a particular establishment, the overarching provisions of the *Public Health Act* apply to all industrial camps, and operators must manage food services in their facilities in an approved manner to prevent a health hazard.

This appropriate and supportable approach is in the interest of the residents of the camps. Although the kitchens in most camps may not serve or dispense food to the public, they are not located in private dwellings and the residents do not have control over the source or the handling of the food

that is provided to them. Consequently, camp residents are entitled to be protected from preventable health hazards by the camp operators who do have control over the source and handling of the food.

The following section provides food safety practices for safe food handling, food storage and preparation.

FOOD SAFETY PRACTICES

As a good practice, the industrial camp operator should create and follow a food safety plan and sanitation plan for his/her food premises. Your local health authority may have templates for specific purposes that it will want industrial camps to use. The following can provide guidance on these topics.

- *Ensuring Food Safety – Writing your own Food Safety Plan* (BC Centre for Disease Control) provides guidance on developing a food safety plan: <http://www.bccdc.ca/NR/rdonlyres/1A068D5D-3350-4D1C-A356-D8C6D62B7DB9/0/EnsuringFoodSafetyHACCPWay.pdf>
- *Food Protection – Vital to your Business* (BC Centre for Disease Control) provides guidance on developing a food sanitation plan: http://www.bccdc.ca/NR/rdonlyres/29845061-1E80-4768-B278-A245E70368BE/0/FoodProtectionVitaltoBusiness_Mar2010.pdf

Wastewater

High organic-strength, greasy wastewater from food preparation will need special considerations for the sewerage system design (i.e. involvement of a professional wastewater engineer). Commercial kitchens can produce significant quantities oil and grease (e.g., exceeding 150 mg/L in the effluent). They must be equipped with appropriately sized and configured grease interceptors (grease traps) to protect the septic system from excessive oil and grease loading.

Additional sewerage systems design considerations may be needed for operations discharging high organic-strength waste or those that use significant quantities of kitchen sanitizers (e.g., through the use of a commercial dishwashers) which may impact the treatment efficacy of the sewerage system.

Kitchen Facilities, Food Storage Areas and Meals

The operator should ensure:

- The kitchen or food preparation area is separate from any other room.
- This area is constructed so that it deters the entry of pests. Pets must be kept out of the kitchen and food preparation area.
- Walls and floors are smooth, durable, and non-absorbent and maintained in a sanitary condition.
- An adequate supply of hot and cold water that meets the needs of the kitchen.
- All sinks be plumbed with hot and cold running water under pressure, and drains connected to an approved waste disposal system.
- Hand basins with hot and cold water, liquid soap and disposable towels are in a location convenient to the kitchen area for food handlers' use.
- Eating/drinking utensils and dishware are thoroughly cleaned and sanitized after each use, as follows:
 - ▶ First sink: Wash in warm water (43°C/109°F) with detergent.
 - ▶ Second sink: Rinse in clear warm water (45°C/113°F).

- ▶ Third sink: Sanitize by immersion in warm clean water (45°C/113°F) containing 100-200 ppm chlorine (1-2 tablespoons) of unscented bleach per 4 litres (1 gallon) of water for at least two minutes – or use another sanitizer with equivalent efficacy.
- ▶ Have a method in place to determine the adequate sanitizer concentration (e.g., chlorine test strips).
- ▶ Air dry utensils and dishware on a clean, non-absorbent surface.
- A commercial dishwasher is recommended for industrial camps of 50 persons or more. The commercial dishwasher should meet the NSF/ANSI Standard 3 for Commercial Warewashing Equipment, or equivalent. For guidance on commercial mechanical warewashing, visit: <http://www.bccdc.ca/resource-gallery/Documents/Guidelines%20and%20Forms/Guidelines%20and%20Manuals/EH/FPS/Food/GuidelinesMechanicalWarewashinginFoodServiceEstablishmentswebformatJan2013.pdf>.
- A domestic dishwasher, certified to NSF Standard, may be appropriate for industrial camps of less than 50 persons.
- Except for camps where people live in housekeeping units (single-family dwellings), the kitchen is considered a commercial cooking operation. Therefore, it needs to be equipped with an NFPA 96 compliant ventilation system and UL or ULC compliant fire protection. (See the BC Building Code, Div. B, Article 6.2.2.7.)
- Ventilation and fire-protection systems must be maintained in conformance with NFPA 96. (See the BC Fire Code, Div. B, Article 2.6.1.9.) Also, visit the National Fire Protection Association's website: <http://www.nfpa.org/codes-and-standards/document-information-pages?mode=code&code=96>

Dining Rooms

A dining room large enough to effectively accommodate serving and eating meals for one shift must be provided. The room must be separate from the kitchen and kept in a sanitary condition.

Food Handlers

Safe steps in food handling, cooking, and storage are essential to prevent foodborne illness. The operator must ensure that:

- No person suspected of having (or being a carrier of) a disease communicable through food comes in contact with any food, equipment, utensils and dishware, or food contact surfaces.
- Food handlers have a designated washroom to prevent the spread of illness.
- Food handlers always wash their hands thoroughly before handling food, clean dishware and utensils, and after using the toilet.
- Food handlers always wash their hands thoroughly after handling raw foods, using the toilet or performing any other task by which the hands could potentially be contaminated (e.g., taking out the garbage or smoking).
- Food handlers with infected cuts on their hands or arms (including sores, burns, lesions, etc.) not handle food or utensils unless the cuts are properly covered (e.g. waterproof bandage covered with a non-latex glove or finger cot).
- Food handlers should, where possible, avoid direct hand contact with food especially ready-to-eat foods (e.g. use utensils plastic or non-latex gloves).
- Food handlers wear clean clothes, keep hair restrained, and keep fingernails short and clean.

- The food premises operator holds a valid FOODSAFE¹ certificate or its equivalent.
- At least one person with a valid FOODSAFE certificate is present when the operator is absent from the food premises.

Food

The operator must ensure:

- All food is obtained from an approved source.
- All food is protected from contamination at all times
- The availability of a probe thermometer to monitor the safe internal cooking temperature of food.
- Special care is taken to ensure that “potentially hazardous foods,” which will not be cooked before eating, are not exposed to contamination (e.g., from unwashed hands or dirty equipment). The Food Premises Regulation defines potentially hazardous foods (PHFs) as: “Food in a form or state that is capable of supporting the growth of disease-causing micro-organisms or the production of toxins.” Examples are meat, fish, milk, eggs, sprouts, cut melons and cooked rice.
- Refrigeration equipment is provided that has enough space to store all potentially hazardous foods kept at the industrial camp (e.g., food that can support disease causing micro-organisms or the production of toxins).
- Each refrigeration unit has a thermometer that is accurate within 1°C to regularly monitor its operability.
- Refrigeration unit temperatures are checked and recorded at least twice per day, and written records are maintained and kept on site.
- Leftover cooked foods are cooled promptly and reach 4°C within 6 hours.
- Foods requiring cooking or reheating are brought up to 74°C before serving or hot holding.
- Hot holding equipment maintains food temperatures at 60°C or hotter.
- Ice is made of potable water.
- All food supplies are dated, labeled, covered and stored off the floor so they are protected from dirt and contaminants.
- Foods are protected in a sanitary manner while being transported to the camp, and potentially hazardous foods have safe temperature control (i.e., hot foods are kept at temperature greater than 60°C, and cold foods are kept at 4°C or less.)

Food Equipment

Containers used for food storage (including leftovers) are of food grade quality. Such containers are used whenever stored food is at risk from water, insects, vermin, or other sources of contamination.

- All food service equipment and utensils/dishware are:
 - ▶ Food grade quality.
 - ▶ Free from breaks, corrosion, cracks, open seams and chips.
 - ▶ Kept clean and sanitized.

¹ FOODSAFE is a comprehensive food safety training program in British Columbia. It provides foodservice workers with the knowledge and skills to apply proper food handling and preparation techniques and to follow appropriate safety measures to prevent food-borne illness. For more information, see: <http://www.foodsafe.ca/>

- Refrigeration must be mechanical.
- When not in use, utensils, dishware and kitchenware are stored off the floor and protected from dirt and contaminants.
- All kitchen or dining room structures are constructed so as to be easily cleaned and sanitized.

Fire Safety Plan

A fire safety plan may be required under the BC Fire Code. Please consult the BC Fire Code

Regulation: http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/263_2012

For more information, see:

- Office of the Fire Commissioner's website: The Office of the Fire Commissioner is a leader in fire safety awareness and prevention in British Columbia.
<http://www2.gov.bc.ca/gov/content/safety/emergency-preparedness-response-recovery/fire-safety>

APPENDIX A: GLOSSARY

Accommodation: A room, group of rooms, or building in which someone may live or stay.

Amenities: Includes beds, bedding, food, tents, sanitary facilities, soap, towels, laundry facilities, drinking water and furnishings.

Bedding: Includes sheets, blankets, pillows and pillowcases.

Bedroom: Structure, or part of a structure, intended to be used for sleeping.

Black Water: Human waste from toilets.

Camp Workers: People working directly in the industry of the camp.

Camp Staff: People employed to support the camp workers (e.g., kitchen staff).

Common Use: Use of a thing by more than one person without it being thoroughly cleaned and, if applicable, sterilized after each use.

Contaminate: to expose to conditions that permit (a) the introduction of foreign matter including filth, a poisonous substance or a pest, (b) the introduction or multiplication of disease-causing microorganisms or parasites, or (c) the introduction or production of toxins.

Domestic Purposes (Water): means the use of water for human consumption, food preparation, sanitation, or other household purposes.

Drinking Water: means water used or intended to be used for domestic purposes.

Dwelling: A house or other structure such as an apartment or a housekeeping suite in which a person or persons live.

Egress (means of): Continuous path of travel provided for people's escape from any point in a structure or contained open space to a separate structure, an open public thoroughfare or an exterior open space protected from fire exposure from the structure and having access to an open public thoroughfare and includes exits and access to exits.

Emergency Industrial Camp: Industrial camp established as a result of any situation that constitutes an imminent and serious threat to human safety, Crown land or resources or private property or otherwise has the imminent potential to result in significant loss.

Employer: A person or company in connection with an industry that owns, operates, maintains or has established permanent or temporary structures intended for use as living quarters by the workers employed in their industry.

Food Premise: means any place where food intended for public consumption is sold, offered for sale, supplied, handled, prepared, packaged, displayed, served, processed, stored, transported or dispensed.

Furnishings: Includes beds, tables, chairs, furniture, lamps, lockers or recreational equipment, or similar materials.

Garbage/Refuse: Discarded organic matter (such as animal or vegetable matter, as from a kitchen) or inorganic matter, such as plastic or metal, but does not include garbage that is classified as being hazardous, toxic or noxious.

Grey Water: Water-borne waste from bathing, showering, hand-basin washing, food preparation and laundry.

Handwashing Station: a hand basin provided with hot and cold running water, soap in a dispenser, and a method of hand drying that uses single service products.

Health Official: means an environmental health officer or a medical health officer as defined in the *Public Health Act*.

Holding Tank: A watertight container for holding domestic sewage until the domestic sewage is removed for treatment.

Industrial Camp: Place that is owned, operated or maintained in conjunction with an industry, with one or more structures intended for use by or for the residents employed in an industry. Industrial camps include places developed for such industries as mining, forestry, construction, drilling, oil and gas, and agriculture.

Infiltration Pit: Excavated area designed to accommodate liquid waste from an industrial camp kitchen, showers and hand washing.

Latrine: Pit dug into the ground for the purpose of urination or defecation by a single person, not covered by a structure and covered over after use.

Liquid Waste: Cumulative water-borne waste effluent that may include grey water and/or black water components.

Operator: A manager, owner or lessor of an industrial camp or an operator contracted to operate the industrial camp or a food premises.

Permanent Camp: Permanent camp means an industrial camp that operates for more than 5 months in any 12-month period, and having a structure that is not intended to be removed from the structure's location for at least one year whether or not the industrial camp is in continuous operation. An industrial camp might not operate every month of the year, but if the structures are present for 12 months or more, it is considered permanent.

Pests: Animals, including insects and rodents, which may carry an infectious agent or endanger the safety of residents.

Potable Water: Water provided by a public water system that meets the standards prescribed in the Drinking Water Protection Regulation and is safe to drink and fit for domestic purposes without further treatment.

Potentially Hazardous Foods (PHFs): The BC Centre for Disease Control defines potentially hazardous foods as: "... Foods that ... will spoil or 'go bad' if left out at room temperature. PHFs are foods or food ingredients that support the growth or survival of disease-causing bacteria (called "pathogens") or foods that may be contaminated by pathogens." Examples are meat, fish, milk, eggs, sprouts, cut melons and cooked rice.

Pit Privy: Outhouse toilet where human waste and toilet paper is released to an excavated pit.

Refuse/Garbage: Discarded organic matter (such as animal or vegetable matter, as from a kitchen) or inorganic matter, such as plastic or metal, but does not include garbage that is classified as being hazardous, toxic or noxious.

Resident: Person provided accommodation at an industrial camp by the operator (e.g., camp employee, contractor).

Sanitary Facility: Structure containing a toilet, wash basin and ancillary equipment and includes a privy, shower or urinal.

Sanitize: Treat by a process that effectively destroys micro-organisms, including pathogens.

Short-term Camp: Short term industrial camp means an industrial camp that operates for 5 months or less in any 12-month period, where the structures are removed at the end of the camp operation and that operates in the same location for less than one year.

Septic Tank: A watertight container for receiving, treating and settling domestic sewage.

Sewerage: Human excreta, and waterborne waste from the preparation and consumption of food and drink, dishwashing, bathing, showering, and general household cleaning and laundry-

Sewerage System: System for treating sewage that uses one or more treatment methods and a discharge area, but does not include a holding tank or a privy (referred to as a wastewater facility under the Municipal Wastewater Regulation).

Structure: Includes a building, vehicle, vessel and tent (permanently or temporarily established) intended for the accommodation of people working and residing at an industrial camp for daily living activities (e.g., sleeping, eating, washing and showering).

Surface Water: A natural watercourse or source of fresh water, whether usually containing water or not, and includes a lake, river, creek, spring, ravine, stream, swamp, gulch and brook or a ditch into which a natural watercourse or source of fresh water has been diverted. It does not include ground water or water in a culvert that is constructed to prevent the contamination of a watercourse by domestic sewage or effluent.

APPENDIX B: RELATED LEGISLATION AND CODES**MINISTRY OF HEALTH**

Drinking Water Protection Act:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_01009_01

Drinking Water Protection Regulation:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/200_2003

Food Premises Regulation:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/11_210_99

Health Hazards Regulation:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/216_2011

Public Health Act:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_08028_01

Public Health Impediments Regulation (Trans Fats):

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/19_50_2009

Sewerage System Regulation:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/22_326_2004

Tobacco Control Act:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_96451_01

Tobacco Control Regulation:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/10_232_2007

MINISTRY OF ENVIRONMENT

Environmental Management Act:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/03053_00

Municipal Wastewater Regulation:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/87_2012

Spill Reporting Regulation:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/46_263_90

MINISTRY OF FORESTS, LANDS AND NATURAL RESOURCE OPERATIONS

British Columbia Fire Code Regulation:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/263_2012

Fire Services Act:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_96144_01

Ground Water Protection Regulation:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/11_299_2004

National Fire Protection Association, Codes and Standards:

<http://www.nfpa.org/codes-and-standards/free-access>

Water Sustainability Act:

<http://www.bclaws.ca/civix/document/id/complete/statreg/14015>

Wildfire Act:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_04031_01

Wildfire Regulation:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/11_38_2005

MINISTRY OF JOBS, TOURISM AND SKILLS TRAINING AND RESPONSIBLE FOR LABOUR

Employment Standards Act:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_96113_01

Employment Standards Regulation:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/396_95

Occupational Health and Safety Regulation:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/296_97_00

Workers Compensation Act:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/96492_00

WorkSafe BC:

<http://www.worksafebc.com/>

MINISTRY OF NATURAL GAS DEVELOPMENT AND RESPONSIBLE FOR HOUSING

BC Building Code:

http://www.bccodes.ca/default.aspx?vid=QPLEGALEZE:bccodes_2012_view

BC Fire Code:

http://www.bccodes.ca/default.aspx?vid=QPLEGALEZE:bccodes_2012_view

Canadian Electrical Code, as amended by British Columbia:

<http://shop.csa.ca/en/canada/landing-pages/c221-12-canadian-electrical-code/page/cecode?gclid=CPuvobOzw8ECFcaCfgodjHkAxA>

MINISTRY OF ADVANCED EDUCATION

Applied Science Technologists and Technicians Act:

<http://www.asttbc.org/about/docs/ASTTActRegs.pdf>

Architects Act:

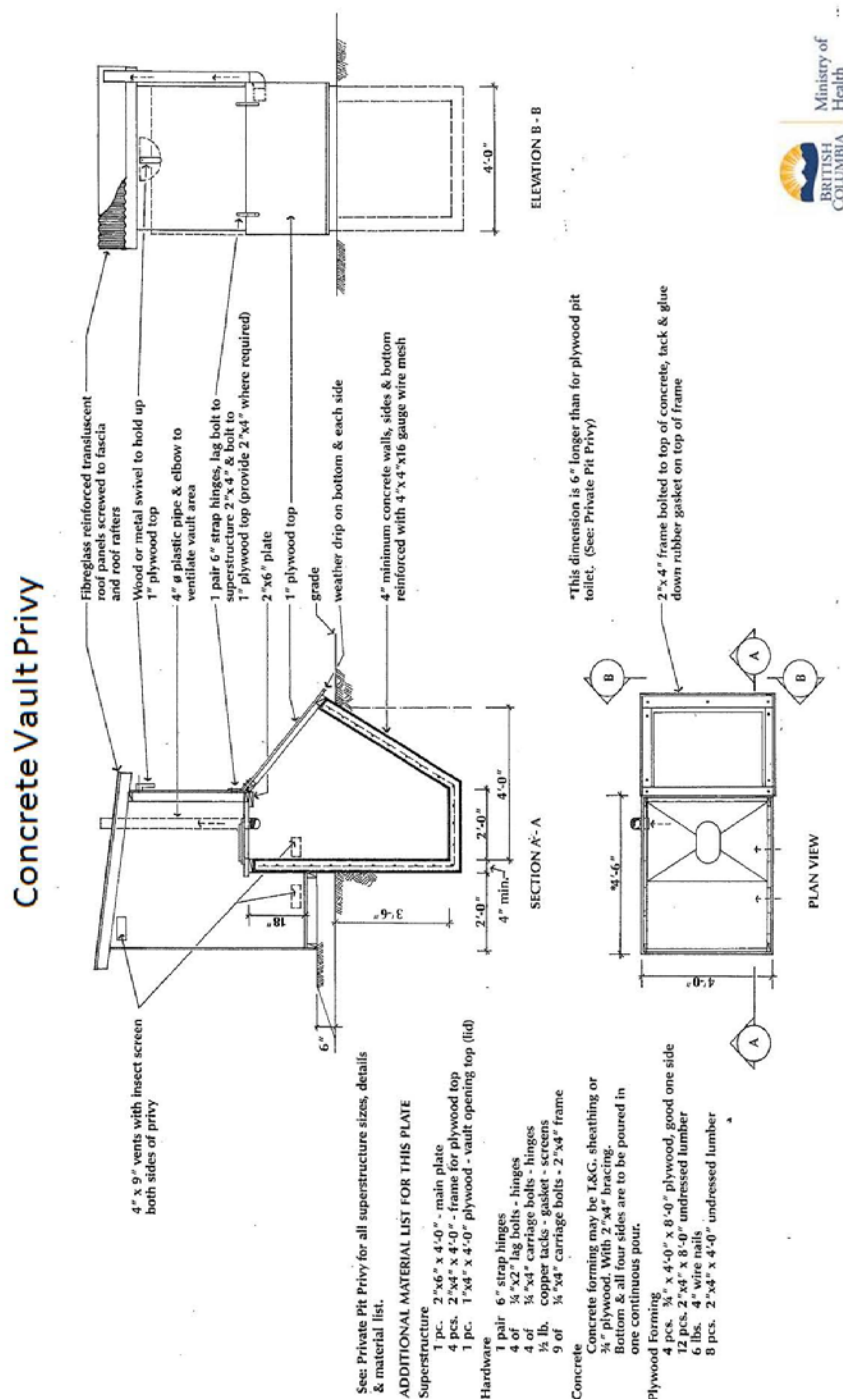
http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_96017_01

Engineers and Geoscientists Act:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_96116_01

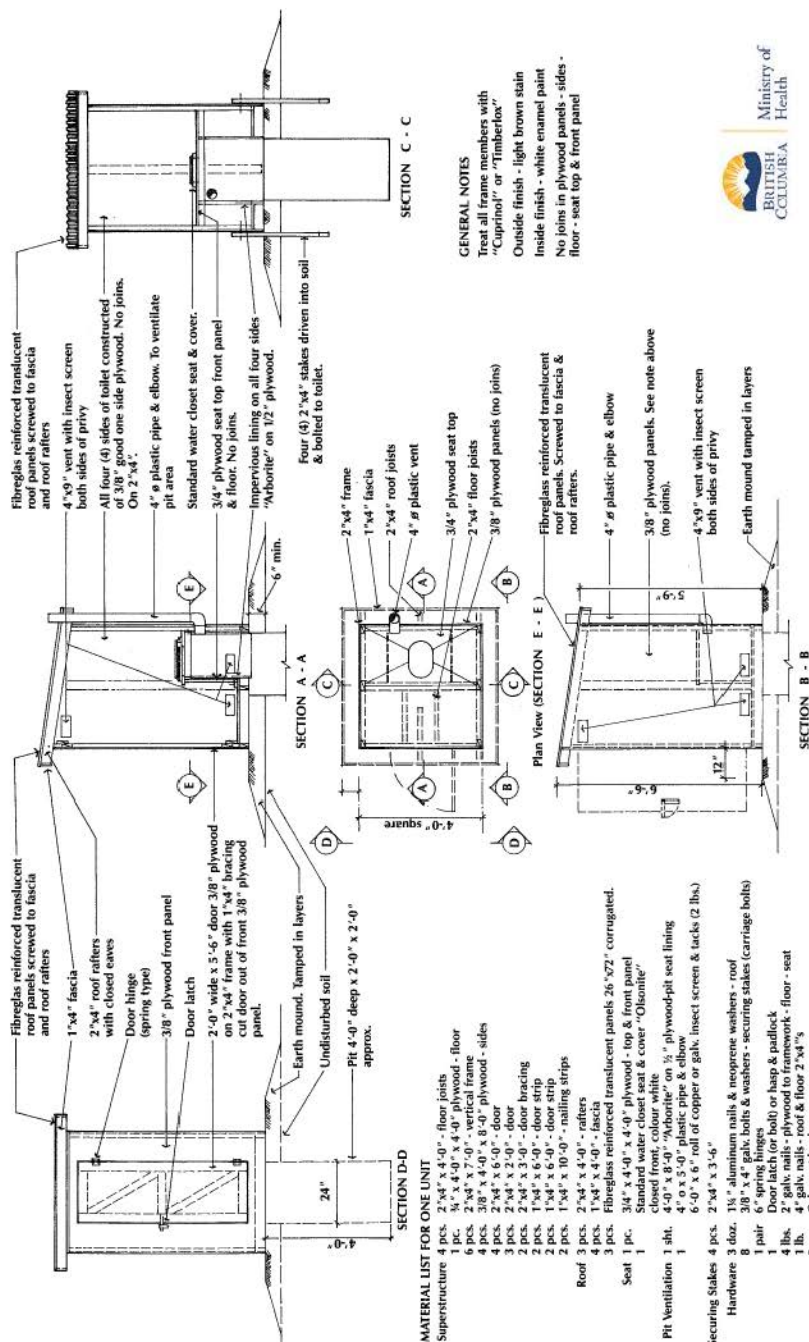
APPENDIX C: PRIVIES – TECHNICAL SPECIFICATIONS

CONCRETE VAULT PRIVY



PLYWOOD VAULT PRIVY

Plywood Vault Privy



GENERAL NOTES
Treat all frame members with "Cuprinol" or "Timberlox"
Outside finish - light brown stain
Inside finish - white enamel paint
No joins in plywood panels - site floor - seat top & front panel



R-1

From: Poulton, Gail OHCS:EX [<mailto:Gail.Poulton@gov.bc.ca>]

Sent: Thursday, November 30, 2017 4:08 PM

Subject: Public review on proposed changes for the 2020 National Building, Fire and Plumbing Codes

Good afternoon:

Please find attached an information bulletin for stakeholders to participate in the review of the National Building, Fire, and Plumbing Codes. The Building and Safety Standards Branch encourages British Columbia Codes Users to participate in this review, as this will affect the 2020 National Codes

Building and Safety Standards Branch |

Ministry of Municipal Affairs and Housing

www.gov.bc.ca/buildingcodes

>

January 24, 2018

Subject: Public review on proposed changes to the National Building, Fire and Plumbing Codes



Note – this review is separate from the Province of British Columbia’s public review for proposed changes to the next edition of British Columbia Building, Fire, and Plumbing Codes (2018). Notification of the British Columbia public review will be sent in the near future, inviting Codes users and other stakeholders to provide comments on the proposed changes to the next edition of the British Columbia Codes.

Good morning,

The Canadian Commission on Building and Fire Codes (CCBFC) is inviting stakeholders to take part in the [fall 2017 public review](#) of proposed changes to the National Building Code (NBC), the National Fire Code (NFC) and the National Plumbing Code (NPC) to be published by the National Research Council in the 2020 editions of the Codes. The Building and Safety Standards Branch (BSSB) encourages British Columbia Codes users to participate in this review.

These national publications will serve as the foundational documents for future editions of the British Columbia Building, Fire and Plumbing Codes (BC Codes).

Following the public review, CCBFC Standing Committees will review all comments and make recommendations on the proposed changes. The changes will be published by the National Research Council in the 2020 editions of the National Codes publications.

The [public review](#) is open from **November 6, 2017 to January 2, 2018**. No changes are being proposed for the National Energy Code for Buildings (NECB) during this public review, as there is an interim change to the NECB in the near future.

For further information about the CCBFC national public review, please contact **Anne Gribbon, Secretary to the CCBFC**, at anne.gribbon@nrc-cnrc.gc.ca.

If you have questions about the upcoming British Columbia codes public review, please email Building.Safety@gov.bc.ca.

Sincerely,

Andrew Pape-Salmon | P.Eng., MRM, FCAE
Executive Director, Building and Safety Standards Branch
Office of Housing and Construction Standards
Ministry of Municipal Affairs and Housing

January 24, 2018

MEDIA BULLETIN

For immediate release

December 4, 2017

Northern Health Connections modified holiday schedule

The Northern Health Connections program will run on a modified schedule starting December 19th, leading up to a holiday season break.

NH Connections provides transportation for clients travelling to non-emergent health services outside their home communities. A variety of routes connect communities across northern B.C., along with service to Vancouver. Demand for the service typically drops over the holiday season as fewer people book health care appointments.

Starting December 19th, NH Connections buses will begin their last routes for 2017. Regular routes will resume the week of January 2nd, 2018.

Departs	Last route for (2017)	First route (2018)
Prince George to Vancouver	December 21 st	January 2 nd
Vancouver to Prince George	December 23 rd	January 4 th
Prince George to Prince Rupert	December 22 nd	January 3 rd
Prince Rupert to Prince George	December 23 rd	January 4 th
Prince George to Fort St. John	December 21 st	January 4 th
Fort St. John to Prince George	December 23 rd	January 6 th
Valemount to Prince George	December 19 th	January 2 nd
McBride, Valemount to Kamloops	December 21 st	January 4 th
Burns Lake to Terrace	December 21 st	January 4 th
Fort Nelson to Dawson Creek	December 19 th	January 2 nd
Dawson Creek to Fort Nelson	December 21 st	January 4 th
Mackenzie to Prince George	December 20 th	January 3 rd
Quesnel to Prince George	December 19 th	January 2 nd
Burns Lake to Prince George	December 19 th	January 2 nd
Burns Lake via Fort St. James	December 20 th t	January 3 rd

The NH Connections booking centre will be closed on statutory holidays (December 25th and 26th, and January 1st, 2018), but open on regular business days. Full details on the NH Connections holiday schedule and other program information are available through the booking centre at 1-888-647-4997; via e-mail at NHConnections@northernhealth.ca; or on the internet www.nhconnections.ca.

Media Contact: NH media line – 1-877-961-7724

January 24, 2018

R-1


From: STARS air ambulance [<mailto:info@stars.ca>]

Sent: December-01-17 10:01 AM


To: prrd dc <prrd.dc@prrd.bc.ca>

Subject: Thank you for 32 years

Is this email not displaying correctly? [View it in your browser.](#)



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January 24, 2018

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R-1

From: Talon Gauthier [<mailto:coordinator@peaceforageseed.ca>]

Sent: Tuesday, November 21, 2017 12:46 PM

To: Renee Ardill <ardillsranch@xplornet.com>; Irmi & Barry Critcher <icritcher@xplornet.com>; Sharla Pearce <srpearce@telus.net>; Garnet Berge <igberge@pris.bc.ca>; Lori Vickers <Lori.Vickers@gov.bc.ca>; Rick Kantz <rkantz@pris.ca>; Bruce Simard <Bruce.Simard@prrd.bc.ca>; Robert Vanderlinden <nvleint@xplornet.com>; mwilson Wilson <billwilson@pris.ca>; Blair Hill <blair_g_hill@hotmail.com>; kiskgelb@pris.ca; BCGPA - Sharla Pearce <sharla@bcgrain.com>; Samantha Charlton <samantha@bcagclimateaction.ca>

Subject: Factsheets from Knowledge Transfer Project

Hello everyone

Please find attached the factsheets that were developed as part of the final knowledge transfer project with the Climate Action Initiative. There is one that is an overview of the initiative and what it accomplished in the Peace Region and then three that are specific to the Irrigation report. You can also find them on our website at <http://www.peaceforageseed.ca/research.html> (side bar under funding partners) and on the BC Cattleman's website at: <http://www.cattlemen.bc.ca/agclimateaction.htm>. Please feel free to post them to your websites as well. I also have 50 hard copies of each factsheet in my office and am happy to try to get you each a few hard copies if you want.

Thanks,

Talon Gauthier

PRFSA General Manager

904-102 Ave

Dawson Creek, BC

V1G 2B7

1 877 630 2198

January 24, 2018

Climate Adaptation Strategies

Date:
January, 2017

Peace - Climate R-1 Adaptation Strategies

Peace Agricultural Adaptation Strategies Working Group Members

The working group consists of representatives from Peace Agriculture Organizations, provincial and local government:

- ⇒ BC Agriculture & Food Climate Action Initiative
- ⇒ BC Branch Canadian Seed Growers Association
- ⇒ BC Grain Producers Association
- ⇒ BC Ministry of Agriculture
- ⇒ Peace Region Forage Seed Association
- ⇒ Peace River Forage Association of BC
- ⇒ Peace River Regional Cattlemen's Association
- ⇒ Peace River Regional District

For more information:

Emily MacNair, Manager,
Adaptation Programming
Emily@BCAgClimateAction.ca

Samantha Charlton,
Project Coordinator,
Regional Adaptation
Program
Samantha@BCAgClimateAction.ca

Website:
www.bcagclimateaction.ca

Overview

In the spring of 2012, the BC Agriculture Climate Change Adaptation Risk & Opportunity Assessment was completed to evaluate how changes to the climate may impact agricultural production for key commodities in various regions of BC.

The assessment generated five regional and commodity specific reports including a "Snapshot Report" for grain and oilseed production in the Peace Region.

Building on the findings of the assessment, the Peace Region Adaptation Strategies plan was completed in the spring of 2013. A summary of the plan is also available. The plan identifies regionally specific collaborative strategies and actions that will enhance agriculture's ability to adapt to projected changes.



\$300,000 in funding from *Growing Forward 2*, a federal-provincial-territorial initiative, was available for eligible collaborative projects identified in the plan. Between Fall of 2013 and Spring of 2017 a number of adaptation projects were implemented in partnership with funders and local organizations. Implementation was overseen by a local working group.

The Adaptation Strategies were a launching point for many projects that are going on even today in the Peace Region. Current projects to address climate change adaptation in the region include:

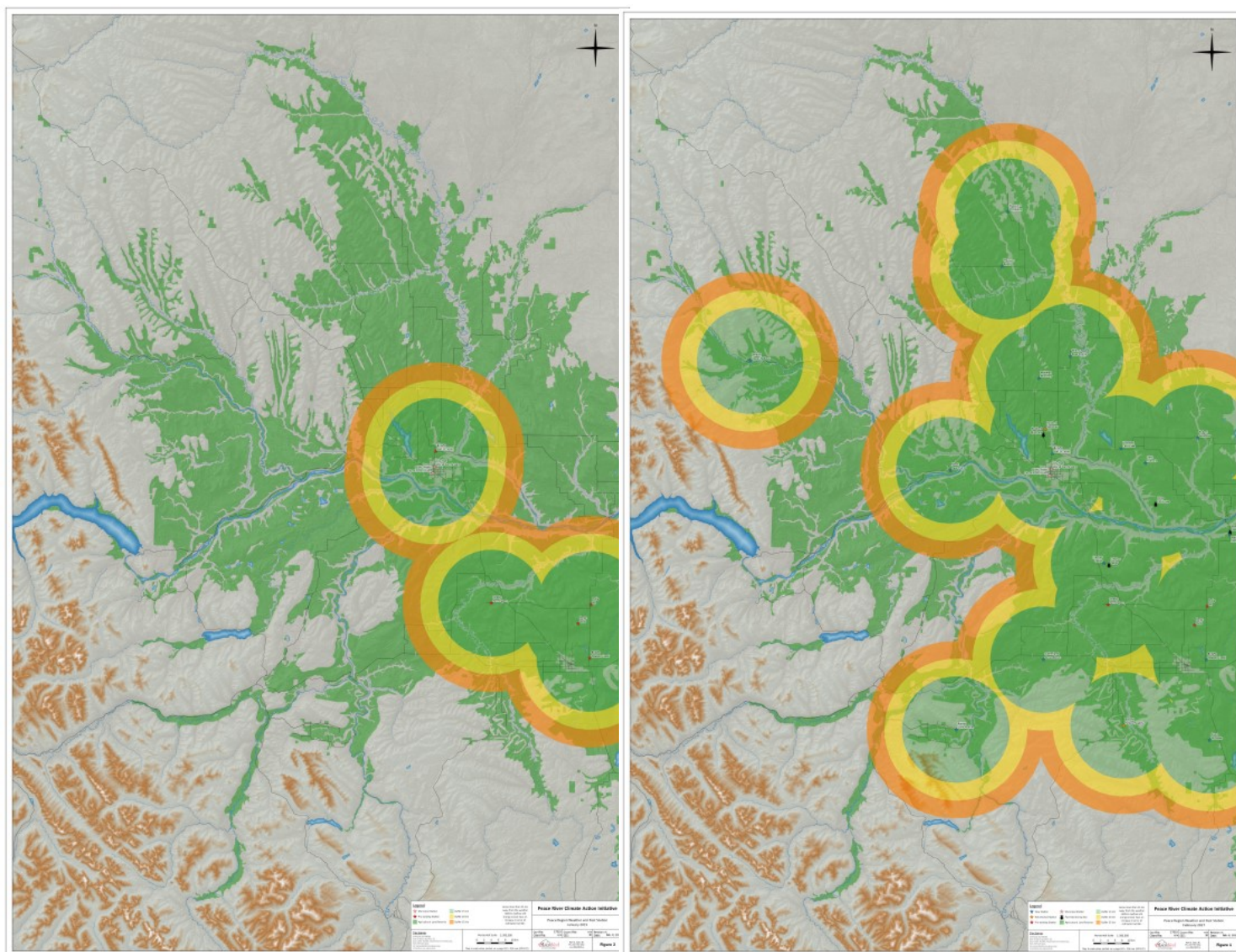
- * Improving Productivity and Profitability of Forage Land (Peace River Forage Association)
- * Pest Monitoring and Innovative Management (Peace Region Forage Seed Association)
- * Enhancing Peace Weather Monitoring and Utilization of Weather Data (Peace Region Forage Seed Association)

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**Peace Agricultural Adaptation Strategies
Working Group**

This and more fact sheets can be found at
www.bcgrain.com; www.peaceforageseed.ca; peaceforage.bc.ca

January 24, 2018

Peace – Increasing Availability of Agriculturally Relevant Weather Data



Station coverage January 2015

Station coverage March 2017

In the spring of 2015, a project was initiated to improve the quantity and accuracy of weather data available for local agriculture. The images above show the resulting increase in coverage of available weather data. The green indicates the agricultural land base and circles on the image to the left show the extent of weather station coverage in January of 2015. The yellow circles show the 15 km range that weather stations can accurately represent precipitation. The outer orange circles shows the 25 km radius from weather stations where there is some coverage but decreased accuracy in representing precipitation.

The image on the right shows the extent of accurate weather station coverage today, resulting from the installation of 16 strategically located new weather stations. In addition to the new stations, a region-specific weather and decision-support tool website has been developed to share weather data – and related information and tools – with Peace region producers.

CHECK IT OUT: <http://weatherfarmprd.com/>

The Peace Agricultural Adaptations Strategies Working Group is ...

Collaborative Pest Monitoring

Projects initiated through the Peace Adaptation Strategies also enabled pest monitoring (insect, disease & weed) to expand in the BC Peace. The beetles on the map to the right show the locations of long-term annual crop pest monitoring stations that have been set up through this project. There are also many perennial pests being monitored in both forage and forage seed crops.

The introduction of this monitoring into the BC Peace gives producers relevant information throughout the growing season and as well as to prepare for the upcoming season. Data collected will be used to develop insect and disease models specific to the region.

For more information about this project contact pest@bcgrain.com.

Peace – Collaborative Pest Monitoring (2014 summary)

Peace – Collaborative Pest Monitoring (2016 report)

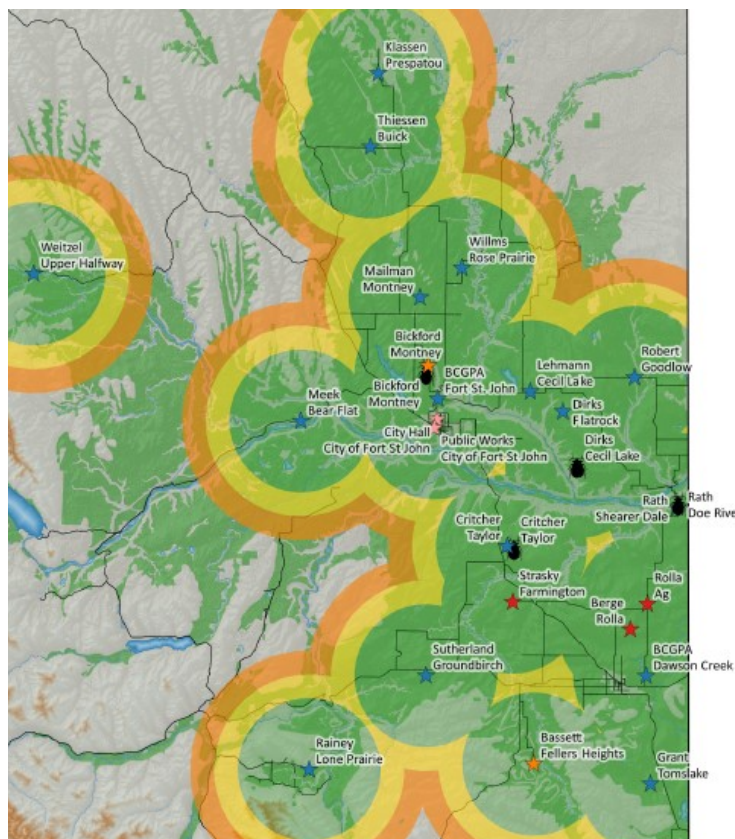
Evaluation of Irrigation Potential

Completed in 2016, the irrigation study assessed the potential for future feasibility of various irrigation scenarios in the BC Peace region. The study uses a set of six irrigation case studies, including single farm systems, small community systems, and large irrigation systems with different water sources and water storage capacity.

Based on water demand models for three reference crops, projected water supply, and detailed economic analysis, the study results indicate that, under current market conditions, irrigated agriculture in the Peace is only feasible under very specific conditions. While climate change will increase the feasibility of irrigation in the region, changing economics and/or cropping systems will be important factors influencing broader future feasibility.

Peace – Evaluation of Irrigation Potential in the BC Peace Region (2016 report)

Peace – Evaluation of Irrigation Potential in the BC Peace Region (2016 summary)



Innovative Management Practices for Resiliency – Farm Adaptation Innovator Program

Led by the Peace River Forage Association, this project worked with Peace producers using a farm systems approach to identify and to adopt nutrient management practices and forage production systems that are more resilient to weather extremes and climate change.

Three strategies were evaluated including: 1) revitalization of forage stand options 2) establishment, production and stand longevity of legume alternatives to alfalfa; and 3) identification of ways to reduce nutrient loss. The three production strategies were evaluated based on economic indicators, soil quality, soil and crop response and producer perspectives on the adoption of the practice.

Find detailed information and results at:
http://www.peaceforage.bc.ca/rd_resiliency_innovation.html

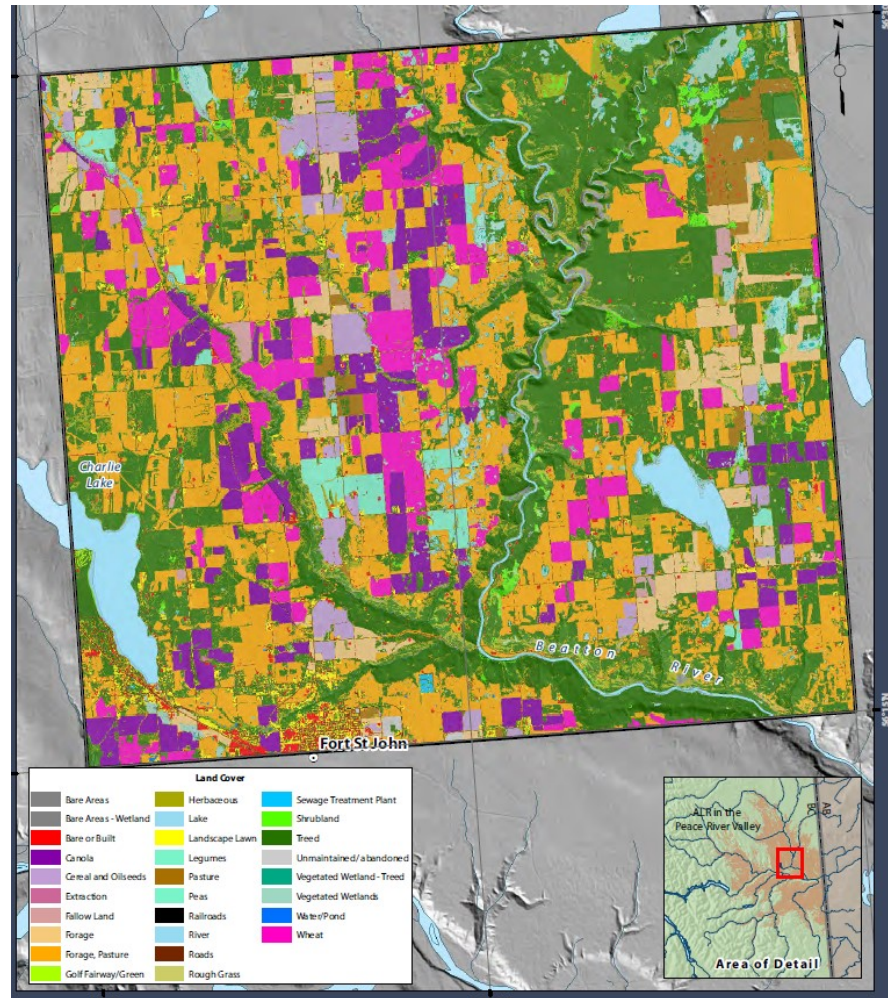
... committed to delivering Climate Action projects in the Peace Region.

Defining a New Approach to Agricultural Land Use Inventory (ALUI) in the BC Peace

The *Peace Adaptation Strategies* identifies the need to inventory the agricultural land in the BC Peace region in order to plan effectively for agricultural activities and needs such as current and future water demand. This background land use information is not only needed for agricultural water management, but also for regional level decision-making that involves all water users. By improving understanding of demand, as well as potential for water storage and supply sources, priorities for agricultural water development may be identified.

A feasibility study completed as a result of the Adaptation Strategies has determined that the utilization of an image classification technology allows the ALUI work to be completed at a significant cost savings. The costs associated with the manual approach are approximately 20 times more than the classification-based approach, which is especially important in a region as large as the Peace.

The image to the left shows canola acres in purple, wheat in pink, peas in light green. There are still some information gaps, but there is a lot of data to build upon for agricultural and water use planning.



The feasibility study is available at: <http://www.bcagclimateaction.ca/regional-project/pc04/>

Compiled & Circulated by: Julie Robinson, information credit to the BC Climate Action Initiative

This publication was supported by a program delivered by the BC Agriculture & Food Climate Action Initiative, with funding provided in part by the Governments of Canada and British Columbia through *Growing Forward 2*, a federal-provincial-territorial initiative.

Funding for this project has been provided in part by:



Investment
Agriculture
Foundation
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Growing Forward 2



Canada

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Funding contributions
also received from:



Climate Adaptation Strategies

Date:
January, 2017

Factsheet #1

R-1

When Needed Irrigation = Supplemental

Peace Agricultural Adaptation Strategies Working Group Members

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- ⇒ BC Agriculture & Food Climate Action Initiative
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- ⇒ BC Grain Producers Association
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- ⇒ Peace River Forage Association of BC
- ⇒ Peace River Regional Cattlemen's Association
- ⇒ Peace River Regional District

For more information:

Any questions or concerns in regards to the Irrigation report contact: the BC Grain Producers
Toll free: 866-716-7179

Email:
sharla@bcgrain.com

Introduction:

A number of actions are identified in the *Peace Adaptation Strategies* to support agriculture to adapt to increasingly dry and drought conditions in summer, including the need to assess the potential for irrigation in the BC Peace Region. An irrigation feasibility study was completed in the autumn of 2015. The study - entitled, *Evaluation of Irrigation Potential in the BC Peace* - concluded that a small number of irrigation opportunities currently exist, and additional opportunities may exist in the future.

Supplemental Irrigation:

In the Peace Region, irrigation for field crops is likely to be planned on an as needed basis, since historically, most of the moisture necessary for growing a crop is provided through snow melt and summer rainfall. Based on long-term averages, there is a moisture deficit for Peace Region soils of approximately 40 mm to 140 mm (2 – 6 inches) varying by crop and by soil type. Although the major rainy season is in June/July, rainfall can be variable and it can come at inopportune times (and with climate change variability is expected to increase).

Supplemental irrigation is put in place anticipating that in some years irrigation will not be necessary, while in other years it will provide substantial benefits. An average moisture deficit of 87mm could be the result of a range of deficits from 29mm to 174mm.



Gun irrigation, photo courtesy of Nelson Irrigation.

Supplemental irrigation provides moisture at essential times, such as during crop germination (for even germination), tillering, seed set, or bolting stages. If a spring rain does not come until June 10 or later, crop germination could be seriously delayed in higher and drier parts of the field. A crop that germinates evenly will be better able to use the rainfall that comes later, compared to an uneven crop. About 120mm of rain or soil moisture is needed just to get the crop through the vegetative stage. Ungerminated seeds will not be able to use the later rain, except possibly to germinate late and lead to an uneven crop, which will be downgraded in quality, or may suffer from fall frosts.

Forage crops that are seeded in summer or early fall can also be affected by inadequate moisture, leading to thin stands, or non-winter ready crops which are very susceptible to winter-kill. Poor stands also lead to loss of fertilizer which is not absorbed by crops and can be lost to leaching or volatilization.

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This and more fact sheets can be found at
www.bcgrain.com; www.peaceforageseed.ca; peaceforage.bc.ca

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Precipitation 1981-2010 (Figure 1)

Place	Precip Annual (mm)	As Rain (mm)	May to Aug precip (mm)
Fort St John	445	292	220
Dawson Creek	453	307	240
Baldonnel	-	322 (1971-2000)	-
Taylor Flats	-	320 (1971-2000)	-



Wheel move , photo credit of flickr user Brad Smith

Timing of moisture

Variability of rainfall means that moisture may not always be there when it is needed. Even when a sufficient amount of precipitation has fallen, a certain amount will run-off into surface water bodies, especially after heavy rainfall events, and if the soil is already saturated. In some cases only half of the moisture that falls during a heavy rainfall event may be retained in the soil, especially in the higher parts of a field. In addition, a proportion of moisture, especially from fall rains and snow melt, may deposit in the soil at a depth beyond the rooting depth of the crop, making it unavailable to the germinating or growing crop. The extent of this problem will vary with the soil type, with sandy soils losing more moisture to depth, and clay soils having more surface runoff.

Climate Change:

Average annual rainfall and rainfall between May - August has decreased by about 5% in the last twenty years (Comparing 1981-2010 normal with 1961-1990). Over the same time period, Growing Degree Days for Dawson Creek and Fort St. John have increased by about 4%. These changes mean that the gap between moisture and sunlight is increasing and while increased sunlight and temperatures can enhance crop growth and yields, decreased moisture can have the opposite effect.

Although the changes to date are not very large, if they translate to a ten percent change in yield, then this is worth noting. Irrigation can have an impact on reducing the solar-moisture imbalance which

exists regardless of change and this imbalance is likely to increase in the future.

In the Peace Region, the La Crete – Fort Vermilion area in Alberta has shown some dramatic changes for Growing Degree Days in the last ten years. Changes in moisture and Growing Degree Days have been smaller in the rest of the Peace Region. The variability in the region is worth noting as it will affect the moisture deficits at different locations as noted in *Figure 1*. However, the differences between most locations are not large, and the moisture deficits can be adjusted accordingly.

Moisture at La Crete (Figure 2)

Growing season precip	264 mm
Long term normal	
Growing Season precip	156 mm
2005-2015	

Moisture Deficits at La Crete 2008-2014 (Fig 3) (from Alberta Agriculture Irrigation Section)

Wheat	avg 142 mm
Barley	avg 87 mm
Canola	avg 170 mm
Alfalfa	avg 213 mm

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Crop Moisture Deficits:

From 2005-2015 the La Crete area is shown to have significantly less precipitation during its growing season when compared to the long term (30 year) average (*Figure 2*).

Figure 3 illustrates the average moisture deficits with different crops at La Crete, as well as the variability of average moisture deficits for different crops over a seven year period from 2008-2014, and include the stored winter moisture. These moisture deficits are higher than those that would be calculated for Dawson Creek and Fort St. John; they would be adjusted downwards by approximately 60-80 mm for Dawson Creek. They illustrate average deficits due to the variability from one year to the next.

The highest moisture deficit for alfalfa was 381mm, and adjusted downward for Dawson Creek to a possible moisture deficit of approximately 250mm, or 10 inches of moisture, in an extremely dry year. This is because alfalfa is a high water use crop when grown for forage such as hay or silage. The deficit will depend on soil type, rooting depth and age of the alfalfa stand, as well as the amount of spring run-off from particular fields, and the length and heat units of the growing season.

It is worth noting that even when the average moisture deficit is zero, there will still be moisture deficits about half of the time and there will be a moisture surplus or sufficiency the other half of the time.



Centre Pivot, photo courtesy of Dave Reede

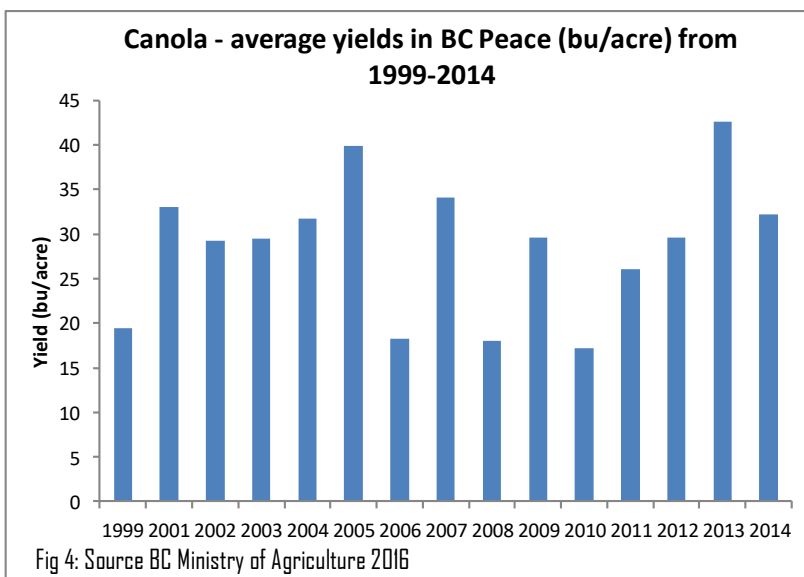
“Alberta research has shown that under good environmental conditions, for each 25 mm (1 inch) of water used, wheat produces 5 to 7 bushels/acre, barley produces 7 to 9 bushels/acre and canola produces 3.5 to 4 bushels/acre.” (Alberta Agdex 100/561-1 - Crop Water Use and Requirements) It is important to note that once a crop has reached full potential, additional water will not increase the yield.

The recently completed study - *Evaluation of Irrigation Potential in the BC Peace* (2016) - assumes an irrigation demand of 75 mm for wheat, 200 mm for Canola, and 300mm for forage.

A moisture deficit of 100mm in Canola could result in a yield loss of about 16 bushels/acre, which could translate to \$174 of gross revenue per acre. A

deficit of 100mm for wheat could result in a yield loss of 24 bushels/acre, valued at approximately \$165/tonne (CPSR) or \$245/tonne (CWRS), or from \$108 to \$160/acre. In an extremely dry year, irrigation could remove a 200mm deficit and provide a benefit for canola of \$350/acre.

On the other hand, the costs of irrigation must be considered, and costs are dealt with in more detail in Fact Sheet #3 (*Economics of Supplemental Irrigation*). It is important to note that average numbers will rarely apply to a particular parcel of land, and that every parcel of land, type of crop, and type of irrigation system will differ in its impact on the costs and benefits of supplemental irrigation.



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The amount of supplemental irrigation required can vary depending on a number of factors, including crop type, seeding dates, crop varieties, soil type, slope direction, tillage practices (direct seeding), timing of rainfall, and irrigation efficiency. *Figure 4* illustrates how variable B.C. Peace canola yields have been over the last 14 years. This data helps to illustrate that the years in which irrigation could see a return on the farm would also be variable.

The benefits and costs of irrigation can vary depending on crop type, price of the crop, extra fertility required, distance to source of the water, cost of irrigation system, efficiency of water application, pumping elevation required, type of energy used for pumping and cost of energy.

Supplemental irrigation is most useful when it can be applied to an entire field within a relatively short period of time. This is because it is used to provide moisture at essential times to prevent the crop from reaching the wilting point, when it will suffer irreparable damage. It can also provide moisture for uniform crop germination, but the greatest benefit will be if all of the field receives moisture within two or three days, so that the crop is uniform.

With supplemental irrigation, fertilizer rates can be optimized and the risk of fertilizing for high yields

and having unused wasted fertilizer sitting in the field can be reduced, resulting in economic as well as environmental benefits. Environmental benefits include the reduction of leaching and runoff of nitrogen, as well as reduction in the volatilization of nitrogen in the form of ammonia and nitrous oxides.

In order to estimate the value of supplemental irrigation on a particular field, the best yield achieved under dryland conditions on that field in the last twenty years can be used as a guide for potential yield benefits of irrigation. A starting point for evaluation for a parcel of land may be to compare average field yields to the best ever crop on that field. It may be possible to exceed that “best crop ever” through irrigation, since in a dry year it is often the case that there will be more Growing Degree Days or heat units available for crop growth.

However, a risk associated with maximizing irrigation based on soil field capacity in the Peace Region is a possibility of excessive soil moisture saturation. If the soil moisture is at field capacity just before a major rainfall event, then some damage to a growing crop may result if there is prolonged field flooding or water-logging due to heavy rains. It is important to pay attention to weather forecasts, and evaluate the relative risks of too much soil moisture in some years and at some times of the year.

Resources:

BC Ministry of Agriculture, Food and Fisheries. 2005 *BC Irrigation Management Guide*. [online] Available at: http://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/agricultural-land-and-environment/water/irrigation/irrigation-management-guide/577300-0_irrigmgmtguide_chapter_00_how_to_use_with_titlepage.pdf

BC Ministry of Agriculture. 2014. *BC Sprinkler Irrigation Manual*. [online] Available at: <http://www2.gov.bc.ca/gov/content/industry/agriculture-seafood/agricultural-land-and-environment/water/irrigation/sprinkler-irrigation-manual>

Alberta Ministry of Agriculture & Forestry. 2017. *Crop Water Use and Requirements*. [online] Available at: <https://open.alberta.ca/dataset/9a017865-5692-464d-92ac-93b5d50558db/resource/c0d20e0c-9f14-4f6d-8144-b8a6bc3452ba/download/5485851-2011-Agri-Facts-Crop-Water-Use-Requirements-Revised-100-561-1-2011-11.pdf>

Alberta Ministry of Agriculture & Forestry. 2017. *Irrigation Management in Alberta*. [online] Available at: [http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/agdex13628](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/agdex13628)

Compiled & Circulated by: John Zylstra, Julie Robinson, Talon Gauthier

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This publication was supported by a program delivered by the BC Agriculture & Food Climate Action Initiative, with funding provided in part by the Governments of Canada and British Columbia through *Growing Forward 2*, a federal-provincial-territorial initiative.

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Date:
March, 2017

Factsheet #2

Irrigation Site Specifics R-1

Peace Agricultural Adaptation Strategies Working Group Members

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- ⇒ BC Agriculture & Food Climate Action Initiative
- ⇒ BC Branch Canadian Seed Growers Association
- ⇒ BC Grain Producers Association
- ⇒ BC Ministry of Agriculture
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- ⇒ Peace River Regional Cattlemen's Association
- ⇒ Peace River Regional District

Introduction:

In the Peace Region, opportunities for supplemental irrigation of field crops and the associated capital costs are closely linked to local conditions. After evaluating the potential crop water use deficits, yield benefits, capital costs and operating costs, a site specific feasibility study needs to be done in order to determine site suitability.



Before setting up an irrigation system it is recommended that a soil and landscape analysis be performed by a professional agrologist, or otherwise qualified individual, which includes all of the following factors.

- local climate (see fact sheet #1)
- soil type
- topography (land slope and aspect)
- location of water source (distance)
- elevation of water source (lift)
- water availability and quality

Soil Type:

While a wide variety of soils can handle irrigation, some soils will be limited in responding to irrigation and other soils will require more volume or frequency of water application to produce a crop due to holding capacity differences. Examples of soils with limiting conditions are described below:

- **Soils with low productive capacity** due to acidity, excessive salinity or high sodium content will not be able to respond fully to increased moisture from irrigation as crop type will be limited as well as crop yield response.
- **Soils with high sand content** will not retain moisture very well and will therefore require more moisture or more frequent moisture; there is also a higher risk of nutrient leaching which causes both environmental and production problems (note: sandy loams are good candidates for irrigation)
- **Soils with high clay content** will have a lower infiltration rate which limits the amount of water that can be added at a time; therefore, irrigation pipes must be moved frequently and/or a lower pumping rate must be used to avoid flooding, ponding and runoff of surface water.
- **Shallow soils** that have bedrock too near the surface have the potential for water logging below the surface and, as well, the shallow topsoil becomes a limiting factor for maximum crop growth potential.

While these limiting conditions do exist in some locations the Peace River area and should therefore be considered, they do not apply to the majority of

For more information:

Any questions or concerns in regards to the Irrigation report contact: the BC Grain Producers
Toll free: 866-716-7179

Email:
sharla@bcgrain.com

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This and more fact sheets can be found at
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Figure 1. Plant-available water and infiltration rate based on soil texture

Soil Texture	Plant Available Moisture in 1-M Root Zone		Basic Infiltration Rate When Soil is Saturated
	(mm)	(in)	
Loamy Sand	112	4.4	26-60
Sandy Loam	140	5.5	25.6
Loam	180	7	6.8
Sandy Clay Loam	152	6	4.3
Silt Loam	200	8	13.2
Clay Loam	200	8	2.3
Silty Clay Loam	220	8.7	1.5
Sandy Clay	172	6.8	1.2
Silty Clay	212	8.3	1
Clay	192	7.6	0.6

Furrow irrigation, photo courtesy of www.deltatropiquesagronomie.com

Soil Type cont'd

agricultural soils in the region. In contrast to these soil limitations, any soil that has produced bumper crops under non-irrigated dryland conditions in the past may be a good candidate for supplemental irrigation. In some cases, different soil quality will simply require an adjustment of irrigation rates and methods (see Figure 1). Fewer limitations exist for sprinkler irrigation than for furrow or flood irrigation.

Soil variability within a particular field also becomes an issue with irrigation management. If a portion of a field is dramatically different than the rest with regards to soil texture (e.g. sandy loam and clay loam) then the moisture requirements will be different. Under dryland conditions this texture difference can usually be seen in the response of a crop to a drought. This means that the irrigation settings for the field may not be optimum for both soil textures, but perhaps only for the soil with the least limitations. While some irrigation systems can be adjusted for different water requirements in different parts of the field, these systems will likely be more expensive than a more basic system.

Topography

In addition to soil type, the landscape itself has an impact on irrigation rates, methods and benefits. Most landscapes in the Peace Region are not suitable for flood irrigation or for furrow irrigation, except for small horticulture fields, such as for potatoes or vegetables.

However, most fields could be suitable for wheel-move or center pivot systems, provided slopes are not too steep. Slopes up to 2% are quite suitable for wheel-moves and center-pivot systems. As slopes increase beyond that, a larger pump may be required in order to maintain pressure at the higher points in the field. A difference in pressure between the higher and lower parts of the field might be compensated for with special nozzles that adjust rates as needed, but this will add to the cost of the system.

If topography is too variable, there may be a problem for movement of systems, such as the wheels of a center pivot, through low spots in the field which will remain too wet.

North facing slopes will likely require slightly less water than south facing slopes, since the sun warms up and evaporates moisture more quickly from south facing slopes. Areas shaded by trees may also have differing levels of moisture use and losses.

Topography also affects pumping energy requirements. A 2% slope will add 50 feet, or 15 meters of elevation from one side of the field to the other. If the irrigation water enters at the low end of the field, this 15 meters of elevation must become part of the calculations for determining pump size requirements as well as line size requirements for the system.

Water Source:

Water source is essential to the success of any irrigation project. In the Peace Region, the Peace River carries more water than all other Alberta rivers combined. However, most of the land in the Peace Region is 300 meters above the level of the river, and this makes the cost of pumping river water for irrigation to the highlands very costly, and usually prohibitive. When looking at the water source for supplemental irrigation, there are a number of inter-related factors that must be considered including:

- water source relative location and elevation;
- pumping costs and logistics (pipe/pump sizes);
- water licences and public land access;
- water quality; and
- water quantity requirements.

Pumping cost considerations:

- Horizontal and vertical distances from source to irrigation site
- Size of pipe and pump used as well as pump and water line efficiencies
- Type of power used (diesel, natural gas, electric)
- Pricing contracts for power

Pumping cost example and reference point

(costs will vary with power type, pump and pipe size, energy pricing contracts)

\$5/acre inch or \$44/acre foot for 100 ft of lift
\$25/acre foot for 16km horizontal movement

Licensing and access considerations

Water licenses are required as per the *Water Sustainability Act* and can be obtained through the relevant Ministry (FLNRO & Rural Development), in order to ensure that sufficient water is retained for environmental and wildlife purposes. In addition, prior users of the water source need to be considered. Construction of access and pipelines across public lands will require permission from the relevant government departments.



Pivot Irrigation system, courtesy of www.zimmatic.com

Quantity Example (100 mm moisture deficit)

- 100 mm of water added to 132 acres (the size of an unmodified center pivot on a 1/4 section)
- 132 acres = 53000 m²
- 53000 m² x 1/10 m water = 5300 m³ or 5.3 million liters = 5300 tonnes of water
- 5300 m³ stored on 10 acres would require a depth of 132/10 x 100 mm = 1320 mm; so almost 1.5 m of water on 10 acres would be completely drained under such a situation, not including losses to evaporation and seepage
- note: the quantity needed at one time determines the sizes of pipes and pumps needed to provide a certain flow volume; typical flow rate requirements are 4-7 gallons per minute per acre

Water Quality and Irrigation

In most cases, surface water will be suitable (the Peace River is particularly good quality water with very low levels of salts).

Some surface water bodies may be acidic, or may contain higher levels of salts, depending on where water originates (particularly true if water originates from a spring).

Groundwater generally contains higher levels of salts, and may have slower rates of replacement, factors which may affect long term soil quality and limit withdrawal quantity (i.e. make it less suitable for sustained irrigation).

Water considered safe for irrigation has an electro-conductivity level of less than or equal to 1.0 dS/m and a sodium adsorption ratio (SAR) of less than or equal to 5 (initial soil quality should be considered).

Alberta Agriculture Salinity and Sodicity Guidelines for Irrigation Water

For supplemental irrigation, the quantities of water needed are much less than in parts of the country or the world where 95% of the crop water demands are met by irrigation, such as in southern California, southern Alberta, or in parts of the Okanagan. Nevertheless the potential water sources in the Peace Region should be analyzed for salt and mineral content, and in particular for sodium content. Salts and sodium can accumulate in the soil and eventually cause harmful effects on crop production levels. This is especially true if the soil is already at a marginal level for salinity or sodicity.

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Forage Water Use:

In very dry conditions, and for high water use crops such as alfalfa, considerably more water could be used to irrigate 132 acres of land (than is outlined in the previous Quantity Example on page 3). Forage and grass crops can use more water because they begin to grow earlier, as much as four weeks before annual crops emerge from the ground. They can also utilize water in the fall after annual crops are mature and have stopped using moisture for growth.

Since alfalfa has a very deep rooting system, it can access water from deeper in the soil profile later in the summer. However, if the soil profile at depth is also dry, it could benefit greatly from additional water, which would increase forage volume as well as perhaps allow for an additional cut of hay. Since alfalfa produces its own nitrogen, when well inoculated, it has great potential. However, if alfalfa is grown continually under high production conditions under irrigation, and then removed from the field as hay or silage it will require more additions of other nutrients such as phosphorus, and possibly sulfur and potassium in order to sustain production.

Forages in the BC Peace region could use as much as 350 mm of water added.

Kerr Wood Leidal report *Evaluation of Irrigation Potential in the BC Peace Region*

Resources:

Alberta Ministry of Agriculture & Forestry. 2016. *Beneficial Management Practices for Irrigated Crop Production*. [online] Available at: [http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/agdex9384](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/agdex9384)

BC Ministry of Agriculture. 2014. *BC Sprinkler Irrigation Manual*. [online] Available at: <http://www2.gov.bc.ca/gov/content/industry/agriculture-seafood/agricultural-land-and-environment/water/irrigation/sprinkler-irrigation-manual>

Kerr Wood Leidal Associates Ltd. 2016. *Evaluation of Irrigation Potential in the Peace Region*. [online] Available at: http://www.peaceforageseed.ca/pdf/research_updates/PC05-Evaluation-Irrigation-Potential-Peace-report.pdf

Alberta Ministry of Agriculture, Food and Rural Development. 2005. *Tall Fescue Seed Production in Western Canada*. Agdex 127/15-3. [online] Available at: [http://www1.agric.gov.ab.ca/\\$Department/deptdocs.nsf/all/agdex9860](http://www1.agric.gov.ab.ca/$Department/deptdocs.nsf/all/agdex9860)

Forage Seed Production:

For forage seed crops, some of the same principles for irrigation will apply as those used for forage production. However, timing of irrigation can be critical as maximizing seed production requires different management than maximizing forage or dry matter production.

Fall Moisture:

- Essential for the tillering that will produce seed heads in the spring
- Critical to good establishment of the forage seed crop before winter prior to the seed production year

Spring/Summer Moisture:

- Essential given that forage grass such as tall fescue can use 55- 65 cm of moisture from spring to the end of July
- Additional moisture applied to crops after seed set can improve seed size, but can no longer improve the basic potential of the crop (and may also delay maturity somewhat)
- Given the nature of pollination for some forage seed crops, ideal pollination conditions should be considered and irrigation minimized or eliminated at the appropriate time in order to maximize pollinator actions (e.g. leaf-cutter bees prefer warm and dry conditions)

In some years, sufficient moisture can double the seed yield (e.g. for fescue or brome grass) but there is no data for an average potential crop response to moisture alone.

Moisture for forage seed crops will provide the biggest benefit when applied prior to seed set, so that the vegetative growth provides the best conditions for maximum amount of viable tillers and seeds produced. This is when the forage crop has the highest water demand.

Compiled & Circulated by: John Zylstra, Julie Robinson, Talon Gauthier

"Evaluation of Irrigation Potential in the BC Peace Region" was Administered by BCGPA, Fact Sheets compiled with the administration of PRFSA

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Agriculture
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Canada

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Funding contributions
also received from:



January 24, 2018

Climate Adaptation Strategies

Date:
March, 2017

Factsheet #3

Economics of Supplemental Irrigation R-1

Peace Agricultural Adaptation Strategies Working Group Members

The working group consists of representatives from Peace Agriculture Organizations, provincial and local government:

- ⇒ BC Agriculture & Food Climate Action Initiative
- ⇒ BC Branch Canadian Seed Growers Association
- ⇒ BC Grain Producers Association
- ⇒ BC Ministry of Agriculture
- ⇒ Peace Region Forage Seed Association
- ⇒ Peace River Forage Association of BC
- ⇒ Peace River Regional Cattlemen's Association
- ⇒ Peace River Regional District

For more information:

Any questions or concerns in regards to the Irrigation report contact: the BC Grain Producers
Toll free: 866-716-7179

Email:
sharla@bcgrain.com

Introduction:

Prior to beginning almost any project, numbers must be crunched in order to determine whether or not the benefits and opportunities of an activity will outweigh the costs. A supplemental irrigation system has the potential to increase crop yield; however, depending on a number of factors (see Fact Sheet #2, *Irrigation Site Specifics*), capital and operational costs may make the project unfeasible when compared to potential yield increases.



A 2016 Kerr Wood Leidal report - *Evaluation of Irrigation Potential in the BC Peace* – evaluated six irrigation scenarios in the Peace Region. The report indicates that there are significant limitations with regards to the feasibility of irrigation in the B.C. Peace Region, but under favourable conditions, irrigating cereals and oilseeds could provide net revenue. However, location, water source, energy costs and crop prices are all contributing factors to the economic feasibility of an irrigation project.

A thorough analysis of gains and costs prior to implementing a supplemental system will provide a better idea of whether or not supplemental irrigation is suitable for a particular parcel of land.

Potential Benefits of Supplemental Irrigation:

When discussing opportunities for supplemental irrigation, it is important to note that the word 'potential' is inextricably linked to the word 'benefit'. So much depends on individual site conditions, crop type and irrigation system type that, without direct local research, crop response may be difficult to quantify. The costs of implementing these systems, however, are much more firmly quantifiable. Figure 1 outlines examples of average yield and moisture data which gives an idea of potential gains to be made through irrigation.

In general, potential gains of supplemental irrigation are as follows:

- Increased yield benefits (site/crop specific), including for forage seed crops
- Uniform germination which may lead to increased yield but also to improved crop quality and grade (i.e. better pricing for crop), as well as easier and earlier harvest conditions and likely reduced costs for drying grain
- For forage crops, there may be potential for an additional cut of high quality hay, as well as potential to extend the productive life of the forage stand through the avoidance of drought stress (forage crops are high moisture users and become drought stressed easily - problems with moisture reserve in an extended growing season can be eased with timely irrigation)

Published in Cooperation with
Peace Agricultural Adaptation Strategies Working Group

This and more fact sheets can be found at
www.bcgrain.com; www.peaceforageseed.ca; peaceforage.bc.ca

Figure 1. Examples of potential benefits for supplemental irrigation

Examples	Crop Type	Moisture Amount	Gain ***	Monetary Value
1	Canola*	100 mm added	16 bushels/acre increase in yield	\$174 gross revenue/acre
2	Wheat*	100 mm added	24 bushels/acre increase in yield	\$108 (CPSR) to \$160 (CWRS) gross revenue/acre
3	Barley*	100 mm added	32 bushels/acre increase in yield	Not calculated
4	Wheat	Enough to promote uniform germination	Shift in wheat grade from feed to CWRS	Increase of \$85/tonne
5	Tall Fescue Seed**	Under minimal moisture Under optimal moisture	200-900kg/ha 700-1500kg/ha	Not calculated

*estimates based on Alberta Agdex 100/561-1 Crop water use and requirements and actual crop response will vary with individual scenarios

**estimate based on Alberta Agdex 9860 Tall fescue seed production in western Canada

***once crop has reached full potential additional water will not increase the yield

Potential Benefits cont'd

- For forage seed crops, some of the above applies as well, and good moisture in the fall is essential for tillering that will produce seed heads in the spring; furthermore, depletion of spring soil moisture plays a major role in reduced yields for the second year - a problem which could be abated with irrigation (it should be noted that for forage seed crops there is little data on average potential crop response to moisture alone and potential gains cannot be firmly estimated without further data - see Fig. 1)

One way of determining the potential gain from irrigation is to evaluate the crop yields on a parcel of land over the last twenty years. It can be assumed that the highest yield on that parcel could be expected more often under irrigation, provided that weeds, disease, and fertility are well-managed. Excessive soil moisture saturation (water-logged or drowned soils) must also be prevented. An alternative approach is to use the examples in Fig. 1 and adjust the scenario accordingly with the help of a knowledgeable local producer and/or agronomist.

It is worth noting that even when the average moisture deficit is zero, there will still be moisture deficits about half the time, as there will be a moisture surplus, or sufficiency, the other half of the time. Therefore, supplemental irrigation should not be discounted in this case.

Capital Costs

The annualized capital costs for supplemental irrigation can be as much or higher than the annual operational (energy) costs. These costs can be broken down into five general categories: system; pipes; pumps; installation; and (depending on individual situations) financing.

1. Cost of Systems

It is important to keep capital costs down, and for this reason it could be advantageous to purchase a used center pivot system which is still functional. This reduces the investment risk, and since the system will be used at about one third the rate of common use in southern Alberta for field crops, it is likely to last longer. Used systems are available in Canada or in the northern USA. Where aquifers have become depleted, or where older systems have been replaced, some used systems have been sold for about 20% of the new price. Occasionally these systems lack some of the options of newer systems, but some do have low drift nozzles, swing extensions and other options.

Wheel move systems can be very economical to purchase, since many of these have been replaced by center-pivots and have become surplus. However, wheel-move systems are much more labor intensive than center-pivots using ten times as much labor.

Capital Costs cont'd

On the other hand, they can be very beneficial for use in odd-shaped fields and for higher value small-acreage crops.

Center pivots can range in cost from \$60,000 to \$140,000, depending on age and options, although some used systems have been available for as low as \$30,000. The advantage of center-pivots is that they can be operated and monitored remotely; however, of course, they cannot be repaired remotely.

2. Cost of Pipes

Six-inch aluminum pipe (used) has been advertised online (e.g. Kijiji) for \$3.75 per foot, or \$9000 for 2400 feet. Such pipe would be used for a supply pipe to bring water from source to the pivot. Sometimes larger pipe such as eight-inch diameter is required to meet the needs of the system. If buried, the costs of trenching need to be considered, but as long as pipes are drained before frost they can be buried at relatively shallow depths. In some cases the pipe can be on the surface of the ground if the pivot does not need to cross the pipe.

3. Cost of Pumps

Pump costs can vary greatly, depending on the size and whether they are powered by diesel or electricity. Electric power tends to be the least costly, but obtaining sufficient power to the pump can increase capital costs. The pivot itself will require power for around 10hp for the motors to drive the wheels of the pivot.

4. Cost of Installation

Costs of installation vary greatly, depending on the type of supply lines used, whether the water lines are buried or left on the surface, the distance from source to pivot, the type of pump used, installation of three-phase electrical power, etc. Each of these costs will be situation dependent, and must be investigated locally. In some cases, installation costs will be as great as the cost of the purchased system.

The biggest factor in the cost of irrigation is the capital cost of purchase and installation; therefore, the more that can be done to reduce these costs, the more feasible the system becomes.

5. Cost of Financing

In addition, the financial situation of the owner will play a role in determining the economics of supplemental irrigation. If money must be borrowed to purchase a system, then interest rates and cash-flow will be significant. If money is not borrowed, then the implications for taxes and opportunity costs should be considered. In some cases, purchasing more land may be a better option, while in other cases, where land is scarce and high-priced, irrigation may be a viable way of increasing production.

Operational (Energy) Costs

Energy costs vary depending on supplier, location, and amount used. In addition, fixed costs of energy supply can also be affected if larger transformers or three-phase power is introduced to the farm system.

Example

- ⇒ if energy cost is \$4.68 per 25mm/ac for a 100 ft lift; and
- ⇒ if water source is 300 ft below land parcel and 16 km horizontally from land parcel and water required is 100mm per acre; then
- ⇒ energy costs for lift would be \$32.70/acre to \$48.00/acre plus \$24.92 to pipe 16km from source

BC Hydro has an irrigation energy rate of \$0.0537/kwh, with a fixed cost of \$5.37 per KW of connected load (motors/pumps) per month. With a 40kw pump, this fixed cost equates to about \$220/month for 8 months. The size and capacity of the system, and the amount of water added per week will impact the KW requirements and the kwh used. The elevation requirement for pumping will impact the size of the pump required. Various online calculators can help provide a general estimate of the power requirements needed for an scenario you are proposing.



Wheel move, photo credit of flickr user Brad Smith

... committed to delivering Climate Action projects in the Peace Region.

Pricing

A quarter-section system that irrigates about 132 acres typically costs \$1300 to \$1500 per acre, excluding the cost of groundwater well construction, pumps and power units. Larger systems usually cost less on a per-acre basis, down to \$900 to \$1000 per acre.

Every parcel of land, every water and energy source, as well as the efficiency of every system, will be different; therefore, a detailed individual economic analysis is necessary before any decisions are made to purchase and install a system on a particular parcel of land.

Example: Costs and gains for a BC irrigation system with a 100 foot elevation

Costs

- \$3 to 18 per acre depending on energy source
- For electricity, operating cost of approximately \$3 per acre for 100mm water (Using the calculator at the bottom of the page <https://www.uaex.edu/environment-nature/water/irrigation.aspx>)
- Combined with fixed cost for interest and depreciation of \$75.00/acre and fixed cost to BC Hydro of \$11.00/acre
- Total cost in year where 100mm used would be \$90/acre for 132 acre pivot

Potential issues/costs: crop price changes; fertilizer and fungicide requirements increased

Gains

- Gross return of \$160 per acre for 100mm added; therefore **net return of \$70 per acre**
- **Note:** increased water needs do not add much to costs (e.g. \$93/acre for 200mm) though fixed costs remain the same even if water is not required that year (i.e. \$86/year for 0mm)
- Forages could require up to 350mm or more

Resources:

Alberta Ministry of Agriculture and Rural Development. 2011. *Irrigation system application efficiency values*. Agdex 563-1. Irrigation and Farm Water Division. Lethbridge, Alberta. Alberta Agriculture and Rural Development.

Bennett, D.R., Heikkila, R., Riewe, R.V., Oyewumi, O. and Harms, T.E. 2013. *Farm economic impacts of water supply deficits for two irrigation expansion scenarios in Alberta*. Canadian Water Resources Journal :210-222

Alberta Ministry of Agriculture, Food and Rural Development. 2005. *Tall Fescue Seed Production in Western Canada*. Agdex 127/15-3. [online] Available at: [http://www1.agric.gov.ab.ca/\\$Department/deptdocs.nsf/all/agdex9860](http://www1.agric.gov.ab.ca/$Department/deptdocs.nsf/all/agdex9860)

Kerr Wood Leidal Associates Ltd. 2016. *Evaluation of Irrigation Potential in the Peace Region*. [online] Available at: http://www.peaceforageseed.ca/pdf/research_updates/PC05-Evaluation-Irrigation-Potential-Peace-report.pdf

BC Ministry of Agriculture, Fisheries and Food. *Agriculture and Water in the Okanagan Basin*. [online] Available at: http://www.obwb.ca/fileadmin/docs/070510_Ted_vdGulik_Agriculture_Water.pdf

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Funding contributions also received from:



January 24, 2018



REPORT

To: Chair and Directors

Date: January 9, 2018

From: Deborah Jones-Middleton, Protective Services Manager and
Aden Fulford, GIS Coordinator

Subject: Locality Boundaries - Digital Road Atlas of BC

RECOMMENDATION(S):

That the Electoral Area Directors Committee recommend to the Peace River Regional District Board to adopt the Digital Road Atlas Locality Boundaries as defined boundaries within the Peace River Regional District.

BACKGROUND/RATIONALE:

On March 16, 2017 staff provided background information and the rationale for reviewing, potentially amending, and adopting the Digital Road Atlas Locality Boundaries. The Electoral Area Directors

Committee provided the following resolution:

“That the Electoral Area Directors’ Committee recommends to the Regional Board that the Electoral Area Directors review the Digital Road Atlas (DRA) map and consider amending the existing Provincial DRA Locality Boundaries to better represent community boundaries and that the amended map be brought back to the Electoral Area Directors’ Committee for final review and recommendation to the Board.”

On July 20, 2017 staff requested direction from the Electoral Area Directors regarding the Locality Boundaries.

On August 17, 2017 staff provided detailed maps of each Electoral Area to the Directors and have received no proposed boundary amendments to date.

Staff provided mapping for the Electoral Area Directors Round Table meetings held between October and December.

OPTIONS:

That the Electoral Area Directors Committee provide direction to staff.

STRATEGIC PLAN RELEVANCE:

- ☐ Ensure that the Solid Waste Management Plan is operating on a fiscally defensible basis.
- ☒ Ensure effective execution of Public Safety and Emergency Services initiatives.
- ☐ Foster Collaboration on services with municipalities and electoral areas.
- ☐ Establish a strategy for coordinated advocacy on identified issues.

January 24, 2018

Staff Initials:

Dept. Head:

J. Morgan

CAO:

Ch. Birk

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- ☐ Manage parks and trails in the region.
- ☐ Support the agricultural industry within the regional district.
- ☐ Not Applicable to Strategic Plan.

FINANCIAL CONSIDERATION(S):

At the March 16, 2017 Electoral Area Directors Committee meeting the following resolution was provided:

“That the Electoral Area Directors’ Committee recommends to the Regional Board that \$4,000 be allocated for advertising, community meetings to inform residents and meetings with emergency response agencies, regarding proposed changes to the Provincial Digital Road Atlas (DRA) Locality Boundaries.”

COMMUNICATIONS CONSIDERATION(S):

If the Board adopts the existing DRA locality boundaries, staff recommends that there be advertising through radio, newspapers, the Peace River Regional District website, and Facebook Page, directing residents to a series of viewable maps that provide reference to address points within the named locality on the website that displays the community boundaries.

If the Board wants to review and amend the locality boundaries, staff recommends that there be public meetings held in the areas they are considering amending the boundary and seek public input into the process. Staff would work with emergency response agencies and the DRA to implement required changes to the DRA. Once the amendments are completed there would be advertising as outlined in the previous paragraph

OTHER CONSIDERATION(S):

Direction to staff

Attachments: March 9, 2017 Community Boundaries Report



Peace River Regional District REPORT

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R-2

To: Electoral Area Directors Committee Date: March 9, 2017
From: Deborah Jones-Middleton, Protective Services Manager and
Aden Fulford, GIS Coordinator
Subject: **Community Boundaries**

RECOMMENDATION(S):

That the Electoral Area Directors Committee recommend to the Peace River Regional District Board to adopt the Digital Road Atlas Locality Boundaries as defined boundaries within the Peace River Regional District.

BACKGROUND/RATIONALE:

At the October 20, 2016 Electoral Area Directors Committee Meeting –the following resolution was made regarding Canada Post – Civic Addresses for Rural Residents –

“That a report outlining options to present to Canada Post to utilize community names found in the Provincial Digital Road Atlas, rather than “PRRD” as a community name, as they migrate to utilizing civic addresses rather than post box numbers for rural residents, as was recently done for Baldonnel and Two Rivers, be prepared with a copy of the letter being forwarded to Bob Zimmer, Member of Parliament for Prince George – Peace River – Northern Rockies.”

The Digital Road Atlas (DRA) is the single authoritative source of road data for the Province of British Columbia. The DRA contains locality boundaries - there are currently 81 defined Locality Boundaries documented within the PRRD.

Why is it important for the PRRD to adopt locality boundaries?

1) Emergency Services

Without clear locality boundaries the data utilized for dispatch of emergency response agencies may become degraded, potentially causing slower responses and confusion. 9-1-1 Emergency dispatch, Police and Ambulance currently use the DRA which contains locality boundaries that are used to describe geographic areas. These agencies also attach historic response information regarding incidents for future reference. The Regional District uses local area names when issuing Evacuation Alerts and Orders.

January 24, 2018

Staff Initials:

Dept. Head:

CAO:

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Adopting the DRA locality boundaries will aid in a faster more efficient dispatch of emergency services through the 9-1-1 Service and for Evacuation Alerts and Orders issued by the Regional District as clear locality boundaries will exist.

Note: Amending the current DRA locality boundaries will require consultation and consensus with the emergency response agencies. Staff has confirmed that each of these agencies will work with the Regional District if changes are required.

2) Canada Post & Parcel Delivery

Canada Post has changed mail delivery in the Baldonnel, Farmington, South Dawson, and Two Rivers rural areas to community mailboxes using civic addresses issued by the PRRD instead of Rural Routes as mailing addresses. With the exception of Baldonnel and Two Rivers, communities who have undergone this change have been named by Canada Post as “PRRD”, “Peace River Regional District” or “Peace River Regional District Elect D” rather than their community name such as “Farmington.” Further, courier companies who provide delivery to rural areas, have noted challenges in delivering parcels because of the confusion surrounding community names.

As more rural community mailboxes are installed, Canada Post will be converting from Rural Route addresses to 9-1-1 civic addresses. They are considering converting the Charlie Lake area in the next two years. Staff has discussed utilizing DRA locality boundaries with Canada Post and they are willing to work with the Regional District to the use of the DRA locality boundaries as they migrate future areas to civic addresses for postal addresses.

3) Community Identity

Rural residents relate to and are committed to their local area names. Many areas have community associations and community halls that are named after their community area.

When Canada Post changed addressing for the Farmington and South Dawson area instead of using the local area names they used “Peace River Regional District” or “Peace River Regional District Elect D” as Canada Post had not consulted with the Regional District on these changes. This generated numerous complaints from residents as they valued and identified with their local communities.

When Canada Post changed addressing for Baldonnel, and Two Rivers, Canada Post consulted the Regional District and these areas were able to retain their name in their address.

January 24, 2018

OPTIONS:

Option 1: Adopt the Digital Road Atlas Locality Boundaries as currently drawn.

Option 2: Review and consider amending existing DRA Locality Boundaries and adopting the DRA as amended.

Option 3: Provide further direction to staff.

STRATEGIC PLAN RELEVANCE:

Emergency Call Answer & Fire Dispatch

- 1.2) The PRRD will provide cost effective access to protective and emergency services including 911 call answer services by 2018 to its residents.
- 1.2.4) Explore mandatory civic addressing.

FINANCIAL CONSIDERATION(S):

Option 1: \$3,000 for advertising/public education

Option 2: \$4, 000 for public meetings and advertising/public education

COMMUNICATIONS CONSIDERATION(S):

If the Board adopts the existing DRA locality boundaries, staff recommends that there be advertising through radio, newspapers, the Peace River Regional District website, and Facebook Page, directing residents to a series of viewable maps that provide reference to address points within the named locality on the website that displays the community boundaries.

If the Board wants to review and amend the locality boundaries, staff recommends that there be public meetings held in the areas they are considering amending the boundary and seek public input into the process. Staff would work with emergency response agencies and the DRA to implement required changes to the DRA. Once the amendments are completed there would be advertising as outlined in the previous paragraph.

OTHER CONSIDERATION(S): none

Attachments:

- A master full size map will be provided to each director at EADC.

January 24, 2018



REPORT

To: EADC

Date: November 29, 2018

From: Chris Cvik, CAO

Subject: Policy and Procedure for Electoral Area Specific Issues

RECOMMENDATION(S):

1. That the Electoral Area Directors Committee (EADC) recommend to the Regional Board that the Policy for Electoral Area Specific Tasks; which outlines the process to request a task of the Electoral Area Manager and defines the template to be used for letters from an Electoral Area Director, be approved.
2. That the Electoral Area Directors Committee (EADC) recommend to the Regional Board that the revised Terms of Reference (TOR) for the Electoral Area Director's Committee be approved.

BACKGROUND/RATIONALE:

Given that the Electoral Areas have a full-time manager, it was felt that a policy be developed to assist the Manager and Electoral Area Directors to understand when items need to go to the Board for approval versus what can be actioned directly by the Electoral Area Manager based on direction from an electoral area director.

DISCUSSION:

The draft Policy contains some guiding principles including:

- The Electoral Area Manager can issue letters or work on tasks directed by an electoral area director when the nature of the request is specific to only one Electoral Area and does not require more than two (2) hours of time from other staff.
- Issues that are common to more than one Electoral Area will continue to be forwarded to the Board for approval if there are specific recommendations or action items.
- Electoral Area specific communication/letters cannot be contrary to an established position of the Board.
- Electoral Area specific communication will be issued on plain white paper without the PRRD letterhead and be addressed at the top "From the Office of Electoral Area XX".

If the Board approves the Policy, the Terms of Reference for the Electoral Area Directors' Committee also needs to be amended to reflect that actions specific to a single electoral area do not need to be ratified by the Regional Board and can be actioned by the Electoral Area Manager.

January 24, 2018

Staff Initials:

Dept. Head:

CAO:

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OPTIONS:

1. That the Electoral Area Directors' Committee (EADC) recommend that the Board approve the Policy to address Electoral Area Specific Tasks.
2. That the Electoral Area Directors' Committee (EADC) recommend that the Board approval of the revised Terms of Reference (TOR) for the Electoral Area Director's Committee.
3. That the Electoral Area Directors' Committee (EADC) recommend changes to the draft Policy before submitting to the Board for approval.

STRATEGIC PLAN RELEVANCE:

- ☐ Ensure that the Solid Waste Management Plan is operating on a fiscally defensible basis.
- ☐ Ensure effective execution of Public Safety and Emergency Services initiatives.
- ☐ Foster Collaboration on services with municipalities and electoral areas.
- ☒ Establish a strategy for coordinated advocacy on identified issues.
- ☐ Manage parks and trails in the region.
- ☐ Support the agricultural industry within the regional district.
- ☐ Not Applicable to Strategic Plan.

FINANCIAL CONSIDERATION(S): N/A

COMMUNICATIONS:**OTHER CONSIDERATION(S):**From the Board Approval Policy and Procedure Template**1. POLICY:**

A policy is a guiding principle that governs the administration of the PRRD, reflecting the vision, goals and objectives of the PRRD. Policies reflect service level (budget) and/or key terms of service. The PRRD Board approves and defines all policies.

2. PROCEDURE

The procedure is an approved process to enforce or administer rules established by policy. Procedure outlines a logical process for administrative staff to follow. The CAO, or designate, is assigned authority to approve "procedural" changes within each of approved policies of the Board.

January 24, 2018

Peace River Regional District Statement of POLICY and PROCEDURE			
Department:	Administration	Policy No.	
Section:	Electoral Area Directors	Issued:	
Subject:	Electoral Area Communication	Effective:	
Board Resolution # and Date:	Policy for Electoral Area Specific Tasks	Page:	1 of 3
		Replaces:	
Issued by:		Dated:	
Approved by:			

1 POLICY

- 1.01 Requests by an Electoral Area Director for support on electoral area specific tasks (i.e., projects, communication, etc.) are to be discussed:
 - a) at an Electoral Area Directors Meeting (EADC) or Rural Budgets Administration Committee (RBAC) Meeting; or
 - b) when a project or communication is time sensitive, the electoral area director wanting to issue a communication or request work on an electoral area specific initiative shall seek the support of the other three electoral area directors. (This support can be obtained electronically or via telephone.)
- 1.02 If support is provided by the majority of the electoral area directors, the electoral area director can direct the Electoral Area Manager to process the communication or work on the specific task.
- 1.03 Issues that are common to more than one electoral area must be forwarded to the Board for approval before the Electoral Area Manager or other staff actions the items.
- 1.04 Electoral area specific communication or initiatives cannot be contrary to an established position of the Board.
- 1.05 Electoral area specific communication will be issued on plain white paper without the PRRD letterhead and be addressed at the top as "From the Office of Electoral Area XX".
- 1.06 All communication using the Peace River Regional District logo must to be approved by the Board.
- 1.07 Communication and project task requests resulting in more than two (2) hours of staff time must be approved by the Board. This does not apply to the Electoral Area Manager's time.

January 24, 2018

Peace River Regional District Statement of POLICY and PROCEDURE			
Department:	Administration	Policy No.	
Section:	Electoral Area Directors	Issued:	
Subject:	Electoral Area Communication	Effective:	
Board Resolution # and Date:	Policy for Electoral Area Specific Tasks	Page:	2 of 3
		Replaces:	
Issued by:		Dated:	
Approved by:			

2 PURPOSE

- 2.01 The Purpose of this “Statement of Policy and Procedure” is to:
- a) outline the processes that must be adhered to for the electoral area directors to direct work to the Electoral Area Manager or other Peace River Regional District staff; and
 - b) define the template that will be used for letters from the Electoral Area Directors.

3 SCOPE

- 3.01 The scope applies to communication and work tasks requested or issued by the Electoral Area Directors.

4 RESPONSIBILITY

- 4.01 The Electoral Area Manager is responsible to ensure the Policy is adhered to.

5 DEFINITIONS

- 5.01 Time Sensitive – An issue is time sensitive if a response is required before the next regularly scheduled EADC or RBAC meeting.
- 5.02 Electoral Area Specific – Subject of any communication or action that is unique to a single electoral area only.

6 REFERENCES and RELATED STATEMENTS of POLICY and PROCEDURE

- 6.01 Bylaw No. 1853, 2009 Rural Budgets Administration.
- 6.02 Electoral Area Directors Committee (EADC) Terms of Reference.

January 24, 2018

**Peace River Regional District
Statement of POLICY and PROCEDURE**

R-3

Department:	Administration	Policy No.	
Section:	Electoral Area Directors	Issued:	
Subject:	Electoral Area Communication	Effective:	
Board Resolution # and Date:	Policy for Electoral Area Specific Tasks	Page:	3 of 3
		Replaces:	
Issued by:		Dated:	
Approved by:			

7 PROCEDURE

- 7.01 When specific electoral areas communication initiatives are approved by EADC or RBAC, the Electoral Area Director will work with the Electoral Area Manager to finalize and distribute the communication.

January 24, 2018



DRAFT

Department: Administration

R-3

POLICY STATEMENT

ELECTORAL AREA DIRECTORS' COMMITTEE

The Electoral Area Directors' Committee membership shall be elected representatives from Electoral Area 'B', Electoral Area 'C', Electoral Area 'D' and Electoral Area 'E'.

TERMS OF REFERENCE

1. The Electoral Area Directors' Committee will meet to address issues of a rural nature.
2. Meetings will be open to the public.
3. The Electoral Area Directors' Committee will be chaired by an Electoral Area Director elected by the committee participants.
4. The Electoral Area Directors' Committee will hold meetings the third Thursday of each month or at the call of the Chair.
5. Electoral Area Directors' Committee meetings will be funded through the Legislative - Electoral Area budget under "Electoral Area Business." Only Electoral Area Directors will be compensated for attending meetings.
6. Agenda items for the Electoral Area Director's Committee meetings will include items that are:
 - a) referred to the meeting by resolution of the Regional Board; or
 - b) of a purely rural nature.
7. Items for the regular agenda must be provided to Administration by **noon the Friday 2 p.m. the Thursday** prior to the scheduled meeting.
8. All recommendations of the Committee shall be determined by majority vote of the Electoral Area Directors.
9. Staff will prepare minutes and forward recommendations to the Regional Board for consideration.
10. Committee recommendations will be ratified by the Regional Board prior to staff action being undertaken, unless previously authorized by a referring Board resolution **or is specific to a single Electoral Area as per the Policy for Electoral Area Specific Issues.**



REPORT

To: Electoral Area Directors Committee

Date: January 17, 2018

From: Erin Price, Bylaw Enforcement Officer

Subject: Bylaw Enforcement Quarterly Update

RECOMMENDATION(S):

That the Electoral Area Directors receive the January 17, 2018 Bylaw Enforcement Quarterly Update.

BACKGROUND/RATIONALE:

Attached is a table summarizing the enforcement files; current to December 31, 2017.

Please keep in mind that for personal reasons the Bylaw Enforcement Officer missed 38 work days between October 11, 2017 and January 1, 2018.

To date, there are 28 Bylaw Enforcement Files in total (Active and Inactive).

Active Files - shaded blue:

There are 24 active enforcement files.

- No new since the last report.
- 1 file was granted an enforcement order by the courts but may be cleaned up by a family friend - PRRD is working with this family friend. Several attempts have been made to contact Mr. Widdicombe, via phone and fax, asking for a written timeline of progress on the property. This is in response to his request for an extension.
- 1 file has an RFP going out for demolition of the structures once an entry warrant is obtained. Judge Adams required a longer notice period to the landowners and a safety plan to the satisfaction of the RCMP. I met with RCMP on November 22, 2017, they have opened a "keeping the peace" file and will attend the property on the approved day to ensure the safety of all attendees.

Inactive or On Hold Files- shaded green:

There are 4 inactive or "on hold" files.

- 1 has had an extension revision from the ALC to July 23, 2018. The agent for the landowner has been in contact with the PRRD North Peace Land Use Planner and the planning report is nearing completion.
- 1 has applied to the Board of Variance.
- 1 has applied for re-zoning and variances; although a meeting to address the remaining contraventions that are not covered in the application was cancelled. The planning report is moving ahead without further input from the landowner.
- 1 has made a second application for re-zoning and has amended the application. The planning department is reviewing the application.

January 24, 2018

Staff Initials: *EP*

Dept. Head: *Bruce Simard* CAO:

Ch. Birk

Page 1 of 2

OPTIONS: n/a

STRATEGIC PLAN RELEVANCE:

- ☐ Ensure that the Solid Waste Management Plan is operating on a fiscally defensible basis.
- ☐ Ensure effective execution of Public Safety and Emergency Services initiatives.
- ☐ Foster Collaboration on services with municipalities and electoral areas.
- ☐ Establish a strategy for coordinated advocacy on identified issues.
- ☐ Manage parks and trails in the region.
- ☐ Support the agricultural industry within the regional district.
- ☒ Not Applicable to Strategic Plan.

FINANCIAL CONSIDERATION(S): n/a

COMMUNICATIONS CONSIDERATION(S): n/a

OTHER CONSIDERATION(S): n/a

Attachments:

Enforcement Summary - December 31, 2017

January 24, 2018

ACTIVE FILES

Bylaw Enforcement File Summary December 31, 2017

R-4

	YEAR	FILE NO.	LAND OWNER	DATE OPEN	COMPLAINT DESCRIPTION	STATUS	CIVIC ADDRESS LEGAL DESCRIPTION	ELECTORAL AREA
1	2007	91	WHITFORD, Jerry	27-Apr-07	Junkyard in residential zone	Met Mr. Whitford at property on Apr. 28, 2017. No Change. Will contact him with more information.	12498 256 RD Lot 1 & 2, Plan 27341, Part SW-15-86-19	B
2	2007	203	CLAY, Martin & Wendy	17-Apr-07	Concern regarding a recycling and salvage yard operating in Rolla not in compliance with zoning	Aug.31.17- clean up has started on the property with huge improvements.	5209 Rolla RD Parcel A (\$22581), Blk 1, Plan 10648, 32-79-14; and Parcel B (T18682), Blk 1, Plan 10648, 32-79-14; and Lots 5,6, 7 & 10, Bk1, Pl 10648, 32-79-14	D
3	2010	64	LEFFERSON, Allan	12-Apr-10	Salvage yard in A-2	March13,2015- I spoke to Tammy from Richmond Steel. They are planning to go when it dries up- March 2016 activity on property however not likely to be completely cleaned or remain cleaned up. On April 20/17 EADC requested followup on this property.	13492 & 13522 Old Edmonton Hwy Lot 1, PL 28960, 21-77-14	D
4	2010	107	SAMUEL RANCH LTD	19-Jul-10	3 homes	ALC has opened a C&E file and will advise of any steps they're taking	13805 Rose Prarie RD Lot 16, Plan 3986	B
5	2011	207	LUNDQUIST, Lanny	15-Nov-11	Unsightly Premises, 20-30 vehicles and junk yard	There has been some improvement, Mr. Lundquist has sold the tractor that was outside the fence.	9336 Willow RD Lot 2 & 3, Blk 4, 35-83-19 Plan 14402	C
6	2012	210	MARTIN, Brian	12-Oct-12	Salvage yard in A-2	Sent new owner a letter. Will follow up after May 23, 2017 to confirm arrangements made for compliance.	15927 Prespatou RD NE 1/4 30-86-19	B
7	2013	91	SHEARS, John	23-May-13	unsightly premises	noticeable improvement, lots 7 & 8 are clean, lot 6 has a renter and is a work in progress. Oct. 3/17- driving by noticed may be much cleaner. Need to plan a site visit	7617 269 RD Lot 6, 7 & 8 PL 13235, 26-83-19	C
8	2013	102	NORNBERG, Neil	3-Jun-13	Salvage yard in R-4 Zone	Aug.31.17-Owner is going to Edmonton for lung specialist. Will call salvage company when he returns. I will follow up around Sept. 15,2017	1728 210 RD Lot 2, Plan BCP30608 28-78-15	D

January 24, 2018

ACTIVE FILES

	YEAR	FILE NO.	LAND OWNER	DATE OPEN	COMPLAINT DESCRIPTION	STATUS	CIVIC ADDRESS LEGAL DESCRIPTION	ELECTORAL EA
9	2013	206	MAXWELL, Joe	4-Nov-13	Storage of many old vehicles	RCMP reported a person, impersonating a PRRD Bylaw Officer, went to Mr. Maxwells place of employment and complained to his supervisor that buses could not turn around on Fell Rd. I reported that it was not a PRRD employee.	13305 Fell RD Lot 2, Plan BCP38667 19-84-19	C
10	2013	207	WESTERGAARD, William	4-Nov-14	Storage of many old vehicles	have not looked at file yet	12937 Cherry RD Lot 1, Plan BCP 38667 19-84-19	C
11	2014	219	BLAIR, Roxann	17-Sep-14	Junk yard in R-4 zone	request for tipping fee relief approved; sign posted	3992 Blair RD DL 2083	E
12	2014	245	EVENSON, David	20-Oct-14	Junk yard in R-4 zone	ABC Recycling left a "metal only" container which Mr. Evenson filled. Mr. Evenson told ABC not to bring another bin for the garbage.- Sept.29/15 sent warning ticket and letter. On April 20/17 EADC requested followup on this property.	1372 210 RD Lot 5, 27-78-15 Plan 11473	D
13	2015	250	SMITH, Frank & John (both deceased)	6-Nov-15	Dangerous buildings & contents. Vacant land & buildings for years-owners both deceased. Strangers come to dump garbage and vandalize	Sept. 1/17- potential purchaser called with update, lawyer is drafting documents	7114 Jorgensen Sub Lots 20-23, S31, T78, R15, W6M, PR, PL 13534	D
14	2015	251	KILFOYLE, Robert	6-Nov-15	3 Sheds located within Interior Side Parcel Setbacks	DVP approved at June 22, 2017 RB meeting, sheds moved out of setback. DVP drainage plan at issue	12278 Oak Ave. Lot 7, Block 5, S2, T84, R19, W6M, PRD, PL 15012	C
15	2015	265	Dr. BADENHORST	24-Nov-15	3 dwellings on .63 acres, no BP's, ALR Land	DVP refused at Dec. 9, 2016 RB Meeting. BP issued for the 2 structures, site plan shows they will be moved out of the setback.	8931 Old Fort Loop Lot 7, Bk 2, DL 418, Cariboo Situated in the PRD, PL 18222	C
16	2016	99	BASTION HOLDINGS LTD	12-May-16	3 dwellings in R-4 zone	they sent a FOIPPA request. Need to follow up with Corporate Officer then make contact again	5979 Hillview Sub. PCL B, DL 1910, PL PGP35656	E
17	2016	213	WILLIAMS, Darrell	9-Sep-16	Disobey SWN, Restrictive Covenant and Consent Order	Have requested RCMP assistance with a Safety Plan	9813 River Drive Lot 1, BK 2, S18, TP83, R18, W6M, PR, PL 14194	C
18	2016	253	PUTRUS, Peter	21-Nov-16	too many dwellings, building in setback, garbage	did a site visit with the local rep for the owner, will follow up with letter. Owner will send a plan for compliance	2016 Taylor Frtg. RD PCL A (PJ28394), S24, TP82, R18, W6M, PRD, Plan 3039	D

January 24, 2018

ACTIVE FILES

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	YEAR	FILE NO.	LAND OWNER	DATE OPEN	COMPLAINT DESCRIPTION	STATUS	CIVIC ADDRESS LEGAL DESCRIPTION	ELECTORAL AREA
19	2017	79	CAMPBELL, Mary	18-Apr-17	no BP, too many dwellings, shop/suites too close to property line	Opened file, sent initial letter. Son contacted me I requested proof of power of attorney by Sept. 30- not received- will try a phone call to Ms. Campbell	9473 River Drive Lot A, S18, TP83, R18, W6M, PRD PL EPP 14982	C
20	2017	87	REIMER, William & Anna	26-Apr-17	too many dwellings, garbage and old vehicles	opened file	13097 260 RD NE1/4, S31, TP86, R19, W6M, PRD	B
21	2017	116	FI PORTFOLIO INC.	12-Jun-17	No BP, or DP	deadline has passed. Will issue a warning ticket	10755 Finning Ftg. Rd Lot 1, S2, TP 84, R19, W6M, PRD, PL 34500	C
22	2017	128	CNL RESOURCES LTD	22-Jun-17	Hazardous waste facility licensed to accept leachable toxic waste and specializing in Naturally Occurring Radioactive Material management and decontamination operating on I-1 land	Nov. 17, 2017- sent request for legal opinion to lawyer	9676 Swanson Street Lot 8, S33, TP83, R18, W6M, PR, PL 23652	C
23	2017	189	BOUTILIER, Eric	11-Aug-17	Construction without building permit	posted SWN and issued Bylaw Notice Warning Ticket No. PRRD 00141	No Civic Issued Lot 1, S20, TP 84, R19, W6M, PRD, PL EPP 72551	C
24	2017	200	CYR, Lucien	1-Sep-17	HBB contrary to Regs, 3 sheds in setbacks	Site visit and plan for compliance received	12274 Oak Avenue Lot 6, Block 5, S2, TP 84, R19, W6M, PR, PL 15012	C

January 24, 2018

INACTIVE FILES

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Bylaw Enforcement File Summary December 31, 2017

R-4

	YEAR	FILE NO.	LAND OWNER	DATE OPEN	COMPLAINT DESCRIPTION	STATUS	LEGAL DESCRIPTION	ELECTORAL AREA	DATE PLACED ON INACTIVE LIST
1	2011	194	GOERTZ, Howard-sold to WARD	7-Dec-11	Worker Camp	ALC gave new owner WARD extension until July 23/18. Our TUP is on hold until ALC conditions are met. Site inspection on Mar.16.2017. Sent email to ALC Jul.18/17 requesting confirmation if ALC requirements have been met	Block A, District Lot 1307	B	11-Mar-15
2	2016	111	AITCHISON, Kevin	31-May-16	building in setback	Applied to the Board of Variance on Jan.10, 2017	8931 River Dr Lot 8, Bk 4, S18, TP83, R18, W6M, PRD, PL14194	C	10-Jan-17
3	2016	97	HANEY, Darryl	9-May-16	HBB, BP, and Zoning contraventions on 3 parcels	Rezoning and DVP applications have been received and paid for.	8340, 8306 Micro Sub & 1080 210 RD Lots 1&2, S26, TP 78, R15, PL PGP46412 & PCL A (BNG a Consolodation of Lots 3&4 See BB1974913) S 26, TP 78, R15, PL 12184	D	17-Mar-17
4	2015	103	GARDNER, Robert	6-May-15	Oilfield equipment storage on A2 land	PRRD received a new application to re-zone to I-1	9819 240 RD PCL A (46726M), 19-83-18, W6M PR, EXC PL 20464	C	5-Oct-17

January 24, 2018

CLOSED FILES

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Bylaw Enforcement File Summary December 31, 2017

R-4

	YEAR	FILE NO.	LAND OWNER	DATE OPEN	COMPLAINT DESCRIPTION	STATUS	LEGAL DESCRIPTION	ELECTORAL AREA	DATED CLOSED
1	2009	96	MEEK, Faye & BEEBE, Brandy	10-Jul-09	Non-farm use in ALR & commercial use in A-2 zone	re-zone approved at Oct. 12, 2017 RB meeting	Hwy 97N and 269 Rd in FSJ Pt NE 1/4 3-84-19	C	12-Oct-17
2	2017	264	AKULENKO, Daniel	11-Dec-17	construction of an industrial water plant	PRRD does not regulate dugouts. Gave complainants MOE contact information.	17536 Inga Lake RD Lot 2, S6, TP88, R23, W6M, PRD, PL EPP 14080	B	11-Dec-17
3	2017	269	HALLIDAY, Frank	13-Dec-17	sewer being dumped	PRRD does not regulate sewer, referred complainant to Northern Health	13003 Erye Rd Lot 2, S19, TP84, R19, W6M, PRD, PL 25672	C	13-Dec-17
4	2017	270	SCHECK, Theodore	14-Dec-17	garbage and junk on road	PRRD has no authority on MOTI ROW. Suggested complainant contact MOTI	444 Briar Ridge RD Lot 1, S33, TP77, R14, W6M, PRD, PL 25409	D	14-Dec-17

January 24, 2018



REPORT

To: Electoral Area Director's Committee

Date: Jan 10, 2018

From: Paulo Eichelberger, General Manager of Environmental Services

Subject: North Pine Tower – Next Steps for Usage

RECOMMENDATION(S):

That the Electoral Area Directors' Committee recommends to the Regional Board that staff be authorized to negotiate agreements with secondary users currently renting or intending to rent space on the North Pine Tower.

BACKGROUND/RATIONALE:

In 2017, the Regional Board resolved to discontinue the provision of TV services via North Pine Tower. Given that the North Pine Tower remains an asset of the PRRD and revenue from taxation is no longer collected for the function as of January 1, 2018, maintenance of the tower and annual lease of the tower location/access must be paid for through other means.

Currently, the tower provides a secondary function for residential users:

- One user on the tower, providing internet services to 80+ residents.
- A second potential user, a public radio station, has approached the Regional District to also rent space and stand ready to negotiate an agreement with the PRRD and install their service. This station would be broadcasting to area residents.

Below is a breakdown of expected costs and income for the North Pine Tower:

2018 income:

- Internet provider -was \$100/month (\$1200/year) in 2017. Contract to be renewed this year.
- Public radio station – rent to be negotiated

2018 expenses:

- \$2,500 – annual lease to landowner (expires 2019)
- \$1,100 – power (estimated)
- \$300 – insurance
- \$500 – admin fees
- \$1,000 – maintenance (estimated)

At minimum, the rental fee(s) for the year will need to cover \$5,400 in expenses, based on the above figures. It would be possible to rent space out to additional businesses that could provide services to the area residents however this would be dependent on interest and acceptable loading on the tower. Additionally, there is still the possibility of selling the tower to another service provider and re-assigning any rental agreements to that provider.

January 24, 2018

Staff Initials:

Dept. Head:

PA Eichelberger

CAO:

Chris Burk

Page 1 of 2

ALTERNATIVE OPTIONS:

Option 1: That the Electoral Area Directors approve the recommendation

Option 2: That staff be authorized to issue a public expression of interest to potential users for rental of space on North Pine tower.

Option 3: That staff be authorized to pursue options for sale of the North Pine Tower to another provider.

Option 4: That staff be authorized to issue a request for quote to dismantle and remove the North Pine Tower.

Option 5: That the Directors provide alternate direction.

STRATEGIC PLAN RELEVANCE:

- ☐ Ensure that the Solid Waste Management Plan is operating on a fiscally defensible basis.
- ☐ Ensure effective execution of Public Safety and Emergency Services initiatives.
- ☐ Foster Collaboration on services with municipalities and electoral areas.
- ☐ Establish a strategy for coordinated advocacy on identified issues.
- ☐ Manage parks and trails in the region.
- ☐ Support the agricultural industry within the regional district.
- ☒ Not Applicable to Strategic Plan.

FINANCIAL CONSIDERATION(S):

- Operating reserve of \$42,085 (as of Oct 2017) exists in case maintenance goes up or a decision is made to dismantle the tower. It is currently unknown what the cost of tower removal and site remediation will be.
- Currently the tower costs the PRRD approximately \$5,400/year.

COMMUNICATIONS CONSIDERATION(S):

None at this time.

OTHER CONSIDERATION(S):

None at this time.

January 24, 2018



REPORT

R-6

To: Electoral Area Directors Committee

Date: January 18, 2018

From: Bruce Simard, General Manager of Development Services

Subject: Municipal Participation in Planning

RECOMMENDATION(S):

1. That the Electoral Area Directors' Committee recommends to the Regional Board that the amended cost-sharing and land use presentation dated January 18, 2018 to the City of Dawson Creek, City of Fort St John, Village of Pouce Coupe, District of Taylor, District of Chetwynd, District of Hudson's Hope, and District of Tumbler Ridge, regarding "Cost Sharing for Planning and Land Use Management" be approved and that the following documents be approved as supplemental background information to the presentations:
 - the detailed "Backgrounder"; and
 - the Planning Institute of BC Brochures - *What is planning? What do planners do?*.
2. That the Electoral Area Directors' Committee recommends to the Regional Board that the cost-sharing and land use presentations to the municipalities be completed by the end of June 2018.
3. That the Electoral Area Directors' Committee recommends to the Regional Board that the Electoral Area Directors be approved to attend each municipal presentation.

BACKGROUND/RATIONALE:

At the October 19, 2017 meeting, the EADC considered the first draft of presentations to communities for discussion about Municipal Participation in Planning.

From feedback provided by Directors a second draft was prepared for consideration. This draft was only completed for the City of Dawson Creek presentation as an illustrative of the changes that would be included in all other presentations.

The proposed map areas for the 75% and 50% options have also been included because there seemed to be some unresolved discussion about the proposed areas.

Also included is the detailed Backgrounder document which was considered by the Regional Board as the basis for making the presentations. This information would also be provided to the municipalities when the presentation is made.

An information brochure from the Planning Institute of BC is also included, which provides an overview of what is planning and what planners do.

Staff Initials:

Dept. Head:

Bruce Simard
January 24, 2018

CAO:

Chibrik

Page 1 of 2

OPTIONS:

1. That the Electoral Area Directors approve the presentation and direct staff to schedule meetings by no later than June 2018.
2. Prove alternate direction to staff regarding the content and timing of the presentations.
3. Direct staff to abandon these presentations and continue municipal participation in planning as it is now.

STRATEGIC PLAN RELEVANCE:

- ☐ Ensure that the Solid Waste Management Plan is operating on a fiscally defensible basis.
- ☐ Ensure effective execution of Public Safety and Emergency Services initiatives.
- ☒ Foster Collaboration on services with municipalities and electoral areas.
- ☐ Establish a strategy for coordinated advocacy on identified issues.
- ☐ Manage parks and trails in the region.
- ☐ Support the agricultural industry within the regional district.
- ☐ Not Applicable to Strategic Plan.

FINANCIAL CONSIDERATION(S):

If the municipalities opt out of the planning function, the Electoral Area Directors will be responsible for funding the planning function. Attached are some scenarios illustrating the impact(s).

COMMUNICATIONS CONSIDERATION(S):

In preparation for presentations to communities, the CAOs will be consulted regarding timing and whether there are any additional questions they may want addressed at the presentation.

OTHER CONSIDERATION(S):

None.

Attachments:

- a) Presentation – Cost Sharing for Planning and Land Use Management (City of Dawson Creek as illustrative)
- b) Proposed map areas for 75% participation option for each community
- c) Proposed map areas for 50% participation option for each community
- d) Backgrounder – Cost Sharing Part 14 Services, *Local Government Act* Section 381
- e) PIBC Brochure – *What is planning? What do planners do?*

R-6



PEACE RIVER REGIONAL DISTRICT

Cost Sharing for Planning & Land Use Management

January 24, 2018

diverse. vast. abundant.



Agenda

1. Planning Areas
2. LGA (Part 14): Planning Services
3. Municipal Participation in Rural Planning: Bill 14
4. History 2010-2017
5. Participation Options



January 24, 2018



What is Planning

Planning is systematic decision-making that leads to informed action.

Community planning, in particular, is an evolving process unique to each community that envisions and shapes where and how people want to live, work and play.

Examples are: plans, policies, regulations, guidelines, etc. that attempt to balance the aspirations and needs of people, communities, environment, and economy.

Summarized from: "What is Planning? What do Planners Do?", Planning Institute of British Columbia
<https://www.pibc.bc.ca/sites/default/files/PIBC%20FACT%20SHEET%20What%20is%20planning%20July%202.pdf>



How is Planning Guided

- Planning is guided by a community developed framework that is a reference used by decision makers (the Regional Board) to undertake actions in the present and the future, and to respond to ongoing changes in the community.
- A primary tool is the Official Community Plan Bylaw:
 - 471** (1) An official community plan is a statement of objectives and policies to guide decisions on planning and land use management, within the area covered by the plan, respecting the purposes of local government.
- Effect of Official Community Plan:
 - 478** (1) An official community plan does not commit or authorize a municipality, regional district or improvement district to proceed with any project that is specified in the plan.
 - (2) All bylaws enacted or works undertaken by a council, board or greater board, or by the trustees of an improvement district, after the adoption of
 - (a) an official community plan, or
 - (b) an official community plan under section 711 of the *Municipal Act*, R.S.B.C. 1979, c. 290, or an official settlement plan under section 809 of that Act, before the repeal of those sections became effective,**must be consistent with the relevant plan.**



LGA –*Management of Development* (Part 14)

List of Planning Services Available under Part 14

Services provided by the PRRD

- Official Community Plans
- Zoning Bylaws
- Public Hearings & Public Notifications
- Development Approval Procedures
- Board of Variance
- Development Permit Areas
- Development Variance Permits
- Temporary Use Permits
- Application Fees
- Development Cost Charges
- School Site Acquisition Charges
- Subdivision Servicing Regulations
- Parking & Loading Regulations

Services NOT provided by the PRRD

- Advisory Planning Commission
- Housing Agreements
- Run-off Control
- Regulation of Signs
- Screening & Landscaping Regulations
- Farm Bylaws
- Tree Cutting Permits
- Development Works Agreements
- Site Profile Assessments



Municipal Participation in Rural Planning Bill 14, August 30, 2000

- In August 2000, the LGA was amended to address how municipalities could participate and vote on Electoral Areas.
- The overall objective of the change was to:
 - Encourage agreements between a municipality and the Regional District with respect to the level of participation in electoral area planning by the municipality
 - To reduce conflict between municipalities and the electoral area.
 - Emphasize the need to encourage co-operative planning between the municipality and the electoral area.



Municipal Participation in Rural Planning

Bill 14, August 30, 2000

- Bill 14 is consistent with recommendations by Dr. Robert L. Bish which emphasized the need for establishing fair voting rules among rural and municipal participants.
- Bill 14 recognizes the benefits of participation to individual municipalities is a matter that is best judged locally, based on the specifics of the situation.
- Municipal participation is based on the view that planning benefits all areas, not just the electoral area (i.e. good planning benefits the region as a whole).



Municipal Participation in Rural Planning Bill 14, August 30, 2000

Selected provisions of Bill 14 include:

- Greater flexibility with opportunity for multi-year contracts
- Clarify options for cost sharing including a range from partial to full participation
- Contract start anytime
- Clarify rules for opting-out - municipalities must notify PRRD by August 31 for opting out (or changes) in the following year
- Clarification about voting on participation agreements



Municipal Participation History 2010-2017

	Opt-in (no contract)
	100% participation (per capita contract)
	75% participation (portion of requisition)
	50% participation (portion of requisition)
	Opt-out

Municipality	2010	2011	2012	2013	2014	2015	2016	2017
Chetwynd	Opt-in	Opt-in	Opt-in	Opt-in	Opt-in	Opt-in	Opt-in	Opt-in
Dawson Creek	Opt-in	Opt-in	Opt-in	Opt-in	Opt-in	Opt-in	Opt-in	Opt-in
Fort St John	Opt-in	Opt-in	Opt-in	Opt-in	Opt-in	Opt-in	Opt-in	Opt-in
Hudson's Hope	Opt-in	Opt-in	Opt-in	Opt-in	Opt-in	Opt-in	Opt-in	Opt-in
Pouce Coupe	Opt-in	Opt-in	Opt-in	Opt-in	Opt-in	Opt-in	Opt-in	Opt-in
Taylor	\$3,177	Opt-in	Opt-in	Opt-in	Opt-in	Opt-in	Opt-in	Opt-in
	50%							
Tumbler Ridge	0	0	0	0	0	Opt-in	Opt-in	Opt-in



Participation Options for 2019 and Beyond

Starting Point For Discussion

	Participation Level	Description
Option# 1	Opt-in (no contract)	Full Planning Area
Option# 2	Partial 75% of requisition (contract)	Fringe OCP Area* (*except for Hudson's Hope & Tumbler Ridge)
Option# 3	Partial 50% of requisition (contract)	Rural Fire Protection Area* (*except for Hudson's Hope & Tumbler Ridge)
Option# 4	Opt-out	No Participation



Participation Options

2017 Budget

2017 Requisition	Participation Level			
\$765,012.00	#1 - Opt-in	#2 - Partial	#3 - Partial	#4 -Opt-out
	100%	75%	50%	
Chetwynd	\$16,316.00	\$12,237.00	\$8,158.00	0
Dawson Creek	\$65,519.00	\$49,139.25	\$32,759.00	0
Fort St John	\$142,450.00	\$106,837.50	\$71,225.00	0
Hudson's Hope	\$9,933.00	\$7,449.75	\$4,966.50	0
Pouce Coupe	\$2,926.00	\$2,194.50	\$1,463.00	0
Taylor	\$11,050.00	\$8,287.50	\$5,525.00	0
Tumbler Ridge	\$19,989.00	\$14,991.75	\$9,994.50	0
Municipal Total	\$268,183.00	\$201,137.25	\$134,094.50	0
Electoral Areas Total	\$496,829.00	\$563,874.75	\$630,920.50	\$765,012.00
Electoral Area 'B'	\$214,965.00	\$268,870.25	\$322,447.50	\$358,567.98
Electoral Area 'C'	\$57,517.00	\$71,896.25	\$86,285.50	\$94,846.11
Electoral Area 'D'	\$107,403.00	\$134,253.75	\$161,104.50	\$176,070.89
Electoral Area 'E'	\$82,166.00	\$102,707.50	\$124,149.00	\$135,524.03



Dawson Creek

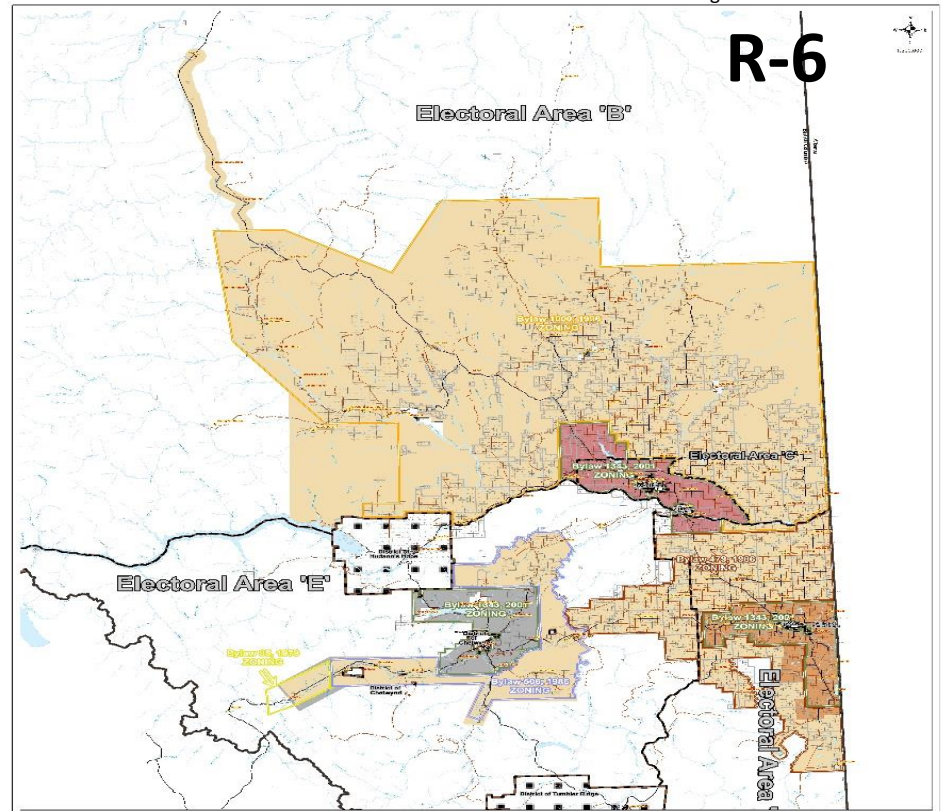
Option #1

Participation Level 100%

Opt-in (no contract)

Full Planning Area

24,034 km²



2017 Requisition	Participation Level			
	Option #1	Option #2	Option #3	Option #4
Dawson Creek	\$65,519.00	\$49,139.25	\$32,759.00	0

100%

Electoral Areas Total	\$496,829.00
Electoral Area 'B'	\$214,965.00
Electoral Area 'C'	\$57,517.00
Electoral Area 'D'	\$107,403.00
Electoral Area 'E'	\$82,166.00



Dawson Creek

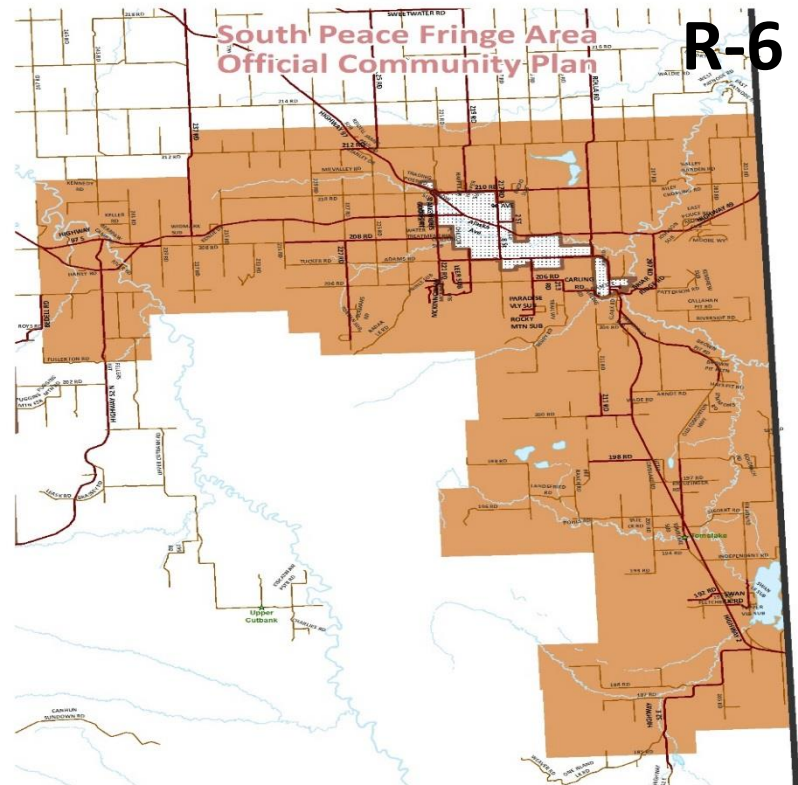
Option #2

Participation Level 75%

By Contract

South Peace Fringe
OCP Area

945 km²



2017 Requisition	Participation Level			
	Option #1	Option #2	Option #3	Option #4
Dawson Creek	\$65,519.00	\$49,139.25	\$32,759.00	0

75%

Electoral Areas Total	\$563,874.75
Electoral Area 'B'	\$268,870.25
Electoral Area 'C'	\$71,896.25
Electoral Area 'D'	\$134,253.75
Electoral Area 'E'	\$102,707.50



Dawson Creek

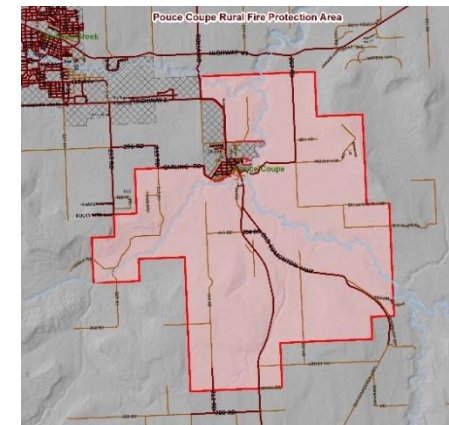
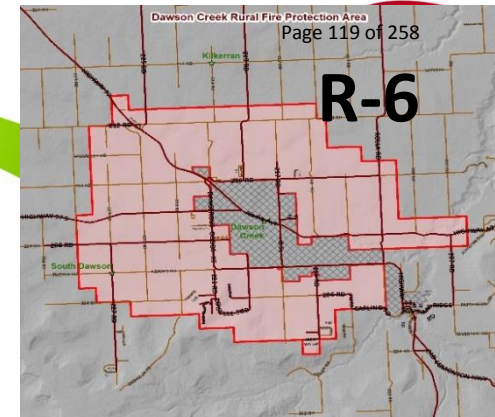
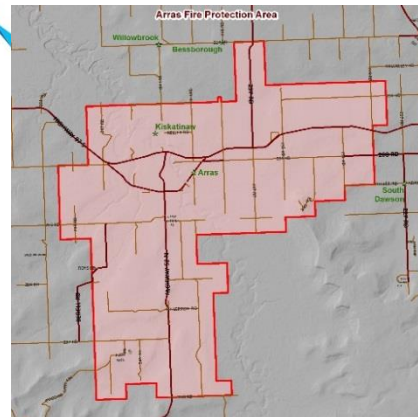
Option #3

Participation Level 50%

By Contract

Dawson Creek, Pouce
Coupe and Arras Fire
Protection Areas

39.8 km²



2017 Requisition	Participation Level			
	Option #1	Option #2	Option #3	Option #4
Dawson Creek	\$65,519.00	\$49,139.25	\$32,759.00	0

50%

Electoral Areas Total	\$630,920.50
Electoral Area 'B'	\$322,447.50
Electoral Area 'C'	\$86,285.50
Electoral Area 'D'	\$161,104.50
Electoral Area 'E'	\$124,149.00

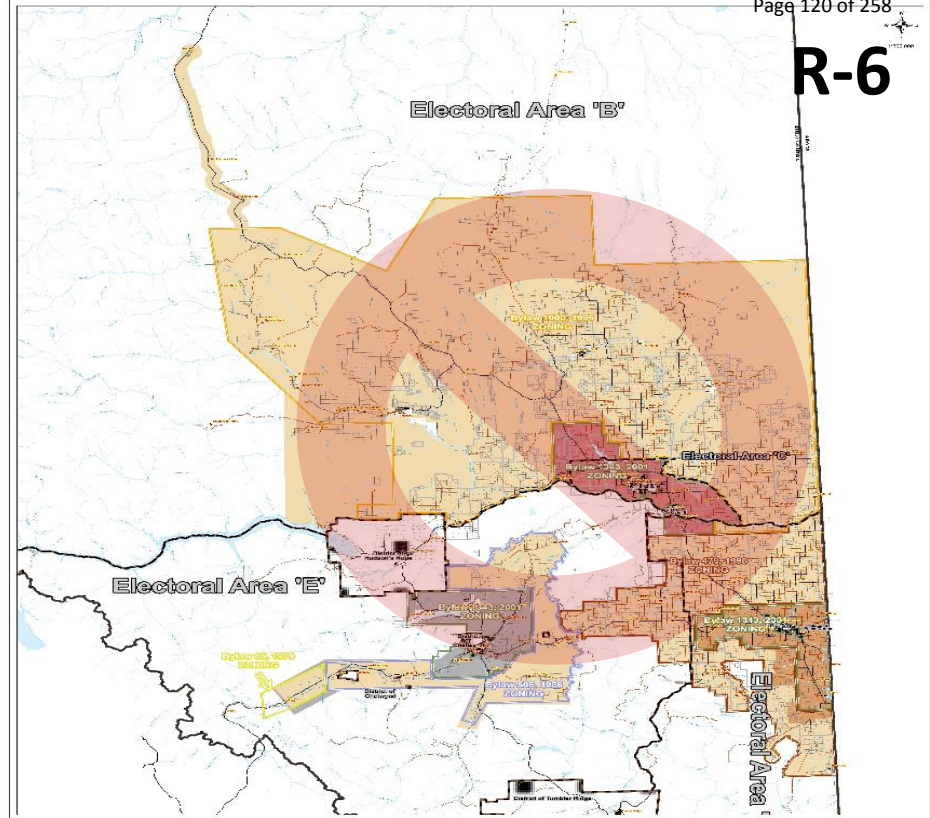


Dawson Creek

Option #4

Participation Level 0%

Opt-out (no contract)



2017 Requisition	Participation Level			
	Option #1	Option #2	Option #3	Option #4
Dawson Creek	\$65,519.00	\$49,139.25	\$32,759.00	0

0%

Electoral Areas Total	\$765,012.00
Electoral Area 'B'	\$358,567.98
Electoral Area 'C'	\$94,846.11
Electoral Area 'D'	\$176,070.89
Electoral Area 'E'	\$135,524.03



QUESTIONS?

Thank you for your time!



PEACE RIVER REGIONAL DISTRICT

HEAD OFFICE

Box 810 1981 Alaska Avenue
Dawson Creek, BC
V1G 4HB

Tel: 250-784-3200
Toll Free: 250-670-7773
Fax: 250-784-3201
Email: prrd.dc@prrd.bc.ca

BRANCH OFFICE

9505 100 Street
Fort St. John, BC
V1J 4N4

Tel: 250-785-8084
Toll Free: 250-670-7773
Fax: 250-785-1125
Email: prrd.fsj@prrd.bc.ca

WEBSITE

www.prrd.bc.ca



Peace River Regional District office Page | Facebook

MAP AREAS FOR
75% Participation Option



Dawson Creek

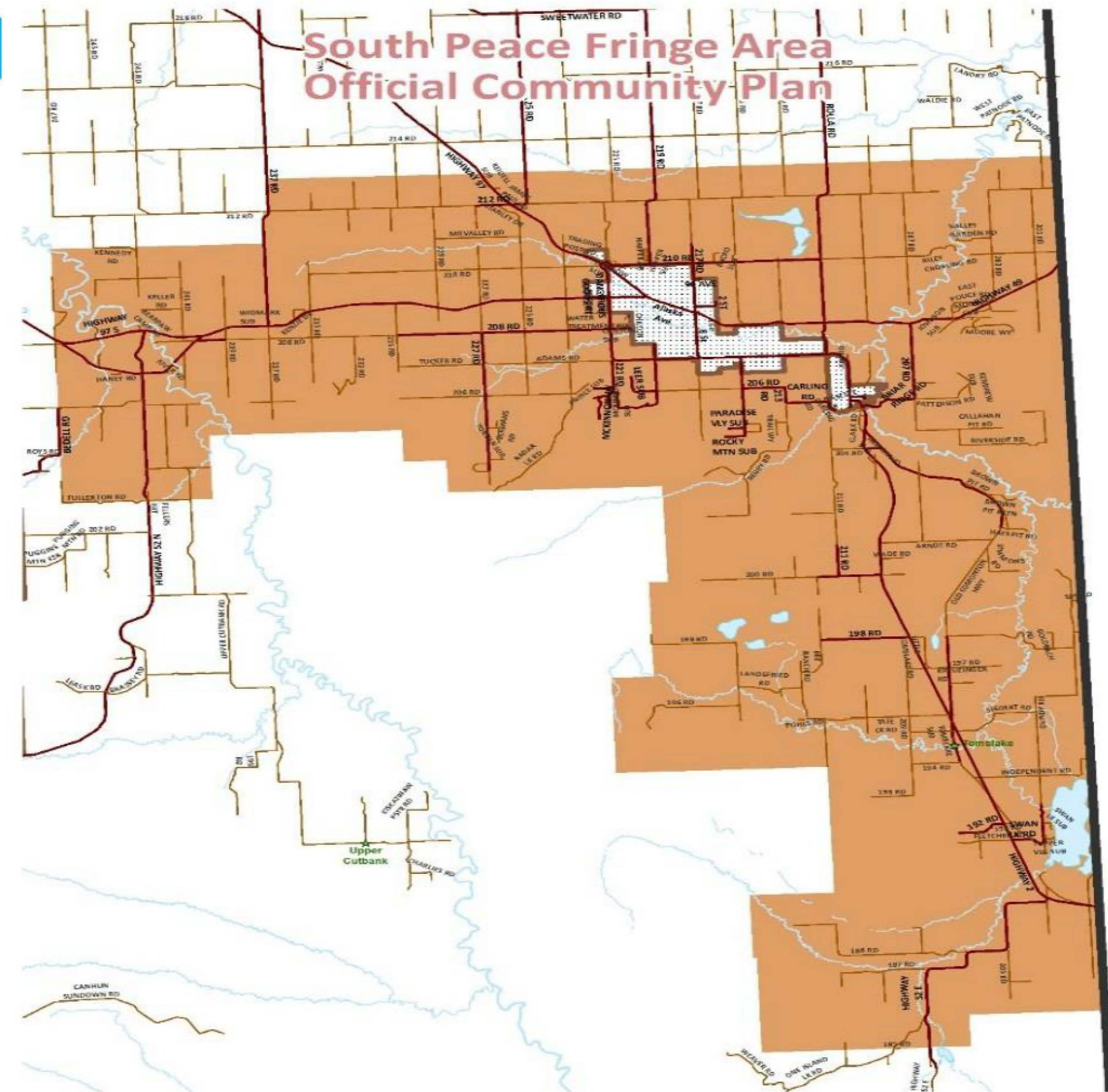
Option #2

Participation Level 75%

By Contract

South Peace Fringe
OCP Area

945 km²



2017 Requisition	Participation Level			
	Option #1	Option #2	Option #3	Option #4
Dawson Creek	\$65,519.00	\$49,139.25	\$32,759.00	0

75%

Electoral Areas Total	\$563,874.75
Electoral Area 'B'	\$268,870.25
Electoral Area 'C'	\$71,896.25
Electoral Area 'D'	\$134,253.75
Electoral Area 'E'	\$102,707.50



Chetwynd

Option #2

Participation Level 75%

By Contract

West Peace Fringe

OCP Area

917.7 km²



2017 Requisition	Participation Level			
	Option #1	Option #2	Option #3	Option #4
Chetwynd	\$16,316.00	\$12,237.00	\$8,158.00	0
		75%		

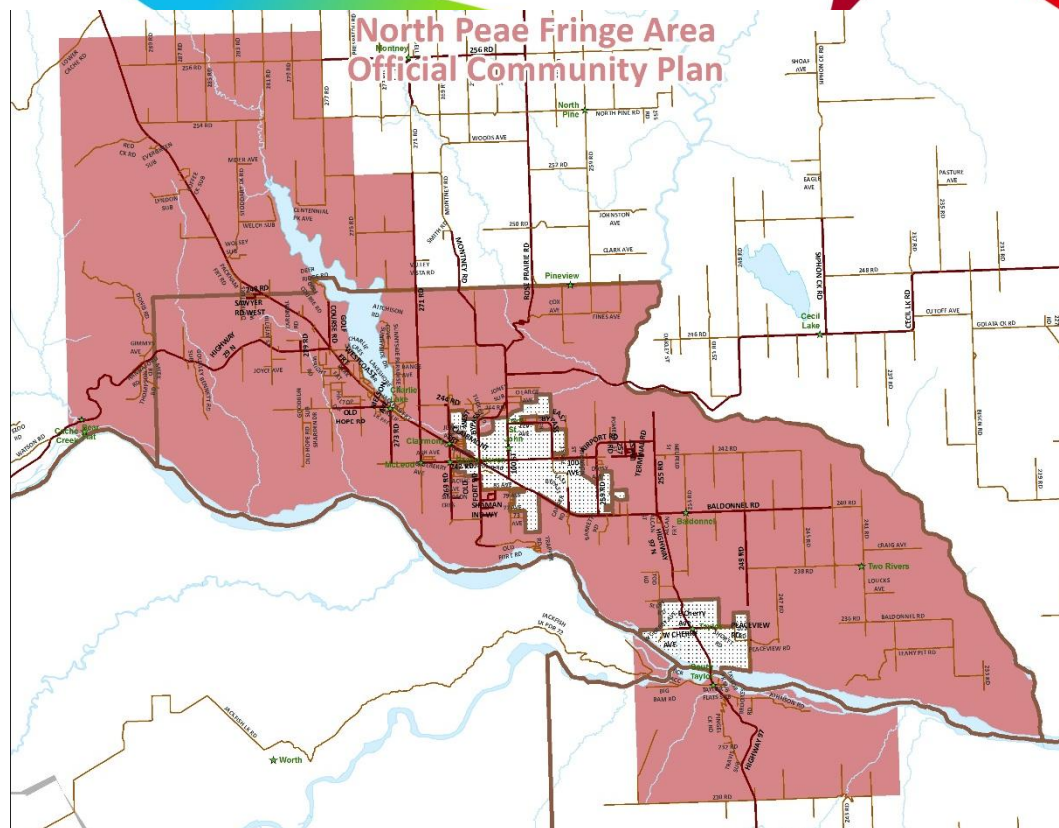


Fort St John

Option #2
Participation Level 75%
By Contract

North Peace Fringe
OCP Area

1,031.6 km²



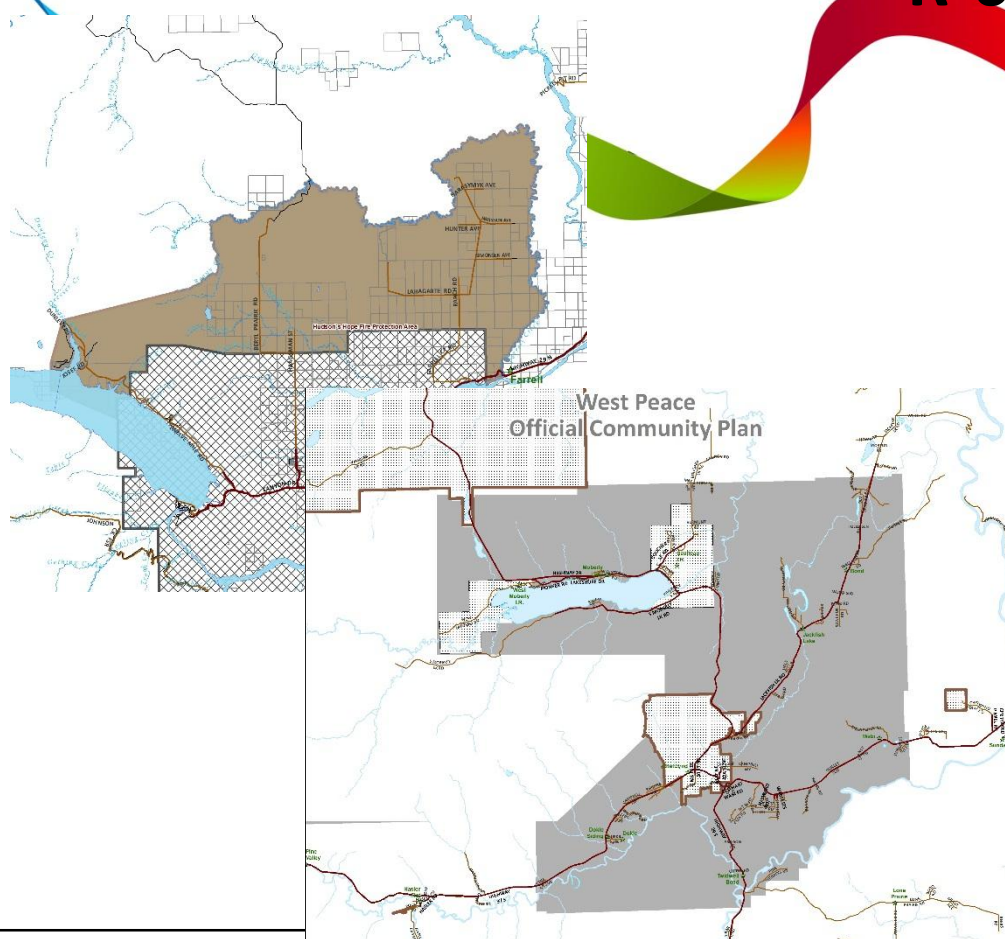
2017 Requisition	Participation Level			
	Option #1	Option #2	Option #3	Option #4
Fort St John	\$142,450.00	\$106,837.50	\$71,225.00	0
		75%		



Option #2

Participation Level 75% By Contract

West Peace Fringe
OCP Area & HH
north to Farrell Cr.
1,440.5 km²



2017 Requisition	Participation Level			
	Option #1	Option #2	Option #3	Option #4
Hudson's Hope	\$9,933.00	\$7,449.75	\$4,966.50	0
		75%		

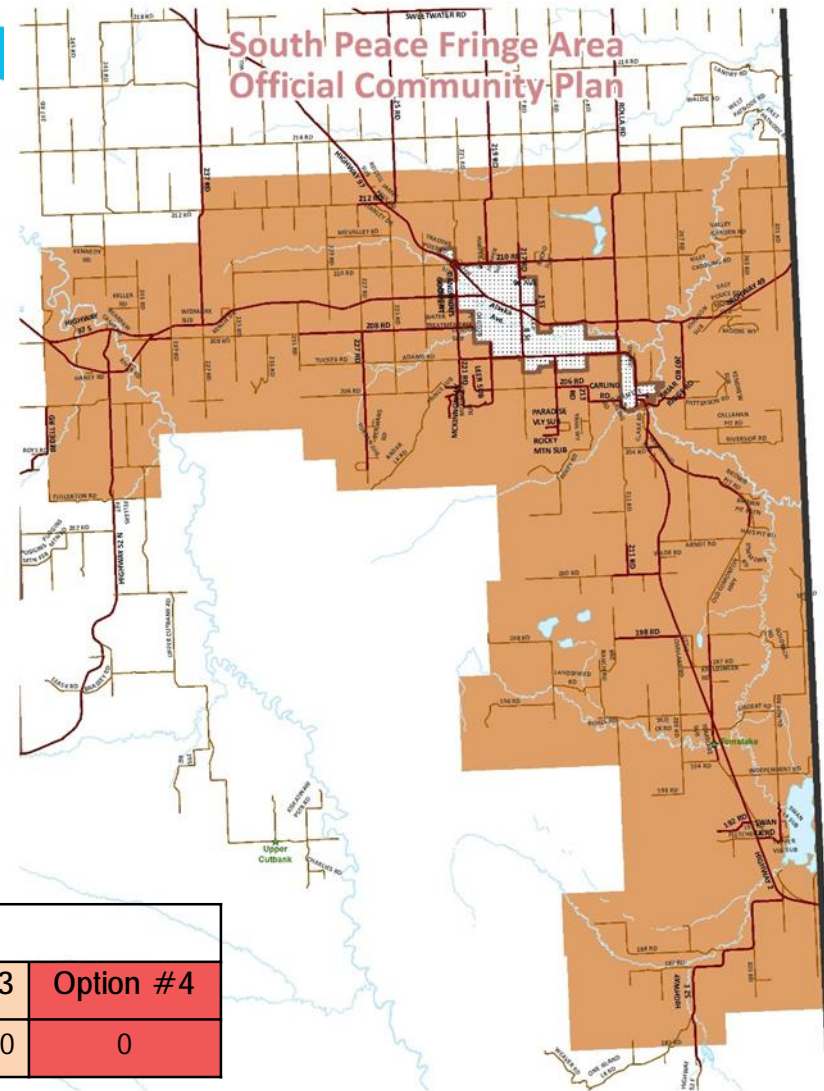


Pouce Coupe

Option #2

Participation Level 75%
By Contract

South Peace Fringe
OCP Area
945 km²



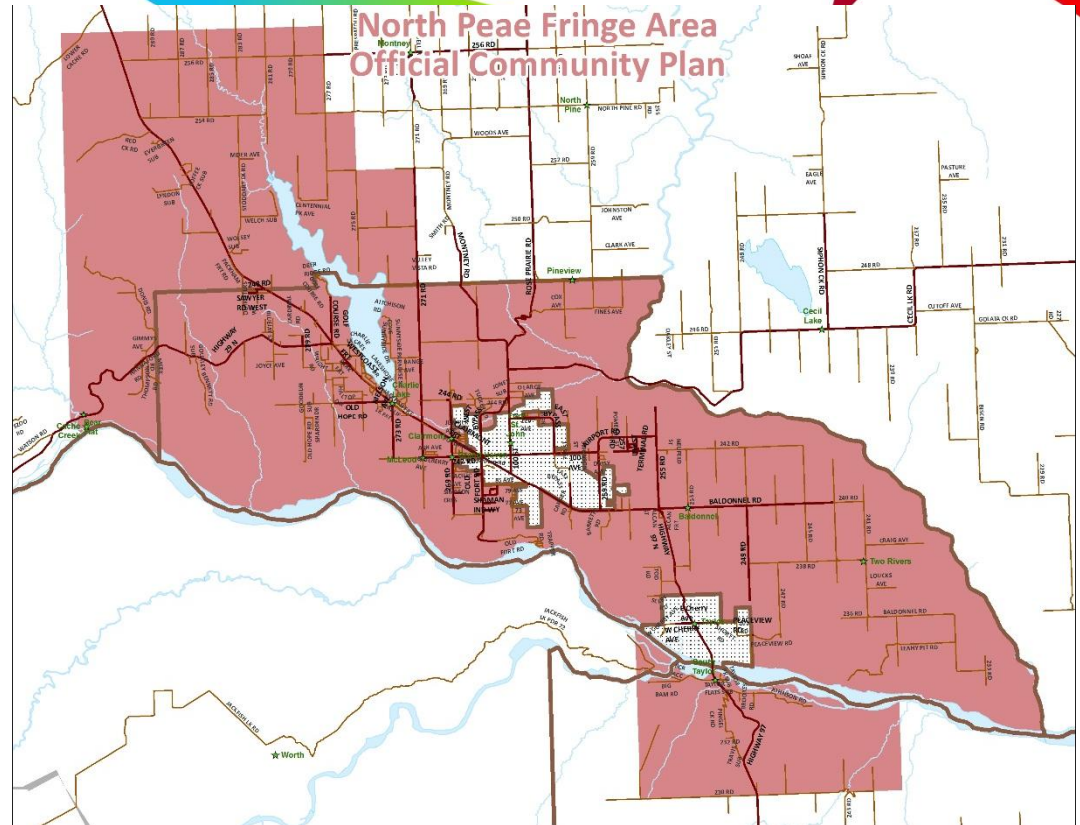
2017 Requisition	Participation Level			
	Option #1	Option #2	Option #3	Option #4
Pouce Coupe	\$2,926.00	\$2,194.50	\$1,463.00	0
		75%		



Taylor

Option #2
Participation Level 75%
By Contract

North Peace Fringe
OCP Area
1,031.6 km²



2017 Requisition	Participation Level			
	Option #1	Option #2	Option #3	Option #4
Taylor	\$11,050.00	\$8,287.50	\$5,525.00	0
		75%		



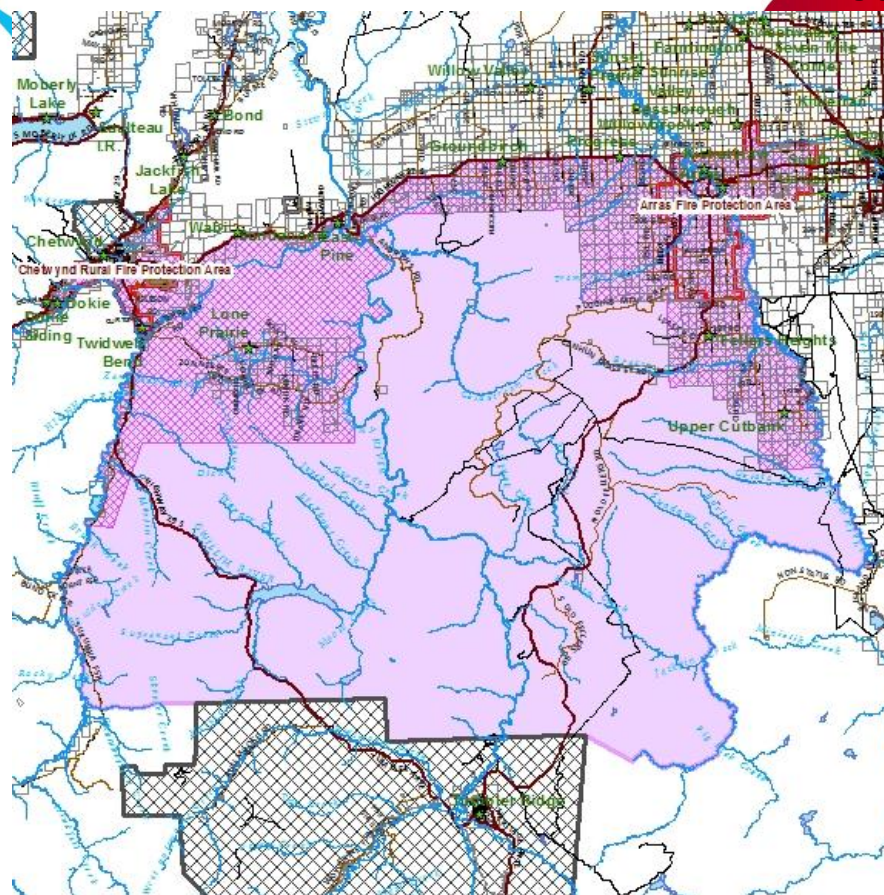
Tumbler Ridge

Option #2

Participation Level 75%

By Contract

Chetwynd & Arras Fire
Protection Areas plus OCP
Areas South of Hwy #97
between Sukunka and
Kiskatinaw Rivers
1,332.2 km²
(Hatched area)



2017 Requisition	Participation Level			
	Option #1	Option #2	Option #3	Option #4
Tumbler Ridge	\$19,989.00	\$14,991.75	\$9,994.50	0
		75%		

MAP AREAS FOR
50% Participation Option



Dawson Creek

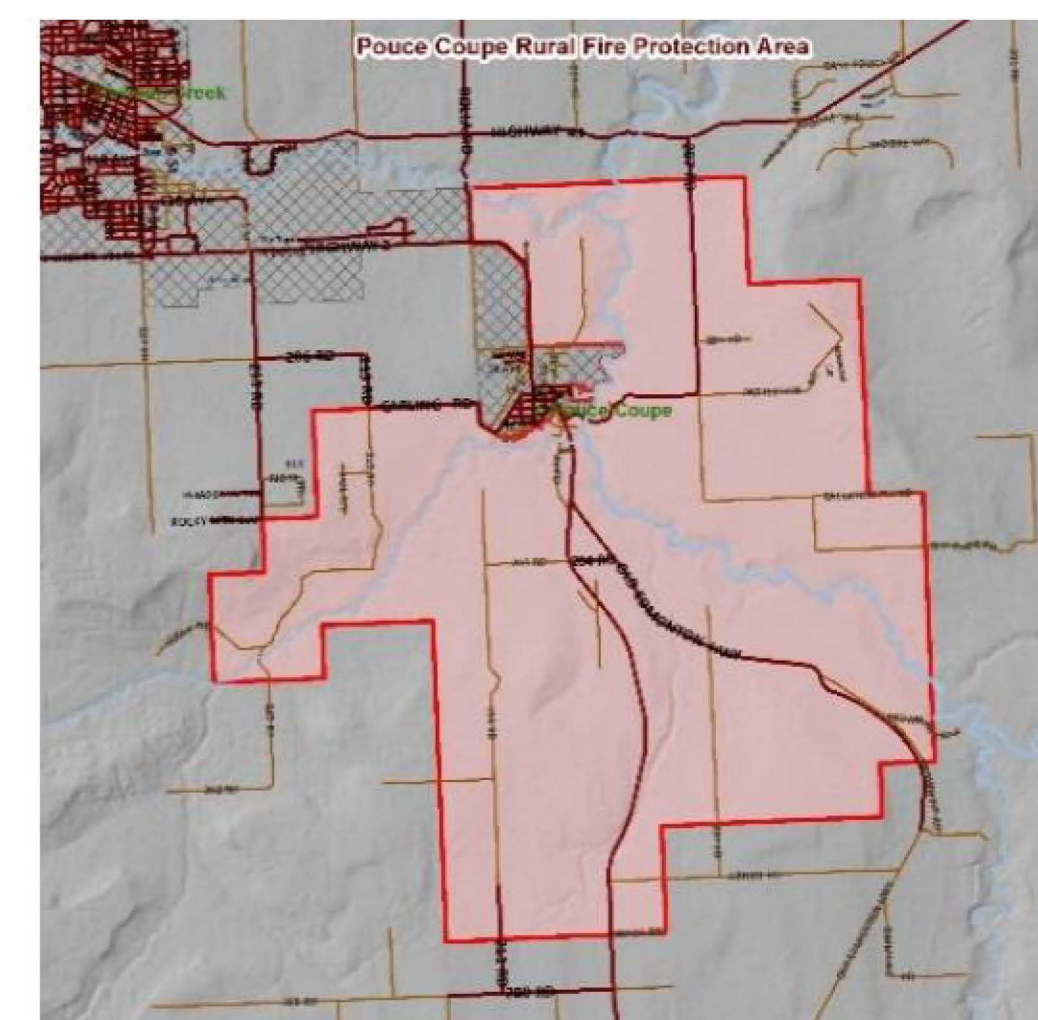
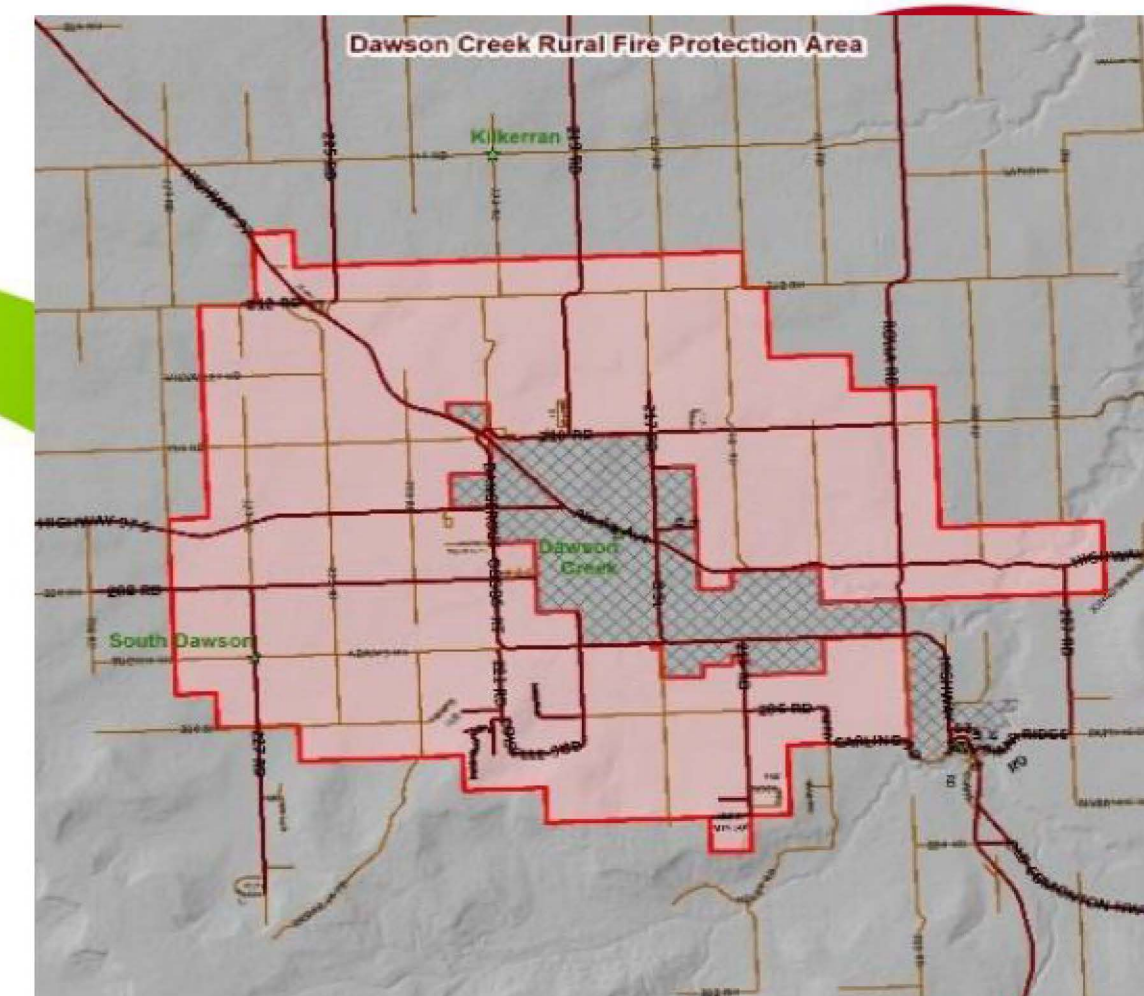
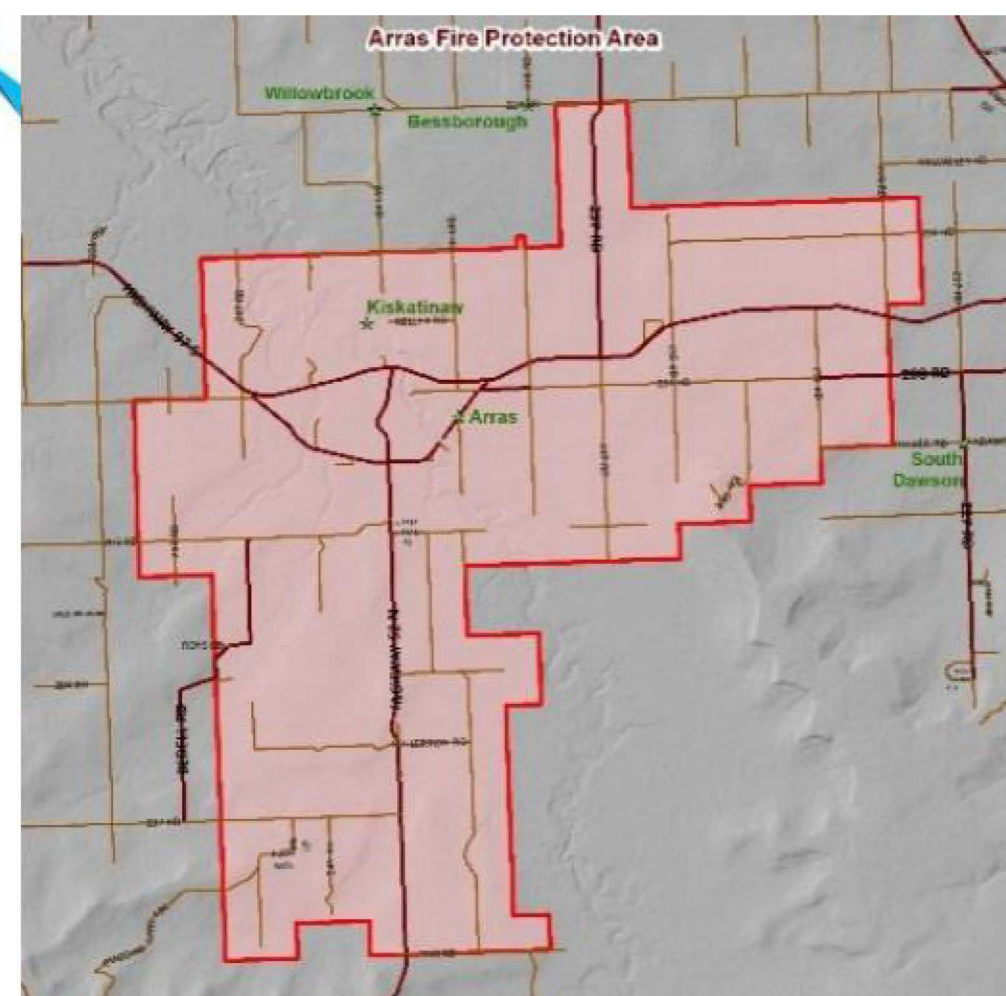
Option #3

Participation Level 50%

By Contract

Dawson Creek, Pouce Coupe and Arras Fire Protection Areas

39.8 km²



R-6

2017 Requisition	Participation Level			
	Option #1	Option #2	Option #3	Option #4
Dawson Creek	\$65,519.00	\$49,139.25	\$32,759.00	0

50%

Electoral Areas Total	\$630,920.50
Electoral Area 'B'	\$322,447.50
Electoral Area 'C'	\$86,285.50
Electoral Area 'D'	\$161,104.50
Electoral Area 'E'	\$124,149.00

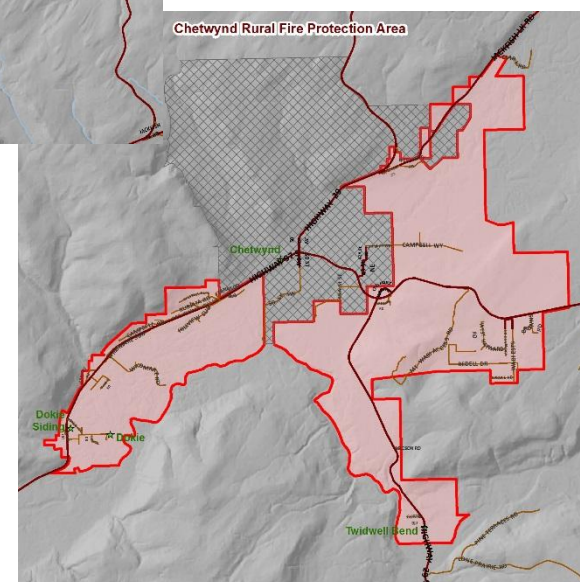
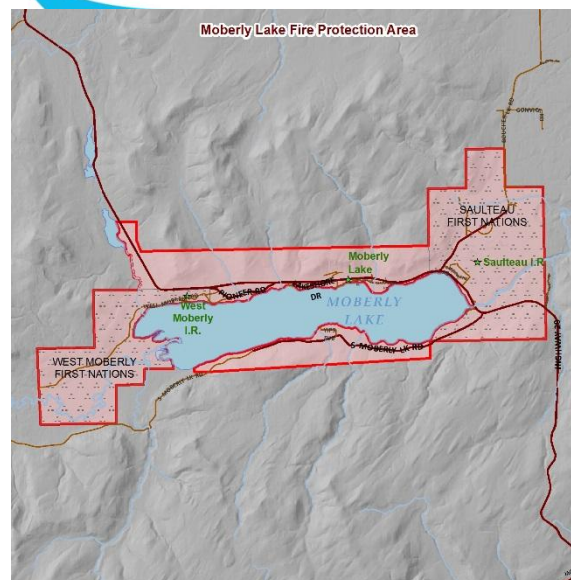


Chetwynd

Option #3

Participation Level 50%
By Contract

Chetwynd &
Moberly Lake Fire
Protection Areas
148.4 km²



2017 Requisition	Participation Level			
	Option #1	Option #2	Option #3	Option #4
Chetwynd	\$16,316.00	\$12,237.00	\$8,158.00	0
			50%	



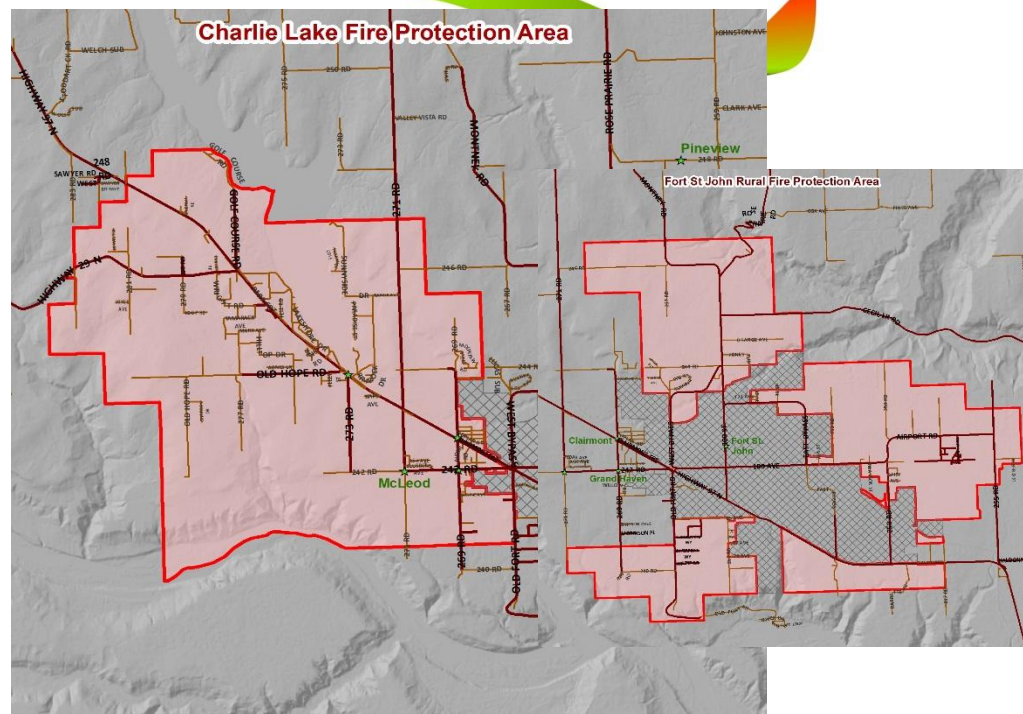
Fort St John

Option #3

Participation Level 50%
By Contract

Fort St John &
Charlie Lake Fire
Protection Areas

184.8 km²



2017 Requisition	Participation Level			
	Option #1	Option #2	Option #3	Option #4
Fort St John	\$142,450.00	\$106,837.50	\$71,225.00	0
			50%	



Hudson's Hope

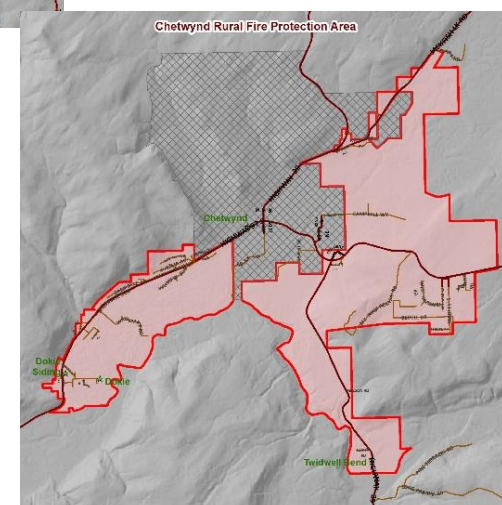
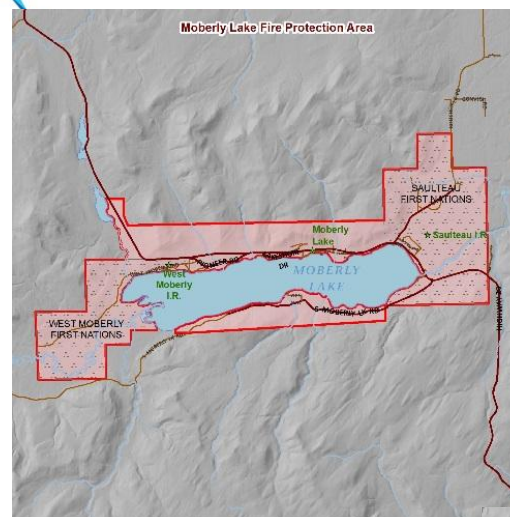
Option #3

Participation Level 50%

By Contract

Chetwynd &
Moberly Lake Fire
Protection Areas

148.4 km²



2017 Requisition	Participation Level			
	Option #1	Option #2	Option #3	Option #4
Hudson's Hope	\$9,933.00	\$7,449.75	\$4,966.50	0
			50%	



Pouce Coupe

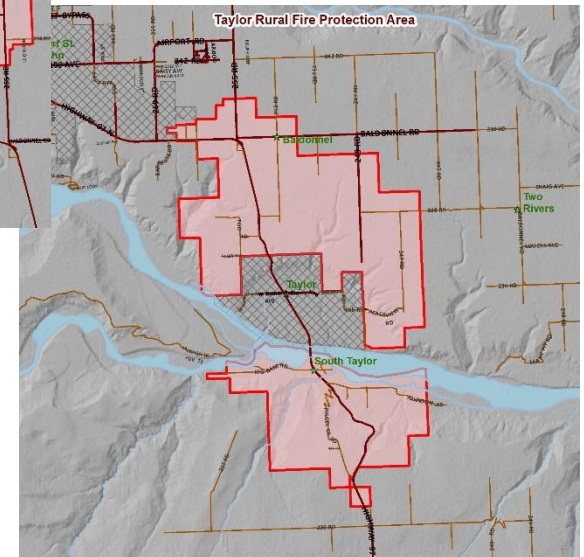
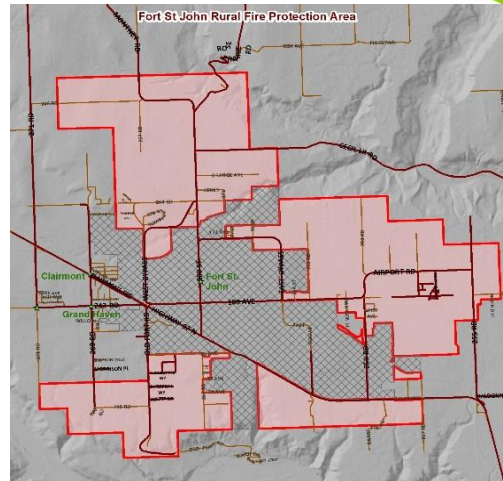
Option #3

Participation Level 50%

By Contract

Fort St John &
Taylor Fire
Protection Areas

149.2 km²



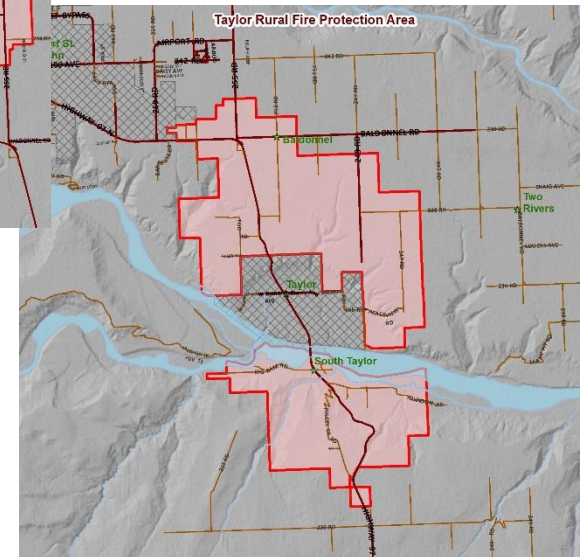
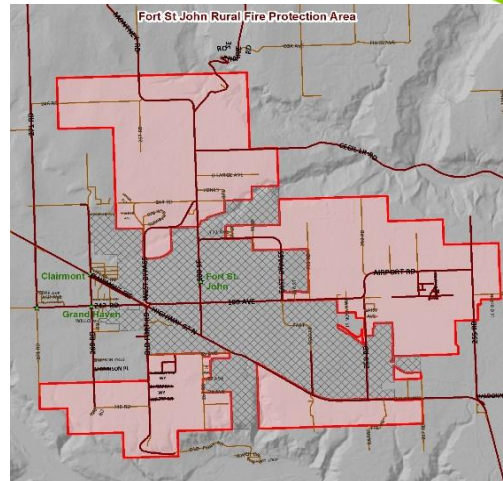
2017 Requisition	Participation Level			
	Option #1	Option #2	Option #3	Option #4
Pouce Coupe	\$2,926.00	\$2,194.50	\$1,463.00	0
			50%	



Taylor

Option #3 Participation Level 50% By Contract

Fort St John &
Taylor Fire
Protection Areas
149.2 km²



2017 Requisition	Participation Level			
	Option #1	Option #2	Option #3	Option #4
Taylor	\$11,050.00	\$8,287.50	\$5,525.00	0
			50%	



Tumbler Ridge

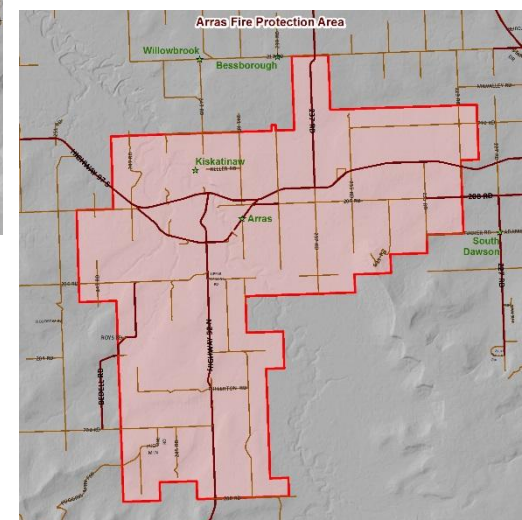
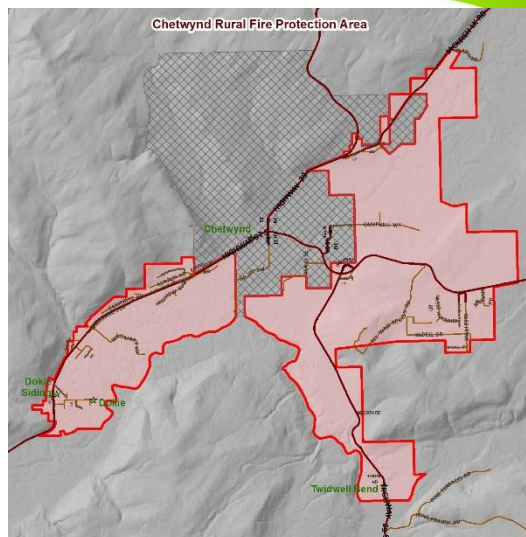
Option #3

Participation Level 50%

By Contract

Chetwynd & Arras
Fire Protection
Areas

244.6 km²



2017 Requisition	Participation Level			
	Option #1	Option #2	Option #3	Option #4
Tumbler Ridge	\$19,989.00	\$14,991.75	\$9,994.50	0
			50%	

LGA s. 381

Cost sharing for services under Part 14 [*Planning and Land Use Management*]

381 (1) The costs of services under Part 14 must be apportioned on the basis of the converted value of land and improvements in the service area as follows:

(a) if no municipality has entered into an agreement under subsection (2) or opted out under subsection (3), among all the municipalities and electoral areas, with the service area deemed to be the entire regional district;

(b) subject to paragraphs (c) and (d), if one or more municipalities have opted out under subsection (3) and are no longer participating in the services, among the electoral areas and any municipalities that have not opted out, with the service area deemed to be those areas;

(c) if one or more municipalities have entered into an agreement under subsection (2) to share only some of the costs, those costs are to be recovered in accordance with the agreements and the remaining costs are to be apportioned among the other municipalities and electoral areas participating in the services;

(d) if a municipality is liable for costs under subsection (6) or (7), those costs are to be recovered from the municipality and the remaining costs are to be apportioned among the other participating municipalities and electoral areas.

(2) The board and a municipality may enter into an agreement that the municipality is to share in some but not all of the costs of services under Part 14, to the extent set out in the agreement and in accordance with the terms and conditions for the municipality's participation established by the agreement.

August 10, 2017

January 24, 2018



(3) Subject to subsection (4), a municipality may opt out of participation in services under Part 14 by giving notice to the board, before August 31 in any year, that until further notice it will no longer share the costs of services under Part 14.

(4) A municipality that is a party to an agreement under subsection (2) may give notice under subsection (3) only in the last year of the term of the agreement.

(5) After notice is given under subsection (3), the municipality ceases to participate in the services, effective at the start of the following year.

(6) As an exception to subsection (5), if a municipality that is not a party to an agreement under subsection (2) gives notice under subsection (3) after a board has passed a resolution authorizing the preparation of an official community plan or bylaw under Part 14, the municipality continues to participate in the services and must share the costs in that preparation until the earlier of the following:

(a) the date the plan or bylaw is adopted;

(b) 2 years after the date the resolution is passed.

(7) Subsection (6) also applies to a municipality that is a party to an agreement under subsection (2) if the official community plan or bylaw is in relation to the Part 14 services for which the municipality shares costs under the agreement.

August 10, 2017

January 24, 2018



Note: References to Part 26 should now be to Part 14.; and, s.804.1 is now s.381

Using the Local Government Act **BULLETIN**

Date: August, 2000

**Bulletin
Number:**

A.7.0.0

Municipal Participation in and Voting on Electoral Area Planning

Rationale:

The new provisions, **which come into effect August 30, 2000**, primarily respond to the Municipal Act Reform principles of flexibility and resolution of inter-local government issues. The amendments respond to consultations with regional districts which emphasized the need to reduce conflict between municipalities and electoral areas and to encourage co-operative planning. Finally, they are consistent with the recommendations of the report by Professor Bish, commissioned by the ministry, which particularly emphasized the need for establishing fair voting rules. To this end the provisions:

- authorize broader, longer term agreements on municipal participation in electoral area planning; and
- change the rules for municipal directors' voting on municipal-regional district agreements for electoral area planning.

The overall objective is to encourage agreements between a municipality and the regional district with respect to the extent of participation in electoral area planning by the municipality. This is done by allowing greater scope and longevity of agreements, as well as clarifying the relationship between the agreement and notices relating to a municipality opting out of all electoral area planning services.

New Provisions:

Municipal Participation in Electoral Area Planning

- Regional districts are authorized under Part 26 to undertake planning and land use management within electoral areas, but this service differs from many other regional district services in two substantive ways:
- unlike most other services, the regional district is not authorized to provide Part 26 services in municipalities [section 873]; and
- unlike other services, all municipalities participate in decision making and share in the cost of the service even though they are not within the service area (unless the municipality indicates that it

August 10, 2017

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does not wish to participate in electoral area planning, or can come to an agreement with the regional district on partial participation).

- Municipal participation is based on the view that planning benefits all areas, not just the electoral areas for which the plans are developed (i.e., good planning benefits the region as a whole). This can be seen most clearly in urban fringe areas, but is true, at least conceptually, for all electoral area planning. In addition, decisions about planning are often considered a general government or corporate responsibility of the entire board (similar to the decisions for establishing services) rather than a service operation or management decision of the participants.
- However, it is recognized that the extent of this benefit to individual municipalities is a matter that is best judged locally, based on the specifics of the situation. Therefore, the legislation provides opportunities for municipalities to make agreements with the regional district whereby the municipality partially participates in electoral area planning. The legislation also authorizes municipalities that have not entered into such agreements to provide notice to the regional district that it does not wish to participate in any electoral area planning services (i.e., municipal opt-out).

Signalling an intention to participate, partially participate, or not participate

- The legislation provides that a municipality is deemed to be fully participating in electoral area planning unless it provides a notice that it intends to opt-out entirely, or agrees with the regional district to participate partially (i.e., **if the municipality does nothing, it is deemed to be fully participating**). Full participation means that municipal directors are entitled to vote on all resolutions and bylaws relating to Part 26 matters and that costs related to Part 26 services will be apportioned to the municipality based on converted values.
- A municipality may make an agreement with the regional district which sets out conditions under which the municipality partially participates in electoral area planning. Partial participation means that municipal directors are entitled to vote on resolutions and bylaws relating to Part 26 to the extent authorized under the agreement, and costs related to Part 26 services will be apportioned to the municipality in accordance with the agreement.
- If a municipality does not have an agreement as noted above, or if it is in the last year of an agreement, it may provide notice to the regional district by August 31 that it no longer wishes to participate in any electoral area planning, in which case, the municipality ceases to be a participant in the following year. No participation means that municipal directors are not entitled to vote on any resolutions and bylaws relating to Part 26 and that the costs of the Part 26 service will not be apportioned to it (with the exception that it must continue to pay for plans or bylaws under Part 26 for 2 years after the board resolution initiating them). There is no longer a requirement to provide notice every year -- **once a notice has been given, the municipality remains excluded from participation in the service in all subsequent years until it either provides notice that it wishes to fully participate, or makes a partial participation agreement.**

Agreements

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- Section 804.1 (2) provides that a municipality and a regional district *may* enter into an agreement that a municipality will participate in some, but not all, electoral area planning. The agreement authority differs from the previous authority in four important aspects:
- Councils and boards may make an agreement at any time in the year. The previous authority required that agreements be in place by August 31 and would become effective for the following year. The new authority allows agreements to be made at any time, with their effective dates set by the parties to the agreement.
- The agreement can be made whether the municipality is a full participant or has opted out. The previous authority allowed for an agreement only if a municipality had provided notice to opt out.
- The agreement may set out the terms and conditions of the municipality's participation. The previous authority was unclear about the extent to which the agreement could set out terms and conditions of participation -- it allowed the agreement to specify "particular plans, permits or bylaws and particular areas" but did not specifically allow any other terms. The new authority makes it clear that any term or condition which can be agreed upon may be provided for in the agreement. The legislation does not specify a maximum term or the scope of the agreement -- this is left to the judgement of the parties to the agreement -- but it is intended that certainty and stability be considered when entering into these agreements, and it is anticipated that these factors will be enhanced when broader, longer term agreements are developed.
- Once an agreement is made, the parties to the agreement are obligated to comply with the agreement until it expires or is amended. If circumstances change, the agreement can always be reviewed and renegotiated, but both parties will need to agree to any changes. Compliance with an agreement means, in part, that **once an agreement is in place, municipalities cannot either fully participate or fully opt-out of participation in electoral area planning during the term of the agreement.** The only exception to this provision relates to the last year of an agreement -- municipalities may provide notice to the board in the last year of an agreement that it wishes to fully opt-out of participation in electoral area planning effective the following year. This opt-out is authorized because the notice must be given by August 31 in a year, but is not effective until the next year (when the agreement would have expired).
- Both cost apportionment for Part 26 services and voting on Part 26 decisions should be dealt with in an agreement. Section 804.1(1)(c) provides that if a municipality has entered into an agreement, costs are to be recovered in accordance with the agreement (therefore, if the agreement does not provide for cost recovery, the municipality is not required to share in the costs). Section 791(12)(c) provides that while an agreement is in force, the director for the municipality cannot vote on Part 26 resolutions or bylaws except in accordance with the agreement (therefore, if the agreement is silent with respect to voting then the director is not entitled to vote).

Fairer Voting Rules

- All votes by the regional district board on planning agreements and resolutions and bylaws under Part 26 continue to be unweighted -- i.e., each director who is entitled to vote has one vote [section 791(2) and (3)].

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- Voting rules for municipalities that are fully participating in electoral area planning have been changed. A director from a fully participating municipality continues to be entitled to vote on all partial participation agreements and all resolutions and bylaws pertaining to Part 26 services.
- Previous provisions prevented a municipal director from voting on the agreement for that municipality but allowed voting on another municipality's agreement. Section 791(12) is amended to eliminate the ability to vote on another municipality's agreement. Therefore, a municipal director representing a municipality that has entered into an agreement in accordance with section 804.1(2) in which it is a partial participant in Part 26 services, cannot:
 - vote on the acceptance of an agreement with the director's municipality;
 - vote on any agreement with another municipality; or
 - vote on any resolution or bylaw under Part 26 except as authorized by their municipality's agreement.
- Similarly, municipal directors representing municipalities that had fully opted-out were authorized to vote on other municipality's agreements. The provisions have been changed to prevent this. Therefore, a director for a municipality which has fully opted-out, cannot:
 - vote on an agreement pursuant to section 804.1(2); or
 - vote on bylaws and resolutions pertaining to Part 26 except when the municipality is required to continue to pay for Part 26 services under section 804.1(6) or (7).
- The timing of voting entitlement is also changed. With respect to agreements, as soon as a municipality has entered into an agreement, it is not entitled to vote on other agreements. However, the entitlement to vote on Part 26 services is linked to the term of the agreement, rather than the date it is entered into. Therefore, if a municipality and regional district agree in September of 2000 to limited participation in Part 26 services commencing in March of 2001, then the director for the municipality would be entitled to vote on all planning matters until March 2001 (assuming that the municipality has not opted-out of electoral area planning for 2000). Similarly, as soon as notice to opt-out has been given directors are not entitled to vote on agreements, but their entitlement to vote on Part 26 matters continues until January of the following year.

Related Provisions:

N/A

Practical Considerations:

- The intent of the new provisions is to encourage regional districts and member municipalities to enter into longer, more comprehensive agreements. This will avoid the annual renegotiation of agreements or annual decisions about opting-out which, in the past, have created uncertainty and, in some cases, conflict.
- The agreement provisions are broad both in terms of scope and timing. It is recommended that boards approach this new power prudently. Since a municipality cannot opt-in or out during the term of an agreement, and since an agreement may only be amended with the consent of both the

January 24, 2018

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municipality and the regional district, it is recommended that initially consideration be given to agreements with relatively short time frames, for example, three years. Once the board and the municipality have had a chance to see how the agreement is working they may want to consider a longer or a shorter term.

- It is recommended that regional districts consider the annual budgeting and tax requisition system when negotiating agreements with municipalities. Agreements may be made at any point in the year, but the regional district must ensure that the effective dates of the agreement mesh with its requisition cycle.
- It is recommended that the agreement lay out the scope of the planning program, in the fullest detail possible, so as to minimize misunderstandings. This can provide an opportunity to deal with a number of critical issues including the following:

municipal interests in electoral area planning and vice versa;

consultation and referral processes between municipalities and electoral areas; and

the priority projects to be undertaken within the time frame of the agreement.

- Regional districts and municipalities are encouraged to use regional growth strategies and official community plans to establish municipal interests in electoral area planning and electoral area interests in municipal planning. This could, for example, focus on the definition of and policies for "urban fringe" areas.
- municipalities and regional districts may also want to use the new consultation requirement for Official Community Plans contained in the new section 879 as an impetus to develop protocols as to how the two jurisdictions can achieve cooperative planning processes. A bulletin will be developed on this topic prior to the new section 879 coming into effect.
- The Ministry will be undertaking research and will work with regional district and municipal planning staff on the development of model agreements and a best practices guide. In addition, Ministry staff are available to meet with regional boards and municipal councils to provide any assistance they might need in using these new legislative provisions.

Transitional provisions:

- [B.C. Regulation 241/2000](#) specifies that the new provisions will be effective August 30, 2000. This date has been chosen specifically because of the August 31 deadline for municipal opt-out notices.
- As in previous years, if a municipality wishes to fully opt-out of electoral area planning, it must do so by August 31.
- Also as in previous years, if a municipality and a regional district wish to enter into an annual partial participation agreement, and the agreement is made prior to August 31, the municipality must first give the regional district an opt-out notice and then may enter into an agreement. Voting on any of these annual agreements prior to August 31 would be based on the old voting rules (i.e., a municipal director cannot ~~August 10, 2017~~ vote on an agreement, but can vote on another

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municipality's agreement). However, if partial participation agreement is voted on after August 30, it must be voted on using the new voting rules (i.e., municipal directors cannot vote on any agreements unless their municipality is fully participating in electoral area planning).

- If a municipality and a regional district wish to enter into a multi-year agreement under the new provisions, it may do so at any time. Depending on the timing, however, the process will be different. The two options are as follows:
- Agreements under the new provisions may be made before August 30. The *Interpretation Act* provides authority to exercise new powers prior to them coming into force, but states that the action has no effect until the new powers come into force. This means that the municipality and the regional district can use the new powers for making agreements before August 30, but that the agreements themselves have no effect until after that date. However, if the new agreement powers are used, voting on the agreements must be done in accordance with the new voting rules (i.e., municipal directors cannot vote on any multi-year agreements unless their municipality is fully participating in electoral area planning, no matter whether that voting takes place prior to or after August 30).
- Agreements under the new provisions may also be made after August 30. Both the new agreement powers and the new voting rules come into force August 30, and so are applicable to any agreements made after that date. **It is recommended, however, that municipalities currently negotiating a multi-year agreement consider its options with respect to opting-out as well, in case it cannot come to an agreement with the regional district. This is because if the municipality does not give a notice to opt-out by August 31 and subsequently cannot come to an agreement with the regional district, it is considered to be fully participating in electoral area planning.**

Local Government Act References:

Primary Sections: 791, 804.1, 879

Bill 14 Sections:

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**BACKGROUNDER****Cost Sharing Part 14 Services
Local Government Act Section 381****1.0 RATIONALE**

Pursuant to Part 14: Planning and Land Use Management, of the LGA, the PRRD undertakes activities in the electoral areas of the region to plan, manage and regulate development. The PRRD considers that municipal participation in these activities is important because proactive planning benefits all jurisdictions.

2.0 PART 14: PLANNING AND LAND USE MANAGEMENT

Activities authorized under Part 14 include:

Official Community Plans	Farm Bylaws
Zoning Bylaws	Development Permit Areas
Public Hearings & Public Notifications	Development Variance Permits
Advisory Planning Commission	Temporary Industrial & Commercial Permits
Development Approval Procedures	Tree Cutting Permits
Board of Variance	Application & Inspection Fees
Housing Agreements	Development Cost Charges
Parking & Loading Regulations	Development Works Agreements
Run-off Control	School Site Acquisition Charges
Regulation of Signs	Subdivision Servicing Regulations
Screening & Landscaping Regulations	Site Profile Assessments

3.0 LGA SECTION 38: MUNICIPAL PARTICIPATION IN PLANNING

(excerpt from Bulletin No. A.7.0.0, Aug. 2000)

These provisions, **which came into effect August 30, 2000**, primarily respond to the Municipal Act Reform principles of flexibility and resolution of inter-local government issues. The amendments respond to consultations with regional districts which emphasized the need to reduce conflict between municipalities and electoral areas and to encourage co-operative planning. Finally, they are consistent with the recommendations of the report by Professor Bish, commissioned by the ministry, which particularly emphasized the need for establishing fair voting rules. To this end the provisions:

- authorize broader, longer term agreements on municipal participation in electoral area planning; and
- change the rules for municipal directors' voting on municipal-regional district agreements for electoral area planning.

The overall objective is to encourage agreements between a municipality and the regional district with respect to the extent of participation in electoral area planning by the municipality. This is done by allowing greater scope and longevity of agreements, as well as clarifying the relationship between the agreement and notices relating to a municipality opting out of all electoral area planning services.

- unlike other services, all municipalities participate in decision making and share in the cost of the service even though they are not within the service area (unless the municipality indicates that it does not wish to participate in electoral area planning, or can come to an agreement with the regional district on partial participation).

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- Municipal participation is based on the view that planning benefits all areas, not just the electoral areas for which the plans are developed (i.e., good planning benefits the region as a whole). This has been seen most clearly in urban fringe areas, but is true, at least conceptually, for all electoral area planning. In addition, decisions about planning are often considered a general government or corporate responsibility of the entire board (similar to the decisions for establishing services) rather than a service operation or management decision of the participants.
- However, it is recognized that the extent of this benefit to individual municipalities is a matter that is best judged locally, based on the specifics of the situation. Therefore, the legislation provides opportunities for municipalities to make agreements with the regional district whereby the municipality partially participates in electoral area planning. The legislation also authorizes municipalities that have not entered into such agreements to provide notice to the regional district that it does not wish to participate in any electoral area planning services (i.e., municipal opt-out).

Signalling an intention to participate, partially participate, or not participate

- The legislation provides that a municipality is deemed to be fully participating in electoral area planning unless it provides a notice that it intends to opt-out entirely, or agrees with the regional district to participate partially (i.e., **if the municipality does nothing, it is deemed to be fully participating**).
 - Up to 2006, participation occurred through a variety of contracts that differed in geographic scope and duration. From 2007-2010, five of seven municipalities had opted in. By 2011 six of the seven municipalities had been fully opted in, and all seven have been opted in since 2015.
- A municipality may make an agreement with the regional district which sets out conditions under which the municipality partially participates in electoral area planning. Partial participation means that municipal directors are entitled to vote on resolutions and bylaws relating to Part 14 to the extent authorized under the agreement, and costs related to Part 14 services will be apportioned to the municipality in accordance with the agreement. Section 4.0 sets out cost sharing models that have been used in the past.

4.0 HISTORICAL COST SHARING

- 4.1 There were three levels of participation available, based on the geographic area over which participation in Part 14 Services was desired. These levels were set at 100%, 75% and 50%, as illustrated on maps for each municipality.
- 4.2 Two options for cost sharing were offered;
 - 1) by requisition, or
 - 2) by per-capita (not to exceed the 100% requisition amount)
- 4.2.1 The per-capita option was based upon population figures as estimated by BC Stats. **This option was only available to those municipalities that chose the 100% participation level.** The per capita rate in 2008 was \$2.48 and the scheme included an annual increase equal to the annual CPI change of the preceding year. Using this formula the per capita fee for 2017 would be \$2.81.
- 4.2.2 The requisition option is based on apportionment of the Part 14 requisition, assuming all jurisdictions participate. This was the only cost option available for participation levels less than 100%. This calculation is based on completed assessments and confirmed budget for the given year.

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5. SUMMARY OF MUNICIPAL PARTICIPATION



Municipality	1999	2000	2001	2002	2003	2004	2005	2006
Chetwynd	\$6,706 100%	\$6,705 100%	\$6,705 100%	\$6,705 100%	\$5,830 100%	\$5,830 100%	\$5,904 100%	\$6,662 100%
Dawson Creek	\$9,368 50%	\$9,247 50%	18,751 100%	25,031 100%	22,688 100%	22,599 100%	23,786 100%	24,442 100%
Fort St John	\$23,044 75%	\$25,052 75%	33,797 100%	33,797 100%	36,086 100%	36,086 100%	38,863 100%	42,764 100%
Hudson's Hope	\$2,524 100%	\$2,524 100%	2,524 100%	2,524 100%	2,338 100%	2,338 100%	2,492 100%	2,782 100%
Pouce Coupe	\$1,206 100%	\$892 100%	879 100%	1,106 100%	961 100%	863 100%	903 100%	998 100%
Taylor	\$2,320 100%	\$2,320 100%	2,320 100%	2,320 100%	2,572 100%	2,572 100%	2,924 100%	3,237 100%
Tumbler Ridge	0	0	0	0	0	0	0	0
Total	\$45,168	\$46,740	\$64,976	\$71,483	\$70,475	\$70,288	\$74,872	\$80,885

Municipality	2007	2008	2009	2010	2011	2012	2013	2014
Chetwynd	Opt-in	Opt-in	Opt-in	Opt-in	Opt-in	Opt-in	Opt-in	Opt-in
Dawson Creek	Opt-in	Opt-in	Opt-in	Opt-in	Opt-in	Opt-in	Opt-in	Opt-in
Fort St John	Opt-in	Opt-in	Opt-in	Opt-in	Opt-in	Opt-in	Opt-in	Opt-in
Hudson's Hope	Opt-in	Opt-in	Opt-in	Opt-in	Opt-in	Opt-in	Opt-in	Opt-in
Pouce Coupe	Opt-in	Opt-in	Opt-in	Opt-in	Opt-in	Opt-in	Opt-in	Opt-in
Taylor	\$2,320 100%	\$4,544 50%	\$4,772 50%	\$3,177 50%	Opt-in	Opt-in	Opt-in	Opt-in
Tumbler Ridge	0	0	0	0	0	0	0	0

Note: The requisitions for each participating jurisdiction for the period 2007-2017 are shown on budget sheets contained in Schedule 3.

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Municipality	2015	2016	2017
Chetwynd	Opt-in	Opt-in	Opt-in
Dawson Creek	Opt-in	Opt-in	Opt-in
Fort St John	Opt-in	Opt-in	Opt-in
Hudson's Hope	Opt-in	Opt-in	Opt-in
Pouce Coupe	Opt-in	Opt-in	Opt-in
Taylor	Opt-in	Opt-in	Opt-in
Tumbler Ridge	Opt-in	Opt-in	Opt-in

6.0 ALTERNATIVE COST SHARING

6.1 Looking forward this report now considers alternative cost sharing models. Similar to before, three cost levels are proposed:

- A. 100% (opt-in)
- B. 75% of requisition
- C. 50% of requisition

Attached maps illustrate applicable area for each municipality. The per capita rate is not considered as an option to entice municipalities toward full participation since they are currently opted-in at full cost and full area participation.

6.2 Summary of alternative cost levels:

2017 Requisition	A	B	C
\$ 765,012.00	Opt-In		
	100%	75%	50%
Chetwynd	\$ 16,316.00	\$ 12,237.00	\$ 8,158.00
Dawson Creek	\$ 65,519.00	\$ 49,139.25	\$ 32,759.50
Fort St John	\$ 142,450.00	\$ 106,837.50	\$ 71,225.00
Hudson's Hope	\$ 9,933.00	\$ 7,449.75	\$ 4,966.50
Pouce Coupe	\$ 2,926.00	\$ 2,194.50	\$ 1,463.00
Taylor	\$ 11,050.00	\$ 8,287.50	\$ 5,525.00
Tumbler Ridge	\$ 19,989.00	\$ 14,991.75	\$ 9,994.50
	\$ 268,183.00	\$ 201,137.25	\$ 134,091.50
Electoral Areas	\$ 496,829.00	\$ 367,612.50	\$ 232,042.50

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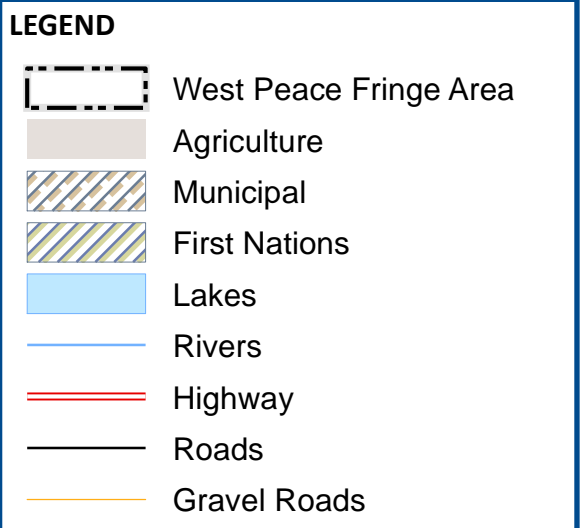
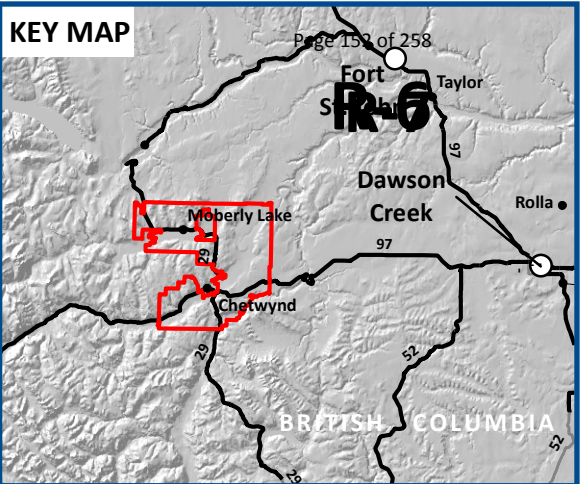
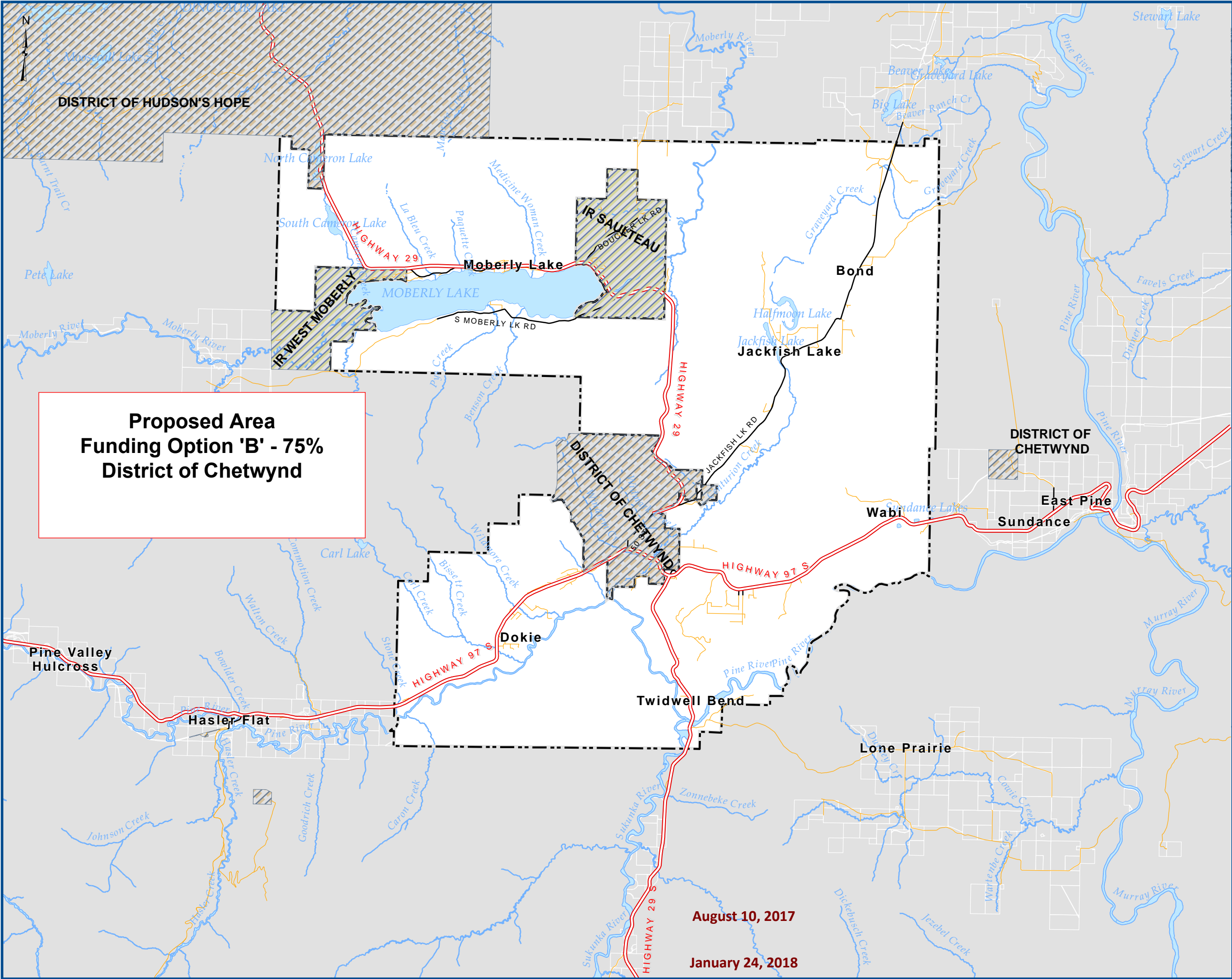
SCHEDULE 1



GEOGRAPHIC AREAS FOR COST LEVEL B 75% of Requisition

August 10, 2017

January 24, 2018



Data Source: Peace River Regional District
1:200,000 0 1,250 2,500 5,000 7,500 10,000 Meters

WEST PEACE FRINGE AREA

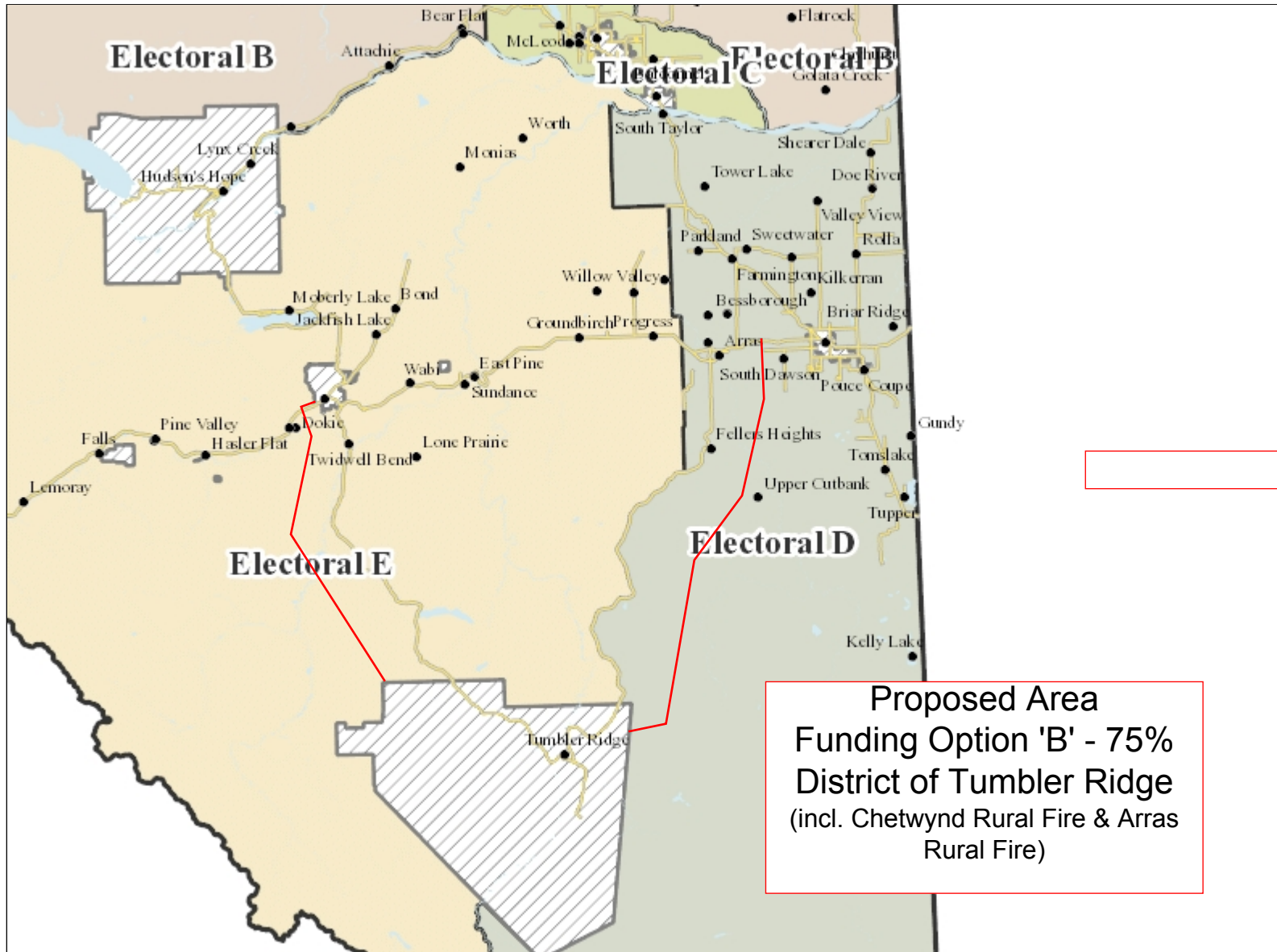
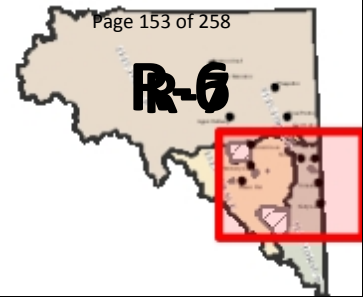
Date: Feb,06,2013; Drawn By:



August 10, 2017
January 24, 2018



Peace River Regional District



Legend

- Rural Community
- Main Roads (< 1:1000000)
- Water Bodies
- Regional District Boundary
- ▨ Municipal Boundaries
- Electoral Area Boundaries
 - Electoral B
 - Electoral C
 - Electoral D
 - Electoral E

**Proposed Area
Funding Option 'B' - 75%
District of Tumbler Ridge
(incl. Chetwynd Rural Fire & Arras
Rural Fire)**

1: 1,068,005



54,254.7 0 27,127.33 54,254.7 Meters

NAD_1983_UTM_Zone_10N
© Latitude Geographics Group Ltd.

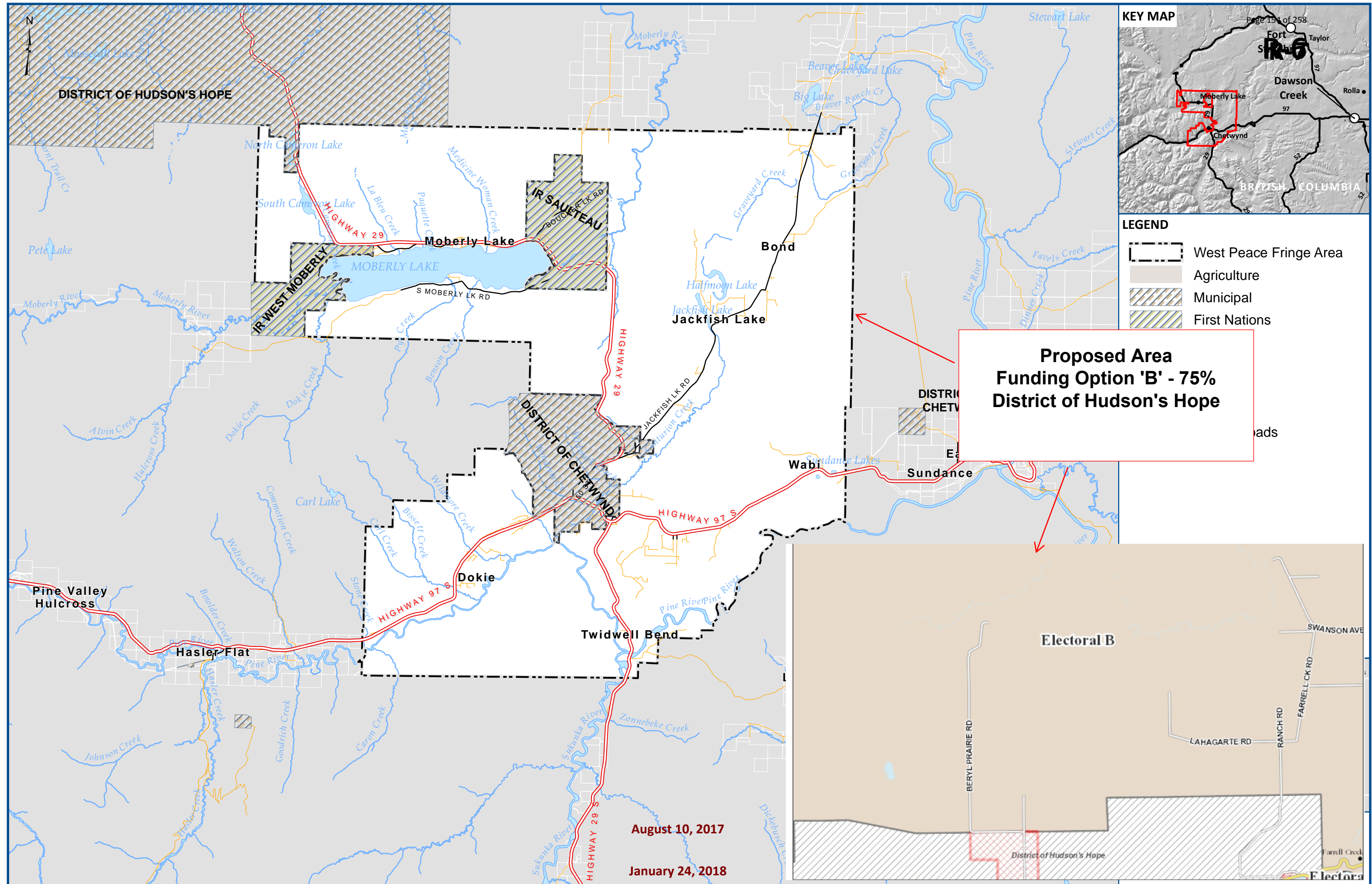
August 10, 2017

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.

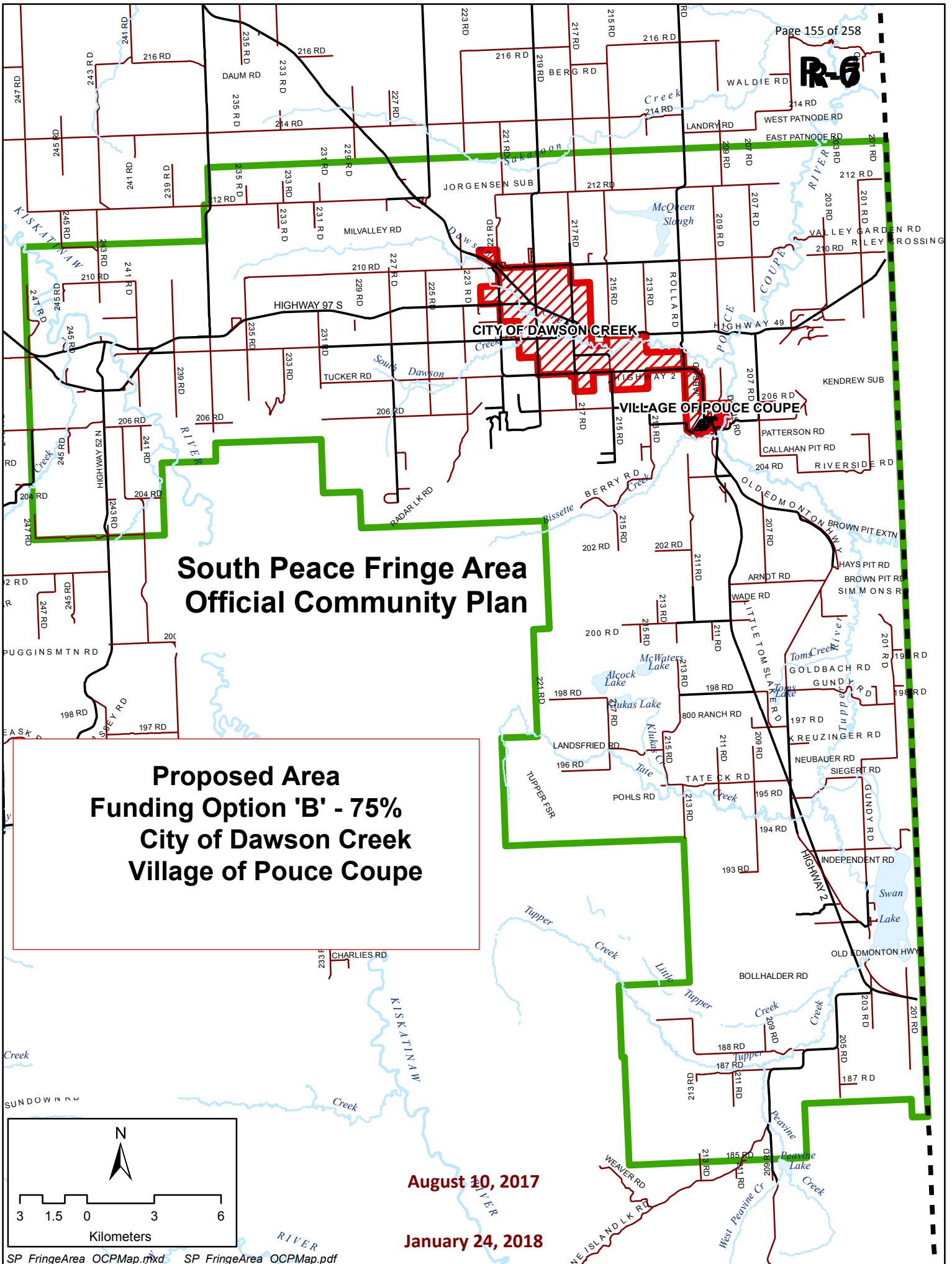
January 24, 2018

THIS MAP IS NOT TO BE USED FOR NAVIGATION

Notes



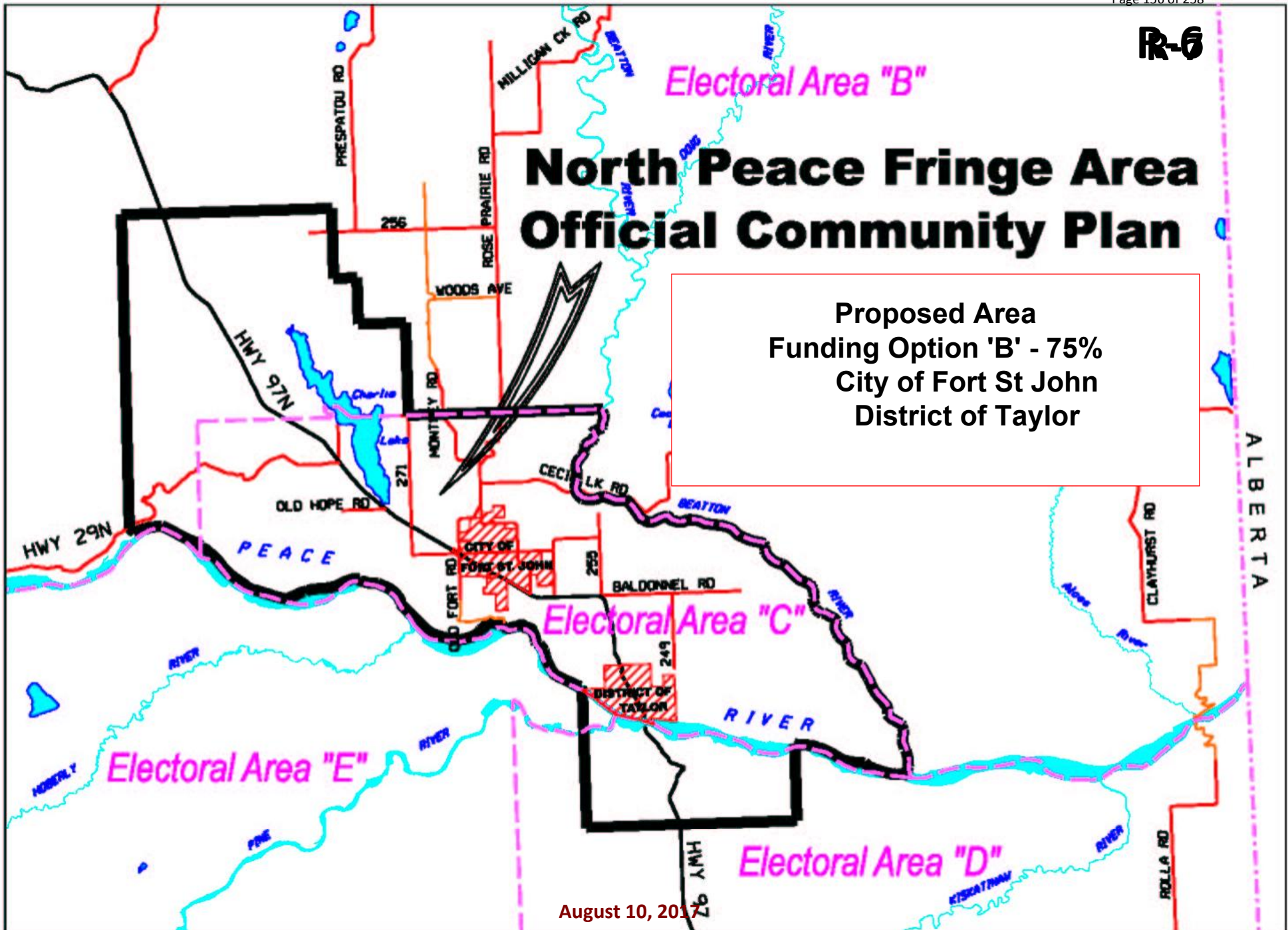
R-6



R-6*Electoral Area "B"*

North Peace Fringe Area Official Community Plan

Proposed Area
Funding Option 'B' - 75%
City of Fort St John
District of Taylor



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SCHEDULE 2



GEOGRAPHIC AREAS FOR COST LEVEL C
50% of Requisition

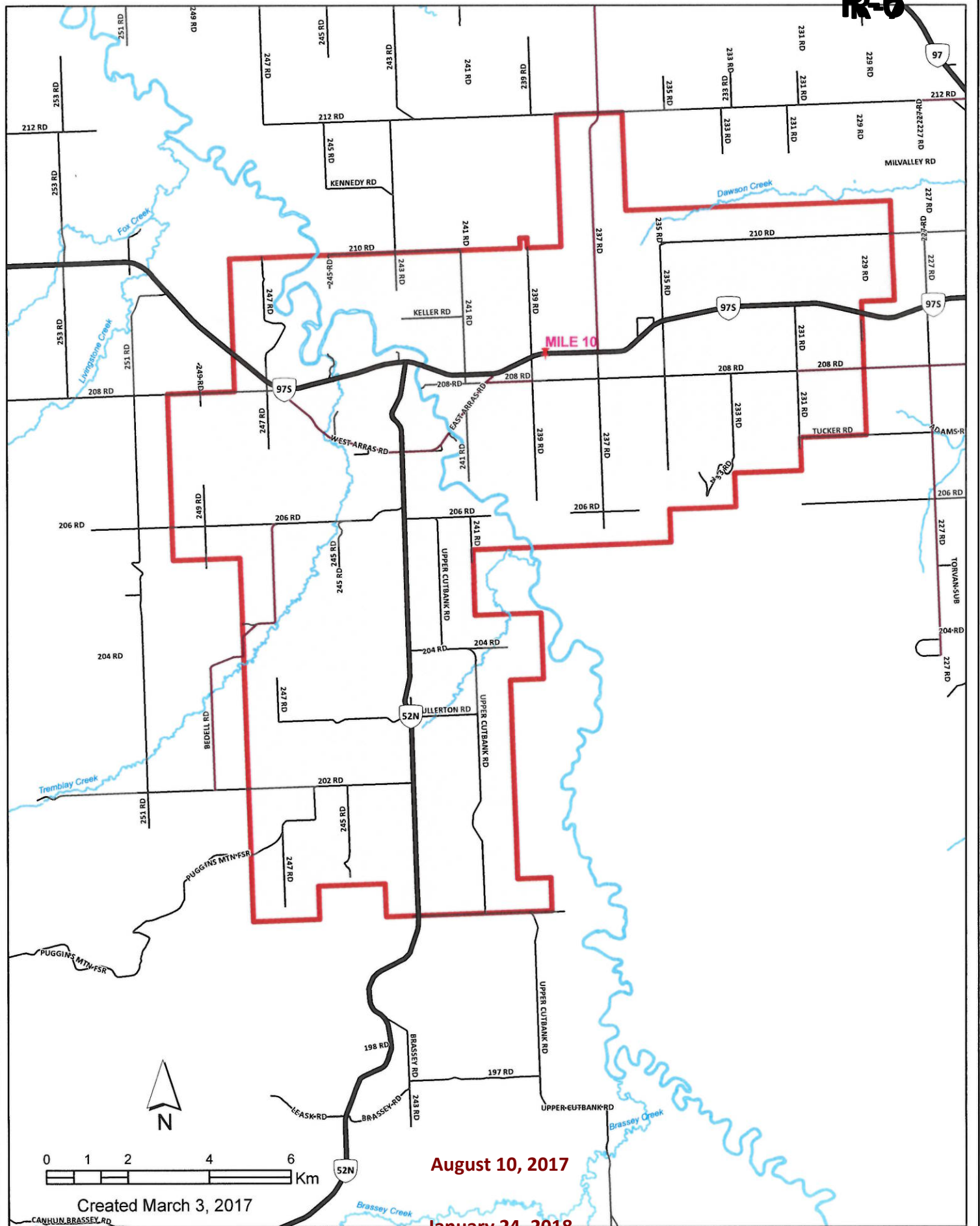
City of Fort St John	Fort St John and Charlie Lake Rural Fire Protection Areas
District of Taylor	Taylor and Fort St John Rural Fire Protection Areas
City of Dawson Creek	Dawson Creek, Pouce Coupe, and Arras Rural Fire Protection Areas
Village of Pouce Coupe	Dawson Creek, Pouce Coupe, and Arras Rural Fire Protection Areas
District of Chetwynd	Chetwynd and Moberly Lake Fire Protection Areas
Hudson's Hope	Chetwynd and Moberly Lake Rural Fire Protection Areas
District of Tumbler Ridge	Chetwynd and Arras Rural Fire Protection Areas

August 10, 2017

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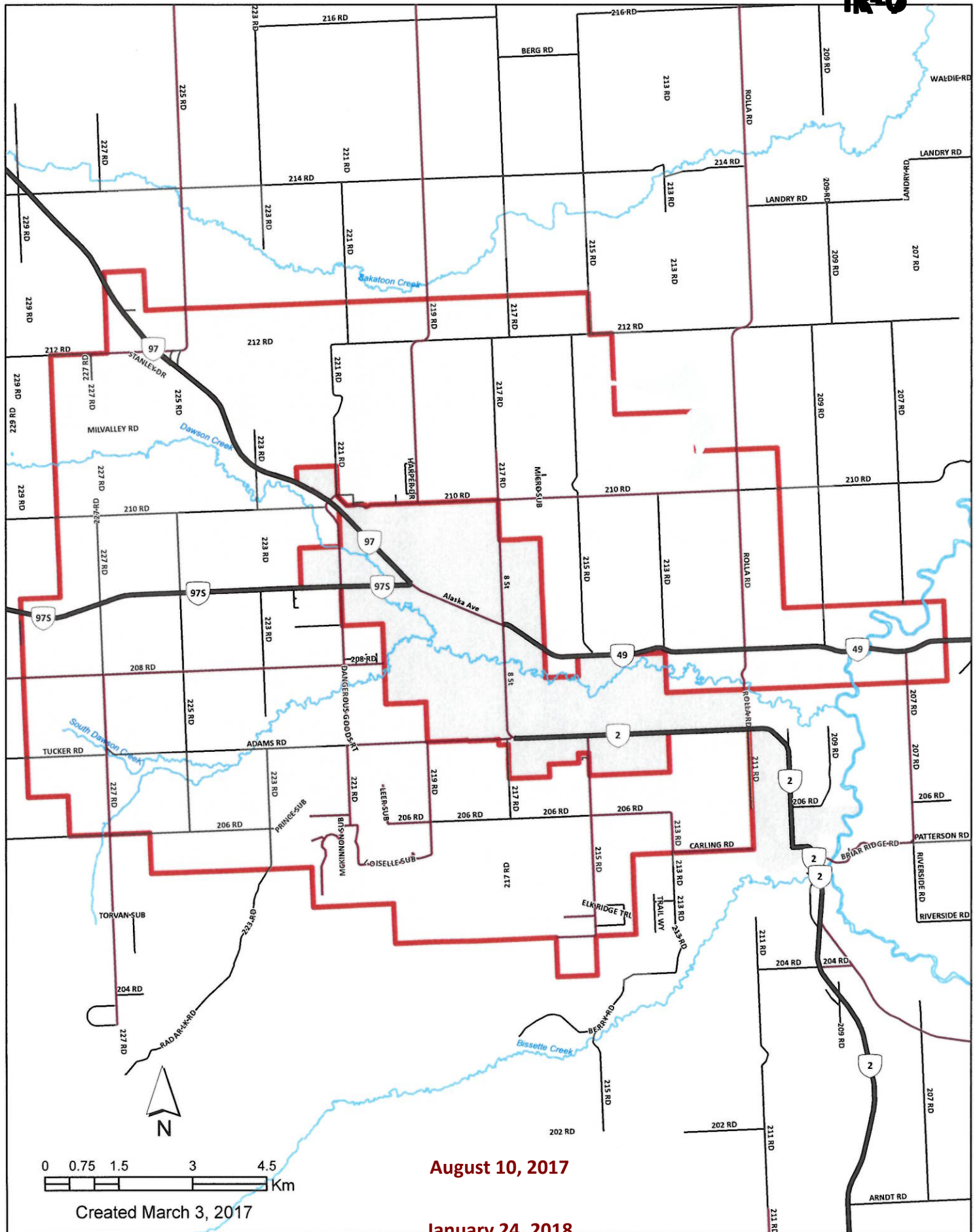
Page 158 of 258

RR-6



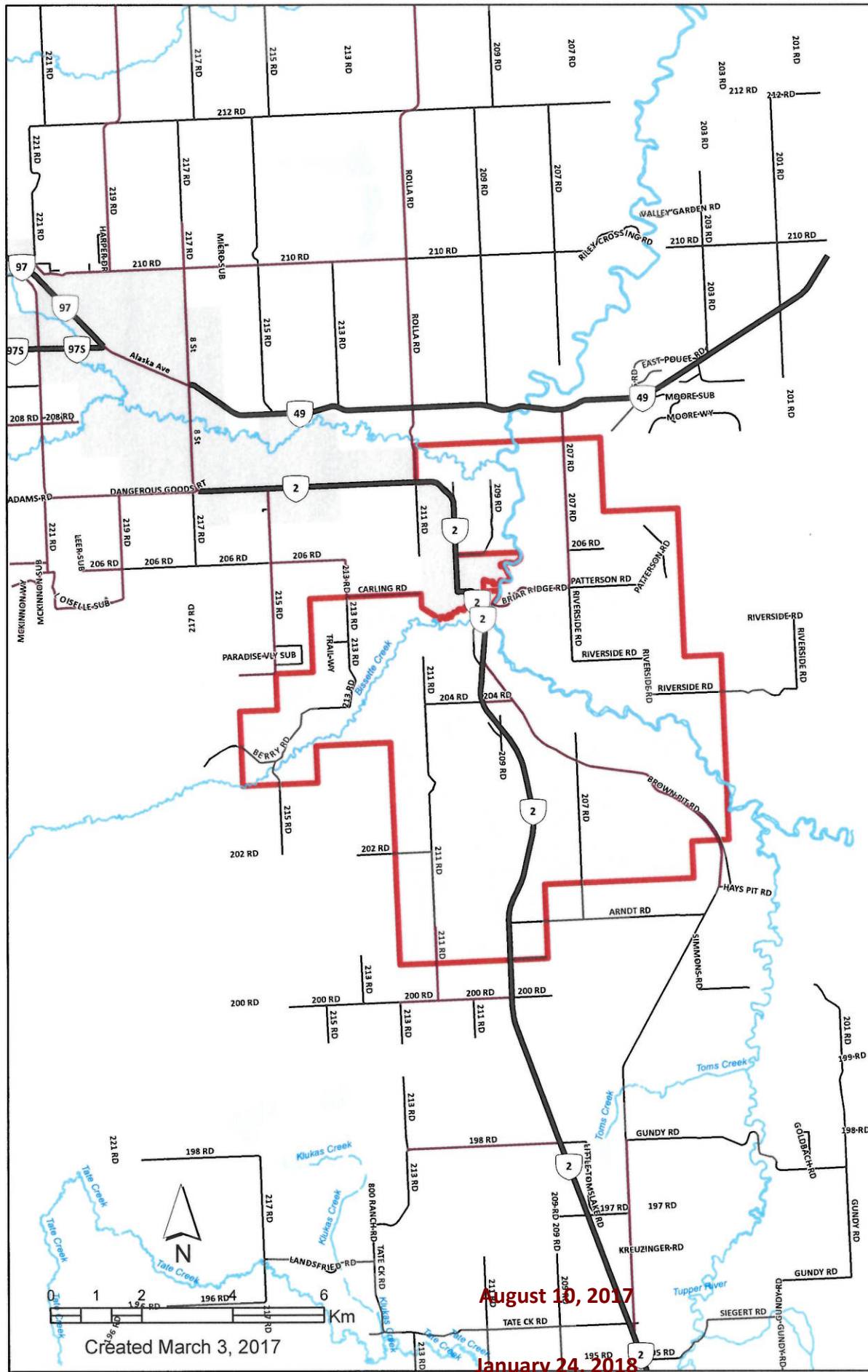
Dawson Creek Rural Fire Protection Area

R-6

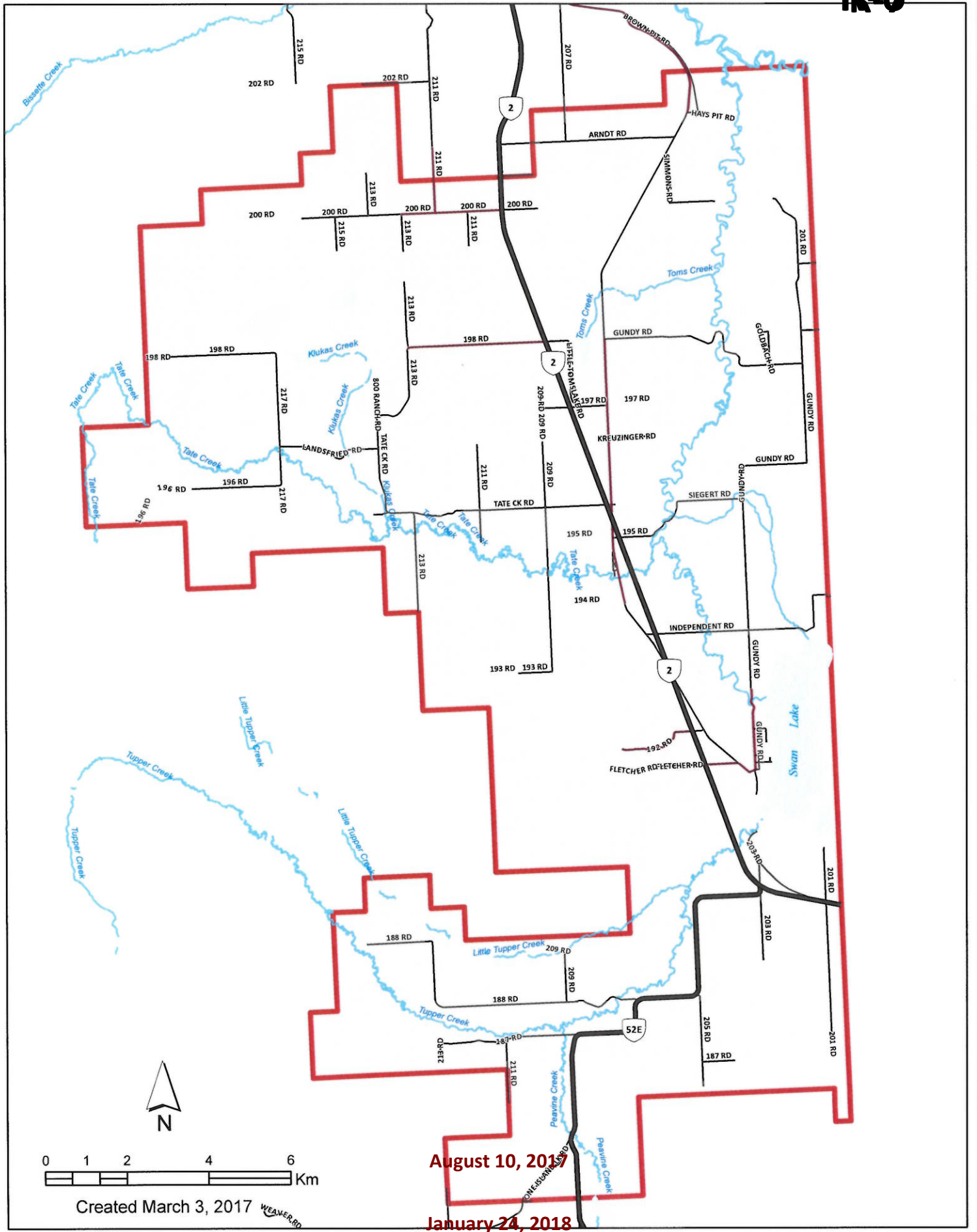


August 10, 2017

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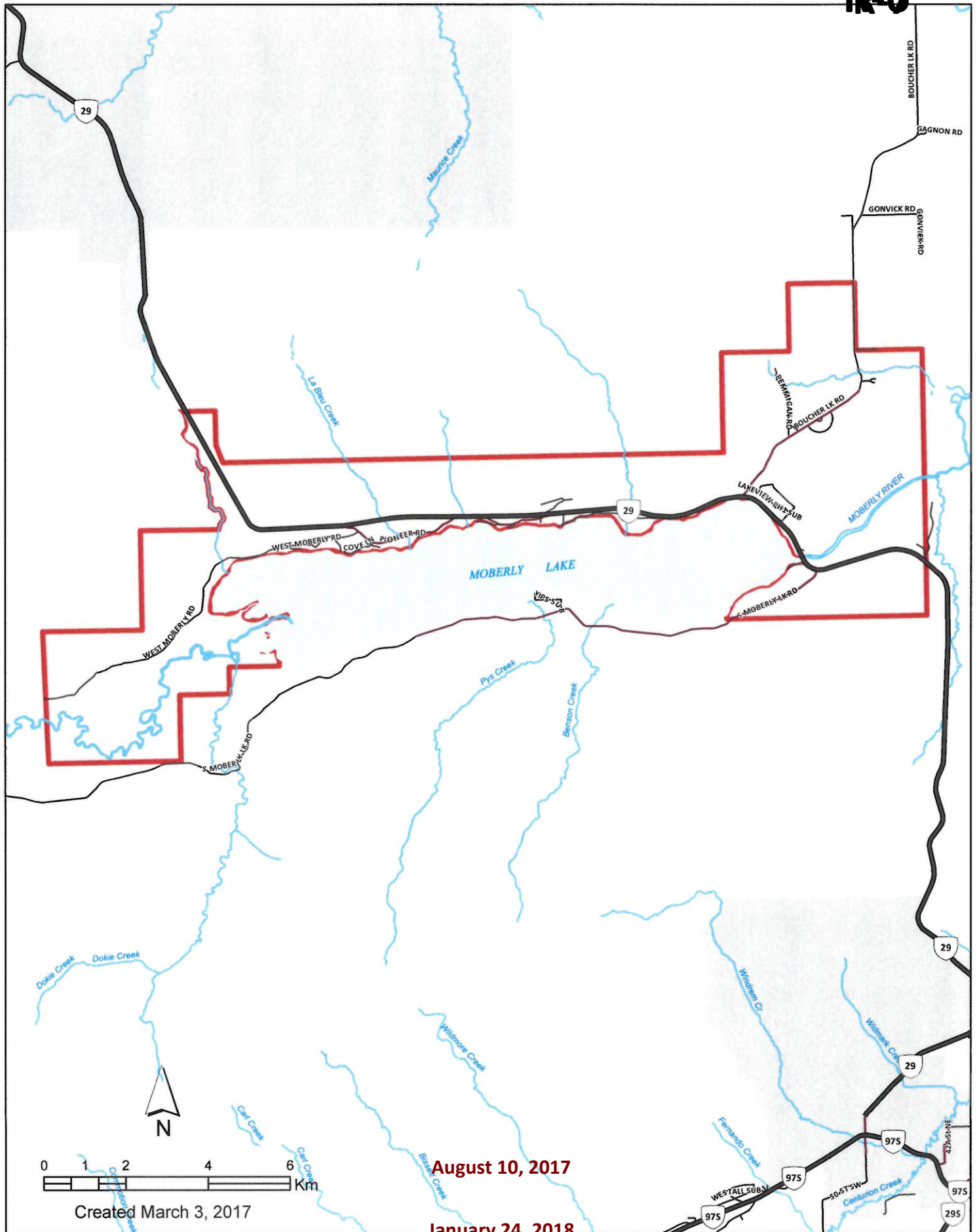
RR-6



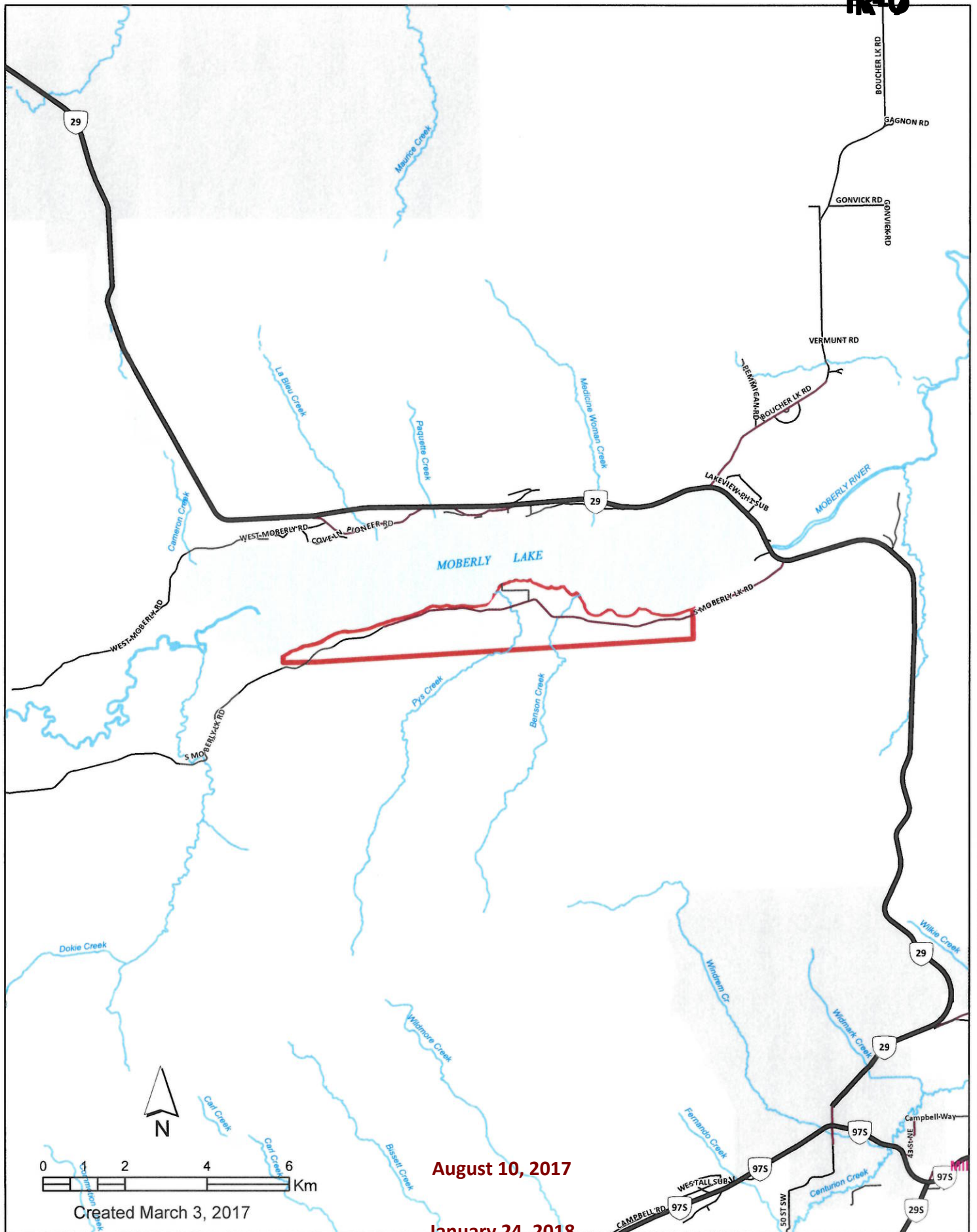
Moberly Lake Fire Protection Area

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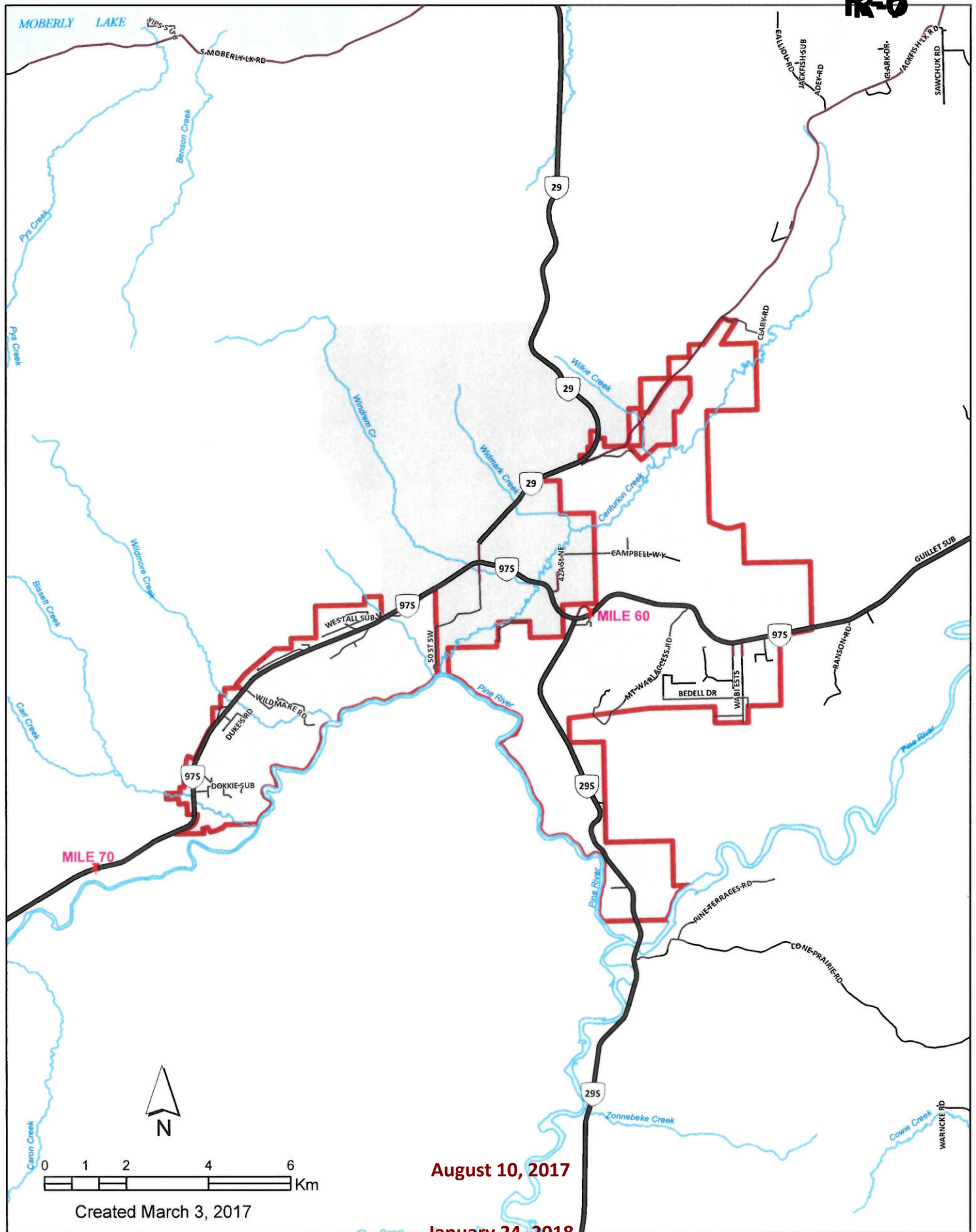
RR-6



Chetwynd Rural Fire Protection Area

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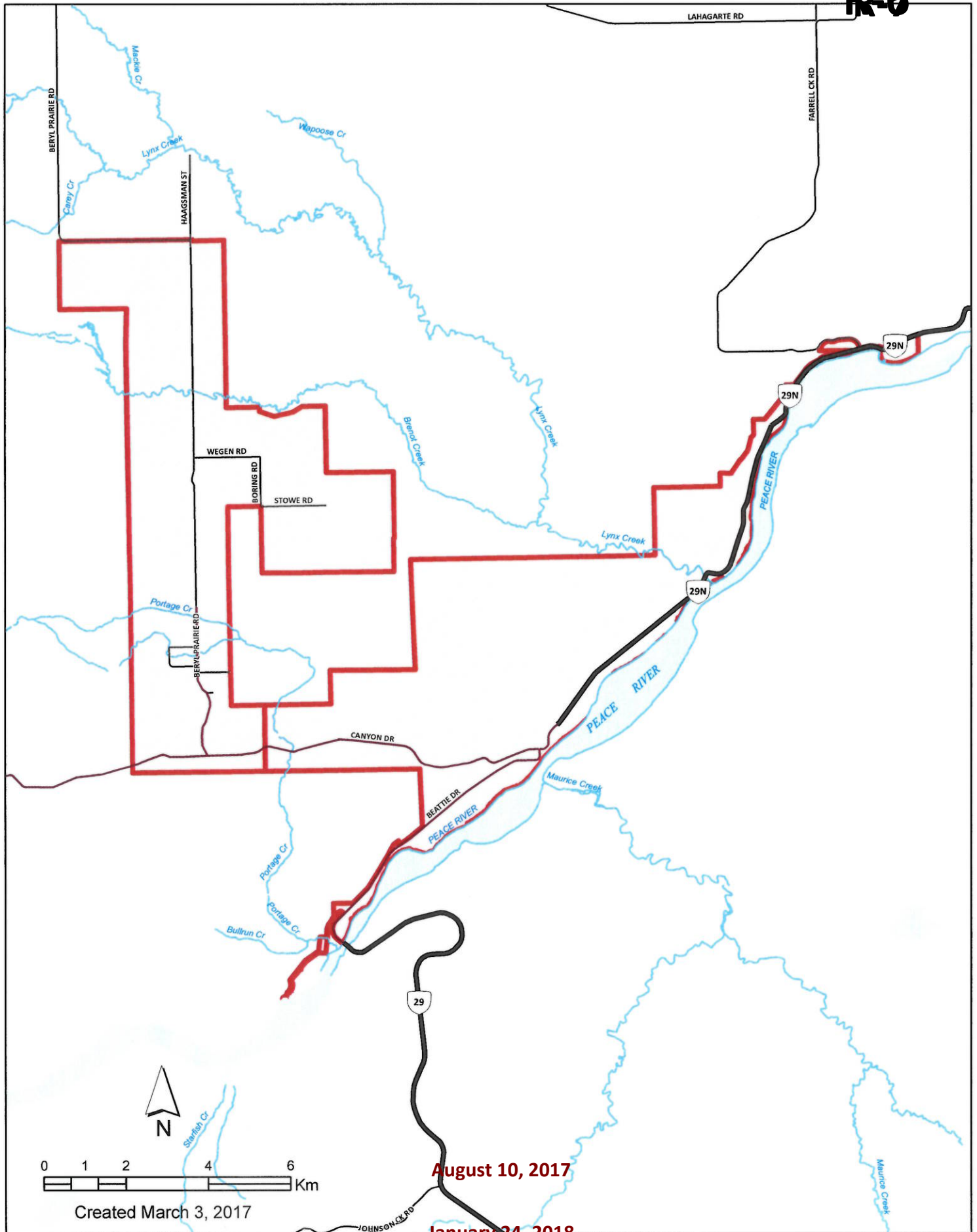
R-6



'HH - Beryl Prairie, HH - Downtown, and HH - Peace Canyon Fire Protection Areas

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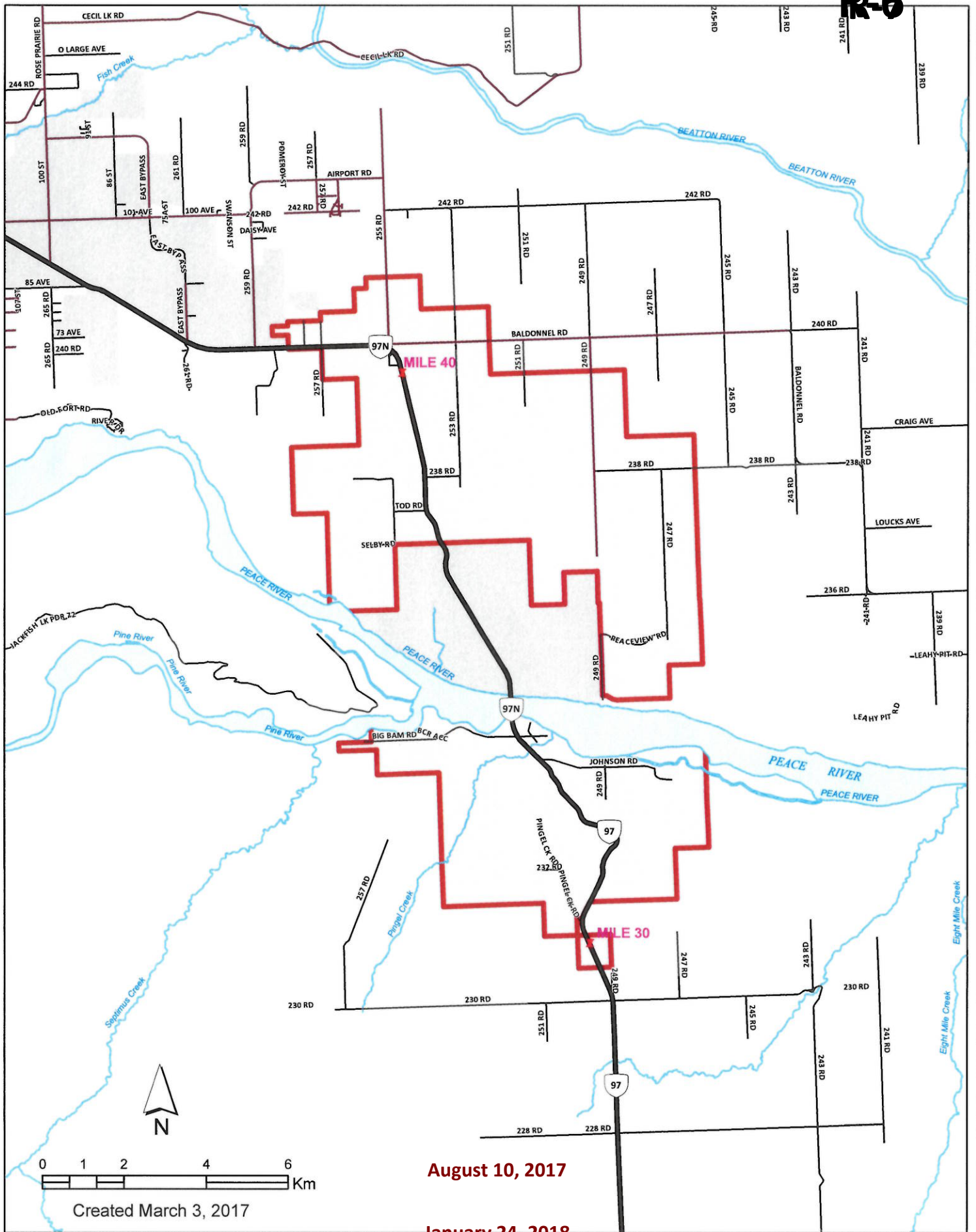
R-6



Taylor Rural Fire Protection Area

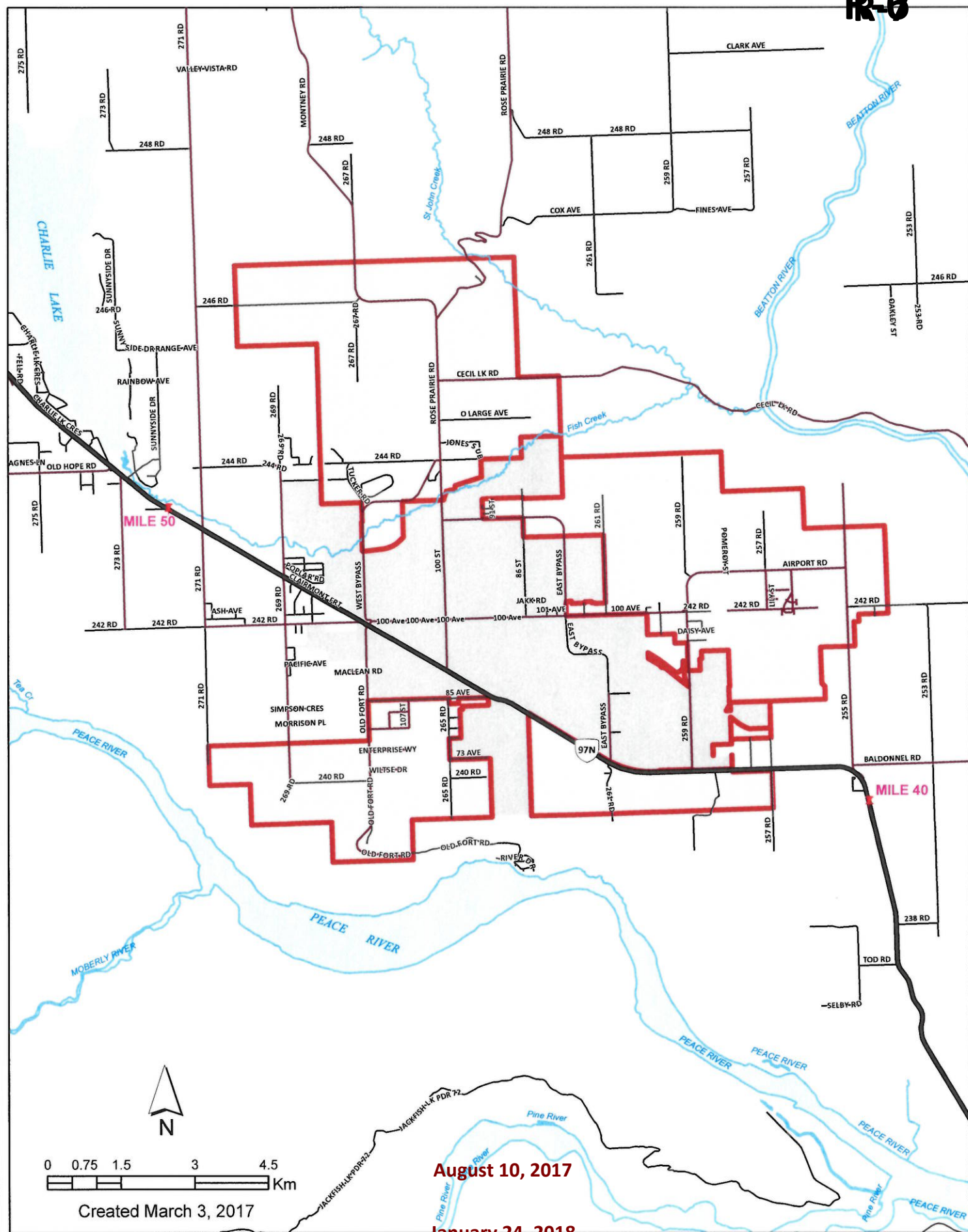
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R-6



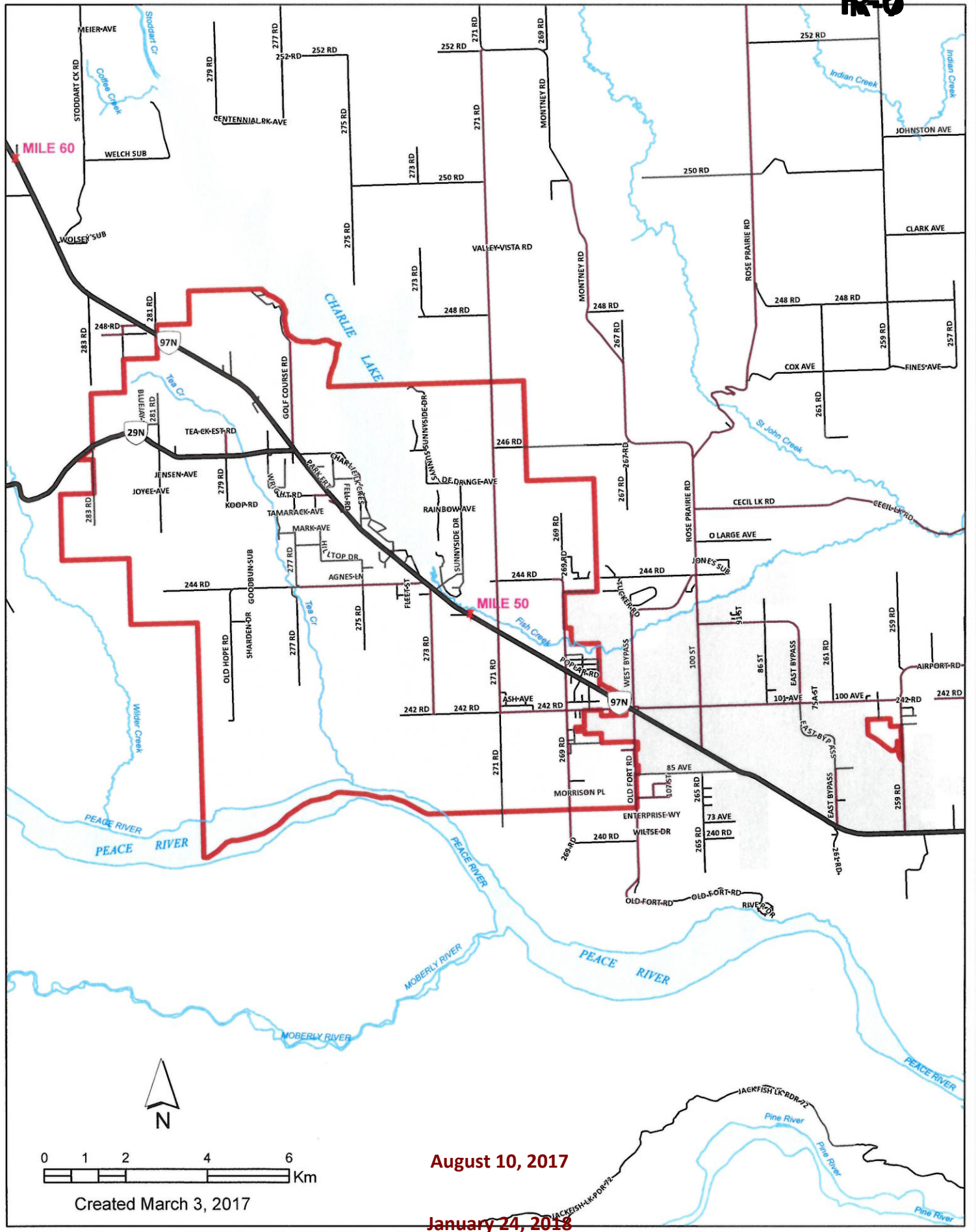
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SCHEDULE 3



2007-2017 REQUISITIONS FOR MANAGEMENT OF DEVELOPMENT

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R-6**EXHIBIT 3****Management of Development**

Category

1-6100**Basis of Apportionment:**

Electoral Areas: Converted Hospital Assessments - Land & Improvements

Municipalities: Converted General Municipal Assessments -
Land & Improvements

Tax Rate or Other Limitations: None

*LGA s. 800 (2) (f)***Draft to COW Feb. 23, 2017**

	Requisition Amount	Tax Rate Per 1000	Figures for Apportionment	Percent	Prior Year Adjustment	Adjusted Requisition
Tumbler Ridge	19,989	0.026	76,545,687	2.61%	-	19,989
Dawson Creek	65,519	0.026	250,896,936	8.56%	296	65,815
Hudson's Hope	9,933	0.026	38,036,067	1.30%	108	10,040
Fort St. John	142,450	0.026	545,498,718	18.62%	484	142,935
Taylor	11,050	0.026	42,313,184	1.44%	-	11,050
Pouce Coupe	2,926	0.026	11,206,117	0.38%	29	2,955
Chetwynd	16,316	0.026	62,481,193	2.13%	47	16,363
Area B	232,868	0.026	891,744,521	30.44%	(2,053)	230,816
Area C	61,599	0.026	235,886,018	8.05%	111	61,710
Area D	114,347	0.026	437,881,400	14.95%	837	115,185
Area E	88,015	0.026	337,042,943	11.51%	141	88,156
<i>See Area E Jurisdiction Split Below</i>						
Total	765,012		2,929,532,784	100.00%	(0)	765,012

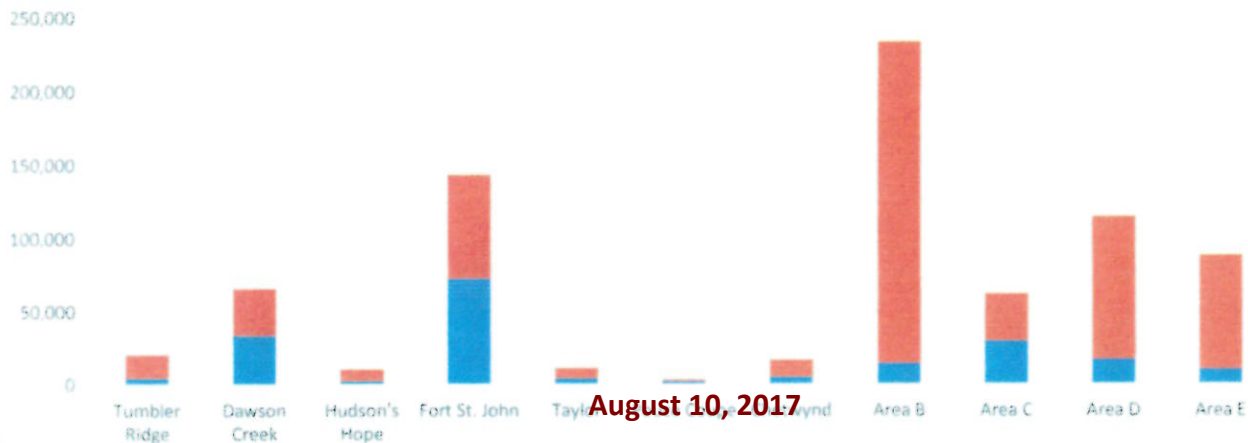
Area E - Jurisdiction 759	87,067	333,413,265	98.92%	139	87,206
Area E - Jurisdiction 760	948	3,629,678	1.08%	2	949
	88,015	337,042,943	100%	141	88,156

Municipal Requisition	269,147
Electoral Area Requisition	495,866
Total Requisition	765,012

After Prior Year Adj

	Last Year	Change %	Change \$
Requisition	612,423	24.9%	152,589
Assessment	2,934,954,937	-0.2%	(5,422,153)
Tax Rate	0.021	25.1%	0.005

Class 1 - Residential Total All Other Classes

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R-6**EXHIBIT 3****Management of Development**

Category

1-6100

Basis of Apportionment:

Electoral Areas: Converted Hospital Assessments - Land & Improvements

Municipalities: Converted General Municipal Assessments -
Land & Improvements**Tax Rate or Other Limitations:** None

LGA s. 800 (2) (f)

Adopted March 24, 2016

	Requisition Amount	Tax Rate Per 1000	Figures for Apportionment	Percent	Prior Year Adjustment	Adjusted Requisition
Tumbler Ridge	17,720	0.021	84,921,438	2.89%	-	17,720
Dawson Creek	52,405	0.021	251,143,553	8.56%	(316)	52,089
Hudson's Hope	8,088	0.021	38,760,367	1.32%	(6)	8,082
Fort St. John	115,847	0.021	555,181,831	18.92%	130	115,978
Taylor	8,984	0.021	43,052,312	1.47%	-	8,984
Pouce Coupe	2,236	0.021	10,715,824	0.37%	(6)	2,230
Chetwynd	12,822	0.021	61,446,619	2.09%	3	12,824
Area B	187,709	0.021	899,571,178	30.65%	49	187,758
Area C	52,485	0.021	251,526,749	8.57%	(4)	52,480
Area D	90,332	0.021	432,902,178	14.75%	277	90,609
Area E	63,796	0.021	305,732,888	10.42%	(127)	63,669
See Area E Jurisdiction Split Below						
Total	612,423		2,934,954,937	100.00%	0	612,423

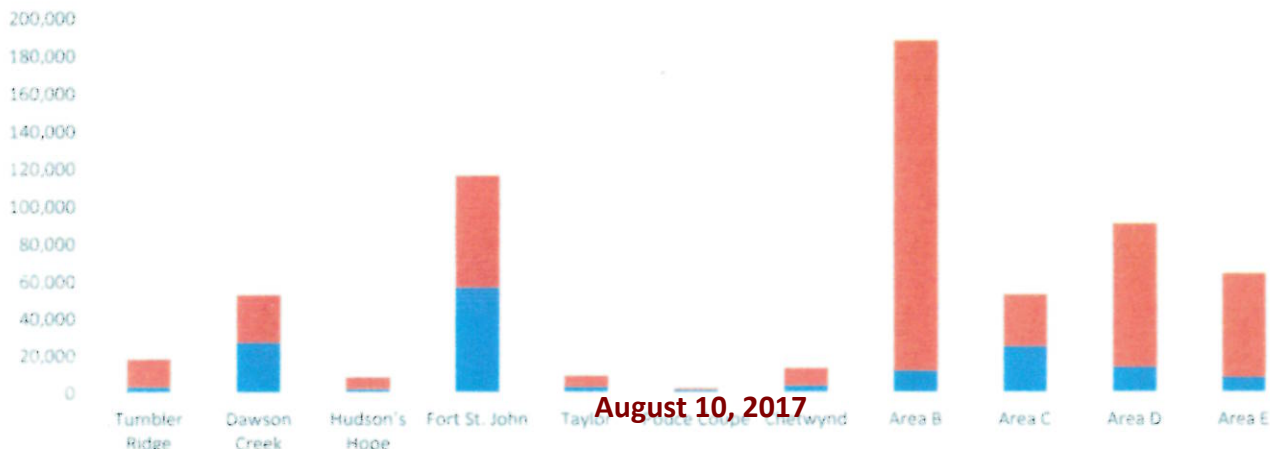
Area E - Jurisdiction 759	63,038	302,102,411	98.81%	(125)	62,913
Area E - Jurisdiction 760	758	3,630,477	1.19%	(2)	756
	63,796	305,732,888	100%	(127)	63,669

Municipal Requisition	217,906
Electoral Area Requisition	394,517
Total Requisition	612,423

After Prior Year Adj

	Last Year		Change %	Change \$
Requisition	768,178		-20.3%	(155,755)
Assessment	2,753,809,522		6.6%	181,145,415
Tax Rate	0.028		-25.2%	(0.007)

Class 1 - Residential Total All Other Classes



August 10, 2017

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R-6**EXHIBIT 3****Management of Development**

Category

1-6100

Basis of Apportionment:

Electoral Areas: Converted Hospital Assessments - Land & Improvements

Municipalities: Converted General Municipal Assessments -
Land & Improvements**Tax Rate or Other Limitations:** None

LGA s. 800 (2) (f)

Adopted March 25, 2015

	Requisition Amount	Tax Rate Per 1000	Figures for Apportionment	Percent	Prior Year Adjustment	Adjusted Requisition
Tumbler Ridge	26,602	0.028	95,363,796	3.46%	-	26,602
Dawson Creek	69,127	0.028	247,809,014	9.00%	(316)	68,810
Hudson's Hope	10,676	0.028	38,273,134	1.39%	(6)	10,670
Fort St. John	137,080	0.028	491,411,567	17.84%	130	137,210
Taylor	11,372	0.028	40,765,944	1.48%	-	11,372
Pouce Coupe	2,978	0.028	10,674,364	0.39%	(6)	2,972
Chetwynd	16,889	0.028	60,543,592	2.20%	3	16,891
Area B	235,406	0.028	843,898,049	30.64%	49	235,456
Area C	62,235	0.028	223,104,002	8.10%	(4)	62,231
Area D	112,356	0.028	402,781,479	14.63%	277	112,633
Area E	83,458	0.028	299,184,581	10.86%	(127)	83,331
See Area E Jurisdiction Split Below						
Total	768,178		2,753,809,522	100.00%	0	768,178

Area E - Jurisdiction 759	82,438	295,529,867	98.78%	(125)	82,313
Area E - Jurisdiction 760	1,019	3,654,713	1.22%	(2)	1,018
	83,458	299,184,580	100%	(127)	83,331

Municipal Requisition	274,527
Electoral Area Requisition	493,651
Total Requisition	768,178

After Prior Year Adj

	Last Year	Change %	Change \$
Requisition	438,633	75.1%	329,545
Assessment	2,459,966,431	11.9%	293,843,091
Tax Rate	0.018	56.4%	0.010

Class 1 - Residential Total All Other Classes

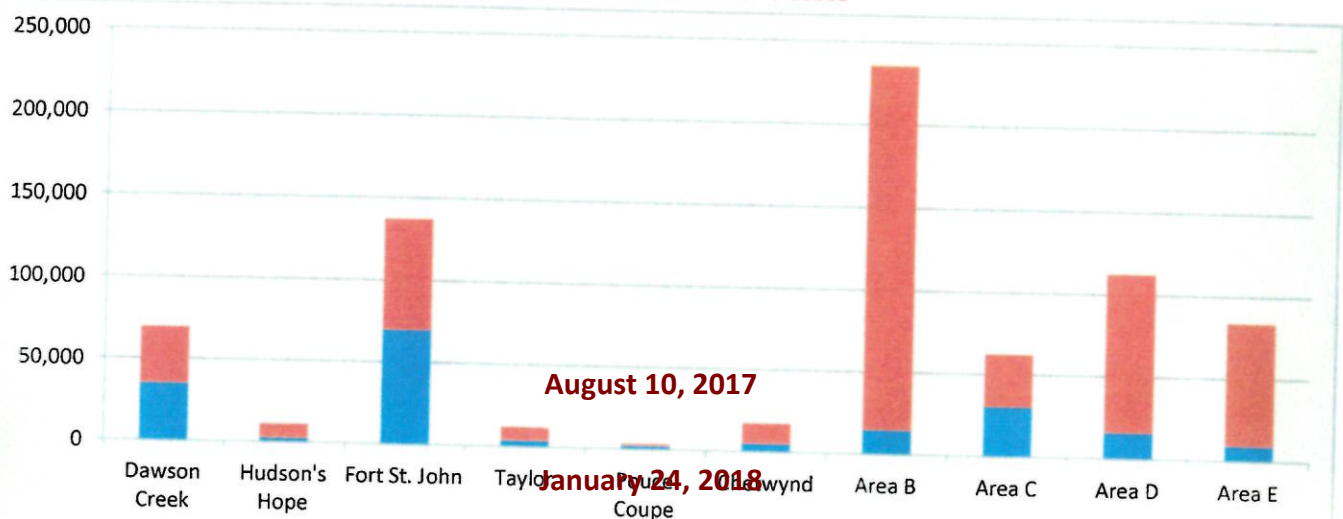


EXHIBIT 3

R-6

Management of Development

Category
1-6100

Basis of Apportionment:

Electoral Areas: Converted Hospital Assessments - Land & Improvements

Municipalities: Converted General Municipal Assessments -
Land & Improvements

Tax Rate or Other Limitations: None

LGA s. 800 (2) (f)

Adopted March 27, 2014

	Requisition Amount	Tax Rate Per 1000	Figures for Apportionment	Percent	Prior Year Adjustment	Adjusted Requisition
Tumbler Ridge (Does Not Participate)	-	-	-	-	-	-
Dawson Creek	41,549	0.018	233,019,556	9.47%	(434)	41,116
Hudson's Hope	6,686	0.018	37,494,421	1.52%	2	6,688
Fort St. John	74,856	0.018	419,809,489	17.07%	177	75,033
Taylor	7,023	0.018	39,389,418	1.60%	-	7,023
Pouce Coupe	1,811	0.018	10,156,515	0.41%	9	1,820
Chetwynd	10,383	0.018	58,231,829	2.37%	39	10,422
Area B	139,453	0.018	782,088,350	31.79%	(707)	138,746
Area C	36,399	0.018	204,134,636	8.30%	710	37,109
Area D	66,926	0.018	375,338,212	15.26%	(904)	66,022
Area E	53,547	0.018	300,304,005	12.21%	1,107	54,654
See Area E Jurisdiction Split Below						
Total	438,633	0.018	2,459,966,431	100.00%	0	438,633

Area E - Jurisdiction 759	52,895	296,647,231	98.78%	1,094	53,988
Area E - Jurisdiction 760	652	3,656,773	1.22%	13	666
	53,547	300,304,004	100%	1,107	54,654

Municipal Requisition	142,102
Electoral Area Requisition	296,531
Total Requisition	438,633

After Prior Year Adj.

	Last Year	Change %	Change \$
Requisition	385,652	13.7%	52,981
Assessment	2,266,632,551	8.5%	193,333,880
Tax Rate	0.017	4.8%	0.001

Class 1 - Residential Total All Other Classes

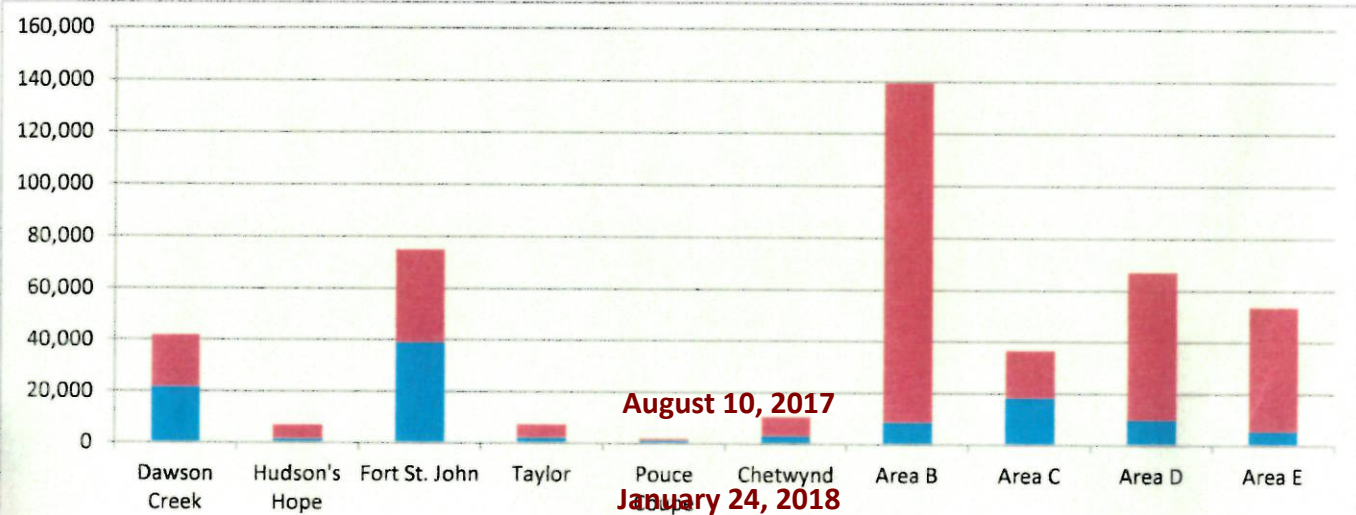


EXHIBIT 3

65
R-6

Management of Development

Category

1-6100

Basis of Apportionment:

Electoral Areas: Converted Hospital Assessments - Land & Improvements

Municipalities: Converted General Municipal Assessments -
Land & Improvements

Tax Rate or Other Limitations: None

LGA s. 800 (2) (f)

Adopted March 28, 2013

	Requisition Amount	Tax Rate Per 1000	Figures for Apportionment	Percent	Prior Year Adjustment	Adjusted Requisition
Tumbler Ridge (Does Not Participate)	-	-	-	-	-	-
Dawson Creek	35,178	0.017	206,752,933	9.12%	(364)	34,813
Hudson's Hope	5,896	0.017	34,652,482	1.53%	2	5,898
Fort St. John	64,568	0.017	379,492,953	16.74%	149	64,717
Taylor	6,614	0.017	38,875,367	1.72%	-	6,614
Pouce Coupe	1,486	0.017	8,732,906	0.39%	8	1,493
Chetwynd	9,779	0.017	57,476,462	2.54%	33	9,812
Area B	124,840	0.017	733,733,797	32.37%	(594)	124,245
Area C	31,003	0.017	182,219,851	8.04%	597	31,600
Area D	59,166	0.017	347,745,519	15.34%	(759)	58,407
Area E	47,121	0.017	276,950,281	12.22%	930	48,051
See Area E Jurisdiction Split Below						
Total	385,652		2,266,632,551	100.00%	0	385,652

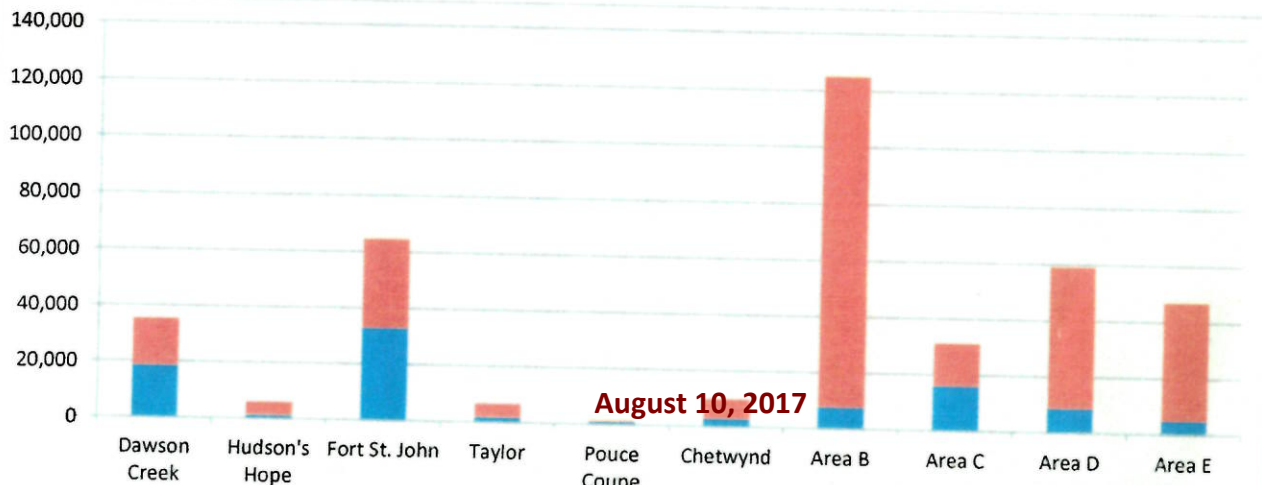
Area E - Jurisdiction 759	46,524	273,442,091	98.73%	918	47,443
Area E - Jurisdiction 760	597	3,508,188	1.27%	12	609
	47,121	276,950,279	100%	930	48,051

Municipal Requisition	123,348
Electoral Area Requisition	262,304
Total Requisition	385,652

After Prior Year Adj

	Last Year	Change %	Change \$
Requisition	550,854	-30.0%	(165,202)
Assessment	2,085,216,094	8.7%	181,416,457
Tax Rate	0.026	-35.6%	(0.009)

Class 1 - Residential Total All Other Classes



August 10, 2017

January 24, 2018

EXHIBIT 3

Management of Development

Category

1-8100

67
R-6

Basis of Apportionment:

Electoral Areas: Converted Hospital Assessments - Land & Improvements

Municipalities: Converted General Municipal Assessments -
Land & Improvements

Tax Rate or Other Limitations: None

LGA s. 800 (2) (f)

Adopted 22 March 2012

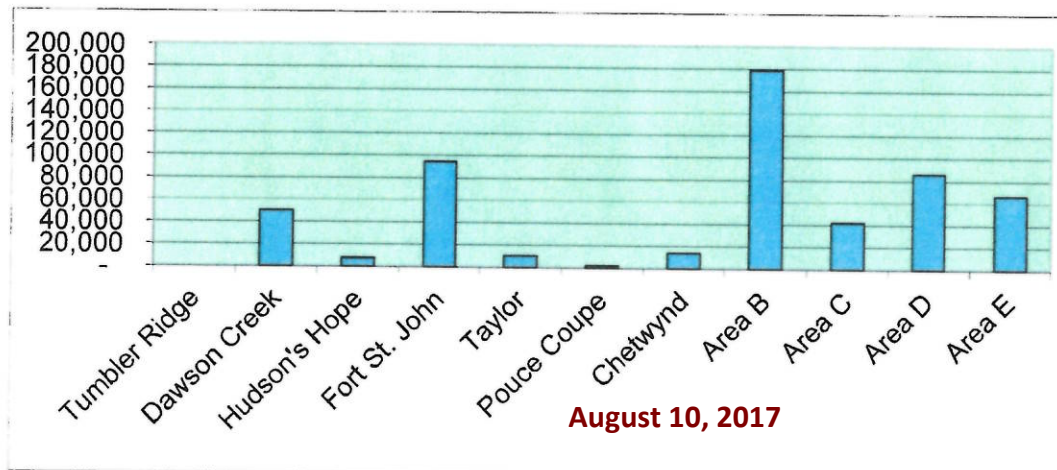
	Requisition Amount	Tax Rate Per 1000	Figures for Apportionment	Percent	Prior Year Adjustment	Adjusted Requisition
Tumbler Ridge	-	-	-	-	-	-
Dawson Creek	49,928	0.026	188,997,532	9.06%	42	49,970
Hudson's Hope	7,671	0.026	29,037,101	1.39%	(2)	7,669
Fort St. John	94,771	0.026	358,747,017	17.20%	249	95,019
Taylor	10,037	0.026	37,995,662	1.82%	-	10,037
Pouce Coupe	1,991	0.026	7,537,724	0.36%	4	1,996
Chetwynd	13,885	0.026	52,560,405	2.52%	62	13,947
Area B	178,869	0.026	677,094,641	32.47%	(1,561)	177,307
Area C	41,576	0.026	157,382,956	7.55%	108	41,684
Area D	85,891	0.026	325,132,989	15.59%	779	86,670
Area E	66,236	0.026	250,730,067	12.02%	318	66,554
See Area E Jurisdiction Split Below						
Total	550,854		2,085,216,094	100.00%	0	550,854

Area E - Jurisdiction 759	65,337	247,326,746	98.64%	314	65,651
Area E - Jurisdiction 760	899	3,403,322	1.36%	4	903
	66,236	250,730,068	100%	318	66,554

Municipal Requisition	178,638
Electoral Area Requisition	372,215
Total Requisition	550,854

After Prior Year Adj

	Last Year	Change %	Change \$
Requisition	463,717	18.8%	87,137
Assessment	1,928,681,648	8.1%	156,534,446
Tax Rate	0.024	9.9%	0.002



August 10, 2017

January 24, 2018

EXHIBIT 3

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R-6

Management of Development

Category
1-6100

Basis of Apportionment:

Electoral Areas: Converted Hospital Assessments - Land & Improvements

Municipalities: Converted General Municipal Assessments -
Land & Improvements

Tax Rate or Other Limitations: None

LGA s. 800 (2) (f)

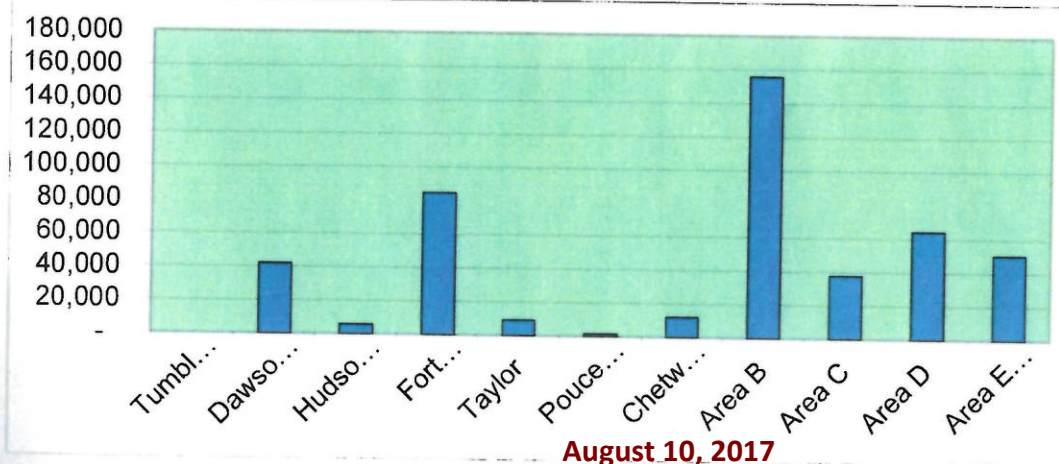
Adopted March 24, 2011

	Requisition Amount	Tax Rate Per 1000	Figures for Apportionment	Percent	Prior Year Adjustment	Adjusted Requisition
Tumbler Ridge	-	-	-	-	-	-
Dawson Creek	41,907	0.02	174,300,404	9.04%	206	42,113
Hudson's Hope	5,897	0.02	24,525,871	1.27%	24	5,921
Fort St. John	84,567	0.02	351,726,898	18.24%	(202)	84,365
Taylor	9,228	0.02	38,381,430	1.99%	-	9,228
Pouce Coupe	1,657	0.02	6,890,742	0.36%	10	1,667
Chetwynd	11,982	0.02	49,836,399	2.58%	25	12,007
Area B	155,787	0.02	647,943,708	33.60%	257	156,044
Area C	37,861	0.02	157,469,069	8.16%	101	37,961
Area D	64,417	0.02	267,922,722	13.89%	201	64,618
Area E (see jurisdiction split below)	50,415	0.02	209,684,405	10.87%	(621)	49,794
Total	463,717		1,928,681,648	100.00%	(0)	463,717
Area E - Jurisdiction 759	49,607		206,322,121	98.40%	(611)	48,995
Area E - Jurisdiction 760	808		3,362,283	1.60%	(10)	798
	50,415		209,684,404	100%	(621)	49,794

Municipal Requisition	155,300
Electoral Area Requisition	308,417
Total Requisition	463,717

After Prior Year Adj

	Last Year	Change %	Change \$
Requisition	504,306	-8.0%	(40,589)
Assessment	1,754,309,631	9.9%	174,372,017
Tax Rate	0.03		



August 10, 2017

EXHIBIT 3

Management of Development

Category
1-6100

Basis of Apportionment:

Electoral Areas: Converted Hospital Assessments - Land & Improvements

Municipalities: Converted General Municipal Assessments -
Land & Improvements

Tax Rate or Other Limitations: None

LGA s. 800 (2) (f)

Adopted March 25, 2010

	Requisition Amount	Tax Rate Per 1000	Figures for Apportionment	Percent	Prior Year Adjustment	Adjusted Requisition
Tumbler Ridge	-	-	-	-	-	-
Dawson Creek	45,990	0.03	161,738,321	9.12%	(24)	45,966
Hudson's Hope	6,698	0.03	23,557,067	1.33%	223	6,922
Fort St. John	96,193	0.03	338,295,474	19.07%	83	96,276
Taylor	5,473		contract		-	5,473
Pouce Coupe	1,685	0.03	5,925,935	0.33%	11	1,696
Chetwynd	13,356	0.03	46,972,051	2.65%	12	13,368
Area B	175,347	0.03	616,666,031	34.77%	(408)	174,939
Area C	42,990	0.03	151,187,030	8.52%	(133)	42,857
Area D	65,093	0.03	228,919,741	12.91%	144	65,237
Area E	51,481	0.03	181,047,981	10.21%	91	51,571
Total	504,306		1,754,309,631	98.91%	0	504,306

Contract Total

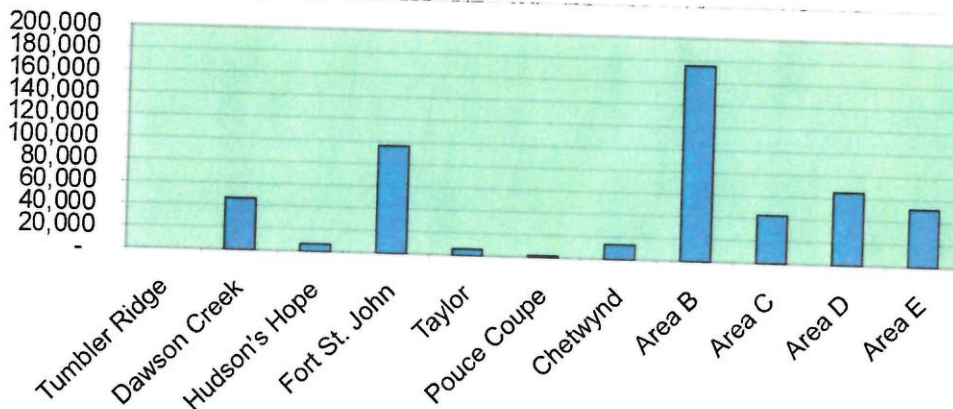
5,473

Taylor - Fire Service Area Only (50% of what would be apportioned in Prior Year)

Municipal Requisition	169,702
Electoral Area Requisition	334,605
Total Requisition	504,306

After Prior Year Adj

	Last Year	Change %	Change \$
Requisition	562,740	-10.4%	(58,434)
Assessment	1,642,085,172	6.8%	112,224,459
Tax Rate	0.03		



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EXHIBIT 3

Management of Development

Category
1-6100

Basis of Apportionment:

Electoral Areas: Converted Hospital Assessments - Land & Improvements

Municipalities: Converted General Municipal Assessments -
Land & Improvements

Tax Rate or Other Limitations: None

LGA s. 800 (2) (f)

Adopted March 26, 2009

	Requisition Amount	Tax Rate Per 1000	Figures for Apportionment	Percent	Prior Year Adjustment	Adjusted Requisition
Tumbler Ridge	-		-		-	-
Chetwynd	16,090	0.03	47,485,620	2.86%	-	16,090
Dawson Creek	48,593	0.03	143,414,654	8.64%	(464)	48,129
Hudson's Hope	7,430	0.03	21,928,512	1.32%	(23)	7,407
Fort St. John	105,866	0.03	312,447,933	18.81%	-	105,866
Taylor	6,354		contract		-	6,354
Pouce Coupe	1,726	0.03	5,092,736	0.31%	1	1,727
Area B	207,625	0.03	612,771,155	36.90%	473	208,098
Area C	47,155	0.03	139,170,064	8.38%	(227)	46,928
Area D	64,920	0.03	191,599,578	11.54%	706	65,626
Area E	56,983	0.03	168,174,920	10.13%	(466)	56,516
Total	562,740		1,642,085,172	98.87%	(0)	562,740

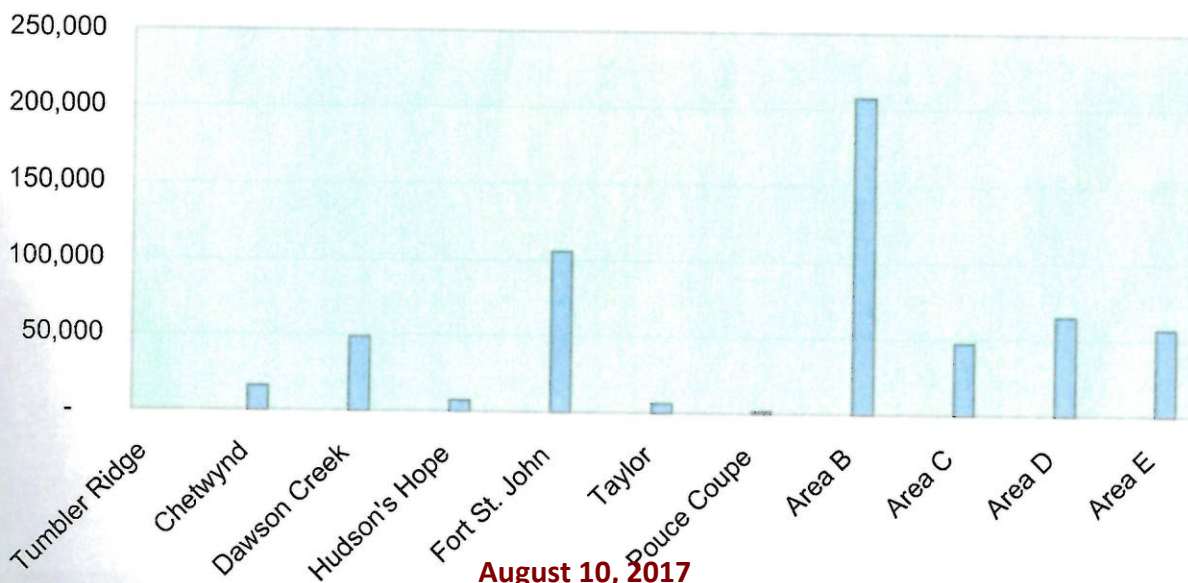
Contract Total

6,354

Taylor - Fire Service Area Only (50% of what would be if opted in)

Municipal Requisition	186,058
Electoral Area Requisition	376,682
Total Requisition	562,740

	Last Year	Change %	Change \$
Requisition	390,559	44.1%	172,181
Assessment	1,214,296,863	35.2%	427,788,309
Tax Rate	0.03		



August 10, 2017

January 24, 2018

R-6**EXHIBIT 3****Management of Development**

Category

1-6100

Basis of Apportionment: Assessment as fixed for taxation for Regional Hospital District taxation purposes in Electoral Areas

Assessment as fixed for taxation for general purposes in the municipalities

FINAL - As Adopted 27 March 2008

Tax Rate or Other Limitations: None

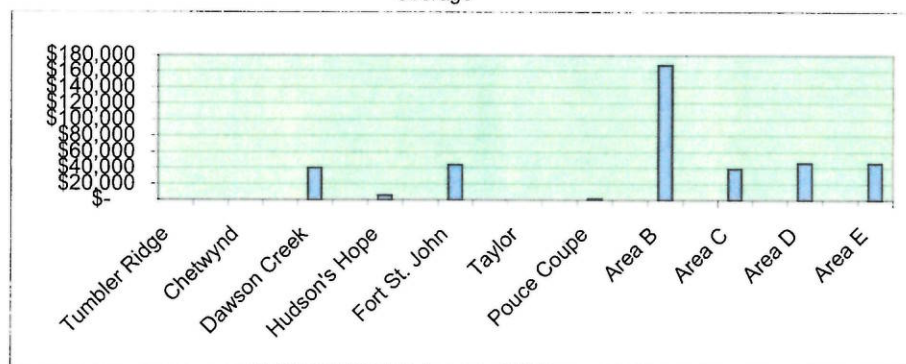
	Requisition Amount	Tax Rate Per 1000	Figures for Apportionment	Percent	Prior Year Adjustment	Adjusted Requisition
Tumbler Ridge	\$ -	-				\$ -
Chetwynd	\$ -	per contract				\$ -
Dawson Creek	\$ 40,049	0.03	\$ 140,411,912	10.25%		\$ 40,049
Hudson's Hope	\$ 5,825	0.03	\$ 20,423,963	1.49%		\$ 5,825
Fort St. John	\$ 44,213	per contract		11.32%		\$ 44,213
Taylor	\$ -	per contract				\$ -
Pouce Coupe	\$ 1,380	0.03	\$ 4,837,972	0.35%	\$ 42	\$ 1,422
Area B	\$ 167,625	0.03	\$ 587,696,523	42.92%	1,183	\$ 168,808
Area C	\$ 38,838	0.03	\$ 136,167,287	9.94%	(337)	\$ 38,501
Area D	\$ 46,510	0.03	\$ 163,063,715	11.91%	(429)	\$ 46,081
Area E	\$ 46,119	0.03	\$ 161,695,491	11.81%	(459)	\$ 45,660
Total	\$ 390,559		\$ 1,214,296,863	100.00%	\$ 0	\$ 390,559

Contract Total \$ 44,213

Municipal Requisition	\$ 91,509
Electoral Area Requisition	\$ 299,050
Total Requisition	\$ 390,559

Last Year		Change %	Change \$
Requisition	\$ 407,501	-4.2%	\$ (16,942)
Assessment	\$ 929,628,123	30.6%	\$ 284,668,740
Tax Rate	\$ 0.04		

average



August 10, 2017

January 24, 2018

EXHIBIT 3

Category
1-6100

R-6

Management of Development

Basis of Apportionment: Assessment as fixed for taxation for Regional Hospital District
taxation purposes in Electoral Areas

Assessment as fixed for taxation for general purposes in the
municipalities

Tax Rate or Other Limitations: None

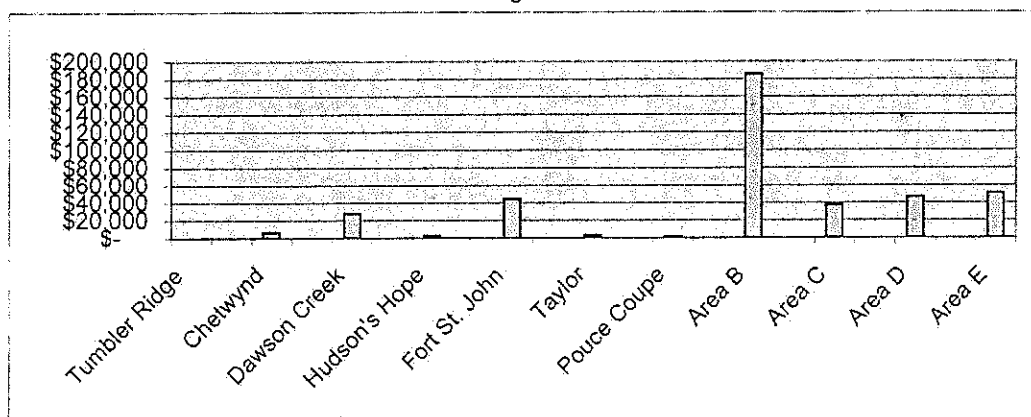
	Requisition Amount	Tax Rate Per 1000	Figures for Apportionment	Percent
Tumbler Ridge	\$ -	-	-	
Chetwynd	\$ 6,936		per contract	
Dawson Creek	\$ 28,108		per contract	
Hudson's Hope	\$ 2,805		per contract	
Fort St. John	\$ 44,213		per contract	
Taylor	\$ 3,340		per contract	
Pouce Coupe	\$ 1,383	0.03	\$ 3,992,612	
Area B	\$ 185,765	0.03	\$ 536,145,163	
Area C	\$ 37,328	0.03	\$ 107,734,251	
Area D	\$ 46,448	0.03	\$ 134,055,185	
Area E	\$ 51,176	0.03	\$ 147,700,912	
Total	\$ 407,501		\$ 929,628,123	0.00%

Contract Total \$ 85,402

Municipal Requisition	\$ 86,785
Electoral Area Requisition	\$ 320,716
Total Requisition	\$ 407,501

	Last Year	Change %	Change \$
Requisition	\$ 336,710	21.0%	\$ 70,791
Assessment	\$ 832,231,336	11.7%	\$ 97,396,787
Tax Rate	\$ 0.04		

average



August 10, 2017

January 24, 2018

Kim Frech
Kim Frech, Chief Financial Officer

R-6


www.pibc.bc.ca

What is planning? What do planners do?

Over a century ago, Canadians from rural areas began moving to larger centres looking for better opportunities. This transformation spawned some of the most important questions we face today. How do we build the future without destroying the past? How do we balance social and ecological health with economic growth? How do we meet everyone's needs in innovative yet practical and affordable ways? Professional planners are forward looking and, therefore, equipped to ask these questions and then to help find answers to positively shape communities and environments.

What is planning?

Planning, in general, is systematic decision-making that leads to informed action. Community planning, in particular, is an evolving process unique to each community that envisions and shapes where and how people live, work, and play. Intended outcomes are plans and policies that balance people, communities, environment, and economy. Community planning is an

ever-changing and increasingly important field. As cities, towns, and regions everywhere change and grow,

continues over...



What specialties does planning offer?

Most planners perform their work in one or more particular fields of specialization within the larger planning profession. While some planners spend their entire careers within one of these specialties, most will move between them or find employment opportunities that combine them. Specialties include:

- Land-use planning and development
- Regional, urban, or rural planning
- Infrastructure and transportation planning
- Parks and environment planning
- Social, cultural, or heritage planning
- Housing analysis and planning
- Economic development planning
- Stakeholder education and community engagement
- Project management and planning
- International development planning

January 24, 2018

What do planners do?

Planners create plans and associated policies that support a community's vision for the future. These can be:

- overarching plans (e.g., integrated community sustainability plans, official community plans)
- specific strategies such as parks or heritage plans
- regulatory tools and policies such as zoning, neighbourhood, and environmental plans.

Planners typically undertake a variety of activities, depending on their sector (public or private), location (rural or urban), and focus (general or specialized). They routinely:

- Facilitate community visioning activities
- Research and present data for consideration by various stakeholders (e.g., demographics, social and cultural issues, environmental and economic impacts)
- Develop and recommend plans and policies for consideration by various decision-makers (e.g., for land use, environment, energy, transportation, housing, parks, heritage)
- Consult with landowners, interest groups, and citizens during the development of plans and policies
- Implement, uphold, and evaluate plans and policies, often along with people from other organizations
- Review and facilitate development proposals and other submissions for legality and suitability.

What is planning? *continued*

there is mounting demand for planners to guide and manage these changes innovatively, yet practically and affordably.

Key components of good community planning include research, process integration, inclusion, facilitation, implementation, and evaluation.

RESEARCH: Communities are continually changing. Informed planners use data to interpret ever-changing statistics, trends and impacts. Resulting information is used to support project proposals and policy recommendations.

PROCESS: A good process drives the development of a good plan. Proactive planners know that citizens deserve and expect to be involved in planning processes, and that these processes should be compelling, systematic, and designed to engage stakeholders authentically and transparently.

INTEGRATION: Every planning decision impacts a community's social, cultural, environmental, and economic health over time. Progressive planners research and report diverse short- and long-term implications of a decision to guarantee full disclosure and, therefore, informed choices.

INCLUSION: Planning processes involve people from various sectors with diverse interests. Responsible planners balance

public and private interests by considering and weighing the goals of good governance, public sentiment, environmental impact, and economic opportunity when evaluating proposals and developing plans.

FACILITATION: People have strong feelings and opinions about their neighbourhoods, communities, and regions. Skilled planners navigate multiple interests and voices by respecting conflicting views, enabling informed discussion and decision-making, and facilitating the development of solutions agreeable to all parties.

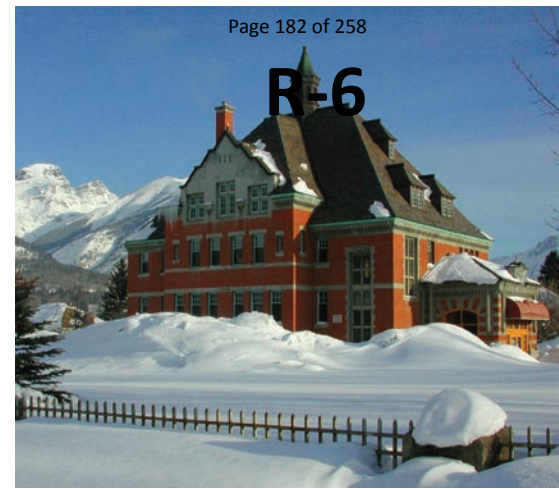
IMPLEMENTATION AND EVALUATION: A plan is only as good as the action it inspires. Having said that, all plans involve change, and change is usually difficult. Successful planners develop practical action plans and continually evaluate challenges, opportunities, successes, and failures.

Where do planners work?

Planners work in rural and suburban areas and cities in every country around the world. In Canada, they work in the public sector for federal, provincial, and local governments or agencies as well as in academia. In the private sector, they represent consulting firms, private companies, and non-profit organizations. Planners also contribute through non-profit and trade organizations such as the Planning Institute of BC.

Who do planners work with?

Planners almost always work as part of a team. Depending on their employers and their areas of specialty, planners work with a variety of people from different sectors and industries. Public-sector planners, for example, work



internally with elected officials and staff in administration, public works, and parks. They also collaborate with other land-use professionals such as realtors and surveyors, academics such as scientists and economists, community health and social service providers, environmental professionals, and design experts such as engineers, architects, and landscape architects. Planners must also engage with communities, stakeholders, and citizens throughout the planning process.

What are the rewards of planning?

The planning profession offers many potential rewards for people who are passionate about communities' social, cultural, environmental, and economic health, and who enjoy research, communication, collaboration, and flexible work schedules. Currently there are employment opportunities for graduates of planning schools in the public and private sectors of most municipalities across Canada. The salary range for a new planner is on par with graduates of engineering or architecture with the same level of experience. ■



For more information about PIBC and becoming a member...

Planning Institute of British Columbia
Suite 1750 – 355 Burrard Street
Vancouver, BC V6C 2G8 CANADA
P: 604.696.5031 F: 604.696.5032
Toll Free: 1.866.696.5031
E: info@pibc.bc.ca W: www.pibc.bc.ca



January 24, 2018



REPORT

R-7

To: Electoral Area Directors Committee

Date: January 23, 2018

From: Crystal Brown, Electoral Area Manager

Subject: Contract Award – PRRD Grant Writer

RECOMMENDATION(S):

That the Electoral Area Directors Committee recommend that the Regional Board award the contract for "Grant Writer Services, Request for Proposal #26-2017" to Access Grant Services Inc. in the amount of \$119,256.24, excluding taxes; to cover Grant Writing services for the PRRD, specifically Electoral Areas B, C, D, E, Hudson's Hope and Taylor, and that the Chair and Chief Administrative Office be authorized to sign the contract on behalf of the Peace River Regional District.

BACKGROUND/RATIONALE:

The Electoral Area Directors wish to hire a Grant Writer who will assist the PRRD, Electoral Areas B, C, D, and E, Hudson's Hope and Taylor and not-for-profit community groups in the region to research grant opportunities, develop and submit grant applications, and to provide advice and guidance regarding grant applicability and eligibility, and to liaise with groups to ensure that their grant applications include all required documentation.

Often, community groups rely on fundraising and grants in order to undertake new projects or services that benefit us all. Grant writing can be both overwhelming and time consuming. In most cases, not-for-profit community groups do not have the time, resources, nor expertise to research and apply for grants. The overall goal of the grant writer is to apply for as many grants as possible to help the region access funding in support of crucial development projects and initiatives throughout the region. The grant writer will also be tasked with promoting the availability of grants to the community groups and encouraging them to apply during term of the contract.

In December 2017, staff issued a Request for Proposal to contract the services of a Grant Writer. A total of three proposals for the Grant Writer Request for Proposal #26-2017 were received. Results of the submissions are as follows:

- | | |
|---|-----------|
| 1. Access Grant Services Inc.
2-9733-83 rd Avenue
Edmonton, AB
GST will be charged separately on invoices | \$157,450 |
| 2. Adlard Environmental
Box 293
Charlie Lake, BC | \$79,280 |

January 24, 2017

Staff Initials:

Dept. Head: 

CAO:

Page 1 of 3

3. Myriad Consulting Inc. \$68,000
11720-89A Street
Fort St. John, BC
Does not include mileage
GST will be charged separately

Proposals were scored based on the following criteria:

Company and Project Team Qualifications	20%
Methodology	30%
Work Breakdown Structure	20%
Fees	30%

Staff have carefully reviewed the three submissions utilizing the scoring matrix and recommend Access Grant Services Inc. as the preferred proponent to undertake the Grant Writer services.

OPTIONS:

1. That the Electoral Area Directors recommend that the Regional Board award the contract for "Grant Writer Services, Request for Proposal #26-2017" to Access Grant Services Inc. in the amount of \$119,256.24, excluding taxes; to cover Grant Writing services for the PRRD, specifically Electoral Areas B, C, D, E, Hudson's Hope and Taylor, and that the Chair and Chief Administrative Office be authorized to sign the contract on behalf of the Peace River Regional District.
2. That the Electoral Area Directors recommend that the Regional Board award the contract for "Grant Writer Services, Request for Proposal #26-2017" to Adlard Environmental in the amount of \$79,280, excluding taxes; to cover Grant Writing services for the PRRD, specifically Electoral Areas B, C, D, E, Hudson's Hope and Taylor, and that the Chair and Chief Administrative Office be authorized to sign the contract on behalf of the Peace River Regional District.
3. That the Electoral Area Directors recommend that the Regional Board award the contract for "Grant Writer Services, Request for Proposal #26-2017" to Myriad Consulting Inc. in the amount of \$68,000, excluding taxes; to cover Grant Writing services for the PRRD, specifically Electoral Areas B, C, D, E, Hudson's Hope and Taylor, and that the Chair and Chief Administrative Office be authorized to sign the contract on behalf of the Peace River Regional District.
4. That the Electoral Area Directors give further direction to staff.

STRATEGIC PLAN RELEVANCE:

- ☐ Ensure that the Solid Waste Management Plan is operating on a fiscally defensible basis.
- ☐ Ensure effective execution of Public Safety and Emergency Services initiatives.
- ☒ Foster Collaboration on services with municipalities and electoral areas.
- ☐ Establish a strategy for coordinated advocacy on identified issues.
- ☐ Manage parks and trails in the region.
- ☐ Support the agricultural industry within the regional district.
- ☐ Not Applicable to Strategic Plan.

FINANCIAL CONSIDERATION(S):

Access Grant Services Inc. bid was \$157, 450, however based on their fee breakdown structure, the total amount in the contract for the PRRD, Electoral Areas B, C, D, E, Hudson's Hope and Taylor is \$119,256.24

The Grant Writer contract will be funded in the 2018 Budget under Economic Development Function. Participating members will contribute based on population and assessment. If successful, grants received from NDIT in the amount of \$24,000 for the PRRD, Hudson's Hope and Taylor can help pay this contract.

COMMUNICATIONS CONSIDERATION(S):

If approved, the PRRD in partnership with the successful component, will initiate a communication strategy to promote the Grant Writer service.

OTHER CONSIDERATION(S):

On December 31, 2017, the North Peace Economic Development Commission was decommissioned and the contract for the current Grant Writer ended. On September 14, 2017, the Board moved that an application be submitted to Northern Development Initiative Trust for a grant of up to \$8000, that, if successful, will be used to contract the services of a rural grant writer.



REPORT

R-8

To: Chair and Directors

Date: January 8, 2018

From: Deborah Jones-Middleton, Protective Services Manager

Subject: Feasibility Study to determine expansion of the Charlie Lake Rural Fire Protection Area

RECOMMENDATION(S):

That the Electoral Area Directors Committee recommend that the Board direct staff to:

1. research the cost and locations of installing water sources in strategic locations within the current Charlie Lake Rural Fire Protection Area;
2. research the cost of implementing a Superior Tanker Shuttle Service for the Charlie Lake Rural Fire Protection Area; and
3. initiate discussions with the City of Fort St. John regarding the options and costs to utilize, improve and expand the fire hydrant system in the Charlie Lake Rural Fire Protection Area;

and report the findings back to a future Electoral Area Directors Committee meeting.

BACKGROUND/RATIONALE:

At the February 16, 2017 Rural Budgets Administration Committee the following motion was carried:

“That the Rural Budgets Administration Committee commit from the Fair Share Feasibility funds, \$20,000, with \$10,000 from Electoral Area ‘B’ and \$10,000 from Electoral Area ‘C’ to conduct a feasibility study to examine expanding the Charlie Lake Rural Fire Protection Area.”

Dave Mitchell and Associates was hired to perform the feasibility study and they have provided the following recommendations:

1. Install water access points via cisterns and dry hydrants in strategic locations in the existing and proposed expanded areas of the Charlie Lake Rural Fire Protection Area.
 - a. Dave Mitchell and Associates identified several locations around Charlie Lake that could be considered for installation of dry hydrants. (see page 11)
2. “Implement a Superior Tanker Shuttle Service (STSS) Accreditation for the Charlie Lake Rural Fire Protection Area.”

With STSS Accreditation, a minimum of three tenders (water tankers) of appropriate capacity along with identified water supply points within 5 kilometers of a residence, may improve the resident’s insurance rating from a 3B to a 3A, which often results in a reduced insurance rate for property owners.

If a dry hydrant is installed on a lake or cistern a residence within 300 metres will automatically receive a 3A rating regardless of the STSS Accreditation as the property would be considered protected by a hydrant system. The 3A rating often results in a reduced insurance rate for property owners.

January 24, 2018

Staff Initials:

Dept. Head:

CAO:

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3. “Discuss the impact of expanding the Charlie Lake Rural Fire Protection Area regarding the impact to the existing Mutual Aid Agreements with the City of Fort St. John and the District of Taylor.”

Both the Fort St. John and District of Taylor Mutual Aid Agreements with the Peace River Regional District will require reconsideration if there is to be a change to the Charlie Lake Rural Fire Protection Area.

4. consider increasing the Charlie Lake Rural Fire Protection Area to the following areas:

Phase 1 Areas to consider for inclusion in the Charlie Lake Rural Fire Protection (in priority order)

a. Area 1

Area 1 straddles Highway 97 and is immediately adjacent to the current fire protection area. It is apparent that the 8-kilometre polygon is quite close and that all this area is within 13 kilometres of the CL FD Hall. Coverage of this area is recommended as a timely response to the 60 properties and the 168 residents is possible from the CLFD hall.

b. Area 2

Area 2 is small, containing one property. This area is within 8 kilometres of the fire hall and the addition of this area to the fire protection area is recommended.

c. Area 3

Area 3 is very large, with many parts of it at a considerable distance by road network from the CLFD fire hall. The following portions of Area 3 should be considered for inclusion in the fire protection area: the identified areas that are within 13 kilometers and 15 kilometers from the Charlie Lake Fire Hall.

(i) Highway 29

Portions of Highway 29 immediately west and outside of the current fire protection boundary are within 13 kilometres of the fire hall. Coverage to include at least that portion should be considered. It is noted that a portion of the CLFD’s existing service area is also beyond 8 kilometres from the fire hall but within 13 kilometres.

(ii) Highway 97

The area along Highway 97 immediately north of Area 1 should be considered to at least the 13 kilometre mark.

(iii) Area North of Beaton Provincial Park

The area immediately north of Beaton Provincial Park includes a portion that is within 8 kilometres of the fire hall as well as portions

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that are within 13 and 15 kilometres. It is recommended that the PRRD consider adding the portion within 8 kilometres as well as that within 13 kilometres to the response area.

(iv) Range Road 271

The area of Range Road 271 north of Township Road 248 includes a portion within 13 kilometres as shown and this should be considered for inclusion within the fire protection area.

(v) Township Road 246

There is a section of Township Road 246 within Area 3 that is also within 8 kilometres of the fire hall and this should be included in a revision of the fire protection area.

Phase 2 Areas to consider for inclusion in the Charlie Lake Rural Fire Protection Area

a. Range Road 267

Range Road 267 north of Township Road 246 contains sections that are 13 kilometres from the fire hall which should be considered for inclusion in a revised fire protection area with consideration given to those properties up to 15 kilometres distant.

b. Rose Prairie Road

Expansion to Rose Prairie Road and Old Montney Road properties that are within 13 kilometres from the fire hall should be considered, with consideration given to areas up to 15 kilometres distant.

c. Old Fort

Very little of the portion of Area 4 that includes Old Fort is within 13 kilometres of the fire hall and not all of it is even within 15 kilometres. Some consideration should be given to including this iarea in the fire protection area .

Phase 3 Areas to consider for inclusion in the Charlie Lake Rural Fire Protection

a. Barrette Road

The portion of Barrette Road being considered for inclusion is all beyond 15 kilometres from the fire hall and it may be considered for inclusion at some point in the future.

The Director for Electoral Area 'C' and Electoral Area 'D' have requested staff to ask the Rural Budgets Administration Committee to consider funding a feasibility study to provide fire protection to all of Area 'C' and a portion of Area 'D'. Staff recommends delaying a decision on the expansion of the Charlie Lake Rural Fire protection Area until this feasibility study has been completed and all recommendations can be considered together.

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OPTIONS:

Provide further direction to staff.

STRATEGIC PLAN RELEVANCE:

- ☐ Ensure that the Solid Waste Management Plan is operating on a fiscally defensible basis.
- ☒ Ensure effective execution of Public Safety and Emergency Services initiatives.
- ☐ Foster Collaboration on services with municipalities and electoral areas.
- ☐ Establish a strategy for coordinated advocacy on identified issues.
- ☐ Manage parks and trails in the region.
- ☐ Support the agricultural industry within the regional district.
- ☐ Not Applicable to Strategic Plan.

FINANCIAL CONSIDERATION(S):

The cost of accomplishing the recommendation would be staff time to research the information, assess the costs, and report back to the Electoral Area Directors Committee.

COMMUNICATIONS CONSIDERATION(S):

None

OTHER CONSIDERATION(S):

None

Attachments: Dave Mitchell and Associates feasibility study: Charlie Lake Volunteer Fire Department Fire Protection Area Review

January 24, 2018



PEACE RIVER
REGIONAL DISTRICT

Charlie Lake Volunteer Fire Department
Fire Protection Area Review

Dave Mitchell & Associates Ltd.

December 2017

~~January 24, 2018~~

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Executive Summary

The Peace River Regional District (the “PRRD”) is considering increasing the size of the fire protection area for the Charlie Lake Fire Department (the “CLFD” or the “Department”) in four specific areas. Protection for one of these areas (Area 1) is at the request of area residents. The issue of extending a fire department’s service boundaries is primarily driven by the question of whether an effective response, one which increases or improves life safety and the protection of property, is possible.

Responses by fire services are time critical and the ability to provide effective rescue and fire suppression declines relative to the time it takes to arrive on scene and commence emergency response activities. Even a response delayed by distance, however, ensures that an incident will be contained, preventing a structure fire from becoming a risk to neighbours or the forest interface. It also will improve life safety for residents. As an additional consideration, the expanded service also may enable some residents to obtain reductions in the cost of their residential insurance premiums.

In evaluating the matter of potentially expanding the fire protection area there are several considerations. The first is that providing the service to an area not currently protected will, at a minimum, ensure that some response is provided to potentially effect rescue and commence fire suppression. Fire propagation within structures is well understood as is the notion that effectiveness in rescue and fire suppression declines with distance travelled, as a result of the time delay involved.

Under the Fire Underwriters Survey (the “FUS”) system, single family residences which are more than 8 kilometres from a fire hall are rated as unprotected and generally are not eligible for a reduced premium. Although we are aware of situations in BC where insurance premium relief has been provided for premises up to 13 kilometres from a fire hall, this is not the stated position of the FUS.¹ As such, the possibility of insurance cost reductions for residences which are beyond 8 kilometres from the fire hall would need to be confirmed with the individual insurers or underwriters.

The analysis of the four areas being evaluated for possible service expansion applied four distance measurements from the fire hall: up to 8 kilometres; up to 13 kilometres; up to 15 kilometres; and more than 15 kilometres. It is recommended that the CLFD fire protection area be extended up to 13 kilometres, and that the possibility of extension to 15 kilometres be considered. Expansion beyond 15 kilometres likely should be deferred. For those properties within 8 and 13 kilometres there may be an opportunity for an insurance premium reduction. For all properties, there would be the opportunity to provide a degree of rescue and fire suppression though the effectiveness of the response is reduced based on distance.

The current service area was reviewed by the FUS in 2015 and was found to be deficient in terms of the water system to support fire suppression. The provision of a water system either by

¹ Individual insurance underwriters may differ from the FUS approach.

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hydrant or tanker is a fundamental requirement for fire suppression and the water system provides 30% of the assessment of a fire department. Improvements to the water system should be a high priority for the CLFD and the PRRD and should include implementation of tanker shuttle service within the region, utilizing the adjacent fire departments if possible. Access to water could include cisterns as identified by the FUS as well as dry hydrants at a number of locations on either side of Charlie Lake.

The FUS survey was discussed with the executive of the Department to update the status of various recommendations. A significant number of these included a thorough review and plan to add water access points as well as to implement a tanker shuttle system and these have yet to be implemented. Given the low FUS rating, improvements to the level of service within the existing fire protection area must be considered a first priority.

Another issue that must be considered is the effect that any extension of the fire protection district will have on the existing mutual aid agreements. Each of these has explicit language that limits the responding department's response to the area described within the current agreement. As such, unless the agreements are amended, there would be no mutual aid support for the expanded service area.

For these reasons, the PRRD should consider increasing the area covered by the CLFD subject to clarifying the impact on the mutual aid agreements and further improvements to the existing fire protection area. Increasing the size of the fire protection areas should also not be unlimited, as there is a serious decline in effectiveness beyond a certain point.² Finally, any expectation of insurance premium savings will need to be confirmed with insurance providers.

² The PRRD should, however, consider permitting extra-jurisdictional responses where the fire or incident threatens or potentially threatens the fire service area. Appropriate operational guidelines would need to be developed and there should be a reporting process established, where such a response is undertaken.

Background

The CLFD is subject to oversight and direction by the PRRD and operates within a local service area established by bylaw. The PRRD taxes service area residents to recover the costs of operating the Department. The Department operates from a single fire hall and is located immediately west of Fort St John as shown in Figure 1. It also provides first fire response to a lumber mill west of the North Peace Airport as shown in the red circle.

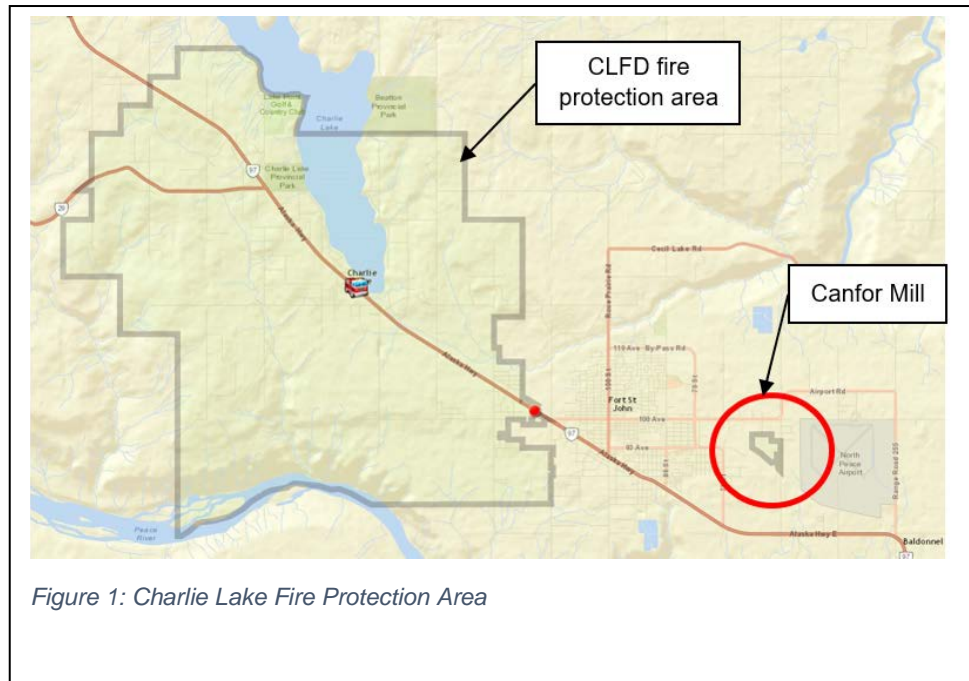


Figure 1: Charlie Lake Fire Protection Area

The PRRD is considering an extension of the fire protection area to include a larger portion of Area B and Area C. At present these areas are not currently protected by the CLFD.

Enlarging the fire response area would enable the CLFD to provide a response where none presently exists and may result in a reduction in fire insurance premiums. The FUS provide ratings of fire services based on many factors including distance by road network from a recognized fire hall.³ Their stated position is that a residential property which is more than 8 kilometres from a recognized fire hall is considered unprotected and thus not discounted in terms of a fire insurance premium. Individual underwriters, however, are free to approach the issue differently and there are several instances where it is reported that a discount has been provided for a structure up to 13 kilometres in other parts of the province.

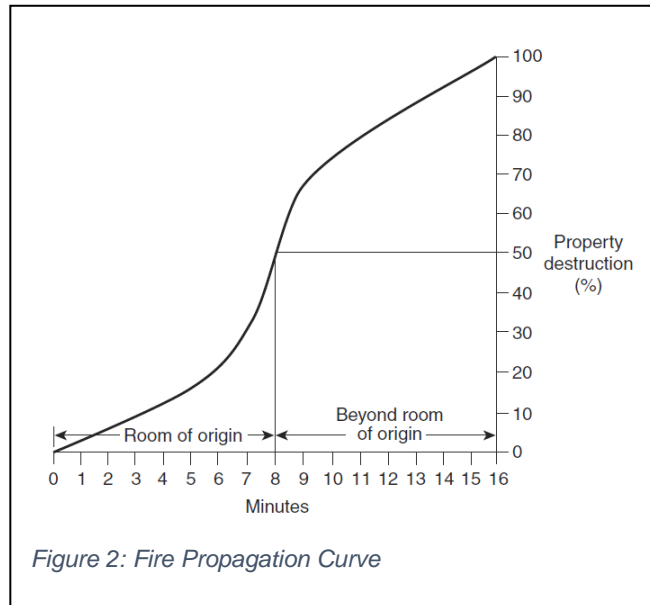
Regardless of whether any discounted premium arises from a response beyond 8 kilometres, the arrival of a fire department will provide a level of comfort to the property owner and potentially effect a rescue, prevent the further spread of a fire and limit damage.

³ http://www.fireunderwriters.ca/home_e.asp

Response Standards—NFPA

The standards of service that apply to the fire service include those related to response time objectives. These are defined by the National Fire Protection Association (the “NFPA”) and include time intervals for 911 call handling, dispatch, turnout of crews and travel to the scene.

Each of these will be described in further detail in the following sections however a key element for all fire responses is the relationship between time and the degree of fire damage. This is illustrated in Figure 2 which shows the rate of change / percentage of destruction from the time at which a fire ignites. This fire propagation model is well documented and explains why each element of fire response is critical because at or about eight minutes from ignition a fire will flashover and extend beyond the room of origin. This increases the risk to the resident as well as to the firefighter, and certainly increases the amount of resulting damage.



The relationship between the deployment of sufficient firefighters within a defined timeframe relative to fire loss and injury has been documented by the NFPA and this is shown in Table 1. From this it can be seen that confining a fire to the room of origin results in an average dollar loss of \$2,993.

Flame Spread	Civilian Deaths	Civilian Injuries	Average Dollar Loss per Fire
Confined fire or flame damage confined to object of origin	0.65	13.53	\$1,565
Confined to room of origin, including confined fires and fires confined to object	1.91	25.32	\$2,993
Beyond the room but confined to the floor of origin	22.73	64.13	\$7,445
Beyond floor of origin	24.63	60.41	\$58,431

Table 1

Fires which extend beyond the room of origin but which are contained to the floor of origin result in an average dollar loss of \$7,445 while fires which extend beyond the floor of origin result in an average dollar loss of \$58,421⁴.

Similarly, where a fire is held to the room of origin civilian fire deaths do not exceed 1.91 per thousand fires, but where the fire extends beyond the room of origin there are 22.73 deaths per thousand fires. In terms of injuries we expect 25.32 per thousand fires when the fire is held to the room of origin but this increases to 64.13 when the fire extends beyond that.

This data is shown graphically in Figure 3 in terms of dollar loss per 1,000 fires and in Figure 4 in terms of injuries and deaths per 1,000 fires.

In summary, fire damage, injuries and fatalities are mitigated by the promptest possible arrival of a competent fire department.

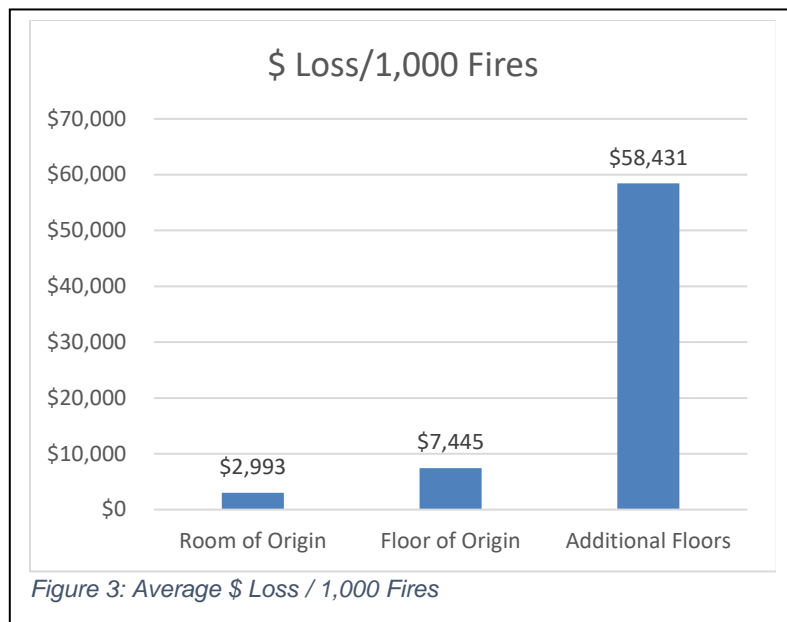


Figure 3: Average \$ Loss / 1,000 Fires

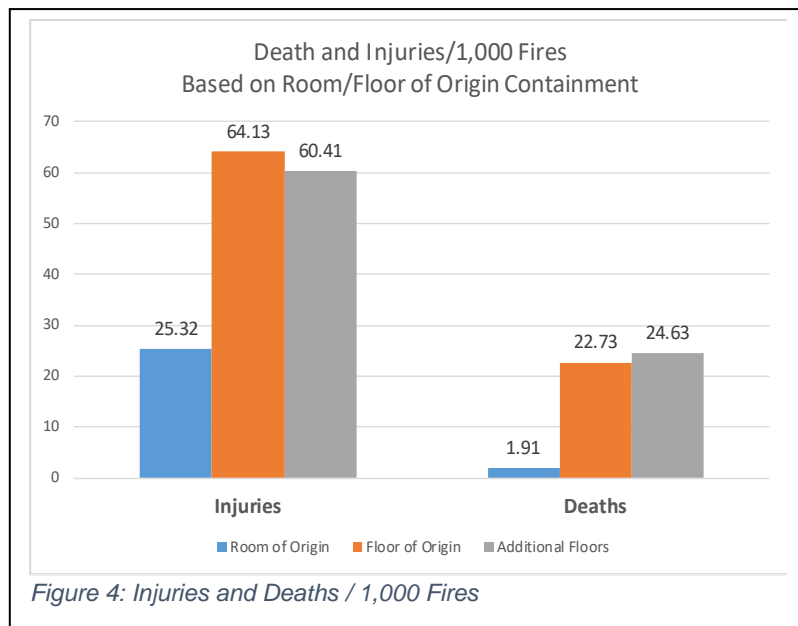


Figure 4: Injuries and Deaths / 1,000 Fires

⁴ The data used in this table is for the United States; there is no similar aggregation of national data in Canada.

Response Standards—Fire Underwriters

The FUS reviewed the CLFD in 2015 and rated the Department in terms of Dwelling Protection Grade (“DPG”) and Public Fire Protection Classification⁵ (“PFPC”).⁶ The DPG rating was split between a 5 (unprotected) and 3B (semi-protected) and the PFPC rating was 9. The poor PFPC rating arose mainly from the lack of a recognized water supply. In that regard, FUS recommended improvements to the water supply which have not yet been achieved. In this regard, however, they noted:⁷

One of the most beneficial recommendations is to complete Superior Tanker Shuttle Service (STSS) Accreditation in addition to tank installations. Achieving STSS Accreditation would result in an improved Grade of DPG 3B(S) being published.
[emphasis added]

An improvement to DPG 3B(s) is accepted as being equivalent to 3A, typically resulting in additional savings for residential homeowners on their insurance premiums. Work to improve the water system is currently being considered, but is not yet complete and the FUS has not yet resurveyed the CLFD.

The following analysis will consider the extension of the fire protection area beyond its current limits and provide a series of recommendations. To be clear however, the determination of insurance premium savings is solely within the control of the insurance industry, which is generally guided by the FUS rating system.

FUS Recommendations Summary

The FUS provided a total of 28 recommendations summarized in the Table 2.

Table 2

Item #	General Section	Status
1	Apparatus	Complete, pending approval by FUS
2	Apparatus	Not required at present, ongoing review
3	Apparatus	Complete
4	Inspection & Maintenance OGS	In progress
5	Record Keeping	Complete
6	Apparatus	Not complete
7	Hose Testing	Complete
8	Record Keeping	Complete

⁵ Applies to multi-family residences, commercial and industrial properties.

⁶ Fire Underwriters Survey, *Charlie Lake FPA, 2015* (August 2015) (the “FUS Survey”). “DPG” is the rating applied to single family residences, where “1” is the best and “5” is unprotected. The “PFPC” rating is applied to multi-family residences and commercial and industrial properties and “1” is the best, while “10” is unprotected.

⁷ FUS Survey, page 6.

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Item #	General Section	Status
9	Record Keeping	Complete
10	Training	In progress
11	Training	In progress
12	Department OGs	In progress
13	Record Keeping	In progress
14	Pre-Incident Planning	In progress
15	Water Supply	Non-compliant/not started
16	Fire Prevention	In progress
17	FireSmart Program	In progress
18	Inspection Bylaw	In progress
19	Water Supply	Non-compliant/not started
20	Water Supply	Non-compliant/not started
21	Water Supply	Non-compliant/not started
22	Water Supply	Non-compliant/not started
23	Water Supply	Non-compliant/not started
24	Water Supply	In progress
25	Water Supply	In progress
26	Water Supply	Non-compliant/not started
27	Water Supply	Non-compliant/not started
28	Water Supply	Non-compliant/not started

Of these, 11 out of 28 pertain to water system/supply improvements which in turn account for 30% of the overall grading by the FUS. Two of the 11 are in progress while for the remaining nine the Department is non-compliant.

For this reason, the FUS recommended that the Department complete the process to achieve accreditation for STSS which if achieved would improve their rating from 5 (unprotected) to 3B(s) which equates to a 3A rating. Such a rating would provide property owners within the 3B(s) area with an improvement in insurance costs.

Water Supply

The FUS as noted made a number of recommendations that include:

- Requiring water tank installations for new developments (19)
- Implement Fire Flow Bylaw or Water Supply Guidelines for the Charlie Lake Fire Protection Area (20)
- Complete Independent Review of Upgrading Water System to Provide Public Fire Protection (21)⁸
- Complete Independent Review of Installing a Dry Hydrant on Charlie Lake (22)

⁸ The water system used by Charlie Lake is owned by the City of Fort St. John, therefore Charlie Lake Fire Department is not able to implement bullet two and three above.

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- Install Water Tanks with Hydrant/Dry Hydrant Installations within the Charlie Lake Fire Protection Area (23)
- Install Tanks within the Fire Protection Area and Complete STSS Accreditation (27)
- Complete Water Supply Master Plan (28)

These requirements were reviewed with the Chief and Deputy in terms of the accessibility to Charlie Lake for dry hydrants. On review, there are multiple easements on the east and west side of the lake that could be considered as part of a master plan for water supply. Some consideration should be made in terms of the slope of the shore but as observed, a number of them appear favorable and could be part of compliance with recommendations 22 and 23.

The Peace River Interactive Web Map was accessed to confirm apparent⁹ easements and these include the following which are summarized in Figure 5 which follows.

West Side of Charlie Lake

1. East end of Lakeshore Drive
2. Palm Avenue east of Lakeshore Drive
3. Forest Avenue east of Lakeshore Drive
4. King Avenue east of Lakeshore Drive
5. Plum Avenue east of Charlie Lake Crescent
6. Charlie Lake Crescent between 13373 and 13377

East Side of Charlie Lake

7. Paradise Street between 13239 and 13245
8. Paradise Street at the west end of Rainbow Avenue
9. Paradis Street south of 13129

⁹ The easements are not identified as such but were assumed to exist where there was an open, accessible road access between visible parcels.

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The locations of the easements are shown in Figure 5.



Figure 5

Superior Tanker Shuttle Service Accreditation

STSS accreditation is recognized by the FUS as being equivalent to hydrant protection.¹⁰ This accreditation has been obtained by a number of fire services in the province and, where they are compliant in terms of water flow and distance, they are equivalent to the DPG Grade 3A which is considered “fully protected”, as opposed to DPG 3B, which is a semi-protected rating. The difference in insurance costs between semi- and fully-protected can be as much as 30%.

For the STSS accreditation to generate an insurance premium discount, the FUS requires the property to be within eight kilometres of a fire station and five kilometers of a water supply point. Achieving an STSS accreditation would provide a more secure water supply within the sub-regional area in addition to a potential reduction in fire insurance premiums. Accreditation is normally granted by the FUS for a period of five years¹¹.

The accreditation would require a minimum of three Tenders of appropriate capacity along with identified water supply points. Achieving this capacity would require an optimized response by the Department and if possible supported by FSJ and Taylor to provide this within the regional area.

Having the ability to provide a consistent water supply by tanker shuttle would be a benefit for both the PRRD service areas which are protected by the CLFD as well as Fort St John and Taylor as this would assure an additional uninterrupted water supply capability regardless of whether accreditation is obtained or not.

Forest Interface Risk

There is a significant wildland interface risk in the Charlie Lake area. This was demonstrated in 2016 with two significant interface fires: Charlie Lake forest fire - 250ha, and the Beaton Airport Road fire at over 15,000 ha. Both fires had the capability of destroying homes and structures in the region. Charlie Lake is surrounded by the forest interface which is made up of mixture of black spruce and popular trees. The fire risk from an interface fire is greatest in the summer months but can happen at any time as demonstrated in 2016.

The CLFD has recognized the risk and has moved forward with appropriate training for it's members: S-100 and the OFC Wildland firefighting courses. The department has also purchased equipment that will be appropriate for working in the forestry interface: a skid pack complete with hose, pump and water tank which is carried in the back of the Deputy Chief's pickup truck. The department has also just taken delivery of an all terrain ATV also with a skid pack for use in interface fires.

¹⁰ Ibid.

¹¹ To be clear, STTS accreditation can only be granted by the FUS but regardless of whether accreditation is obtained or not, the ability to provide an enhanced water shuttle will be a benefit to any firefighting response.

The fire department should become even more active in spreading the Fire Safe educational program to the community. This will encourage the public to take responsibility for reducing interface fire risk on their own properties.

Level of Service

The level of service has been set at Full Service by the PRRD as the Authority Having Jurisdiction (the “AHJ”). Full Service is the highest of the three levels of service and the requirements have been provided. The authorizing policy also notes the requirement for a regular audit at section 7.5.

The ‘Level of Service Policy’ will be reviewed annually to ensure that all Fire Departments are meeting the requirements of the ‘British Columbia Fire Service Minimum Training Standards Structure Firefighters Competency and Training Playbook’¹².

Full service requires that all training and assessment is documented, and the Department is to be commended for the work it has done to date to record this information. The development of pre-plans is also underway, and these should be completed for every structure that is more complex than a residence.

Analysis

The PRRD covers a very large area and this analysis is limited to four specific areas. For these areas, responses by road network have been generated using 5, 8, 13 and 15-kilometre polygons and these are color-coded as shown in Figure 6.

For each of the following areas the number of civic addresses has been identified by the PRRD and based on a multiplier of 2.8,¹³ the number of residents has been calculated. The total number of residents by this measure would be 2,139.



¹² Board Policy, page 4.

¹³ The multiplier of 2.8 was provided by the PRRD GIS department, July 28, 2017.

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The following section will list and discuss a number of locations within Areas 1, 2 and 3 to be considered within an extended fire protection area and these are summarized in Figure 7 which follows.

Area 1

See map reference 1.

This area is immediately north of the current fire protection area and is located on both sides of Highway 97 to the northern limit at the intersection of Range Road 283. This area has 60 civic addresses and so the estimate for its population is 168. The entire area shown is beyond 8 kilometres from the fire hall and thus would be rated by the FUS as DPG 5, which is unprotected.

When the travel distances from the fire hall are overlaid it is apparent that the 8-kilometre coverage (yellow) comes very close to Area 1 and that all the area would be within 13 kilometres.

Area 2

See map reference 2.

Area 2 has a single property and based on the multiplier the population for this property is 2.8 (3.0). Area 2 is within the 8-kilometre coverage from the fire hall and it likely would receive the same DPG rating as the CLFD's existing fire service area (DPG 3B).

Area 3

This area contains 641 civic addresses, which equates to a population of 1,795. Given the size of this area, the FUS coverage will be examined in a series of views to follow. In summary however, much of this Area 3 is well beyond 20 kilometres from the fire hall and so any additions to the fire protection coverage should be considered in stages, based on the available road network.

Highway 29

See map reference 3.

The area with the salmon pink shading is outside of the current fire protection area, but is part of Area 3 and being considered for inclusion. The response polygons from the fire hall show that all of this area is beyond 8 kilometres (yellow). The 13-kilometre (red) and 15-kilometre (grey) polygons are shown and, as noted previously, individual insurance brokers or underwriters may consider some part of this eligible for a degree of premium relief.

It should be noted that some properties within the current CLFD fire protection area are also outside of the 8-kilometre limit, including Bluejay Street and Zolinski Avenue.

Highway 97

See map reference 4.

This area is adjacent to Highway 97 north of Area 1. The 13-kilometre coverage extends to the intersection of Township Road 250 and Highway 97 and includes parts of Wolsey Subdivision and Stoddard Creek Road.

The 15-kilometre travel distance polygon includes Township Road 250 to the intersection of Range Road 287. The area along Highway 97 is also included to and beyond Range Road 285.

Area North of Beaton Provincial Park

See map reference 5.

This area is immediately north of Beaton Provincial Park. The portion shown in salmon pink is outside of the current fire protection area but is being considered as part of Area 3. At the very bottom of this section, the 8-kilometre travel polygon (yellow) is shown and some part of that projects into Area 3.

The 8-kilometre (yellow), 13-kilometre (red) and 15-kilometre (gray) response polygons are shown. A small portion of this area is within 8 kilometres and much of the rest within 13 kilometres.

Range Road 271

See map reference 6.

The area along Range Road 287 north of Township Road 248 to north of Township Road 250 is shown and illustrates that all of this area as well as Valley Vista Road is within 13-kilometres of the fire hall.

Township Road 246

See map reference 7.

One portion of Township Road 246 is within the current fire protection coverage; an eastern extension of that is not and is part of the request for Area 3. The 8-kilometre response polygon extends for approximately 1.5 kilometres into Area 3. Beyond this, to the junction with Montney Road the road is within 13-kilometres of the fire hall.

One portion of Township Road 246 is within the current fire protection coverage; an eastern extension of that is not and is part of the request for Area 3. The 8-kilometre response polygon extends for approximately 1.5 kilometres into Area 3. Beyond this, to the junction with Montney Road the road is within 13-kilometres of the fire hall.

Range Road 267

See map reference 8.

In terms of coverage on Range Road 267 and Montney Road north of Township Road 246, the 13-kilometre polygon extends north along Township Road 248; the 15-kilometre polygon extends a further 2 kilometres on Montney Road.

Rose Prairie Road

See map reference 9.

The 13- and 15-kilometre response polygons on Rose Prairie Road are illustrated on the map and this shows that Road Prairie Road and Old Montney Road would be within 13 kilometres of the fire hall.

North of Montney Creek to beyond Cox Road would be within 15 kilometres.

Area 4

The final area for consideration is Area 4. This area contains 62 civic addresses which equates to approximately 174 residents.

Old Fort

See map reference 10.

The portion shown in the salmon pink background is the area under consideration and from this it can be shown that the 13-kilometre coverage extends just about 0.5 kilometres into Area 4. The 15-kilometre travel polygon extends further along Old Fort Road, but not quite to River Drive.

Properties beyond that including those on Old Fort Loop, Trapper Road and River Drive, which are more than 15 kilometres from the fire hall.

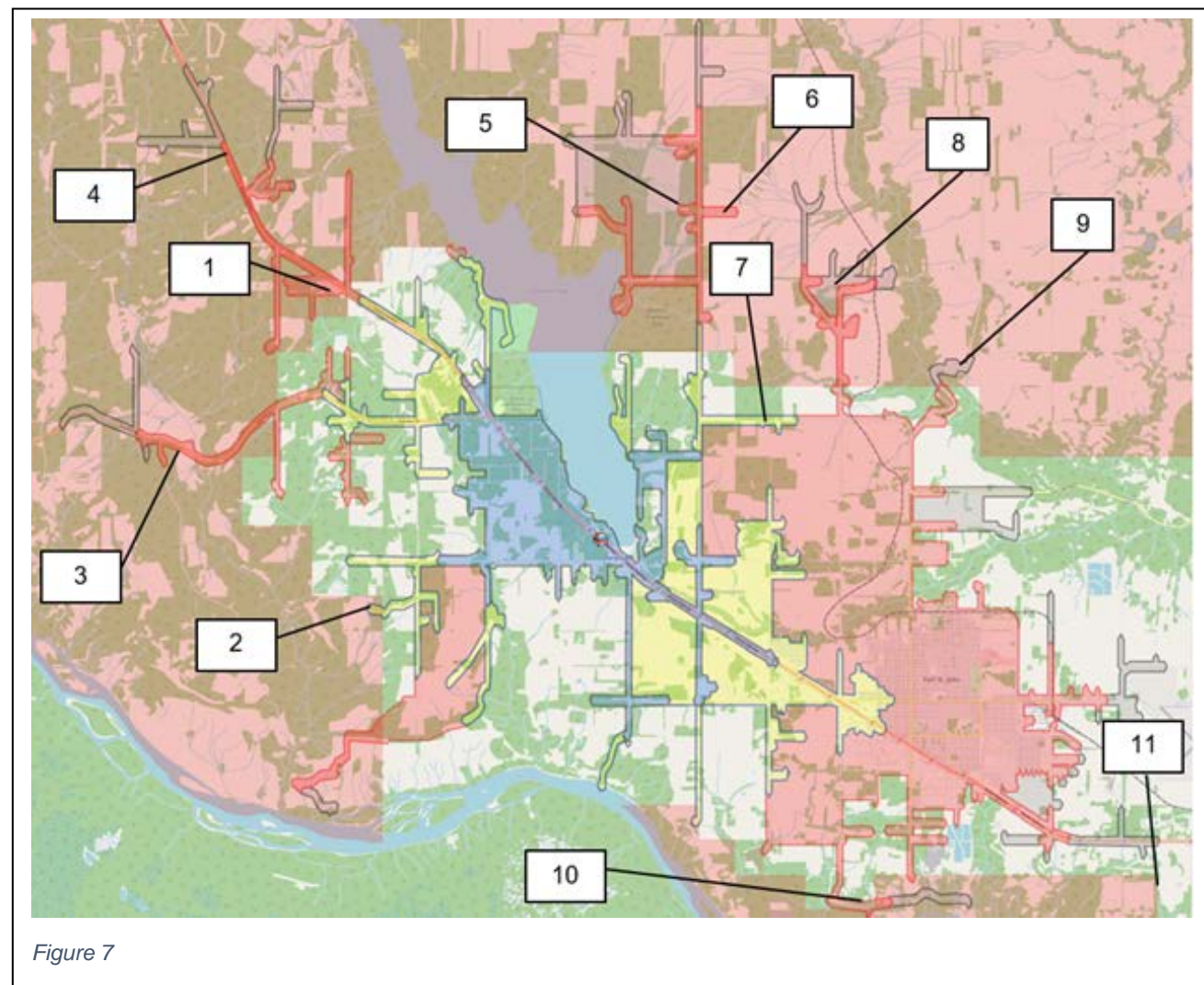
Barrette Road

See map reference 11.

The portion of Area 4 that includes Barrette Road south of Highway 97 is shown in the reference map. This entire portion of Area 4 is more than 15-kilometres from the CLFD fire hall with the nearest part of Barrette Road at about 15.5 kilometres distant.

Map Overview

The map shown in Figure 7 summarizes the sections within Areas 1, 2, 3 and 4 that are being considered. The travel distance by road network from the Charlie Lake fire hall are shown where



the blue polygon represents 5 kilometres, yellow represents 8, the darker red outline represents 13 and the grey outline represents 15 kilometres.

Mutual Aid Agreements

The CLFD is covered by a mutual aid agreement with the Fort St John Fire Department (the “FSJ”), dated May 8, 2017, and one with the District of Taylor Fire Department (the “Taylor”) dated April 11, 2017. Each of these agreements is for a five-year term and neither has an automatic renewal. The agreements also note that the fire protection boundaries cannot be altered without written consent of the other party and, without this consent, aid responses to the additional areas will not be provided. The content of the two agreements are substantively identical, except as noted below.

Fort St John

The mutual aid agreement with FSJ is similar to the one with Taylor in the majority of its terms of agreement with the following exceptions.

The FSJ agreement has a specific exemption for the Canfor sawmill. The definition of the “Charlie Lake Protection Service Area” in section 1 notes that it “...specifically and intentionally excludes the properties owned and operated by Canfor Sawmill...”.

The agreement is also very specific in terms of the portions of the PRRD that FSJ will respond to and explicitly notes that responses to additional areas may not occur without their written consent at section 7.

Any changes to the Portion of the Charlie Lake Protection Service Area shown in Schedule ‘B’ requires the consent in writing of the City of Fort St. John to be considered included in the service area of this City/PRRD (Charlie Lake) Mutual Aid Agreement. For certainty, if consent is not given in writing, Primary Mutual Aid will not apply to the additional area and Emergency Resources will not be provided.

The term “Primary Mutual Aid” is defined as comprising one engine, one tender and/or one Wildland unit, and for Ft. St. John, involves a response by its duty crew. Where a response is provided that is considered to be in excess of “Primary Mutual Aid” for commercial or industrial properties, section 8(ii) provides that the costs of such responses are to be reimbursed, with costs calculated based on the current year’s BC Inter-Agency Working Group Reimbursement Rates.

The protection area is noted as Schedule A to the Agreement.

Taylor

The agreement with Taylor has similar language but is bilateral in terms of potential changes to the response areas unlike the FSJ agreement in which the language is unilateral.

Any changes to the Charlie Lake Fire Protection Service Area or the District of Taylor Fire Protection Area requires a duly authorized amendment to this agreement. For certainty, if consent is not given in writing, the agreement is not amended, Primary

Mutual Aid will not apply to the additional area(s) and Emergency Resources will not be provided.¹⁴

The protection area is noted as Schedule A to the Agreement.

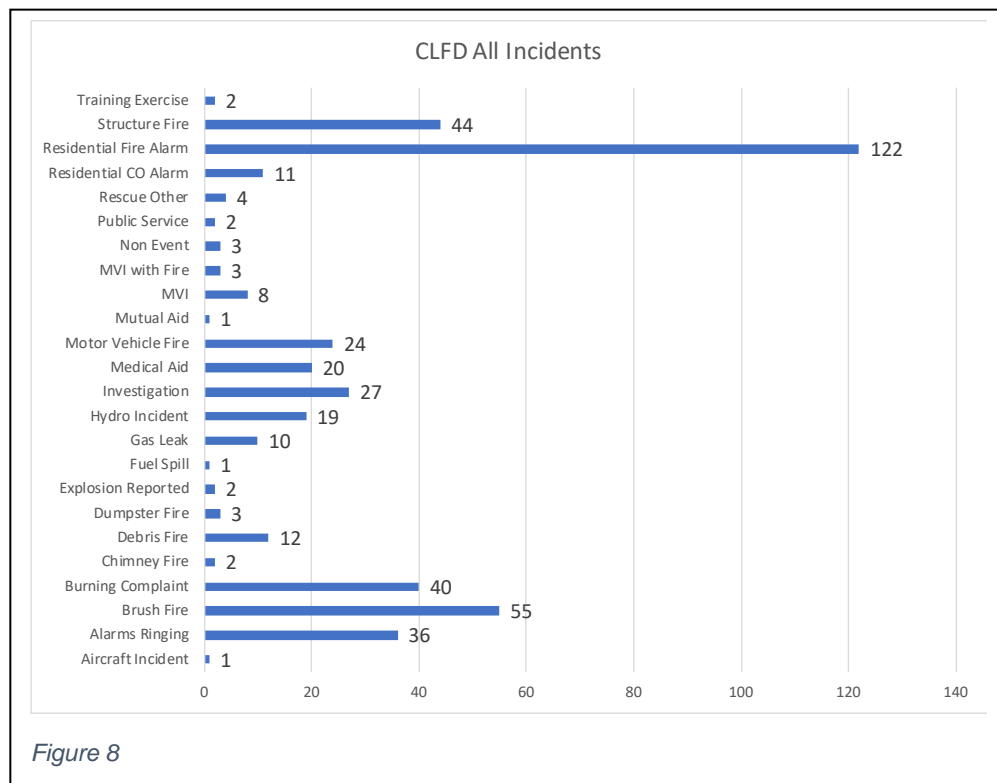
Existing CLFD Responses

The Department has been dispatched for a number of years by FSJ which provided a data set for the period 2010 to 2016¹⁵.

This data was reviewed to determine the call volume based on the existing agreed level of service. The data indicates that responses are to a broad range of call types as shown in Figure 8.

From this it can be seen that the majority of responses

(37.4%) are for Alarms, either Residential Fire Alarms, Alarms Ringing or Residential CO Alarms.



Non-structural fire responses which includes Brush Fires and Dumpster Fires total 58, or 11.8%. Fires in structures including Structure Fires and Chimney Fires are 11.1% of the total, at 50 over the period. The data from the FSJ Computer Aided Dispatch system (the "CAD") indicates that over the period that CLFD responded to a total of 24 incidents classified as Medical Aid or Rescue Other, comprising 5.3% of total responses. As well the Department responded to 11 calls classified as MVI or MVI with Fire, representing 2.6% of all responses.

¹⁴ PRRD/Taylor Mutual Aid Agreement, page 5.

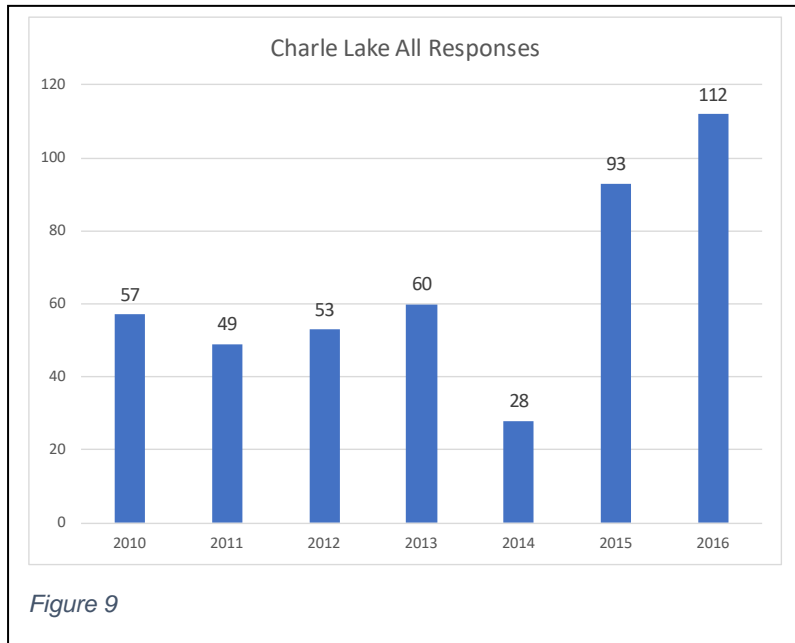
¹⁵ Note that the data set was incomplete for the year 2014, comprising only the last four months and so for the purposes of year over year call volume calculations, that year is omitted. In terms of counting the total number of responses over the six-year period, 2014 is included.

Responses by Year

Responses by the Department have increased annually as shown in Figure 9, with the exception of 2014 which as noted previously lacks the response data from January to August.

The average number of responses for 2010 to 2013 is 54.75. For the period 2015 and 2016 it is 102.5; essentially the call volume has doubled.

Over this period the Department has responded to 50 fires reported in structures¹⁶ which amounts to an average of 8.3 per year. These incident types are the ones that normally would require the response by all members of the Department. Other types such as Public Service (2), Burning Complaint (40), Residential CO Alarm (11), Investigation (27) and others may not require a total response.



Service Impact

The proposed increase to the fire protection area for the CLFD has the potential to provide coverage to an additional 764 properties with an estimated 2,129 residents as shown in Figure 10, depending on how many of the four areas are included.

Area	Properties	Estimated Residents
1	60	168
2	1	3
3	641	1,795
4	62	174
Total	764	2,139

Figure 10

The impact to the CLFD by adding some or all of the areas, will be to increase the call volume. That said, the degree of accuracy in such an estimate is a challenge. In general terms, the most common 'driver' for fire department responses is population but that is also coupled with the age

¹⁶ This includes structure fires and chimney fires.

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and condition of property in terms of response to fires. The population of Charlie Lake for the existing fire protection area was determined to 3,315 in the 2015 FUS report¹⁷. On that basis the total population for Charlie Lake and the four areas is shown in Figure 11.

	Population	% of Charlie Lake	2016 Responses	Estimated Responses
Charlie Lake	3,315		112	
Area A	168	5.1%		5.7
Area B	3	0.1%		0.1
Area C	1,795	54.1%		60.6
Area D	174	5.2%		5.9
		64.6%		72.3
Total Population	5,455			
Total Responses	184			

Figure 11: Estimated Increase in Responses for Areas A, B, C, D

From this it is possible to estimate that the number of responses by the CLFD if all four areas were added, might amount to 72 over the year, or about 6 per month. Given that the Department attends approximately eight fires in structures in an average year we might expect that number to increase by five to a total of 12, or about one a month.

Apparatus & Staffing

The apparatus and staffing were reviewed by the FUS in 2015 and it was noted that “*The Charlie Lake Fire Department is well staffed*”.¹⁸ Since that time the Chief has reported that the Department has continued to upgrade the skills of the company officers with two achieving NFPA 1021 and others in progress. The current structure with a fire chief, a deputy chief as well as a complement of volunteer captains, lieutenants and fire fighters is appropriate and found in many other departments the consultants have worked with¹⁹.

In terms of apparatus the Department is compliant, with the exception of an aerial ladder device as shown in Figure 12. As noted previously this is not a requirement for the current fire protection area²⁰ and would not be a requirement for the extension of coverage to Areas A, B, C or D.

¹⁷ FUS report, page 31.

¹⁸ FUS report, page 34.

¹⁹ In some volunteer fire departments, the position of deputy chief is sometimes not filled, instead there are one or more positions as assistant chief and below that captains and lieutenants.

²⁰ The one exception is the contracted response to the Canfor Mill.

Assignment	Manufacturer	Function	Pump Capacity	Water Tank
Engine 1	International 1999	Engine	1,050	1,000
Engine 2	Sterling 2006	Engine/tender	1,050	2,000
Tender 1	Freightliner 2014	Tender	1,250	1,500
Tender 2	Ford 1987	Tender	840	1,500
Squad 3	GMC 2014	Bush truck	100	200
Rescue 1	Ford 550 2005	Rescue/Rehab.	N/A	N/A
Squad 1	GMC 2014	Command	N/A	N/A
Bush 1	GMC 2007	Bush truck	100	100
Bush 2	Ranger UTV 2016	Bush ATV	100	75

Figure 12

Of this apparatus, Engine 1 is due for replacement in 2018; Tender 2 is overdue but scheduled for 2020. Engine 2 is a tandem-axle unit which presents issues in terms of additional licensing as well as its turning radius. One option would be to sell this unit to a jurisdiction that requires a larger unit, and to replace it with a single-axle engine/tender.

Summary

The proposed expansion of the existing fire protection area would significantly extend the service boundaries of the CLFD. While it would include some properties within 8 kilometres of the fire hall, most would be further away, with some more than 15 kilometres from the hall. In general, under the FUS system, properties more than 8 kilometres from a recognized fire hall, are rated as unprotected and do not receive any reduction in insurance premiums. Some individual underwriters, however, do provide reduced insurance rates in rural settings, where the property is within ~13 kilometres of a recognized hall. The principal intent behind the service expansion, however, is to improve life safety and protect property. Even though the travel distances exceed those recognized by FUS, the provision of an emergency response will still provide improved protection for residents of the extended service area.

The question of whether insurance premiums would be reduced for properties in the expanded service areas is up to the individual insurance underwriters. Regardless of the potential insurance saving it is clear based on the NFPA documentation that the earliest arrival of a competent fire department will lessen the impact of fire injuries and fatalities as well as damage.

The PRRD may then wish to consider an extension of the existing fire protection area for the two reasons that 1) it will provide an increase in public safety and 2) may result in a partial reduction of insurance premiums. However, any contemplated increase in the fire response areas will also require the agreement of FSJ and Taylor if the PRRD wishes those departments to continue to provide a mutual aid response. The mutual aid agreements explicitly state that without this consent, a “Primary Mutual Aid Response” will not be provided to the new areas.

Recommendations

It is recommended that the PRRD consider increasing the CLFD fire protection area in the following areas subject in all cases to clarifying the degree to which this extension may or may not impact their mutual aid agreements with FSJ and Taylor.

Area 1

Area 1 straddles Highway 97 and is immediately adjacent to the current fire protection area. It is apparent that the 8-kilometre polygon is quite close and that all this area is within 13 kilometres. Coverage of this area is recommended as a timely response to the 60 properties and the 168 residents is possible from the CLFD hall.

This area could be a first priority.

Area 2

Area 2 is small, containing one property. This area is within 8 kilometres of the fire hall and the addition of this area to the fire protection area is recommended.

This area could be a first priority.

Area 3

Area 3 is very large, with many parts of it at a considerable distance by road network from the CLFD fire hall. The following portions of Area 3 should be considered for inclusion in the fire protection area:

Highway 29

Portions of Highway 29 immediately west and outside of the current fire protection boundary are within 13 kilometres of the fire hall. Coverage to include at least that portion should be considered. It is noted that a portion of the CLFD's existing service area is also beyond 8 kilometres from the fire hall but within 13 kilometres.

This area could be a first priority.

Highway 97

The area along Highway 97 immediately north of Area 1 should be considered to at least the 13 kilometre mark.

This area could be a first priority.

Area North of Beaton Provincial Park

The area immediately north of Beaton Provincial Park includes a portion that is within 8 kilometres of the fire hall as well as portions that are within 13 and 15 kilometres. It is recommended that the PRRD consider adding the portion within 8 kilometres as well as that within 13 kilometres to the response area.

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This area could be a first priority to at least 13 kilometres.

Range Road 271

The area of Range Road 271 north of Township Road 248 includes a portion within 13 kilometres as shown and this should be considered for inclusion within the fire protection area.

This area could be a first priority to at least 13 kilometres.

Township Road 246

There is a section of Township Road 246 within Area 3 that is also within 8 kilometres of the fire hall and this should be included in a revision of the fire protection area.

This area could be a first priority.

Range Road 267

Range Road 267 north of Township Road 246 contains sections that are 13 kilometres from the fire hall which should be considered for inclusion in a revised fire protection area with consideration given to those properties up to 15 kilometres distant.

This area could be a second priority.

Rose Prairie Road

Expansion to Rose Prairie Road and Old Montney Road properties that are within 13 kilometres from the fire hall should be considered, with consideration given to areas up to 15 kilometres distant.

This area could be a second priority.

Area 4

Area 4 contains two areas for consideration as follows.

Old Fort

Very little of the portion of Area 4 that includes Old Fort is within 13 kilometres of the fire hall and not all of it is even within 15 kilometres. Some consideration of including this in the fire protection area should be considered.

This area could be a second priority.

Barrette Road

The portion of Barrette Road being considered for inclusion is all beyond 15 kilometres from the fire hall and it may be considered for inclusion at some point.

This area could be a third priority.

Conclusion

The issue of extending a fire department's service boundaries is primarily driven by the question of whether an effective response, one which increases or improves life safety and the protection of property, is possible. In general, the longer that it takes a fire department to arrive at the scene of an incident, the greater the damage that is likely to occur and the greater the risk of injury or death. Even so, the provision of a confirmed emergency response ensures that an incident will be contained, preventing a structure fire from becoming a risk to neighbours or the forest interface. It also will improve life safety for residents. As an additional consideration, under the FUS system, insurance premiums are reduced where a residential property is located within 8 kilometres of a fire hall, with some individual insurers or underwriters extending this protected zone as far out as 13 kilometres.

In the present review, the possible extension of the CLFD fire protection coverage for Areas 1, 2, 3 and 4 was broken down into zones based on travel distance from the fire hall. One property was within 8 kilometres, while most were within 13 – 15 kilometres from the hall. Some portions of the proposed Areas exceeded a travel distance of 15 kilometres from the hall.

Coverage up to 13 kilometres should be seriously considered; the PRRD, in consultation with the CLFD and area residents, may want to extend coverage as far as 15 kilometres, as shown in the maps above. Extension beyond 15 kilometres, while possible, probably should be deferred.

While extension of the CLFD fire protection areas to include Areas A, B, C and D is recommended, the more immediate priority for the Department is to address the issues raised by the FUS in terms of water supply. These include the development of cisterns and other water supply points including dry hydrants at various locations as well as the implementation of the tanker shuttle service to provide a continuous flow of water at any structure fire. This should be implemented and then accreditation from FUS as a Superior Tanker Shuttle Service should be sought²¹. Development of a master water plan (recommendation 21) will require the assistance of a third-party with expertise in planning such systems for public fire protection.

A further requirement will be to ensure annual compliance with the level of service agreed by the PRRD which is Full Service. The Department has taken a number of steps to record training in a compliant software package and to address the level of supervision by company officers. Compliance with this level of service which is the highest level and comparable to many cities with career personnel is complex and will require a great of diligence.

²¹ Superior Tanker Shuttle Accreditation applies within defined travel limits and can result in a significant reduction in fire insurance premiums. Beyond those travel limits a tanker shuttle will still provide a continuous water supply where none is currently in place enhancing fire protection and life safety but without a consequent reduction in premiums.



REPORT

To: Electoral Area Directors Committee

Date: January 9, 2018

From: Deborah Jones-Middleton, Protective Services Manager

Subject: Charlie Lake Fire Road Rescue and First Medical Responder Service Provision Feasibility

RECOMMENDATION(S):

1. That the Electoral Area Directors Committee recommend that Board direct staff to investigate the number and type of calls attended by the BC Ambulance Service in the Charlie Lake Rural Fire Protection Area and provide a report back to the Electoral Area Directors Committee on the costs and benefits if the Charlie Lake Fire Department were to expand its services to include First Medical Response.
2. That the Electoral Area Directors Committee recommend that Board direct staff to enter discussions with the City of Fort St. John regarding the Charlie Lake Fire Department providing road rescue service within the Charlie Lake Rural Fire Protection Area, and Fort St. John continuing road rescue service to the area outside of the Charlie Lake Rural Fire Protection Area;

and report the findings back to a future Electoral Area Directors Committee meeting.

BACKGROUND/RATIONALE:

At the April 20, 2017 Regional Budgets Administration Committee meeting the following motion was carried:

"That the Rural Budgets Administration Committee approve that \$10,000 be provided from Area C Peace River Agreement funds for the purpose of conducting a study to examine the feasibility of Charlie Lake Fire providing road rescue and medical first responder services.

Dave Mitchell and Associates were hired to perform the feasibility study. They have provided the following recommendation:

"In terms of additional services, implementation of RR (Road Rescue) or FMR (First Medical Response) could be considered, in that order. Considering the risk of a fire or leak of hazardous materials that is always present in an accident, the addition of RR to the Department's mandate makes sense. The Chief has advised that the Department could offer this service as it has trained personnel and appropriate equipment. Addition of FMR is a more complex issue as noted and will require a further dialogue with BCAS to quantify the number and types of responses in the area as well as their current on-scene times for such events."

The Charlie Lake Fire Department currently trains volunteers in Road Rescue as it is required to obtain NFPA 1001 Level 2 certification and in First Medical Response to provide medical response to injured firefighters before BC Ambulance attends a scene. Charlie Lake Fire Department currently has:

- 16 members trained to NFPA 1001 which includes Road Rescue training;
- 11 members First Responder Qualified and Emergency Medical Association Certified;

January 24, 2018

Staff Initials:

Dept. Head:

CAO:

Page 1 of 2

- The 2018 Charlie Lake Fire Department Budget includes funds to train the remaining firefighters in both services.

OPTIONS:

Provide direction to staff.

STRATEGIC PLAN RELEVANCE:

- ☐ Ensure that the Solid Waste Management Plan is operating on a fiscally defensible basis.
- ☒ Ensure effective execution of Public Safety and Emergency Services initiatives.
- ☐ Foster Collaboration on services with municipalities and electoral areas.
- ☐ Establish a strategy for coordinated advocacy on identified issues.
- ☐ Manage parks and trails in the region.
- ☐ Support the agricultural industry within the regional district.
- ☐ Not Applicable to Strategic Plan.

FINANCIAL CONSIDERATION(S):

The cost of the recommendation is approximately 3 hours of staff time.

COMMUNICATIONS CONSIDERATION(S): None.

OTHER CONSIDERATION(S):

Attachments: Dave Mitchell and Associates feasibility study: Charlie Lake Volunteer Fire Department Service Review and Options

January 24, 2018



PEACE RIVER
REGIONAL DISTRICT

Charlie Lake Volunteer Fire Department Service Review and Options

Dave Mitchell & Associates Ltd.

December 2017

~~January 24, 2018~~

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Executive Summary

The Peace River Regional District (the “PRRD”) is reviewing service options for the Charlie Lake Fire Department (the “CLFD” or the “Department”) including the possible addition of Road Rescue (the “RR”) and First Medical Response (the “FMR”). In both cases this would be within the fire protection area however this response area may be increased in size to include response to an additional four areas¹. In the case of RR and FMR these services are currently provided by the Fort St John Fire Department (the “FSJ”) and the BC Ambulance Service (the “BCAS”) respectively.

If the response area is increased there will be a need to assess the impact on the existing mutual aid agreements with Fort St John and Taylor. Each of these has explicit language that limits the responding department’s response to the area described within the current agreement. As such, unless the agreements are amended, there would be no mutual aid support for the expanded service area.

The Department is currently authorized by policy to provide firefighting, public education, pre-planning, high-angle rescue only for Canfor and lift assists at the request of the BC Ambulance Service (the “BCAS”). Road Rescue is currently provided by FSJ and FMR is provided by the BCAS. In terms of its provision of firefighting, the Department is authorized as a Full Service fire department as outlined in the requirements of the Office of the Fire Commissioner (the “OFC”) Playbook.

The service area was reviewed by the Fire Underwriters Survey (the “FUS”) in 2015 and was found to be deficient in terms of the water system to support fire suppression. The provision of a water system either by hydrant or tanker is a fundamental requirement for fire suppression and the water system provides 30% of the assessment of a fire department. Improvements to the water system should be the first priority for the CLFD and the PRRD and should include implementation of tanker shuttle service within the region, utilizing the adjacent fire departments if possible. Once that level of service is addressed, the Department may wish to consider RR and FMR.

In terms of additional services, RR would add approximately 17 responses per year and would be within the Department’s current capability. Their arrival on scene at these incidents would be in support of BCAS which would have primary responsibility for patient treatment. The Department’s role would be to assist as required and to take primary responsibility for scene safety, fire suppression as required and mitigation of any spilled gasoline, diesel or other hazardous substances.

Provision of FMR should be considered but not implemented until such time as the potential call volume is clarified with BCAS and a determination made as to the types of calls at which the Department could provide a timely service. Lacking any response data for the current deployment of BCAS, it may be the case that there is no service gap that could be bridged by

¹ These areas are addressed in a separate report by Dave Mitchell & Associates.

having the CLFD provide an FMR service. The provision of this additional service should also reflect the wishes of the local residents who were surveyed as part of the review in 2011 and at that time did not support the provision of RR or FMR; see the following section: Public Expectations. Finally, it should be recognized that the primary remit of the CLFD is fire service and its priority should be to address those issues identified by the FUS and to ensure it continues to meet the requirements of the Playbook for Full Service.

The impact of a significant increase in the total call volume of the Department would need to be understood in terms the ability to call back volunteers many more times that is currently the case. Furthermore, and depending on the level of acuity chosen, the Department would need to ensure appropriate training and certification in addition to completing an indemnification agreement with BCAS. However, without any response data from BCAS it is very difficult to calculate the number of additional response or the equipment and training costs.

Background

The CLFD is subject to oversight and direction by the PRRD and operates within a local service area established by bylaw. The PRRD taxes service area residents to recover the costs of operating the Department. The Department operates from a single fire hall and is located immediately west of Fort St John as shown in Figure 1. It also provides first fire response to a lumber mill west of the North Peace Airport as shown in the red circle.



Figure 1: Charlie Lake Fire Protection Area

The PRRD is considering service options for the Department that could include the provision of FMR, RR or both within the fire protection area. At present these areas are provided by the Fort St John Fire Department (the “FSJ”) in the case of RR and the BC Ambulance Service provides medical response.

Addition of either of the two proposed services will have an impact on the existing level of service which has been revised over time to establish the Department and define the levels of service. The service level is currently defined in policy dated 29 May 2017 and the CLFD is

authorized to be a Full Service fire department within the meaning of the Office of the Fire Commissioner Playbook (the “Playbook”). Full Service is the highest of three levels and requires extensive training and assessment and detailed requirements are listed in Appendix 2—The Playbook Requirements for Full Service.

The Department is authorized to undertake the following levels of services within the Charlie Lake Fire Protection Service Area².

1.4 Charlie Lake Fire Department is authorized to undertake the following levels of services within the Charlie Lake Fire Protection Service Area.

- i. Firefighting
- ii. Wildland and Urban Interface Firefighting
- iii. High Angle Rescue – Canfor Responses Only
- iv. Mutual Aid
- v. Public Service Response
- vi. Hazardous Materials Response – Awareness Level Only
- vii. First Responder for firefighter aid or aid to a victim at an authorized level of service incident
- viii. Medical Lift Assist when requested by BC Ambulance
- ix. Pre-Fire Planning
- x. Public Education
- xi. Firefighter Training

As written the level of service does not authorize RR or FMR for the public with the exception of a lift assist on request by BC Ambulance³.

² Peace River Regional District Rural Fire Department Firefighting Service Level & Training Policy, report dated 29 May, 2017.

³ This is similar to Dawson Creek which has not adopted FMR, but will respond to a specific request by BC Ambulance.

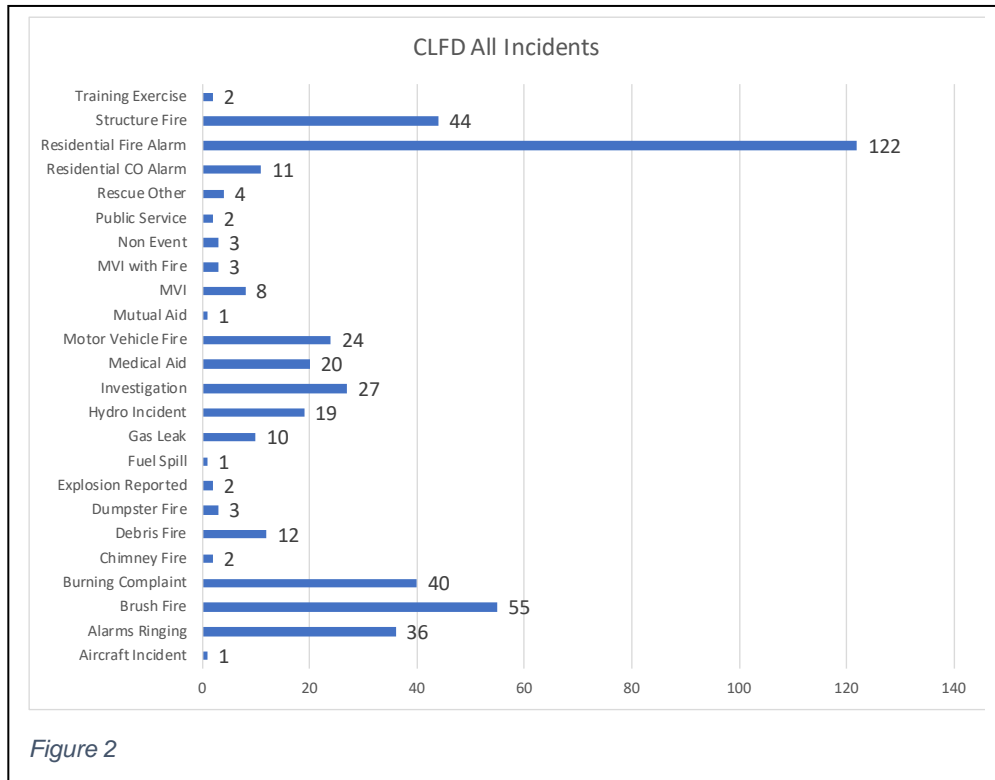
Existing CLFD Responses

The Department has been dispatched for a number of years by FSJ which provided a data set for the period 2010 to 2016⁴.

This data was reviewed to determine the call volume based on the existing agreed level of service. The data indicates that responses are to a broad range of call types as shown in Figure 1.

From this it can be seen that the majority of responses

(37.4%) are for Alarms, either Residential Fire Alarms, Alarms Ringing or Residential CO Alarms.



Non-structural fire responses which includes Brush Fires and Dumpster Fires total 58, or 11.8%. Fires in structures including Structure Fires and Chimney Fires are 11.1% of the total, at 50 over the period. The data from the FSJ Computer Aided Dispatch system (the “CAD”) indicates that over the period that CLFD responded to a total of 24 incidents classified as Medical Aid or Rescue Other, comprising 5.3% of total responses. As well the Department responded to 11 calls classified as MVI or MVI with Fire, representing 2.6% of all responses.

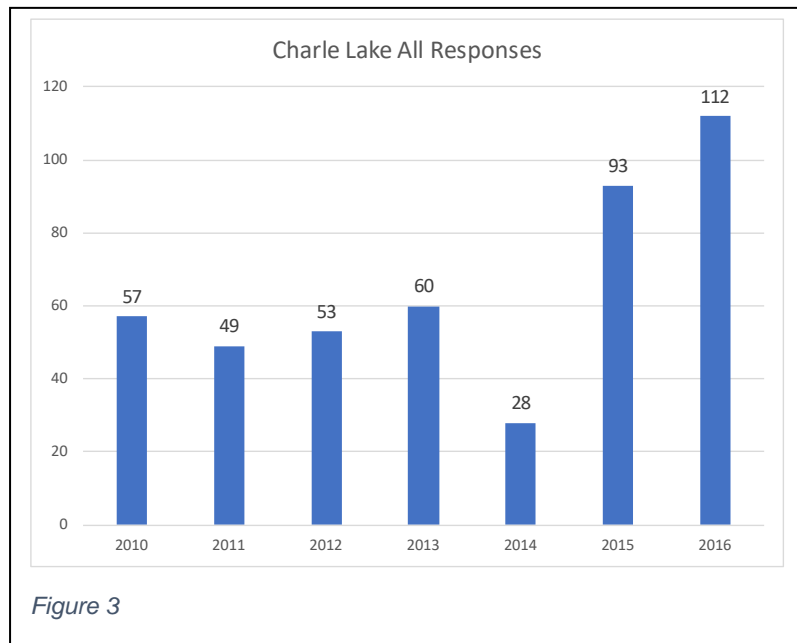
It should be noted that these responses are those tracked in the CAD system and it is possible that these were received by FSJ from the electronic interface with the BC Ambulance Service (the “BCAS”) CAD system but not dispatched because of a dispatch policy. For this reason, it is recommended that the CLFD should review its existing responses records to confirm the responses, by type that it has a record of attending.

⁴ Note that the data set was incomplete for the year 2014, comprising only the last four months and so for the purposes of year over year call volume calculations, that year is omitted. In terms of counting the total number of responses over the six-year period, 2014 is included.

Responses by Year

Responses by the Department have increased annually as shown in Figure 3, with the exception of 2014 which as noted previously lacks the responses data from January to August.

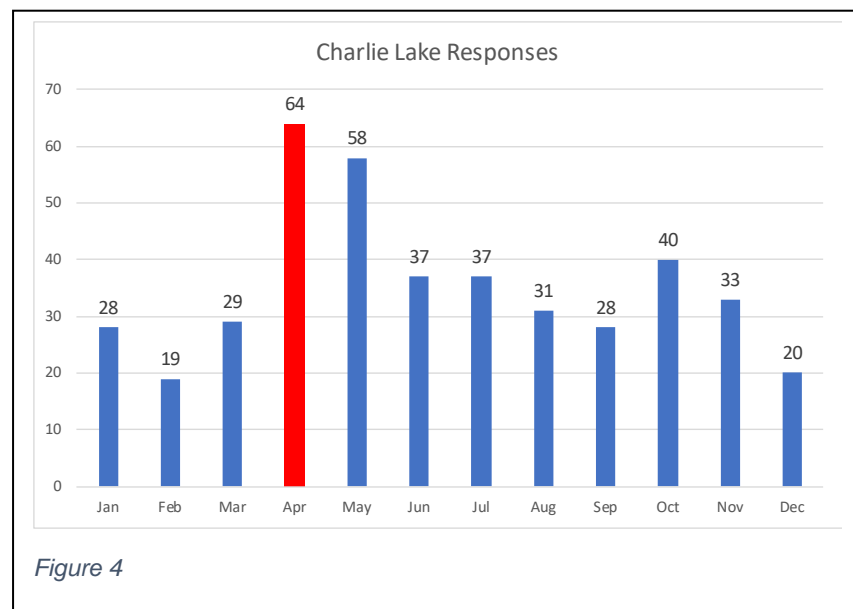
The average number of responses for 2010 to 2013 is 54.75. For the period 2015 and 2016 it is 102.5; essentially the call volume has doubled.



Responses by Month

Responses by the CLFD vary considerably during the year as shown in Figure 4.

These range from a peak of 64 in April and 58 in May to a low of 19 in February and 20 in December.



Responses by Day of the Week

Responses by day of the week are more typical of most fire departments with a peak at the end of the week and less call volume mid-week.

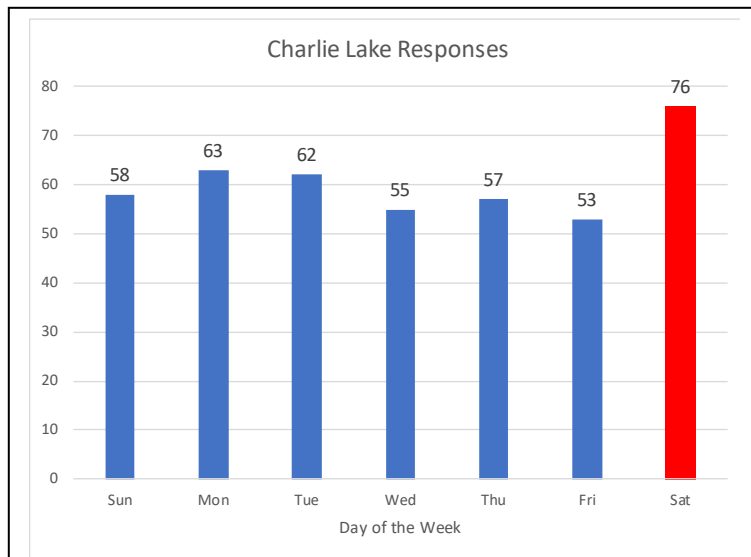


Figure 5

Responses by Hour

CLFD responses by hour are shown in Figure 6. This type of distribution by hour is fairly typical of a fire department that performs a limited number of FMR calls.

Most departments which include FMR within their scope experience a peak in call volume from around 10:00 until mid-afternoon.

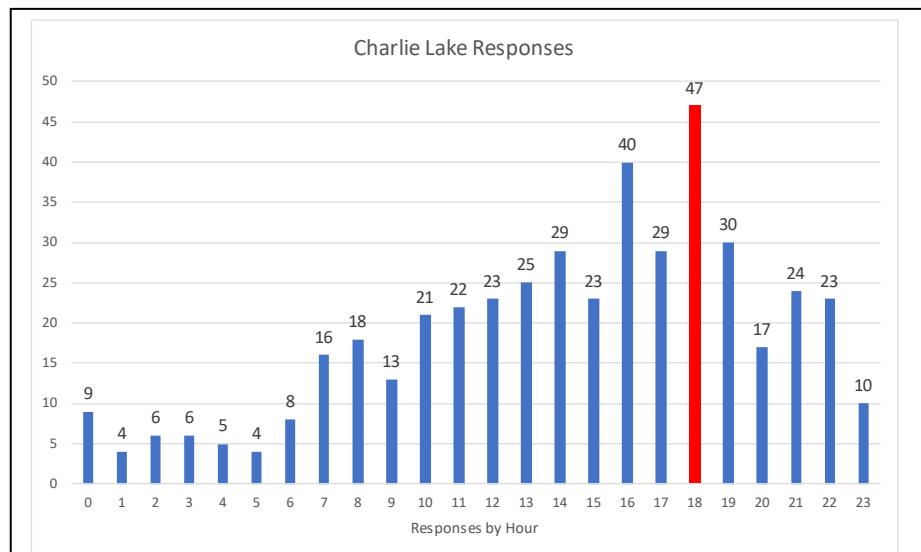
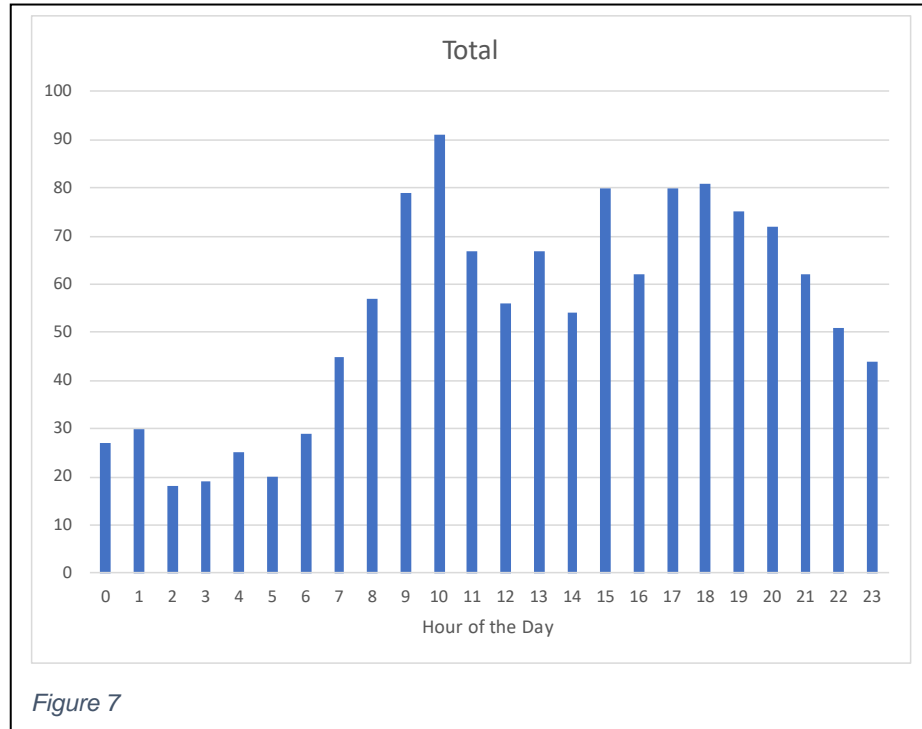


Figure 6

One example from another fire department the consultants have recently worked with is shown in Figure 7. The difference between the shape of the two graphs is largely comprised of an additional level of FMR responses.

If the PRRD chooses to implement FMR it is likely that the distribution of response by the Department will

change in a reasonably similar way. This will have an impact on available resources not just in terms of an additional call volume but also when during the day they will be required.



Road Rescue Response Estimate

Road Rescue in Charlie Lake is currently provided by the FSJ. This is part of their mandate to provide RR in a larger portion of the PRRD and they have provided response data for 2015 and 2016. For this period the total number of RR responses totals 34 as summarized in Table 1.

Table 1

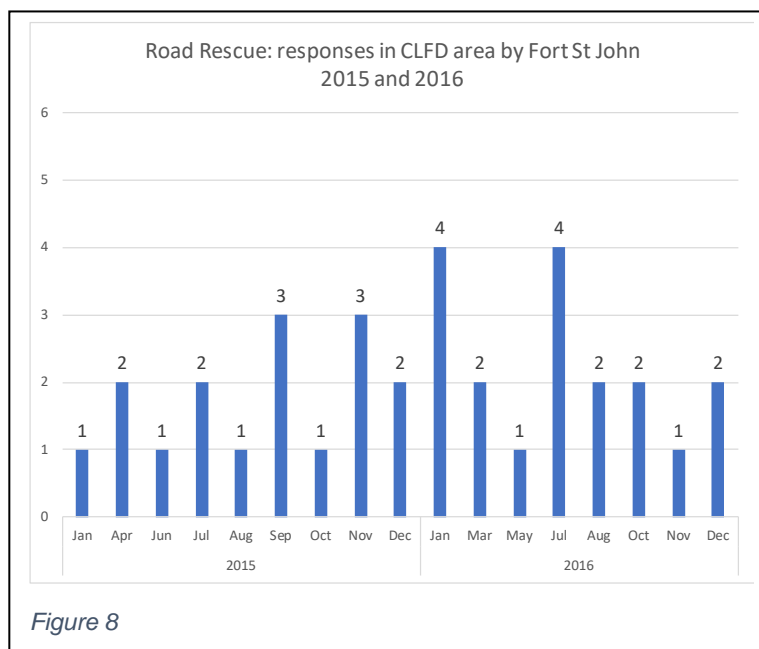
Year/Month	Count
2015	
Jan	1
Apr	2
Jun	1
Jul	2
Aug	1
Sep	3
Oct	1
Nov	3
Dec	2
2015 Total	16

2016	
Jan	4
Mar	2
May	1
Jul	4
Aug	2
Oct	2
Nov	1
Dec	2
2016 Total	18
Grand Total	34

Responses by Year and Month

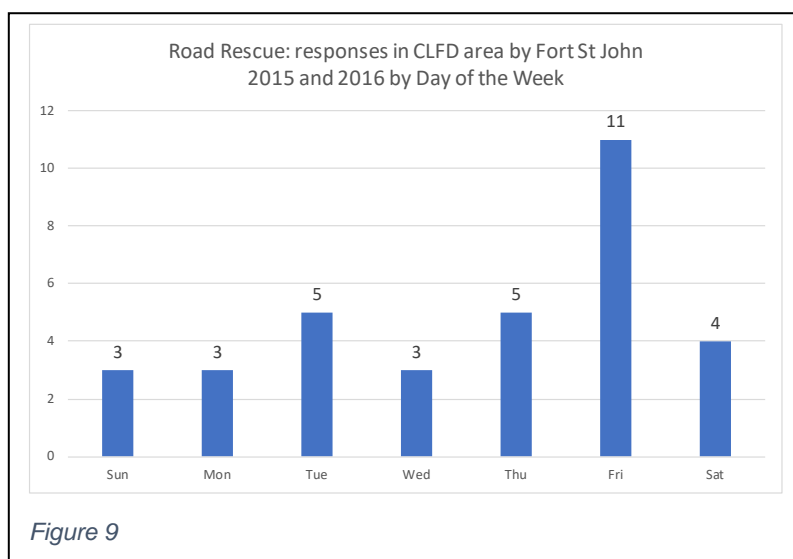
The distribution of RR responses is not even, as shown in Figure 8.

For example, RR responses only occurred in nine months in 2015 and eight months in 2016.



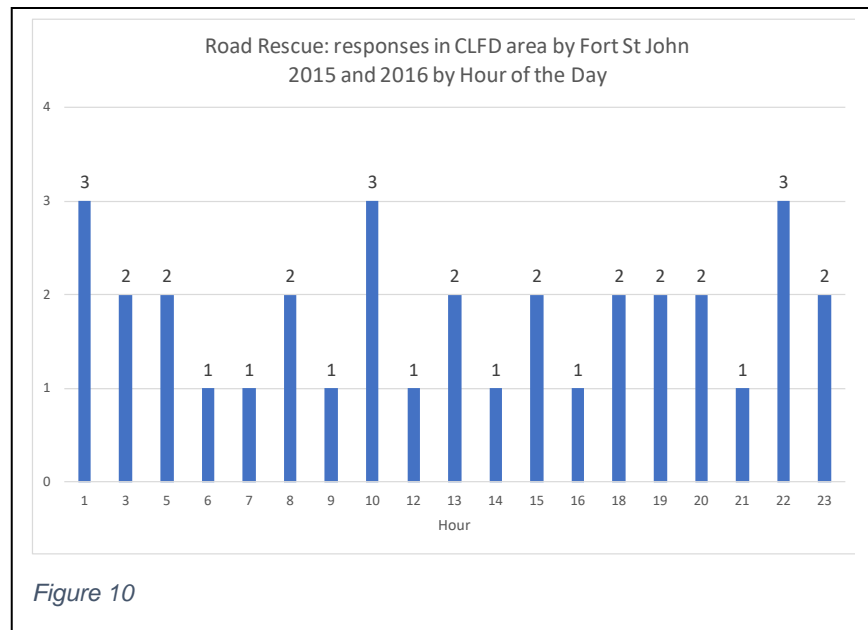
Responses by Day

Responses by day of the week are shown in Figure 9 with the highest volume occurring on Friday with 11 responses; more than double the next busiest days which are Tuesday and Thursday with five each.



Responses by Hour

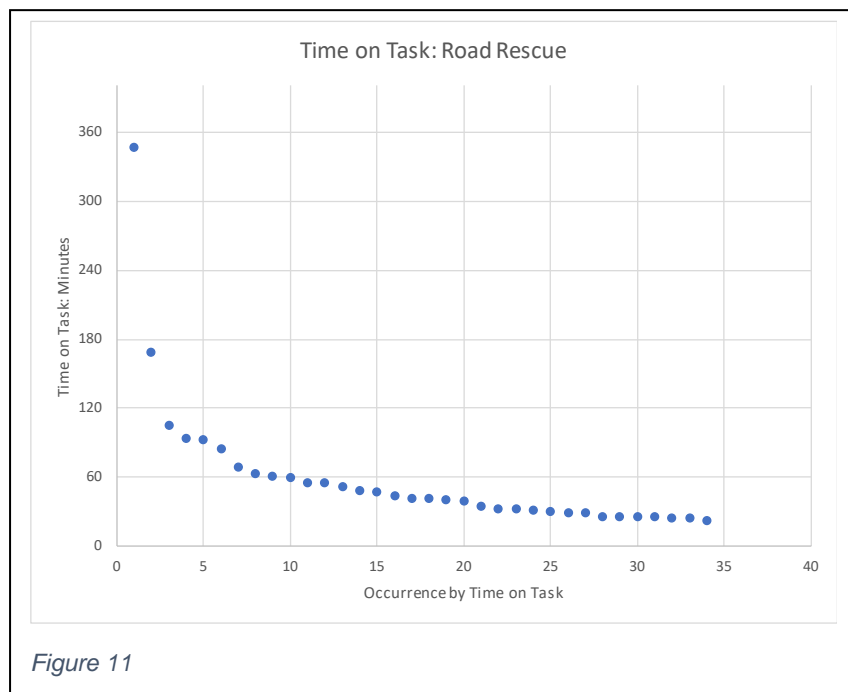
Responses by hour are shown in Figure 10. What this suggests is that the RR responses are evenly spaced throughout the day unlike what would be anticipated with FMR incidents.



Incident Duration

The data also provides information on the duration of the RR incidents and this provides a level of detail that should be factored into a decision to implement this program. The time on task for these incidents over the two-year period is summarized in Figure 11.

In this two-year period the average time on task was 59 minutes, the minimum 23 minutes and the maximum 347 minutes. Twenty five of these responses were one hour or less in duration.



Public Expectations

At the present time, and by its bylaw and policy the Department provides fire response and is not currently mandated to provide RR or FMR. As part of the 2011 review⁵, the community was surveyed to gauge the level of satisfaction with the existing service and to clarify public expectations. The survey included the following questions:

3. At present, the FD provides fire suppression services. Would you support the idea of the department providing other services, such as medical first responder & road rescue – understanding that to do so will involve higher taxes?				
RESPONSES	YES	NO	UNSURE	BLANK
	58	86	23	1

For question 3, inquiring about support for medical first responder & road rescue (FMR and RR), 86 (51%) were not in support, with 58 (35%) in support.

4. Do you support the idea of the FD conducting fire safety inspections of public buildings and local business to ensure that they meet Fire Code requirements and to preplan for emergencies?				
RESPONSES	YES	NO	UNSURE	BLANK
	124	31	12	1

Question 4 tested support for the Department conducting fire safety inspections and for this question 124 (74%) were in favor, 31 (18%) were opposed.

6. Would be in favour of the RD exploring the idea to create a “regional” fire department by margining Charlie Lake’s department with Fort St. John and possibly Taylor?				
RESPONSES	YES	NO	UNSURE	BLANK
	77	48	41	2

The final question explored the issue of the formation of a regional fire department and on this question 77 (46%) were in favour, with 48 (29%) opposed.

On balance, there was support for the Department’s existing mandate and service delivery; there was support for the Department to conduct safety inspections and support for the PRRD to administer the Department as well as for a regional fire service. In terms of additional services such as FMR and RR, the majority of those who responded were not in favour in 2011.

Analysis

The following analysis will review each of the previous sections in terms of the current and proposed future service mandate for the Department.

Service Mandate

The mandate for the CLFD is prescribed in a policy dated 29 May 2017 which authorizes the Department to be Full Service. The policy also outlines the services which the Department can offer and they include firefighting, training, pre-planning, high-angle rescue for Canfor and

⁵ Governance, Administrative and Operational Review conducted by Dave Mitchell & Associates Ltd.

hazardous materials response to the awareness level. Road rescue is not within the service mandate, nor is FMR with two exceptions. Members of the Department may provide FMR to a firefighter or to a victim at an incident; they may also provide a lift assist at the request of BCAS.

The potential addition of RR and/or FMR to the service mandate are discussed further in a following section suffice it to say that they are not presently within the service mandate. Addition of either of them would require a change in policy.

Road Rescue

At present RR is provided by FSJ within Charlie Lake and for the past two years has average 17 responses. This service is not currently within the mandate⁶ of the CLFD but should be considered for several reasons.

First, the service mandate does provide for firefighting within the service area and this is always a risk with a motor vehicle incident (the “MVI”) given the potential for spills of gasoline or diesel or for impairment of electrical systems. Second, the Department is confident that it has sufficient apparatus and personnel trained to operate this service⁷. This was reviewed with the Fire Chief who noted that the Department has suitable rescue tools and trained personnel. Third, although RR is currently provided by FSJ there is always the chance that department may be committed to other incidents within the city which potentially could delay a response in Charlie Lake.

First Medical Response

First Medical Response for Charlie Lake is currently within the mandate of the BCAS and the impact of adding this to the Department’s mandate is very complex. First, it is more difficult to ascertain the potential call volume in this area as that has not been provided and so there is no practical way to calculate the potential service impact for the Department.

Within the province, and where the service is authorized, fire departments choose to respond to one of five major responses types ranging from Alpha with the lowest acuity through Bravo and Charlie, to Delta and Echo with the highest acuity.

The consultants are not aware of any fire department that responds to all five levels; most choose to respond to Delta and Echo and often not all sub-types within those. Within the five levels of acuity, the BCAS event codes describe more than 1,700 variants.

⁶ The 2011 survey found 31% of residents supported implementation of RR and FMR with 51% opposed, the remainder undecided.

⁷ In our recent experience with an auto extrication course in the Interior, the cost was \$3,500 for a weekend program with local instructors plus around \$1,000 for 10 vehicles for practice.

The response codes of Alpha through Echo describe the relative severity and the type of response, either 'routine' or 'lights and siren'. One model uses the following to describe the

Alpha	Non-Life-Threatening
Bravo	Possibly Life-Threatening
Charlie	Life-Threatening
Delta	Serious Life Threat
Echo	Life Status Questionable

Figure 12

progression from non-emergency to emergency response.

The medical protocol used by BCAS continues to be revised and most recently had 1,729 possible diagnoses within 33 general descriptions.

Table 2

Code	General Type	Variations
01	Abdominal Pain/Problems	16
02	Allergies/Envenomations	41
03	Animal Bites/Attacks	19
04	Assault	48
05	Back Pain	10
06	Breathing Problems	40
07	Burns (Scald) Explosion	88
08	CO/Inhalation/HAZMAT/CBRN	112
09	Cardiac Arrest	56
10	Chest Pain/Chest Discomfort	14
11	Choking	31
12	Convulsions/Seizures	36
13	Diabetic Problems	15
14	Drowning/Near Drowning	82
15	Electrocution/Lightning	24
16	Eye Problems/Injuries	8
17	Falls	108
18	Headache	128
19	Heart Problems/A.I.C.D.	16
20	Heat/Cold Exposure	22
21	Hemorrhage/Lacerations	42
22	Inaccessible Incident/Entrapment	72
23	OD/Poisoning	75
24	Pregnancy/Childbirth/Miscarriage	40
25	Psychiatric	64

Code	General Type	Variations
26	Sick Person	50
27	Stab/GSW/Penetrating Trauma	84
28	Stroke (CVA/TIA)	210
29	Traffic Incident	113
30	Traumatic Injuries	17
31	Unconscious/Fainting (Near)	14
32	Unknown Problem (Person Down)	6
33	Interfacility/Palliative Care	28
	Total	1,729

In our experience those fire departments that choose to respond to FMR expect to review each of these 1,729 variations and determine which ones they wish to respond to. Then, depending on the nature of these, their training, equipment and periodic certification is derived.

For departments that choose to respond to FMR, the call volume from this type often approaches 50% of the total call volume. This could potentially increase the CLFD's responses to 200 or more and in some fire departments this has a negative impact on volunteer firefighters.

Implementation of FMR by the CLFD should be considered, but it will be necessary to understand the impact in terms of call volume and this will require a response review with the BCAS. One element of this review will be an understanding of response times by BCAS within Charlie Lake to clarify whether the CLFD would arrive prior to, simultaneous or after the arrival of the ambulance.

Depending on the level of service provided, the Department will need to ensure that it has sufficient personnel, training⁸ and ongoing recertification⁹ as required to support this service and that it is prepared to sign an agreement with BCAS. It will also need to ensure public support for this service; such support was not reflected in the 2011 survey.

Summary

The CLFD is defined as a Full Service fire department with a service mandate that includes aspects of firefighting but which does not explicitly authorize either RR or FMR. Road Rescue is provided by FSJ, FMR by the BCAS. The service mandate also prescribes an annual audit to ensure the Department continues to meet the Playbook requirements noted in Appendix 2—The Playbook Requirements for Full Service.

⁸ In our recent experience the Red Cross has provided FMR training for fire departments in BC and the cost for this may approach \$800 per member. A firm price should be obtained prior to authorization. As well there are a number of service providers in BC some of which may offer the program for different rates.

⁹ In a similar way our recent experience in terms of costs for recertification is \$400 per member.

The Department's call volume is increasing steadily, and it is addressing the recommendations of the most recent FUS report many of which have been completed or are in progress. At the same time 11 out of 28 recommendations relate to providing a water supply sufficient to support fire suppression.

The water supply in any jurisdiction accounts for 30% of the total rating of a fire department by the FUS and as a first priority the Department and the PRRD are encouraged to address this shortage by the implementation of cisterns, water-fill points and by implementation of a tanker shuttle service.

In terms of additional services, implementation of RR or FMR could be considered, in that order. Considering the risk of a fire or leak of hazardous materials that is always present in an accident, the addition of RR to the Department's mandate makes sense. The Chief has advised that the Department could offer this service as it has trained personnel and appropriate equipment. Addition of FMR is a more complex issue as noted and will require a further dialogue with BCAS to quantify the number and types of responses in the area as well as their current on-scene times for such events.



REPORT

To: Electoral Area Directors Committee

Date: January 9, 2018

From: Deborah Jones-Middleton, Protective Services Manager

Subject: **Expansion of the Dawson Creek Rural Fire Protection Area Feasibility**

RECOMMENDATION(S):

That the Electoral Area Directors Committee recommend that the Board direct staff to enter into discussions with the City of Dawson Creek to determine:

1. their interest in providing fire protection services to the Briar Ridge and South Dawson rural areas; and
2. the resources and costs required to provide the service;

and report the findings to a future Electoral Area Directors Committee meeting.

BACKGROUND/RATIONALE:

At the February 16, 2017 Rural Budgets Administration Committee the following resolution was carried:

“That the Rural Budgets Administration Committee commit from the Fair Share Feasibility funds, \$35,000 from Electoral Area ‘D’ to conduct a feasibility study to examine expanding the Dawson Creek Rural Fire Protection Area.”

Dave Mitchell and Associates were hired to perform the feasibility study. They have provided the following recommendations:

1. It is recommended that the PRRD consider expanding the Dawson Creek Rural Fire Protection Area to include the two areas identified below:
 - a. **Briar Ridge**
Briar Ridge is at the east limit of the current fire protection area on either side of Highway 49. There are 91 residences in this area and the majority are within 13 kilometres of the DCFD; all of the remaining area is within 15 kilometres.
 - b. **South Dawson**
South Dawson is at the south-west corner of the existing fire protection area. There are 65 residential properties in this area with few if any within 13 kilometres of the fire hall. The largest portion of the 65 properties is just beyond 13 kilometres with a few just beyond 15 kilometres.
2. It is further recommended that the PRRD and the three fire departments (Dawson Creek, Pouce Coupe, and Tomslake) that are parties to the mutual aid agreement be trained and equipped to achieve certification for a Superior Tanker Shuttle Service (STSS) accreditation.
 - a. The training and regular practice to achieve this to be facilitated by an increase of one position for the DCFD.

January 24, 2018

Staff Initials:

Dept. Head:

CAO:

Page 1 of 3

With STSS Accreditation, a minimum of three tenders (water tankers) of appropriate capacity along with identified water supply points within 5 kilometers of a residence, may improve the residents' insurance rating from a 3B to a 3A, which often results in a reduced insurance rate for property owners.

If a dry hydrant is installed on a lake or cistern a residence within 300 metres will automatically receive a 3A rating regardless of the STSS Accreditation as the property would be considered protected by a hydrant system. The 3A rating which often results in a reduced insurance rate for property owners.

3.it is recommended that the PRRD and the DCFD consider the implementation of a Rapid Response Engine similar to the unit shown in Figure 17 (page 19 of the Dave Mitchell report). This type of unit is deployed in many fire departments as an additional unit for this specific type of response and often equipped with a compressed air foam system (the "CAFS") to obtain the maximum utilization of the available provided water supply. The estimated cost for this type of unit based on ones currently deployed in other fire departments is \$200,000.

OPTIONS:

Provide direction to staff.

STRATEGIC PLAN RELEVANCE:

- ☐ Ensure that the Solid Waste Management Plan is operating on a fiscally defensible basis.
- ☒ Ensure effective execution of Public Safety and Emergency Services initiatives.
- ☐ Foster Collaboration on services with municipalities and electoral areas.
- ☐ Establish a strategy for coordinated advocacy on identified issues.
- ☐ Manage parks and trails in the region.
- ☐ Support the agricultural industry within the regional district.
- ☐ Not Applicable to Strategic Plan.

FINANCIAL CONSIDERATION(S):

This Recommendation will require approximately 4 hours of staff time.

COMMUNICATIONS CONSIDERATION(S):

None

OTHER CONSIDERATION(S):

Pending the City of Dawson Creek agreeing to provide fire protection service to Briar Ridge and South Dawson rural areas, staff would recommend that further discussions with the City of Dawson Creek, the Village of Pouce Coupe and the Tomslake Fire Department regarding Mutual Aid Agreements and training and equipping their firefighters to achieve a Superior Tanker Shuttle Serve (STSS) Accreditation and report the outcome to the Electoral Area Directors Committee.

January 24, 2018

Pending satisfactory outcomes from the discussions, staff would recommend that staff work with the City of Dawson Creek to engage residents of the Briar Ridge and South Dawson areas regarding the proposed expansion of the rural fire protection area.

Attachments: Dave Mitchell and Associates – Dawson Creek Fire Department Fire Protection Area Review

January 24, 2018



PEACE RIVER
REGIONAL DISTRICT



Dawson Creek
BRITISH COLUMBIA

Dawson Creek Fire Department Fire Protection Area Review

Dave Mitchell & Associates Ltd.

December a2017

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Executive Summary

The Peace River Regional District (the “PRRD”) and the City of Dawson Creek are considering increasing the size of the fire protection area for the Dawson Creek Fire Department (the “DCFD” or the “Department”) for two specific areas, South Dawson and Briar Ridge. The issue of extending a fire department’s service boundaries is primarily driven by the question of whether an effective response, one which increases or improves life safety and the protection of property, is possible.

Responses by the fire service are often time critical and the ability to provide effective rescue and fire suppression declines relative to the time it takes to arrive on scene and commence emergency response activities. Even a response delayed by distance, however, ensures that an incident will be contained, preventing a structure fire from becoming a risk to neighbours or the forest interface. It also will improve life safety for residents. As an additional consideration, the expanded service also may enable some residents to obtain reductions in the cost of their residential insurance premiums.

In evaluating the matter of potentially expanding the fire protection area there are several considerations. The first is that providing the service to an area not currently protected will, at a minimum, ensure that some response is provided to potentially effect rescue and commence fire suppression. Fire propagation within structures is well understood as is the notion that effectiveness in rescue and fire suppression declines with distance travelled, as a result of the time delay involved.

Under the Fire Underwriters Survey (the “FUS”) system, single family residences which are more than eight kilometres from a fire hall are rated as unprotected and generally are not eligible for a reduced premium. Although we are aware of situations in BC where insurance premium relief has been provided for premises up to 13 kilometres from a fire hall, this is not the stated position of the FUS.¹ As such, the possibility of insurance cost reductions for residences which are beyond eight kilometres from the fire hall would need to be confirmed with the individual insurers or underwriters.

The two areas being considered for expansion include properties that, in the majority of cases, range between eight and 15 kilometres from the DCFD fire hall. The report recommends that both areas be fully added. The DCFD is in a position to provide an emergency response and while the effectiveness is attenuated by distance, even for those residences furthest from the hall, it will ensure that a response will be provided, and that the incident will be addressed. Any damage will be limited or confined and the spread of fire prevented. Those properties which are between eight and up to 13 kilometres also may see their insurance costs reduced, although such a reduction is at the discretion of individual insurers and underwriters.

For these reasons, the PRRD should consider expanding the area covered by the DCFD. Increasing the size of a fire protection area should not be unlimited as there is a serious decline

¹ Individual insurance underwriters may differ from the FUS approach.

in effectiveness beyond a certain point. Finally, any expectation of insurance premium savings will need to be confirmed with insurance providers.

In support of the efficacy of the existing fire protection service and the contemplated increase to the fire protection area, it is also recommended that the PRRD and the DCFD collaborate to improve the supply of water for firefighting purposes by seeking to achieve a Superior Tanker Shuttle Service ("STSS") accreditation. This would require integrating the personnel and resources of the Pouce Coupe and Tomslake departments and the coordination of this effort might best be managed by the DCFD. This was reviewed with the DCFD Fire Chief and it is recommended that the complement of the department be increased by an individual to coordinate and provide training and regular exercises.

In addition to adding a trainer, it is recommended that a Rapid Response Engine be added to the DCFD fleet to provide a better response to the properties in Briar Ridge and South Dawson where the houses and other structures have narrow, steep driveways which will provide a challenge for a full-size Engine.

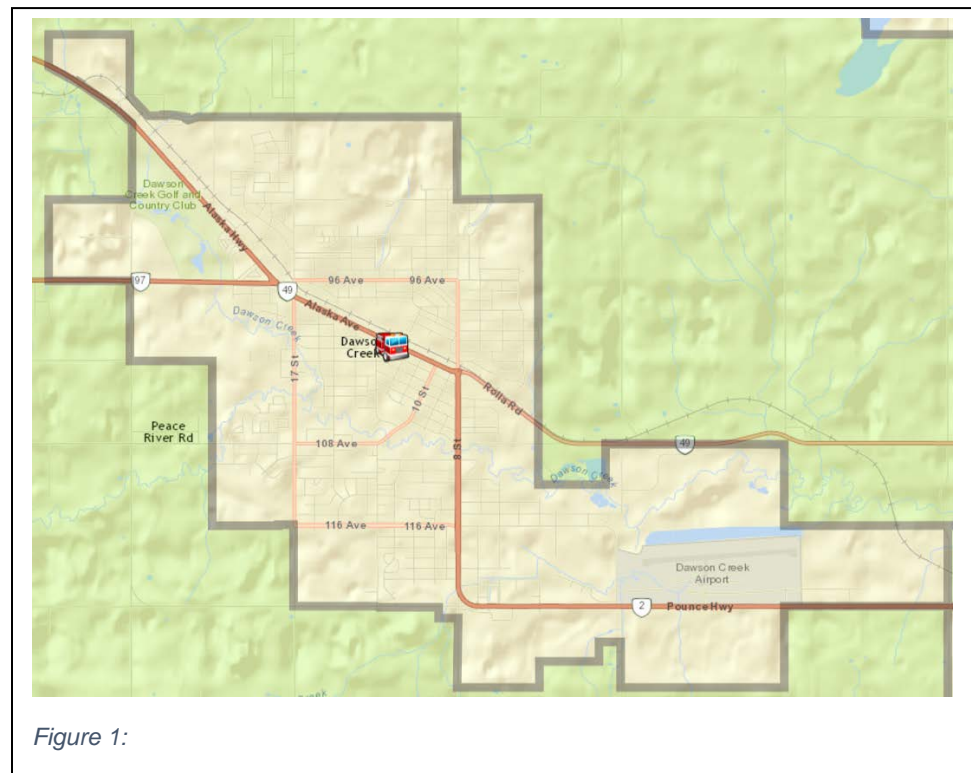
Background

The DCFD is operated by the City of Dawson Creek. The Department operates from a single fire hall adjacent to the City Hall as shown in Figure 1. It also provides response to an extended fire protection area within the PRRD.

The PRRD is considering an extension of the fire protection area to include Briar Ridge and South Dawson, two areas not currently covered by a fire protection agreement.

Enlarging the fire response area

would enable the DCFD to provide a response where none presently exists and will likely result in a reduction in fire insurance premiums for those properties which are less than eight



kilometres from the hall, and may result in somewhat lower premiums for those between eight and 13 kilometres. The FUS provide ratings of fire services based on many factors including distance by road network from a recognized fire hall.² Their stated position is that a residential property which is more than eight kilometres from a recognized fire hall is considered unprotected and thus not discounted in terms of insurance premiums. Individual underwriters, however, are free to approach the issue differently and there are several instances where it is reported that a discount has been provided for a structure up to 13 kilometres in other parts of the province.

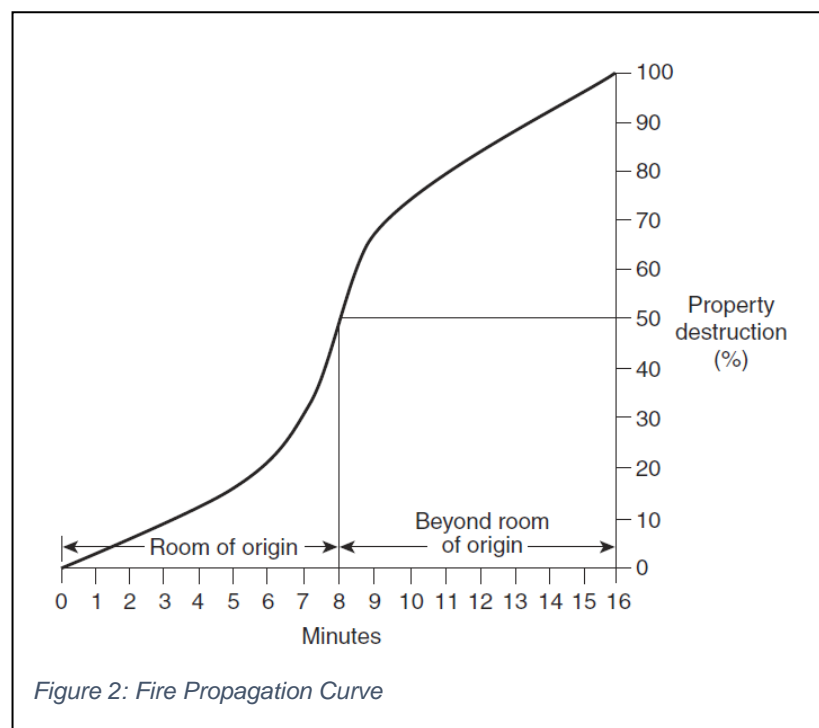
Regardless of whether any discounted premium arises from a response beyond eight kilometres, the arrival of a fire department will provide a level of comfort to the property owner and potentially effect a rescue, prevent the further spread of a fire and limit damage.

Response Standards—NFPA

The standards of service that apply to the fire service include those related to response time objectives. These are defined by the National Fire Protection Association (the “NFPA”) and include time intervals for 911 call handling, dispatch, turnout of crews and travel to the scene.

Each of these will be described in further detail in the following sections. However, a key element for all fire responses is the relationship between time and the degree of fire damage. This is illustrated in Figure 2 which shows the rate of change / percentage of destruction from the time at which a fire ignites.

This fire propagation model is well documented and explains why each element of fire response is critical because at or about eight minutes from ignition a fire will flashover and extend beyond the room of origin. This increases the risk to the resident as well as to the firefighter, and certainly increases the amount of resulting damage.



² http://www.fireunderwriters.ca/home_e.asp

The relationship between the deployment of sufficient firefighters within a defined timeframe relative to fire loss and injury has been documented by the NFPA and this is shown in Table 1. From this it can be seen that confining a fire to the room of origin results in an average dollar loss of \$2,993.

Flame Spread	Civilian Deaths	Civilian Injuries	Average Dollar Loss per Fire
Confined fire or flame damage confined to object of origin	0.65	13.53	\$1,565
Confined to room of origin, including confined fires and fires confined to object	1.91	25.32	\$2,993
Beyond the room but confined to the floor of origin	22.73	64.13	\$7,445
Beyond floor of origin	24.63	60.41	\$58,431

Table 1

Fires which extend beyond the room of origin but which are contained to the floor of origin result in an average dollar loss of \$7,445 while fires which extend beyond the floor of origin result in an average dollar loss of \$58,421³.

Similarly, where a fire is held to the room of origin civilian fire deaths do not exceed 1.91 per thousand fires, but where the fire extends beyond the room of origin there are 22.73 deaths per thousand fires. In terms of injuries we expect 25.32 per thousand fires when the fire is held to the room of origin but this increases to 64.13 when the fire extends beyond that.

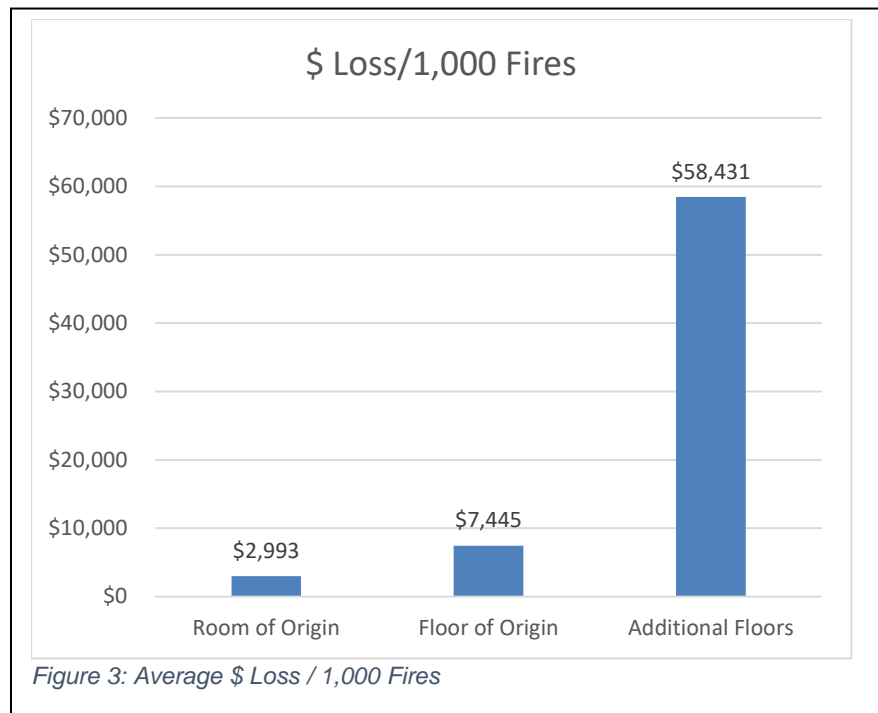
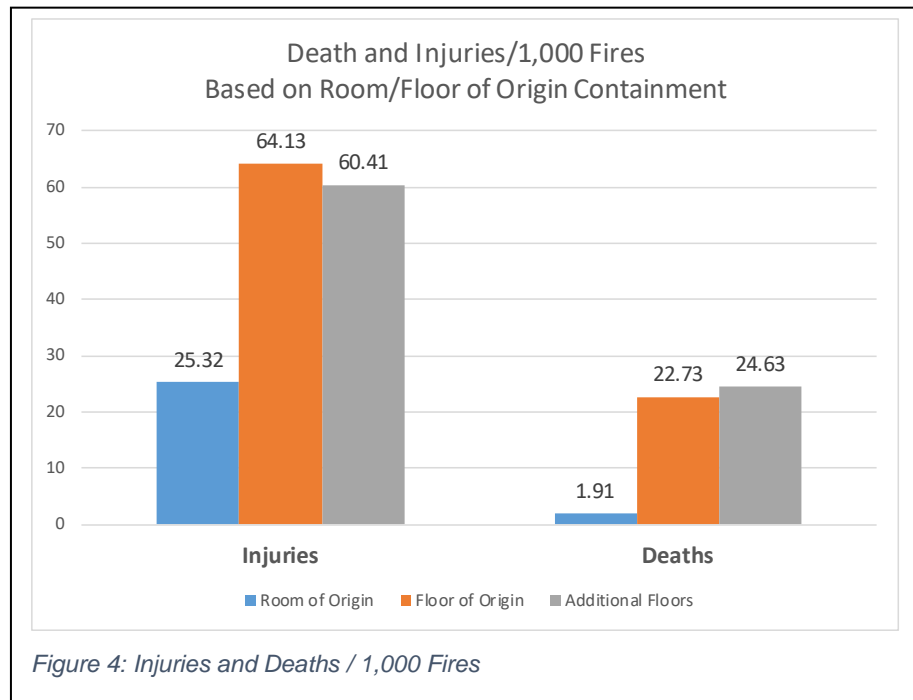


Figure 3: Average \$ Loss / 1,000 Fires

³ The data used in this table is for the United States; there is no similar aggregation of national data in Canada.

This data is shown graphically in Figure 3 in terms of dollar loss per 1,000 fires and in Figure 4 in terms of injuries and deaths per 1,000 fires.

In summary, fire damage, injuries and fatalities are mitigated by the promptest possible arrival of a competent fire department.



Response Standards—Fire Underwriters

The FUS reviewed the DCFD in 2010 and rated the Department in terms of Dwelling Protection Grade (the “DPG”) and Public Fire Protection Classification (the “PFPC”).⁴ The DPG rating was 3A, the PFPC was 5.

The following analysis will consider the extension of the fire protection area beyond its current limits and provide a series of recommendations. To be clear however, the determination of insurance premium savings is solely within the control of the insurance industry, which is generally guided by the FUS rating system.

⁴ Fire Underwriters Survey, *City of Dawson Creek, 2010* (the “FUS Survey”). “DPG” is the rating applied to single family residences, where “1” is the best and “5” is unprotected. The “PFPC” rating is applied to multi-family residences and commercial and industrial properties and “1” is the best, while “10” is unprotected.

Analysis

The PRRD covers a very large area and this analysis is limited to two specific areas which are being considered for addition. For these areas, responses by road network have been generated using 5, 8, 13 and 15-kilometre polygons and these are color-coded as shown in Figure 5.

For comparison, the existing fire protection area outside of Dawson Creek is also displayed to illustrate the areas in which properties are responded to by the DCFD beyond eight kilometres.

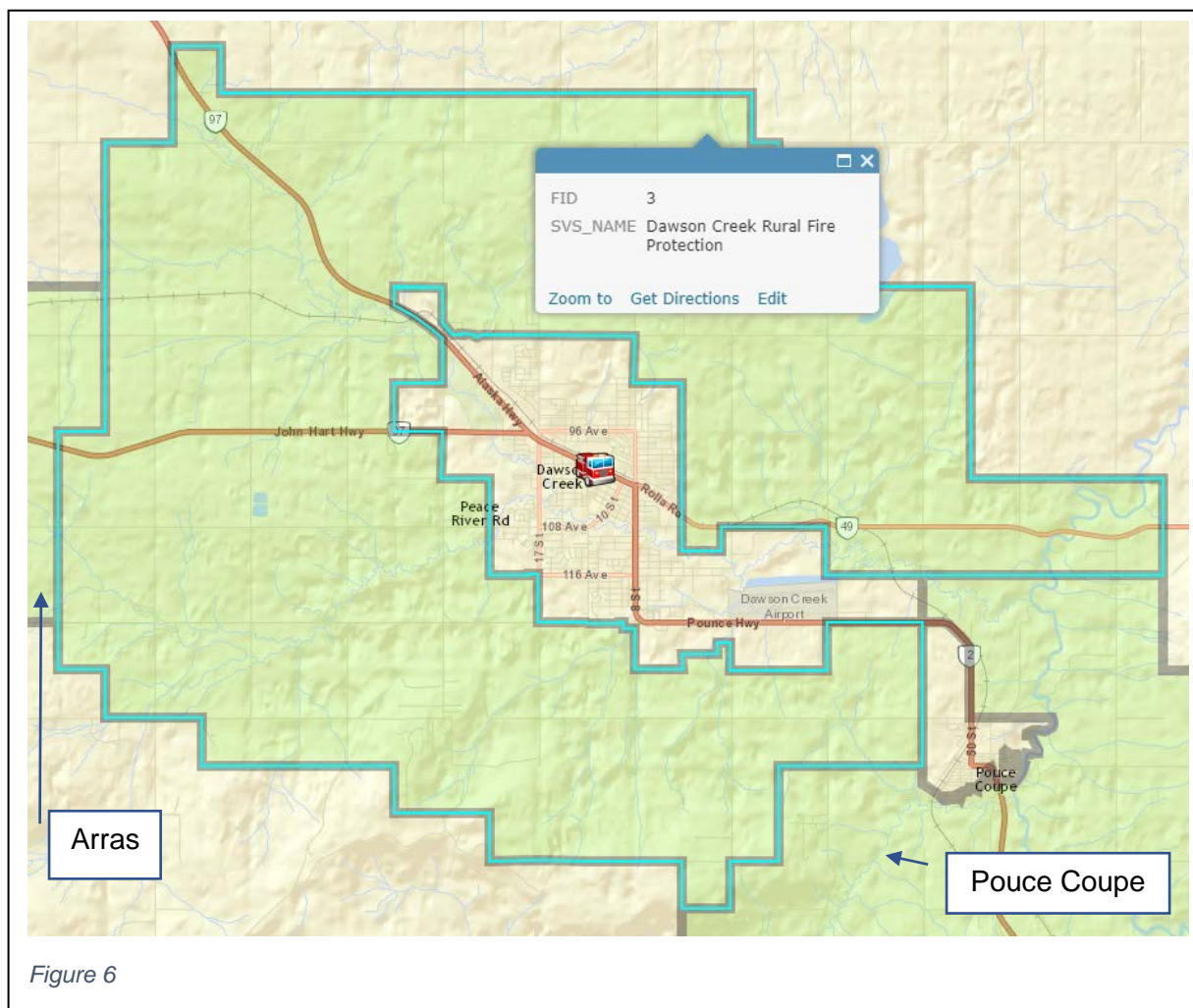
For Briar Ridge and South Dawson, the number of civic addresses (156) has been identified by the PRRD and, based on a multiplier of 2.8,⁵ the number of residents has been estimated. The total number of residents by this measure would be 437.



⁵ The multiplier of 2.8 was provided by the PRRD GIS department, July 28, 2017.

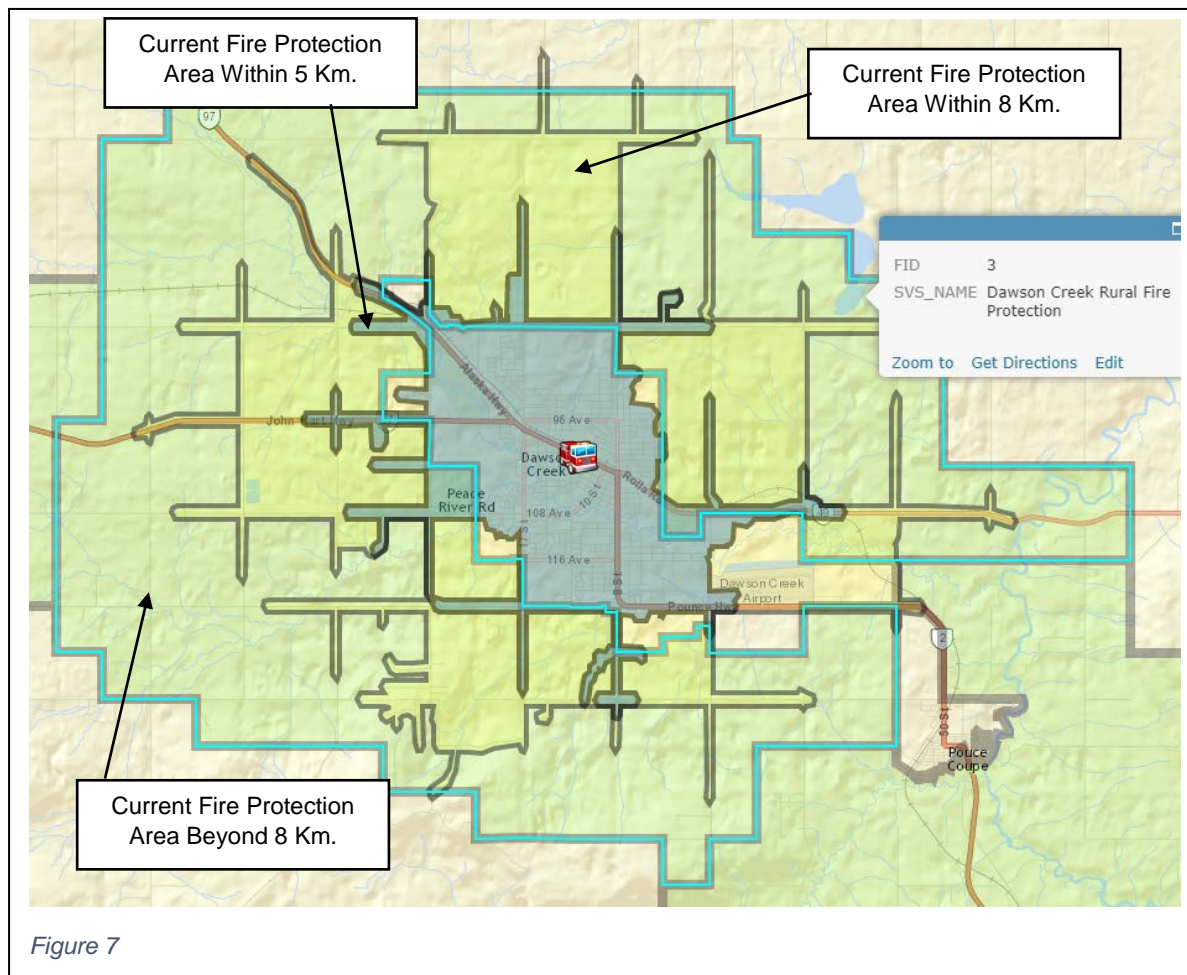
Current Fire Protection Area

The current fire protection area is shown as the light green shaded area outlined in blue as



shown in Figure 6. The light green areas shown to the west and south-east of Dawson Creek are the Arras and Pouce Coupe fire protection areas respectively.

This same area can then be overlaid with the five and eight kilometre polygons as shown in Figure 7

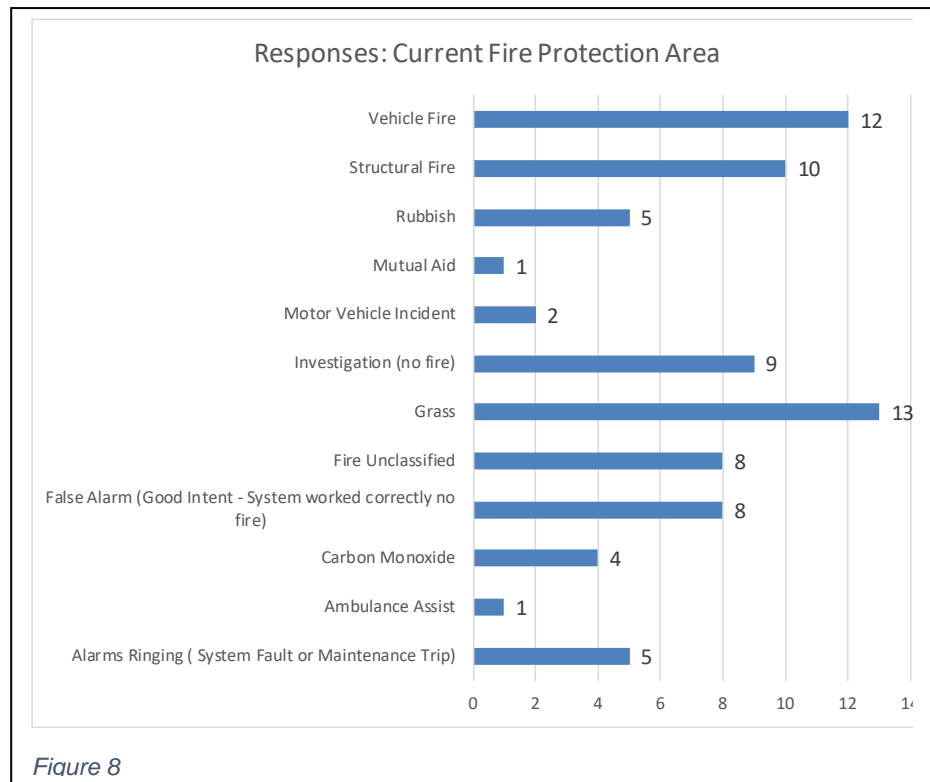


What this illustrates is that the current extended fire protection district includes areas which are beyond eight kilometres; these include Highway 49 to the east, the Hart Highway to the west, Highway 97 to the north-west and Township Line Road to the south-east.

Response to Incidents

As noted, the DCFD currently provides coverage to a portion of the PRRD and one issue to be addressed is the potential impact on the Department from providing additional responses at a further distance.

Responses are for a range of incident types summarized in Figure 8. The majority of these are for single unit calls and/or for a shorter duration than structure fires which require a full commitment by the Department.



Total responses in the fire protection area are slightly less than 4% of the responses by the Department (see Figure 9).

This percentage changes when the responses data is analyzed for structure fires as shown in Figure 10.

In this case, the percentage of responses in the fire protection area is 12.5%.

	2012	2013	2014	2015	2016	Total
Fire Protection Area	11	12	12	15	28	78
Dawson Creek	375	355	416	397	414	1,957
Total	386	367	428	412	442	2,035

Figure 9: All Response Types: Average of 16 calls in the Fire Protection Area 2012 to 2016

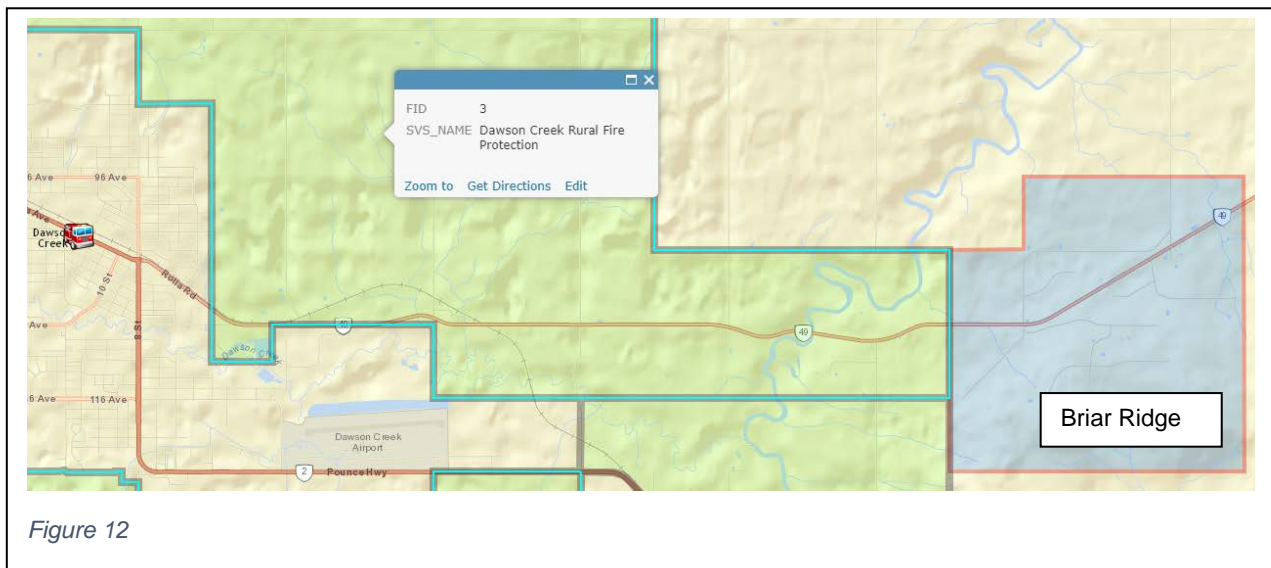
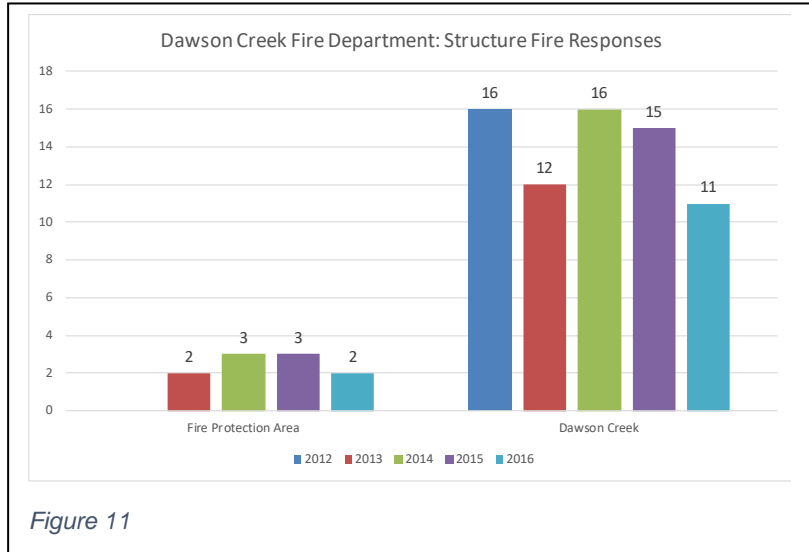
	2012	2013	2014	2015	2016	Total
Fire Protection Area		2	3	3	2	10
Dawson Creek	16	12	16	15	11	70
Total	16	14	19	18	13	80

Figure 10: Structure Fire Incidents

This is shown graphically in Figure 11 and illustrates that there is an impact to the DCFD for responses that are for structure fires as they are likely to result in a commitment of a majority or all of the Department's resources. Where this occurs outside of Dawson Creek there is a degree of elevated risk in terms of the 'next call for service' that may occur in the City.

Briar Ridge

The Briar Ridge area that is being considered for inclusion in the fire protection area is the blue



polygon shown in Figure 12 and immediately adjacent to the eastern limit of the current rural fire protection area along Highway 49. The area is approximately 9.8 square kilometres and contains 91 residential properties.

The travel distance to the area exceeds eight kilometres; however, the majority of it is within 13 kilometres (red polygon) and all of it within 15 kilometres (grey polygon) as shown in Figure 13.

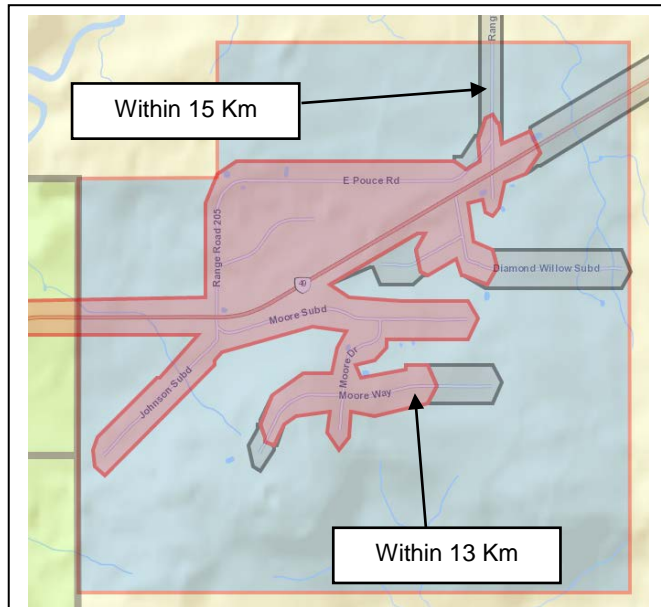


Figure 13

South Dawson

The South Dawson area being considered for inclusion in the fire protection area provided by the DCFD is the red shaded area shown in Figure 14.

The area is approximately 5.9 square kilometres and contains 65 residential properties.

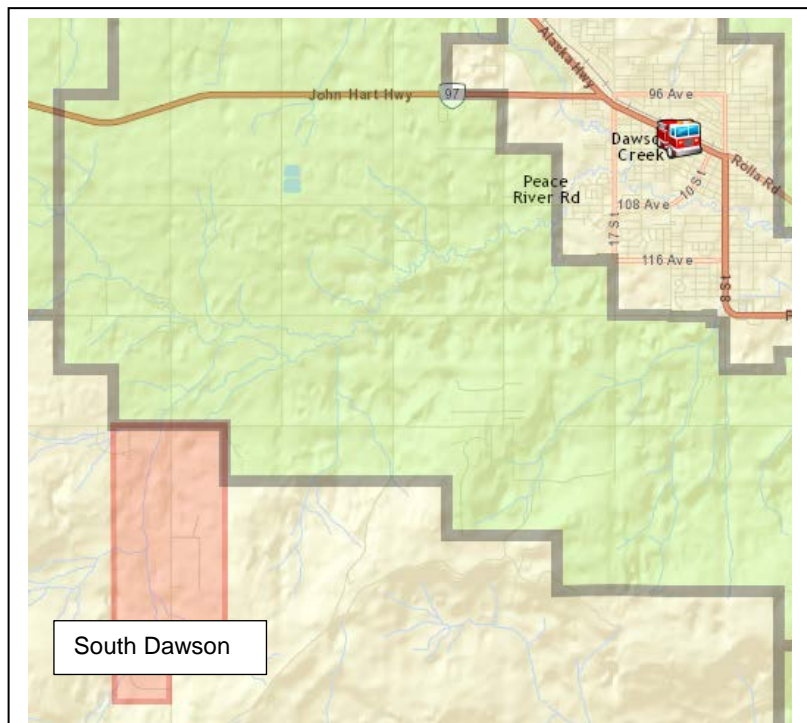
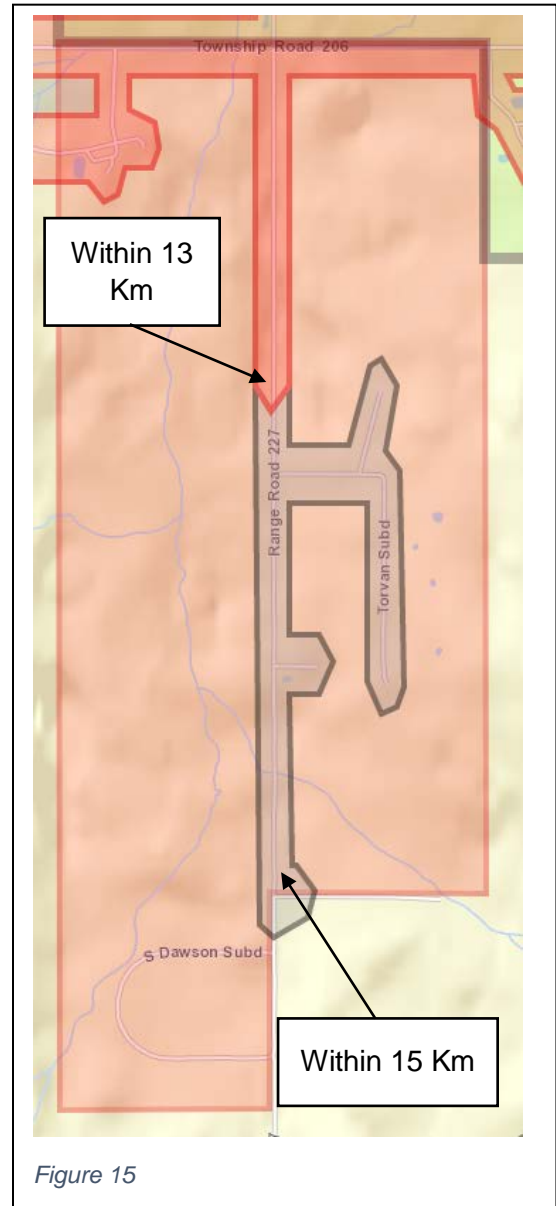


Figure 14

The travel distance to this area exceeds eight kilometres but for some part is within 13 and 15 kilometres as shown in Figure 15.

Travel distance from the Dawson Creek fire hall within 13 kilometres is portrayed by the darker red polygon; 15 kilometres is shown in the grey polygon with the black outline.



Coverage Expansion Issues

The addition of Briar Ridge and South Dawson into the Dawson Creek rural fire protection area is recommended. Coverage within these two areas will be beyond the eight kilometre travel distance from the fire hall but that is already the case within the existing fire protection area.

Official Community Plan

Expansion of such fire service is also consistent with the South Peace Fringe Area Official Community Plan⁶ at 11.2.1:

11.2.1 Policies

- a. To encourage and support existing Dawson Creek, Pouce Coupe, Arras, and Tomslake rural fire protection service areas as defined on Schedule E, providing services to SPFA residents; and
- b. To facilitate requests for expanded fire protection service areas, where feasible.⁷

An expanded fire service to Briar Ridge and South Dawson would require a primary response by the DCFD which would dispatch a trained crew with an Engine and a Tender for water supply since the area under discussion does not have hydrants. One option for the PRRD and the DCFD to jointly consider is STSS accreditation by the FUS.⁸

Wildland Interface Risks

As part of this review process, Briar Ridge and South Dawson were reviewed including a consideration of the risk posed by the wildland interface.

Briar Ridge

All Briar Ridge homes are classified as being in the wildland interface. Therefore, there is a risk of wildfire to all residents of this area. The wildland interface risk is considered moderate according to the Provincial Strategic Threat Analysis done in 2015. The Briar Ridge area is surrounded by farmland on the north and west which will protect the ridge from most wildfires; the east and south sides of the ridge are composed of C-2 (spruce) and M-2 (aspen) forested areas. In the summer months, the fire risk can reach extreme.

By practicing the Fire Smart principles, the risk from wildland interface fire to home owners can be greatly reduced. The PRRD and the DCFD should focus on public education programs such as Fire Smart to educate the residents of the ridge. As well, there is a need to improve fuel management performance by planning and carrying out forest activities in a manner that reduces future fire risks and the potential impacts of wildfire.

⁶ Bylaw No. 2048, 2012.

⁷ Ibid, page 47.

⁸ http://www.fireunderwriters.ca/superiortankershuttle_e.asp

South Dawson

The South Dawson properties are classified as being in the wildland interface because of they are surrounded by a forest. This forested area is a mixture of C-2(spruce) and M-2(aspen). The South Dawson homes are protected by surrounding farmland outside of the immediate homesteads/forested areas which makes the area fairly safe from large scale forest fires. The wildland interface fire risk would be considered moderate to low most times of the year, but in the summer months the risk can reach extreme.

By practicing the Fire Smart principles, the risk from wildland interface fire to home owners can be greatly reduced. As with Briar Ridge, the PRRD and the DCFD should focus on public education programs such as Fire Smart to educate residents. A planned-out fuel management program should be implemented over a period of years. This practice can greatly reduce future fire risks and the potential impacts of wildfire.

Superior Tanker Shuttle Service Accreditation

STSS accreditation is recognized by the FUS as being equivalent to hydrant protection.⁹ This accreditation has been obtained by a number of fire services in the province and, where they are compliant in terms of water flow and distance, they are equivalent to the DPG Grade 3A which is considered "fully protected", as opposed to DPG 3B, which is a semi-protected rating. The difference in insurance costs between semi- and fully-protected can be as much as 30%.

For the STSS accreditation to generate an insurance premium discount, the FUS requires the property to be within eight kilometres of a fire station and 5 kilometers of a water supply point. Achieving an STSS accreditation would provide a more secure water supply within the sub-regional area in addition to a potential reduction in fire insurance premiums. Accreditation is normally granted by the FUS for a period of five years¹⁰.

The accreditation would require a minimum of three Tenders of appropriate capacity along with identified water supply points. Achieving this capacity would require an optimized response by the DCFD along with the Pouce Coupe Fire Department and probably also Tomslake.

Having the ability to provide a consistent water supply by tanker shuttle would be a benefit for both the PRRD service areas which are protected by the DCFD as well as the City of Dawson Creek as this would assure an additional water supply capability regardless of whether accreditation is obtained. Such a cooperative model would also be supported by the ongoing commitment to training within the South Peace that is now possible at the DCFD training site.

⁹ Ibid.

¹⁰ To be clear, STSS accreditation will only be granted by the FUS but regardless of whether accreditation is obtained or not, the ability to provide an enhanced water shuttle will be a benefit to any firefighting response within the PRRD as well as within Dawson Creek.

Mutual Aid Agreement

Mutual aid agreements are essential tools that enable fire departments to provide aid to one another, when circumstances warrant. They permit departments to share resources and specialty services (e.g., specialty rescue or hazardous materials responses; additional water supplies, etc.), and enable them to obtain critical support for major incidents or other situations where a department's resources are overwhelmed by events. Mutual aid agreements require a specific request for assistance from the requesting department, before another department responds to the incident.

There is an existing mutual aid agreement (the "Agreement") between the PRRD, the Tomslake Fire Department Society, the City of Dawson Creek and the Village of Pouce Coupe. The Agreement, made as of 10 November 1999, was intended "...to provide for fire and emergency response mutual aid in Dawson Creek, Pouce Coupe and Tomslake and the rural areas surrounding those communities."¹¹

The Agreement appears to have expired as it was signed 10 November 1999 and was for a five-year term. If the DCFD intends to rely on this arrangement, the Agreement should be renewed and updated. Nevertheless, it appears still to form the basis for mutual aid between the parties. The Agreement is without any specific area limitations and is intended to enable each of the parties to request aid from the other parties when required. Likewise, there is no restriction as to what might be provided by this agreement, as the term Emergency Resources includes "...all persons and equipment held by, in the service of or directly available to the fire services of the Party."¹² That said, the Fire Chief of the Providing Party has full discretion as to what resources to send in response to a request and no liability is intended to attach to any such decision.¹³

Subject to the adoption of a revised mutual aid agreement all available apparatus and personnel are available for deployment at the request of any party to the Agreement. The shared response by apparatus and personnel can be used to achieve an STSS accreditation, though any such arrangement for water tenders would likely have to be developed along with an automatic aid structure, to ensure the timeliness of response.¹⁴ The appropriate number of Tenders for water supply and water supply points should be reviewed and this detail provided to the FUS; as well, they will require information on a coordinated plan to train and implement this enhanced water supply system. Coordination of this training function could be managed by the DCFD, subject to a review of their resources, due to the presence of the training site in Dawson Creek as well as their capacity to manage training overall.

¹¹ As described in the full name of the bylaw authorizing the execution of the agreement by the PRRD: *South Peace Fire Mutual Aid Agreement By-Law No. 1260, 1999.*

¹² Agreement, s. 1, Definitions.

¹³ Agreement, sections 3 and 4.

¹⁴ Under automatic aid, the supporting departments are automatically called out to certain classes of events – e.g., a confirmed structure fire.

Apparatus and Staffing

Fire protection for the existing and proposed additional two areas is recommended with provision for a more flexible response and with a greater capacity for water supply for fire suppression.

In terms of water supply, the fire protection area does not have fire hydrants. All water used for firefighting is that carried to the fire in Tenders, or uses stored water at the scene.

At the present time, the Department has a number of Tenders at least one of which has been provided by the PRRD. However, there is a practical limit to the amount of fire suppression that can be attempted with what is a de facto limited water supply. For this reason, it is recommended that Department and the PRRD procure sufficient additional Tenders and provide fill points to achieve a continuous flow of water; what is termed a Tanker Shuttle Service. It may also be possible to have this accredited by the FUS and if that can be achieved, the insurance industry considers this the same as being within a hydranted area.



Figure 16: Tender

Deploying a tanker shuttle service will require sufficient additional tankers to provide a continuous flow of water at a fire scene. This is a practice that is achieved by a number of fire departments in BC and results in a greatly enhanced ability to provide fire suppression. It also provides a greater margin of safety for firefighters.

The effectiveness of a tanker shuttle service is determined by the provision of water sources and apparatus. It also absolutely requires regular training and drilling with this configuration to ensure the competence and familiarity with all parts of the operation. It is proposed that the DCFD would be in the best position to manage this service in partnership with the PRRD and the surrounding fire departments. If this concept is agreed it will require a more detailed discussion and agreement with the respective fire departments as well as the procurement of sufficient Tenders and a commitment to training time and regular practices. This matter was reviewed with the DCFD Fire Chief and it is proposed that a training position be added to the Department to coordinate and deliver training and regular practices.

As noted earlier Briar Ridge and South Dawson were reviewed by the consultants in terms of the forest interface risk as well as the general risk, types of construction and topography.

In a number of places houses are built on hillsides with relatively steep and narrow driveways that present a significant challenge in terms of access or egress for a full-size engine. For this reason, it is recommended that the PRRD and the DCFD consider the implementation of a Rapid Response Engine similar to the unit shown in Figure 17. This type of unit is deployed in many fire departments as an additional unit for this specific type of response and often equipped with a Compressed Air Foam System (the “CAFS”) to obtain the maximum utilization of the available provided water supply. The estimated cost for this type of unit based on ones currently deployed in other fire departments is \$200,000.



Figure 17: Rapid Response Engine

Summary

The PRRD has an agreement with the DCFD to provide an emergency response to a defined area outside of the City of Dawson Creek. This agreement generates approximately 11 responses per year by the DCFD.

Increasing the size of the fire protection area to include South Dawson and Briar Ridge would add some 156 additional properties to the DCFD service area, and provide a response by a fire department where none currently exists. A portion of the two areas will be within 13 kilometres of the DCFD fire hall, others are beyond that. In the case of Briar Ridge all properties are within 15 kilometres; in South Dawson, there are perhaps 17 properties that would be just slightly beyond that point.

The area that is currently unprotected also lacks hydrants and so, in its present configuration, the DCFD is somewhat constrained in the amount of water that can be provided by Tender. The mutual aid agreement permits the DCFD as well as the Pouce Coupe and Tomslake fire departments to provide mutual aid without limitation in terms of their resources. Providing a consolidated response by the resources of all three departments with the appropriate numbers of Tenders and sufficient water supply points could allow for an STSS accreditation. Such an accreditation would allow any fire suppression activities in any protected area to operate with a continuous water supply.

Recommendations

It is recommended that the PRRD consider expanding the DCFD fire protection area to include the two areas identified below. It is further recommended that the PRRD and the three fire departments that are parties to the mutual aid agreement be trained and equipped to achieve certification for an STSS accreditation. The training and regular practice to achieve this to be facilitated by an increase of one position for the DCFD.

Accreditation by the FUS should provide an opportunity for lower fire insurance premiums but even without accreditation a tanker shuttle can provide a continuous flow of water for firefighting where this is not currently the situation both within the current fire protection area and the proposed extensions. Implementation will require a review with the respective fire chiefs to ensure a sufficient number of tenders, suitable training and regular practice to ensure a continuous water supply.

In addition to the implementation of a tanker shuttle it is recommended that the DCFD increase its fleet by adding a Rapid Response Unit to provide a first attack capability in Briar Ridge and South Dawson. This type of unit would allow the Department to better cope with many of the residences with long, steep driveways; as well the response time for a smaller vehicle is likely to improve.

Briar Ridge

Briar Ridge is at the east limit of the current fire protection area on either side of Highway 49. There are 91 residences in this area and the majority are within 13 kilometres of the DCFD; all of the remaining area is within 15 kilometres.

South Dawson

South Dawson is at the south-west corner of the existing fire protection area. There are 65 residential properties in this area with few if any within 13 kilometres. The largest portion of the 65 properties is just beyond 13 kilometres with a few just beyond 15 kilometres.

Conclusion

The issue of extending a fire department's service boundaries is primarily driven by the question of whether an effective response, one which increases or improves life safety and the protection of property, is possible. In general, the longer that it takes a fire department to arrive at the scene of an incident, the greater the damage that is likely to occur and the greater the risk of injury or death. Even so, the provision of a confirmed emergency response ensures that an incident will be contained, preventing a structure fire from becoming a risk to neighbours or the forest interface. It also will improve life safety for residents. As an additional consideration, under the FUS system, insurance premiums are reduced where a residential property is located within eight kilometres of a fire hall, with some individual insurers or underwriters extending this protected zone as far out as 13 kilometres.

In the present review, the possible extension of the DCFD fire protection coverage for Briar Ridge and South Dawson is recommended. Most properties within this expanded service area are within 13 to 15 kilometres from the hall. Some portions of South Dawson slightly exceed a travel distance of 15 kilometres from the hall.

Appendix 1: Superior Tanker Shuttle

The following is from the FUS and describes alternate water supplies including Superior Tanker Shuttle (the “STS”).

Fire Underwriters Survey: Superior Tanker Shuttle

Alternative Water Supplies for Public Fire Protection¹⁵

Alternative water supplies include water supplies other than those that are defined as pressurized, municipal-type water supply systems. Generally speaking fire fighting operations are dependent on water and/or other extinguishing agents to succeed. In developed areas, water supplies are provided through a network of distribution pipes, storage and pumping facilities.

In areas without municipal-type water supplies, fire fighting presents a significantly greater challenge. Historically various methods have been utilized to deliver water from some source location to the fireground. The bucket line is an example of one of the historical methods of delivering water to a fire. Generally speaking these types of water supply delivery methods were not effective with respect to reducing property damage.

Since the advent of automotive fire apparatus and road infrastructure, the capacity to move water from a source location to the fire ground has improved dramatically. The fundamental steps in a shuttle operation are as follows:

- set up pumper apparatus at fire event and deliver water from temporary storage facility (ex. portable tank) through fire pump to fire;*
- draft water (from a location where water supplies are known to be reliable and accessible) into a mobile water supply apparatus*
- move water from source location to fire event using mobile water supply apparatus*
- dump water into temporary storage facility (ex. portable tank) at fire event location*
- repeat shuttle cycle.*

Levels of Service

Unrecognized Shuttle Service

If the level of shuttle service provided by a community does not meet the minimum benchmarks set out in NFPA 1142, then the level of service will not be recognized for fire insurance grading purposes.

Standard Tanker Shuttle Service

¹⁵ http://www.fireunderwriters.ca/superiortankershuttle_e.asp, accessed 23 August 2017.

To be recognized, for Standard Tanker Shuttle Service, the fire department must have adequate equipment, training and continuous access to approved alternative water supplies to deliver standard tanker shuttle service in accordance with NFPA 1142, Standard on Water Supplies for Suburban and Rural Fire Fighting. A formal plan for use of alternative water supplies must be in place and available for review detailing the alternative water supply sources and characteristics. To be credited, fire department access to alternative water supplies must be 24 hours per day and 365 days per year. Refill capacity from alternative water supplies using drafting techniques requires a pump that has a minimum capacity of 450 LPM (100 Igpm) at 275-415 kPa (40-60 psi).

Accredited Superior Tanker Shuttle Service

Accredited Superior Tanker Shuttle Service is a recognized equivalency to hydrant protection. To be accredited, fire departments must commit to maintaining a high standard of organization, and practice delivering the service regularly. The fire department must be able to show through testing and documentation that it can continuously provide water supplies in excess of the minimum required for hydranted municipal-type water supplies.

To be recognized for Accredited Superior Tanker Shuttle Service, the system of delivery of water supplies must be well-designed and well-documented. The system of delivery must meet all of the requirements specified for Standard Tanker Shuttle Service and must exceed the requirements in several key areas:

- *The fire department must be able to prove through testing that the specified requirements of Superior Tanker Shuttle Service can be met.*
- *For personal lines insurance, the fire department must be able to deliver a flow rate of not less than 950 LPM (200 IGPM) within 5 minutes of arriving at the test site with the first major piece of apparatus (wheel stop).*
- *For commercial lines insurance, the fire department must be able to deliver a flow rate of not less than 1900 LPM (400 IGPM) within 5 minutes of arriving at the test site with the first major piece of apparatus (wheel stop).*
- *The fire department must be able to deliver the flow rate which will be accredited within 10 minutes of arriving at the test site with the first major piece of apparatus (wheel stop).*
- *The volume of water available for fire fighting must be adequate to sustain the accredited flow rate for a duration in accordance with the Fire Underwriters Survey Water Supplies for Public Fire Protection*

Further Notes

- *To be recognized for fire insurance grading purposes, the protected property must be located within:*
 - *Commercial Lines (PFPC) - 5 km of a fire station AND 2.5 km of an approved water supply point*

- *Personal Lines (DPG) - 8 km of a fire station AND 5 km of an approved water supply point*
- *To be recognized for fire insurance grading purposes, the water-delivery system must be available AND accessible 24 hours per day and 365 days per year;*
- *To be recognized for fire insurance grading purposes, the water capacity of alternative water supply sources must be documented for a 50-year drought cycle and documentation must be available for review. Alternative evidence of reliability of supply will be considered on a case by case basis.*
- *Fire Underwriters Survey treats dry hydrants with suction points in the same way as it treats standard (pressurized) fire hydrants. Any property within 300 metres of a dry hydrant may be eligible for a Dwelling Protection Grade better than 3B, provided the building is within eight kilometres by road of a responding fire station, the fire department is recognized as meeting the criteria for a Dwelling Protection Grade of 3A or better and the fire department has adequate apparatus to effectively utilize the dry hydrant through suction. Testing of the fire department's capacity to utilize the dry hydrant and documentation of the dry hydrant design and maintenance may also be required.*
- *Fire Underwriters Survey may extend credit beyond 300 metres of a fire hydrant when the responding fire company uses large-diameter hose, if the fire department can demonstrate a standard procedure for deployment of hose and also establish a relay operation as needed.*

Historical Note: Fire Underwriters Survey has completed Superior Tanker Shuttle Service Testing since 1989 when the first such test was completed in Ontario. Past systems for testing were somewhat less formal. [See article: 1988 First Accreditation in Canada](#)

Noted changes to Accredited Superior Tanker Shuttle Service

1. *Defined coverage areas*
2. *Formalized requirements for Approved Water Supply Points*
3. *Publication of accredited flow rates to the Canadian Fire Insurance Grading Index*
4. *5 year limit on accreditation period*
5. *Formalized requirements for documentation*
6. *Formalized integration of NFPA 1142*

For communities that are currently accredited to deliver Superior Tanker Shuttle Service, a phase in period of 2 years will be used to allow communities time to prepare for the re-accreditation process.

Note: the full Superior Tanker Shuttle Accreditation document can be downloaded here: [Superior Tanker Shuttle Service Accreditation Protocol](#)

The new protocol is in draft and comments/feedback are welcomed:

feedback@fireunderwriters.ca

Why become Accredited to deliver Superior Tanker Shuttle Service?

Property owners in communities with accredited Superior Tanker Shuttle Service are eligible for improved property insurance rates similar to those in communities with municipal-type water supply systems.

Fire Underwriters Survey does not set property insurance rates, however the organization is responsible for publishing the Canadian Fire Insurance Grading Index which is used by insurers across Canada to base insurance rates upon.

Fire Underwriters Survey is recognized by the Insurance Bureau of Canada as being the only organization authorised to publish fire insurance grades in Canada.

Outside Agencies Testing Tanker Shuttle Service?

Communities that have been tested by agencies other than Fire Underwriters Survey may still be eligible to receive Fire Underwriters Survey accreditation. Documentation of test procedures followed and test results must be submitted to the offices of Fire Underwriters Survey in accordance with the Superior Tanker Shuttle Service Protocol document. Applicants that successfully meet the specified criteria will be accredited and receive certification through the Fire Underwriters Survey' Registry of Accredited Superior Tanker Shuttle Services. The Registry is promulgated to the Fire Insurance Grading Index to ensure that the community's fire insurance grades reflect the accreditation.

Updated: December 15, 2017

ELECTORAL AREA DIRECTORS' COMMITTEE

DIARY ITEMS

	<u>Topic</u>	<u>Notes</u>	<u>Diarized</u>
1.	North Pine TV Tower		August 17, 2107
2.	Internet		November 16, 2017
3.	Tour for the Water Advisory Committee Members	Arrange a final meeting 6-8 months after operational to close the loop	November 16, 2017
4.	Meetings with Ministers and MLA`s		November 16, 2107
5.	Cell Towers within the Region		December 14, 2017